



*Fear appeals and mortgage protection insurance – a quantitative study*

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**Fear appeals and mortgage protection insurance  
– a quantitative study.**

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26042638

A thesis submitted in partial fulfilment of the requirements of  
Sheffield Hallam University  
for the degree of Doctor of Business Administration (DBA)  
in collaboration with Munich Business School

March 2023

## Candidate Declaration

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## **Abstract**

Managers in charge of sales process designs are constantly in the need to optimise their communication strategy to improve advisory quality and take-up rates. This is especially true for mortgage protection insurance (MPI), where buying insurance means buying an immaterial product that creates a perception of security which protects one of the most important assets in life – one's home. It is key for a successful advisory to find communication approaches that overcome the psychological barriers of customers. One possible approach is the use of fear appeals, which confront the customer with negative consequences. Despite their widespread use in the public field, and continuous academic interest since the 1950s, the effectiveness of fear appeals remains equivocal. A detailed chronological examination of fear appeal research is presented suggesting that the field of insurance distribution was neglected from research. The effect of specific individual differences (optimism, pessimism, risk-taking) on cognitions, emotions, and behaviour outcomes are identified as gaps in the literature.

The primary aim of this thesis was to determine the effectiveness of fear appeals in the context of MPI on behaviour outcomes and on willingness-to-pay to enhance the advisory quality of mortgage salespersons. To achieve this a research framework was developed that utilises the constructs of the Extended Parallel Process Model, conceptualises a fear appeal into three message characteristics (vivid image, message frame, message direction) and integrates individual differences.

Using data from a randomised experiment ( $N = 1,014$ ), the research framework was tested using ANOVAs, t-tests, regression analysis, and PROCESS calculations. The results delivered valuable insights. Firstly, vivid images created fear and uncomfortable feelings but did not influence cognitions or behaviour outcomes. Secondly, cognitive appraisal values indicated that the product information was well suited for business needs. Moreover, perceived susceptibility to a threat, as did optimism and risk-taking, showed a significant positive effect on willingness-to-pay. Lastly, a significantly positive effect was achieved on attitude towards MPI with the integration of the treatment. This project has demonstrated important factors for improving the sales process of MPI salespersons.

## **KEYWORDS**

Extended Parallel Process Modell (EPPM), Fear Appeals, Threat Appeals, Mortgage Protection Insurance, Individual Differences, Optimism, Risk-Taking

## 1 Introduction

This thesis examines the effects of fear appeals on German mortgage customers facing a decision in favour or against taking up mortgage protection insurance whilst being in a counselling meeting with a mortgage or insurance advisor. In addition, individual differences such as risk-taking and optimism/pessimism are added to the field of research.

### Fear appeals

Due to the information overload through a multitude of media, today's recipients are confronted with an unmanageable number of messages that they can by no means fully perceive. This poses a challenge for advertisers and sales responsible. In order to emphasise messages, they often appeal to emotions in addition to informative facts and hope above all for a positive influence on attitudes and behavioural intentions in addition to increased attention (Gelbrich & Schröder, 2008). In doing so, advertisers mostly try to arouse positive emotions; depending on the product category, however, the arousal of negative emotions, such as fear (Izard, 1994), can also be advantageous. Generating fear for convincing is a very old rhetorical strategy that was already recommended by Aristotle in ancient times (Aristoteles & Krapinger, 1999). The emotion of fear is one of the most basic emotions humans can experience (Bartikowski et al., 2019). Poels and Dewitte (2006) propose that fear can be felt either automatically (e.g., standing eye in eye with a dangerous animal), or after cognitive appraisal (e.g., the fear of losing a job after making a serious mistake), depending on the situation.

Scholars have not reached consensus on a unique definition of what a fear appeal is (Bartikowski et al., 2019). In general, a fear appeal activates a person's sense of risk and vulnerability. It also provides solutions as a means of reducing fear. Fear appeals encourage recipients of the message to engage cognitively and emotionally with the threat presented, and the outcome of this processing effort may influence decisions to support the proposed recommendations. The use of threatening messages to generate fear is a source of motivation to follow the recommendations and to ease the uncomfortable tensions associated with fear (Tannenbaum et al., 2015). In short, **fear appeals** are messages that communicate and strongly

emphasize serious threats to the recipients to motivate changes in attitude and behaviour (Hastall, 2016). They can be distinguished from positive emotional and rational-argumentative target group approaches (Brassington & Pettitt, 2013), and, conceptually, feelings of fear should be distinguished from anxiety, which is an individual's chronic tendency of being afraid or worrying excessively (Bartikowski et al., 2019). Fear appeals are one of the main strategies of persuasive communication (Neurauter, 2005). Instead of making a positive promise to the consumer, these messages threaten negative consequences, such as pain or social isolation, which can only be averted by following the recommendation for action presented. The fear induced by this promotes a positive attitude towards the recommended action and the intention to carry it out (Barth & Bengel, 1998).

Relatively popular are fear appeals in social marketing, in health communication and in political communication. Examples for this can be found on cigarette packages (e.g. 'smoking kills') on posters for safe driving (e.g. 'alcohol can kill') or in political speeches (e.g. 'nuclear power kills'), and most recently in fear arousing messages concerning COVID-19 (e.g. 'purchasing protective equipment'). Their popularity may be due in part to an overestimation of their effectiveness: studies show that people consider fear appeals to be far more convincing than they actually are and that even the clarification of the actual effectiveness does little to change this distortion of perception (ten Hoor et al., 2012). The use of fear appeals has long been controversially discussed (e.g. Hastings et al., 2004; Hyman et al., 1990; Spence & Moinpour, 1972). Extensive research has been done on the use of threats or warnings to encourage individuals to adopt healthy or positive behaviours, or to deter from engaging in risky or unhealthy behaviours (e.g. Faseur et al., 2015; Halkjelsvik & Rise, 2015; Johnston et al., 2015; Nabi, 2015; Nancy Rhodes, 2017).

The use of threats as a means of communication has been widely used in practice (Chamberlain, 2015). However, both practitioners and academics have been examining the effectiveness of the use of threats as a means to persuade individuals to change behaviour with varying results and therefore it is still an ongoing debate and investigation on how exactly fear appeals work (Morales et al., 2012). Hastings (2004) notes that fear appeal research has several limitations which include an overdependence on student samples, short-term measurement, and forced exposure.

Remarkably, there are hardly any larger companies or institutions in Germany that are heavily reliant on fear appeals. An important reason for this will probably be the fear of negative radiating effect on your own image (e.g. Hastings et al., 2004; Reifegerste et al., 2012). In addition, there are narrow legal limits to the creation of fear for advertising purposes (Gelbrich & Schröder, 2008; Hastall, 2011). This thesis focuses specifically on the use of threat appeals in a one-to-one sales process. As such, this thesis is not only located within the field of fear appeals, but also in the mortgage sector and takes into account borrowers' individual differences concerning decision making when it comes to insuring a loan.

### **Banks and mortgages**

According to the Bundesbank (2020), the German Federal Bank, real estate financing is a very important topic from various perspectives: First, for macroeconomic analyses, as real estate is of great importance for the asset holdings of private households. Second, real estate financing is an issue of financial stability, as falling real estate prices and increasing loan defaults could have a severe impact on the entire financial system. And finally, third, mortgage finance is highly relevant for banking supervision: This is due to the fact that real estate loans are a central component of the business model of many banks (Wuermeling, 2020). A real estate loan is a loan from a bank, savings bank, building society or insurance company that is usually used to buy or build a house or apartment. Lenders and borrowers enter into significant, long-term commitments with a real estate loan (BaFin, 2022).

Real estate loans account for around 70 percent of total lending to domestic companies and private individuals. For most of Germany's 1,700 banks, real estate loans thus represent a mainstay of their business model. In recent years, especially since 2010, Germany has seen strong loan growth and, at the same time, strong price increases in the real estate market (Empirica, 2022). Residential real estate loans to private households continue to be the more important segment within real estate lending for German banks across the board. Housing loans have become riskier against the backdrop of sharply rising prices because the trend can quickly reverse. Property buyers are becoming increasingly indebted: they are financing an ever-higher proportion of their acquisition costs through loans and bringing less and less equity with them. Market data indicate that in new business, the loan amount exceeds the purchase price of the property in just under ten percent of cases

(Wuermeling, 2022). The share of residential real estate financing in bank balance sheets has increased enormously. It now stands at 35 percent of all bank loans. This is also a result of the rise in prices. And the trend is continuing. The latest developments in the mortgage market will be discussed further in chapter 1.1.1.

## **Borrowers**

Coming home, putting the key in the lock, and knowing: This is mine. Here I can do what I want, rearrange as I please, and I don't have to ask anyone for permission.

Having their own home is the dream of many people in Germany (Interhyp, 2019).

Authors such as Jenkinson (1992) argue that housing constitutes the largest single component of household expenditure and is a unique good that plays an

unprecedented role in providing security and social structure to individuals and households. Housing plays a role unlike any other commodity in shaping our lives and communities, often complementing, if not essential, the consumption of many other goods and services (Pryce & Keoghan, 2001). Moreover, a well-maintained home or garden benefits everyone in the community, not just the owner.

Many studies have shown that people in Germany are happier if the home they live in, is also owned by them and that two thirds of all tenants would rather own their property (Interhyp, 2019). Nevertheless, only 47.6% of Germans own their home or apartment, which is prognosed to increase to 50.1% by 2030 (Deutscher Bundestag, 2017, p. 40). Germany has the second lowest home ownership rate in the OECD. A significant part of the low homeownership rate in Germany compared with other OECD countries can be explained by a relatively high real estate transfer tax, the lack of a tax deduction for mortgage interest for owner-occupiers and social housing with broad subsidy conditions (Kas et al., 2020). Germans describe the decision to buy real estate as one for life, or at least a decision for several decades. According to a major study conducted by Interhyp (2019), the decision which real estate to buy is either primarily emotional (54%) or fact-based (46%). It can be argued, that taking up a mortgage is connected with numerous emotions, from positive feelings of owning real estate to negative feelings about having made the right decision (regret) or being insecure about the capability to pay for the mortgage for a long period of time. One could discuss that the borrower might be in an emotional state of positive insecurity, when deciding to take up a mortgage loan.

From a financial perspective, residential property prices have decoupled from income growth in Germany. The share of debt service in disposable income has continued to rise and most recently stood at 29% (Wuermeling, 2022). Moreover, the average loan amount for first-time buyers ranges up to 329,000 EUR (Europace AG, 2022). With an average monthly net income of 2,165 EUR (Statistisches Bundesamt, 2022a, p. 11), thereof 29% debt service, and an average interest payment of 215,000 EUR, 30 years of duration, this projects up to approximately 66 years (loan-to-income) to repay the loan amount for an average German. One can clearly see that owning your home has become almost impossible for an average person. Nevertheless, according to internal data, the average mortgage customer is financially much better positioned than the average person with a disposable monthly net-income of more than 4,000 EUR (BNP Paribas Cardif, 2022). Hence, it can be assumed that mortgage customers are on average better educated and in a well-positioned professional situation. Furthermore, households taking out mortgages should have sufficient financial literacy or access to financial advice to understand the nature of the risks. However, some studies demonstrate that households show great heterogeneity in financial literacy (e.g. Lusardi & Tufano, 2015; van Rooij et al., 2011). In fact, many households have levels of financial knowledge which are, most likely, insufficient to obtain a mortgage loan without proper advice. These households can especially benefit from financial guidance provided by a mortgage advisor (van Ooijen & van Rooij, 2016). As such, in Germany, it is common to have a personal mortgage advisor, either situated in the bank or serving as an independent broker. Since March 2016, all mortgage advisors in Germany are obliged to possess a license after §34i of the German Trade Regulation (“Gewerbeordnung”) which was put into place following the European Mortgage Credit Directive (BMJ, 2016).

### **Mortgage protection insurance**

On a global perspective, Germany holds position six with overall 226 billion EUR of insurance premiums (GDV, 2021). With 84 million inhabitants, according to GDV (2021), the overall number of insurance contracts in Germany totals 465 million, equalling approximately 5.5 insurance contracts per person. Interestingly, 87 million insurance contracts cover the death risk and therefore every German calculatedly already holds at least one death cover. Additionally, permanent disability insurance is well-known in Germany with 17 million existing contracts, representing 30%, out of a

total working population of 44 million (German Association of Actuaries, 2018). When considering insurance and mortgage, mortgage consumers can defuse the financial risks of credit default by taking mortgage protection insurance (hereafter MPI). Defusing risk is supposedly very much connected to reducing the level of fear that an incidence will negatively affect one's life.

MPI consists of a package of insurance products, providing varying combinations of life, accident, sickness, and unemployment covers. MPI is used to protect the mortgage payments of policyholders in these events. The principle of the insurance solution is to either repay the outstanding loan in case of death or cover the mortgage payment up to 24 months and therefore serve as a cushion to bridge temporary personal financial shortages due to unforeseen events (BNP Paribas Cardif, 2022). As such, mortgage customers are not only faced with the financial burden of repaying the loan amount, but also with taking care of health related and income related risks. In general terms, mortgage advisors sell MPI together with the mortgage contract as the insurance should fit to the loan which is supposed to be insured. In Germany however, MPI as a package solution is an insurance product which is not widespread. Generally speaking, insurance products are well known in Germany, but this is not the case for mortgage insurance (BNP Paribas Cardif, 2022). Still to date, the market standard is either no insurance or solely a death cover. Permanent disability insurance policies are also common, but only in seldom cases sold together with a mortgage contract.

Overall, it can be stated that in Germany mortgage insurance is still in its infancy. This may seem astonishing as in other European countries MPI is already well developed. In France, Italy, Spain, Czech Republic, and Belgium the take up of MPI is a common process when signing a mortgage (BNP Paribas Cardif, 2022). In France taking up MPI is a mandatory requirements for all borrowers, while e.g. in Canada MPI is mandatory if the loan-to-value exceeds 80% (Basiri et al., 2022). The fear of miss-selling is also an important issue in the German market. The Ministry of Finance has issued a new law for credit protection insurance entering into force on July 1 2021, capping the sales commission to 2.5% of the loan amount (BMF, 2021). Nevertheless, this regulation is primarily targeted at consumer loans with lower credit



amounts, as the average loan amounts for mortgages are above 300.000EUR allowing for enough financial space to cover the cost of distribution.

The author of this thesis currently holds the title of Head of Mortgage Protection in Germany at the worldwide leading credit protection insurance company BNP Paribas Cardif. As such, BNP Paribas believes in the development of the German market for mortgage protection and has made this one of the top three strategic priorities until 2025. Not only is there a customer need for this insurance, but also there lies impressive business potential in the development of the overall market. The business potentials will be discussed further in chapter 1.1.3.

From a business perspective, the distribution of mortgage protection insurance should be directly linked to the advisory of the underlying mortgage contract.

Worldwide, this process has proven to be the most successful in terms of take-up rates (BNP Paribas Cardif, 2022). One possible solution for persuading consumers is the use of fear appeals to intensify the perceived need for MPI. To understand what motivates people to take up mortgage protection insurance this thesis will examine the effect of fear appeals on the distribution success of MPI in Germany. It will be essential to evaluate the right level of threatening message, considering individual differences around risk-taking and optimism/pessimism, to develop a guiding communication for German mortgage and insurance salespersons.

This thesis also illustrates the theoretical development of academic understanding regarding individuals' responses to threat appeals. This will be explored further using a chronological and thematic approach. Nevertheless, building on empirical research and theoretical advancements, the intention is to depart from the equivocality of empirical results and take a fresh approach. Specifically, to define message characteristics in more detail, to add risk-taking and optimism/pessimism and frame cognitive responses to threat appeals, in the context of a one-to-one sales setting, as part of a decision, as well as use the findings to develop a communication guideline for mortgage advisors. More precisely, given that the exposure to a threat appeal in this context usually occurs at a different time to the real mortgage advisory meeting, the response process generally involves a decision about future behaviour. As such, the present study specifically focuses on this decision process, allowing for a more

detailed examination of the cognitions generated, resulting from the exposure to a threatening sales advertisement.

## **1.1 Domain of research**

Fear appeals have already been recommended by Aristotle as a rhetorical stylistic device and are used particularly in health communication, social marketing and in political communication (Hastall, 2016). They are defined as a persuasive communication that attempt to arouse fear in order to promote precautionary motivation and self-protective action (R. W. Rogers & Deckner, 1975). While proponents emphasize positive effects on attention, behaviour and attitudes of the recipients, opponents point to several undesirable and problematic effects. A relatively large number of approaches have already been postulated to explain the effects of fear appeals and most of them have been revised or rejected since the empirical findings remained contradictory. According to previous literature, threat appeals are broadly defined according to four elements (Chamberlain, 2015):

1. First, a threat usually contains vivid or personalistic language and bloody pictures (Witte, 1992) and is a persuasive message that tries to arouse the emotion of fear by depicting “a personally relevant and significant threat” (Witte, 1994, p. 114).
2. Second, the consequences of this threat are highlighted. According to Algie and Rossiter (2010, pp. 264–265) a threat appeal “is a means of persuasion that threatens the audience with a negative physical, psychological, or social consequence that is likely to occur if they engage in a particular behaviour”. It is important to note that negative outcomes can be presented as avoidable if the individual does not engage in the stated behaviour.
3. Third, it is assumed (as discussed throughout the paper, is problematic) that the audience will experience fear (Witte, 1994), and as defined by Witte (1992, p. 329) the messages are “designed to scare people by describing the terrible things that will happen to them if they do not do what the message recommends”.
4. Fourth, a recommendation regarding how to reduce or eliminate the consequences of the threat is outlined. Communications using threat appeals are used to “stimulate anxiety in an audience with the expectation that the

audience will attempt to reduce this anxiety by adopting, continuing, discontinuing, or avoiding a specified course of thought or action” (Spence & Moinpour, 1972, p. 40).

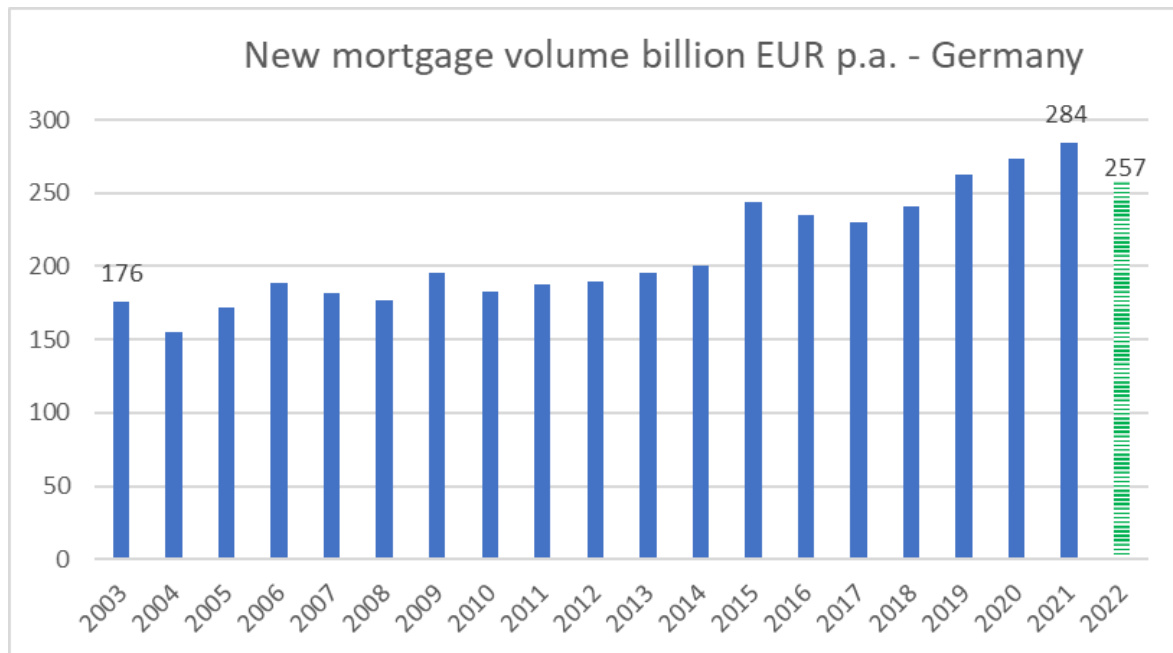
The main assumptions of some central theoretical threat appeal approaches will be summarised, and the empirical state of the research depicted. Both the variability of the theoretical explanatory experiments as well as the heterogeneity of the empirical findings suggest that the complex effects of the decisive frame conditions for positive and negative effects of fear appeals have so far been insufficiently understood.

### **1.1.1 Mortgage market in Germany**

To bring the topic of this thesis in context with the overall perspective, this chapter briefly describes the mortgage market in Germany. As stated above, real estate financing is a very important topic from various perspectives.

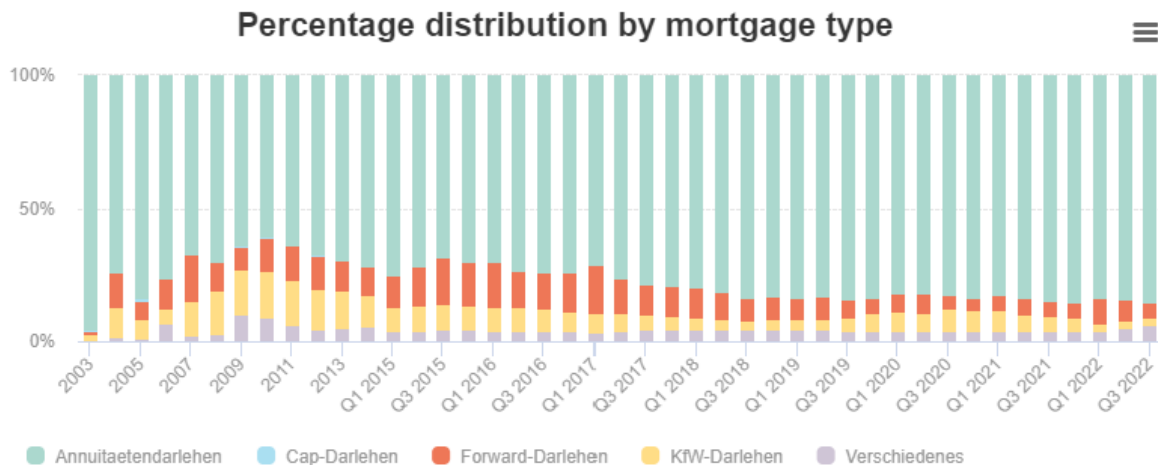
The overall mortgage volume in Germany totals 1.678 billion EUR at the end of 2021 (Deutsche Bundesbank, 2022a) with a new mortgage volume of 284 billion EUR in 2021 (Deutsche Bundesbank, 2022b). Based on the latest Bundesbank (2022b) numbers until September 2022 of 215 billion EUR the author estimates a total of 257 billion EUR new mortgage volume in 2022 (9% decrease to 2021), as depicted in figure 1.

**Figure 1:** *New Mortgage Volume p.a. 2003 - 2022 (Deutsche Bundesbank, 2022b)*



Typically in Germany, the interest rates for real estate loans are fixed for 5, 10 or 15 years (BaFin, 2022). This is known as a fixed borrowing rate, fixed interest rate or fixed interest rate period. After the fixed rate duration has ended, the customer takes up a new mortgage for the outstanding loan amount. Therefore, an average mortgage customer will sign 2-3 mortgage contracts to fully repay the loan over approximately 30 years. In recent years, contracts with a fixed interest rate for a period of 20, 25, 30 or even 40 years have increasingly been offered. However, there is also real estate financing with a variable interest rate that depends on the development of a certain reference interest rate. Mortgage loans are generally repayable in equal monthly instalments (annuities). The respective instalment comprises the interest portion and the repayment portion. The regular repayments reduce the loan amount so that the interest portion of a monthly instalment is constantly reduced. At the same time, the repayment portion increases by the saved interest resulting from the successive reduction of the loan amount. Such real estate loans are also called annuity loans and as depicted in figure 2 below with 85% represent the majority of all issues mortgage loans in Germany (Europace, 2022).

**Figure 2:** *Percentage Distribution of Mortgage Types (Europace AG, 2022)*

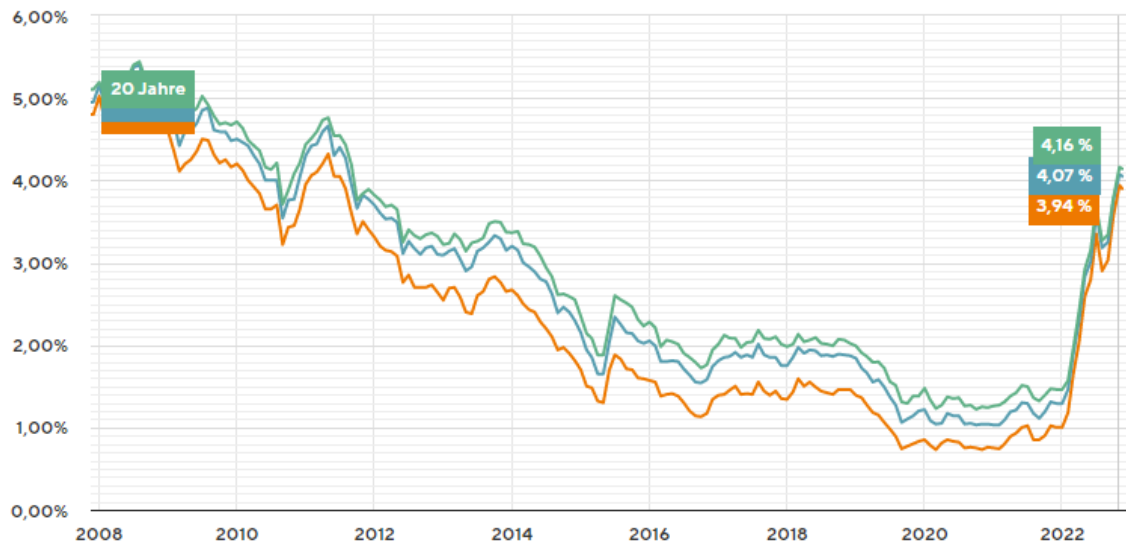


*Reprinted with permission from Europace*

Therefore, the outlook of the mortgage market is robust as the repayment of the mortgage loans are in a fixed contract with a fixed rate for 10 years and more. Nevertheless, this only holds true for existing mortgages and due to changed economic conditions seems not as clear for new mortgage business.

High inflation rates and significant interest rate hikes by central banks are turning points of the real estate market (Empira Invest, 2022). Since the outbreak of the Ukraine war in 2022, the monetary policy of central banks worldwide has been driven by high inflation rates which accrues to 10.4% in Germany in Oktober 2022, marking new record highs in the last 30 years (Statistisches Bundesamt, 2022c). Until November 2022, the U.S. Federal Reserve as well as the Bank of England, and the European Central Bank (ECB) responded to this with several interest rate hikes each, with the Fed reaching 3.9% (Federal Reserve, 2022), the Bank of England reaching 3.00% (BoE, 2022), and the ECB postulating 2.25% (ECB, 2022a). The break in the inflation and interest rate trend determines economic activity in all sectors of the economy. In the real estate sector, these interest rate developments are increasingly being felt by borrowers. For example, according to leading broker organisations Interhyp (2022b) and CHECK24 (2022) mortgage rates with a fixed borrowing rate are touching the 4% mark, making mortgage loans as expensive as they were in 2010 (see figure 3 below). Mortgage rates are proposed to increase even further, as more increases of the ECB rates are expected (ECB, 2022b).

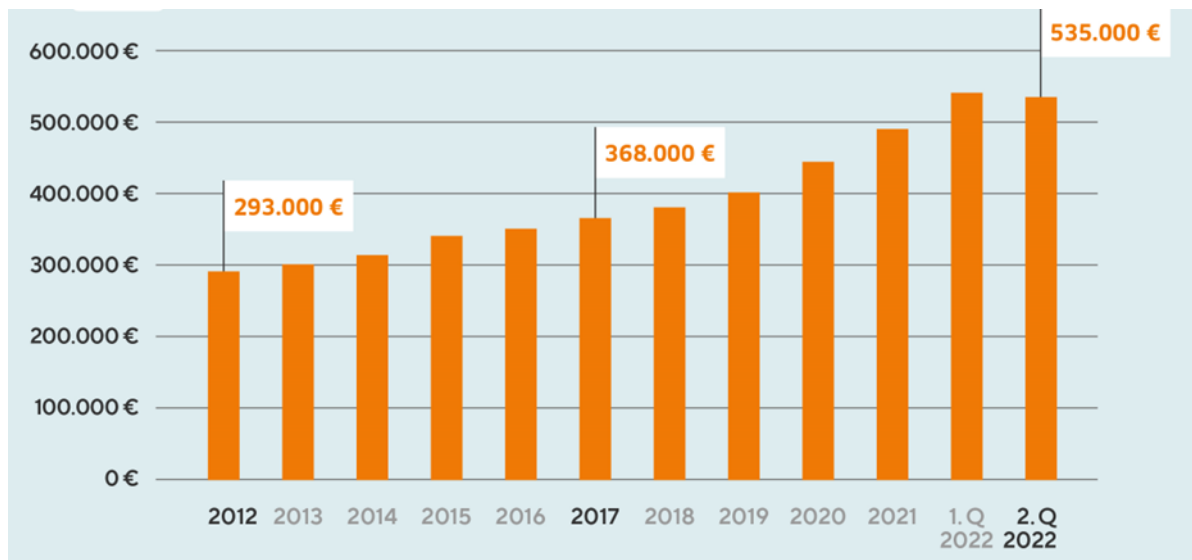
**Figure 3:** Mortgage Rates Touching the 4% Mark (Interhyp, 2022b)



*Reprinted with permission from Interhyp*

Moreover, the average housing prices have increased steadily from 293.000 EUR to 535.000 EUR (83% rise) over the last 10 years, following the low interest rate environment (see figure 4 below). The latest interest rate developments are already becoming visible in the second quarter of 2022 with a slight decrease in real estate prices, the first decrease in 17 years (Bulwiengesa AG, 2022).

**Figure 4:** Average Housing Prices since 2012 (Interhyp, 2022a)



*Reprinted with permission from Interhyp*

This adds up to an uncomfortable situation for new home buyers, the subjects of interest for this study. The sales prices are still on a very high level, while the interest rates have returned to high levels. Additionally, the chances of significant reductions in housing prices seem low, as building costs have increased by 16.5% year-on-year from August 2021 to August 2022 (Statistisches Bundesamt, 2022b), in large parts due to material shortages and high energy prices (Deutsche Bauindustrie, 2022). Consequently, future homeowners will now have to dispose of an even higher income to afford mortgage payments, delay their wished-for purchase, scale-down, or defer from buying a home in the current market environment. In short, the costs and risks of taking up a mortgage have increased significantly in 2022.

In mortgage financing, there are two major trends for acquiring new customers: the Internet and financial brokers. The customer compares online and decides which provider to have the consultation with. The second trend also results from this, among other things. Customers are increasingly going to mortgage brokers because they see them on the Internet. 30% of customers already seek advice from mortgage brokers, and 75% obtain information on the Internet (Fehlhauer & Gerlach, 2015). The trend toward third-party brokering as a supplement to the bank's own product will continue to increase, as BNP Paribas Cardif (2022) already assumes 40% market share of mortgage brokers in 2022.

### **1.1.2 Mortgage protection insurance solution “BaufiSchutz”**

An insurance is an immaterial product that is valued subjectively by its recipients. What people buy is a perception of security. Due to the subjectivity involved, differences occur concerning the need for and the appreciation of insurance products (Hofstede, 1995). As stated earlier, mortgage consumers can defuse the financial risks of credit default by taking mortgage protection insurance.

MPI is a very complex service that combines several different types of insurance and has different characteristics from provider to provider (Ashton & Hudson, 2017). Hereafter, the insurance solution “BaufiSchutz” is briefly described, which is a common product name for mortgage protection in Germany and will be used throughout this thesis. To standardize the insurance product for this thesis, BaufiSchutz is sold jointly with the mortgage, either through a bank or a broker, and consists of three building blocks: death, temporary disability, and unemployment insurance, as depicted in table 1 below. For example, other studies distinguish the various risks in ‘credit life insurance’, ‘credit disability insurance’, and ‘involuntary unemployment insurance (IUI)’ (e.g., Durkin & Elliehausen, 2012), but for this study the three risks are not separated, rather included in one package solution. The duration of the insurance contract follows the duration of the underlying mortgage contract, currently averaging 13 years (BNP Paribas Cardif, 2022). The insurance premium is paid monthly with a monthly cancellation right for the customer. The principle of the insurance solution is to either repay the outstanding loan in case of death or cover the mortgage payment up to 24 months and therefore serve as a cushion to bridge temporary personal financial shortages due to unforeseen events.



**Table 1: Mortgage Protection Product "BaufiSchutz"**

Insured risk	Insured sum	Insurance benefit	Qualifying / Waiting period
<b>Death</b>	Up to 600.000 EUR	One-time payment	<ul style="list-style-type: none"> <li>• No qualifying period</li> <li>• No waiting period</li> </ul>
<b>Temporary disability</b>	Up to 5.000 EUR monthly	<ul style="list-style-type: none"> <li>• 24 months payment</li> <li>• Multiple payments possible</li> </ul>	<ul style="list-style-type: none"> <li>• 6 weeks qualifying period</li> <li>• No waiting period</li> </ul>
<b>Unemployment</b>	Up to 2.500 EUR monthly	<ul style="list-style-type: none"> <li>• 12 months payment</li> <li>• Multiple payments possible</li> </ul>	<ul style="list-style-type: none"> <li>• 6 weeks qualifying period</li> <li>• 6 months waiting period</li> </ul>

Accenture (2020) conducted an international survey, where 64% of respondents expressed fears (agree or significantly agree responses) about their health.

Nevertheless, R+V insurance company (2022) has conducted a survey to evaluate the fears of the German population in 2022, ranking positions from 1-22 with 1 being the greatest fear. The outcome is quite interesting as the fear of death is not even in the top 22 ranked positions and fear of unemployment or severe illness are at the end of the ranking, holding position 21 and 19 respectively (R+V-Infocenter, 2022). Clearly, these prevalent risks are not top of mind. This is precisely where the mortgage advisor comes into play to create awareness for statistics and realities to face when one of the unpleasant and not wished for life events occur.

## Death

- In Germany, in case of death, surviving partners receive from the German state either the small (survivor younger than age 46) or large (survivor aged 46 and older, or own children) widows' pension. The small pension amounts to 25% of the pension of the deceased partner and is paid for 24 months, while the large pension amounts to 55% of the deceased partners' pension and is paid for unlimited time (Deutsche Rentenversicherung, 2022a).
- Considering the average monthly pension payment of 973 EUR (Deutsche Rentenversicherung, 2022b, p. 3), one can conclude that neither 243 EUR (25%) nor 535 EUR (55%) will be enough to cover the costs of a mortgage next to the costs of living.
- In 2020, a total of 985,572 deaths were reported, of which 239,552 people have died of cancer in 2020 (Gesundheitsberichterstattung des Bundes, 2020). Moreover, approximately 218,000 people have died before reaching the age of

65, accounting for 22% of all death cases (Gesundheitsberichterstattung des Bundes, 2020).

- Lastly, in the year 2022 more than 28,000 properties had to be foreclosed due to inability to repay the mortgage rates, of which 7,500 account for classic owner occupied homes and apartments (Wölfle, 2022).

### **Temporary disability:**

- In Germany, in case of incapacity to work, the full salary is continued to be paid for 6 weeks. After this period the health insurance provider will cover, for a duration of 78 weeks, 70% of the gross income or 90% of the net-income (minus social security costs) which on average amounts to approximately 20% less net income. This seems quite fair, but the maximum amount of monthly pay-out is 2,979 EUR, which leaves the average mortgage customer with more than 30% deficit (BNP Paribas Cardif, 2022).
- Each year, in 5% of disability cases the duration exceeds 6 weeks (Schumann et al., 2022). In other words, over the lifetime of a mortgage contract of approximately 15 years, the likelihood of being in the need of protection support, arguably, can be calculated as 75%. Additionally, the German Association of Actuaries (2018) states that one in four persons will be incapacitated at least once during their working life.
- Mental issues together with musculoskeletal disorders account for over 50% of sick notes, whereas back pain alone accounts for 6.5% of all sick days (Schumann et al., 2022). Moreover, it is stated that in 2016 at least 33% of incapacitations to work are caused by mental illness (German Association of Actuaries, 2018).
- In 2021, out of 2.2 million reported road accidents (Statistisches Bundesamt, 2021, p. 17) 300,000 involved personal damage (Statistisches Bundesamt as cited in de.statista.com, 2022).

### **Unemployment:**

- In Germany, in case of unemployment, the employment agency pays 60% (67% if children exist) of your prior net-income for the duration of 12 months (up to 24 months if older than age 50) (Bundesagentur für Arbeit, 2022a). This also seems quite fair, but the maximum amount of monthly pay-out is 2.676

EUR, which leaves the average mortgage customer with more than 30% deficit (BNP Paribas Cardif, 2022).

- The current unemployment rate in October 2022 lies at 5.3% which equals 2.4 million individuals (Bundesagentur für Arbeit, 2022b). Germany therefore has a robust labour market with a strong law on the protection against dismissal (Bundesministerium der Justiz, 2022). Nevertheless, latest signs of recession in the economy and news about lay-offs in companies in Germany and international companies (Crunchbase, 2022) have sparked some doubt on the future of safe job positions. According to the ifo Institute (2022) companies have revised their employment plans due to the recent economic developments and dismissals are just a matter of time.

In summary, it can be stated that there are real risks of life involved when taking up a mortgage over a duration of 30 years. Bank advisors and mortgage brokers should address these topics as it seems important to create awareness on the customer side.

### **Reasoning behind MPI**

From a macro and business perspective, the reasoning behind MPI is as follows:

1. In Germany, currently MPI and mortgages are only available jointly (in terms of distribution) and the competition with individual policies, compared to death covers and permanent disability covers, creates clear economic incentives for firms distributing MPI policies with mortgages to offer higher quality policies. If a future claim is successful, both the policyholder and the companies co-arranging the mortgage with MPI will be the beneficiaries of these payments. MPI's policyholders benefit from continued mortgage payments and therefore never default on their mortgages or face foreclosure on their homes. Mortgage providers also benefit from guaranteed mortgage repayments and reduced trust required within lending relationships (Lapavitsas, 2007). Mortgage brokers also benefit as their customers will be satisfied to have taken up MPI, which was recommended by the broker. Therefore, companies that sell MPIs together with mortgages benefit from policies with comprehensive coverage, higher quality, and higher pay-outs if successful.

2. Secondly, while in Germany only 0.7% of mortgages are classified as non-performing loans in Q2 2022 (European Banking Authority, 2022, p. 34), it can be stated that only a small proportion of households default on their mortgage debt (Figueira et al., 2005) but the costs of this outcome are high. For lenders, mortgage defaults increase bad debts and bad debt provisions and as stated earlier, mortgage default can result in the governmental support costs by social security services. For mortgage customers, defaults and foreclosures can cause emotional costs comparable to failed marriages or job loss (Taylor et al., 2007) and significantly increase the incidence of mental illness (Pevalin, 2009). Subsequently, the development of methods to reduce the number of mortgage defaults is economically and socially advantageous (Ashton & Hudson, 2017).
3. Thirdly, the distribution of MPI is a highly profitable business model for banks, brokers, and insurance companies during times when questionable practices by financial institutions in charging additional fees and add-on services are seen globally (Tennant & Sutherland, 2014) making this a market worthy of further examination.

### **Literature examining mortgage payment protection insurance**

Academic contribution to the topic of mortgage protection in the German speaking region has been very poor, e.g. Diaz-Serrano (2005) has analysed eight European mortgage markets in terms of MPI, but has excluded German speaking countries in his analysis. Moreover, the appearance of MPI in studies seems solely as a side note which must be addressed in the surrounding of a mortgage consultation or is just a small part of the financing solution (e.g. Bruhn, 2009; Noosten, 2015). The scarce literature on MPI is mainly conducted in the UK and USA and is influenced and guided to some extent by the ongoing policy debate surrounding this financial service. These discussions take into account the requirements of mortgage protection, the low utilization of this service and consumer protection and competitiveness concerns (Ashton & Hudson, 2017). Also, in the UK, Ranyard and McHugh (2012b) investigated customer decision-making in the payment protection insurance (PPI) market (Note: PPI covers do not include death insurance as is the case in Germany). In this sector, indications of willingness to pay for PPI are not affected by large shifts in quality of coverage. Other findings, for UK PPI loans between 1998 to 2011,

indicate that interest rates on loans were significantly lower when the loans were offered with PPI (Ashton & Hudson, 2014). A legal overview of the PPI mis-selling practices and regulatory decisions is provided by Ferran (2012). Academics from the USA have explored different regulatory and policy concerns including excessive coverage provided (Cyrnak, 1986), the general legal treatment of PPI policies (Spahr & Escolás, 1986), antitrust implications of credit insurance tying arrangements (Polden, 1983), the often very small quantities insured (Durkin & Elliehausen, 2012), and due to insufficient competition in the industry the premiums are not at competitive levels (Allen & Chan, 1997). Lastly, Baker and Siegelman (2013) provide a discussion of ongoing policy issues in the US American PPI market.

### **1.1.3 Business case**

This chapter briefly describes the business case behind the mortgage protection insurance in Germany. As stated earlier the new business volume in Germany in 2021 amounted to 284 billion EUR (Deutsche Bundesbank, 2022b) with an average loan amount of 277,000 EUR (Europace AG, 2022). From this, the number of distributed annual new loans can be calculated as 1,025,271, see table 2 below. Assuming a conservative MPI take-up rate of 30% this accrues to a potential 307,581 MPI contracts per annum.

As a next step, the average MPI premium based on BNP Paribas Cardif (2022) is calculated with a 13-year contract life-time which amounts to 6,552 EUR. The costs for insuring a loan with all relevant risks is therefore connected to additional costs of 2.37% of the loan amount. The share of premium for the different stakeholders is as follows: 15% (983 EUR) each for the distributor and the insurer and 70% (4,586 EUR) as customer value, paid out as claims to the insured community.

For the overall MPI market in Germany it can be stated that the annual revenue potential reaches over 2 billion EUR, out of which 1.4 billion EUR are paid out for claims. Lastly, the analysis of this thesis is concerned with the improvement of the sales process in terms of take-up rate and willingness to pay for MPI. According to the calculations below, a 1 percentage point increase in take-up rate would amount to 67 million EUR additional revenues.

**Table 2:** *Business Case Calculation German MPI Market*

	2021
New mortgage volume p.a.	284.000.000.000 €
Average loan amount	277.000 €
# of new loans	1.025.271
MPI take-up rate (potential)	30%
<b># of MPI contracts (potential)</b>	<b>307.581</b>
Average MPI premium (life-time 13 years)	6.552 €
MPI premium in relation to loan amount	2,37%
of which distribution commission	983 €
of which insurer profit margin	983 €
of which customer value (claim pay-outs)	4.586 €
MPI Customer value	70%
<b>Premium revenue total market</b>	<b>2.015.272.202 €</b>
Total profit Distributor (Bank, Broker)	302.290.830 €
Total profit Insurance company	302.290.830 €
Total Claims pay-outs (customer value)	1.410.690.542 €
Improving the sales process potential:	
1% point increase in take-up rate equals	67.175.740 €

After acknowledging the mortgage market in Germany and the mortgage protection insurance product and backgrounds, the next chapter will consider the gaps within the literature, with specific focus on the research of threat appeals.

#### **1.1.4 Contribution to practice and knowledge**

In short, the expected contributions of this thesis to practice and knowledge can be summarised as:

- To gain insights into the effect of **intrinsic message characteristics** of threat messages on the immediate emotions, attitude, behaviour and willingness-to-pay of recipients in the context of mortgage protection insurance.
- To gain further insights into **the effect of individual differences** optimism/pessimism and risk-taking when applying fear appeals in the context of mortgage protection insurance.
- To increase the **knowledge around threat appeals in the context of a sales process** for MPI, especially improving the communication of salespersons,

evaluating willingness-to-pay, and increasing the take-up rate of MPI. Overall, this will help to increase the revenues for business.

## **1.2 Research objectives and research design**

Drawing from the previous discussion, the general objectives of this research are:

- 1. To explain the effects of moderate and modest fear appeals on behaviour intention, behaviour expectation, and willingness-to-pay regarding mortgage protection insurance in Germany using constructs of the Extended Parallel Process Model.*
- 2. To provide empirical evidence of the impact of individual differences (optimism/pessimism and risk-taking) on behaviour intention, behaviour expectation, and willingness-to-pay concerning MPI in Germany.*
- 3. To analyse whether moderate or modest fear appeals are effective to establish the most appropriate 'fear level' of threatening message constructs in order to develop a guiding communication for German mortgage and insurance salespersons.*

In order to achieve these broad objectives, a number of more specific tasks need to be completed, which together comprise the beginnings of the overall research design:

- 1. Conduct a detailed review of the literature and analyse the EPPM related areas of threat appeal research.*
- 2. Identify gaps in the literature that require further investigation to help explain consumer responses to threat appeals in the context of insurance sales processes.*
- 3. Conduct quantitative data collection to explore the gaps identified and proposed sales processes enhancements for mortgage and insurance agents.*

Furthermore, one aim of this research is to add clarity regarding individual differences, emotional and cognitive responses to threat appeals, in a detailed review of the literature. As mentioned earlier, research on fear appeals has returned mixed results. This study aims to add value and reduce some confusion in the understanding of threat appeals and responses to these appeals by considering specific individual differences and specifying message characteristics in order to persuade the recipient.

The definition and manipulation of intrinsic message characteristics provides the possibility to identify the precise elements of the stimuli that influence the cognitive and emotional responses in recipients, resulting from the exposure to the threatening stimuli. Indeed, the aim of this study is to develop a better understanding of the relationship between intrinsic message characteristics and emotional and cognitive responses, as well as the influence of individual differences, and consequently the effect of those responses on behaviour intent and expectation, attitude and willingness-to-pay. This study implements an empirical research design, and the results will be presented. In order to test the hypothesised relationships, a web-based experiment was conducted. The complete details of the research design are described in chapter 4. The threatening stimuli with intrinsic message characteristics, manipulated according to the defined constructs were created and tested. The web experiment was conducted with a sample of 1.014 participants.

### **1.3 Structure of the thesis**

The thesis is structured into seven chapters.

- Chapter 1: Introduction, especially focussed on the mortgage market and MPI as well as overview of the research objectives.
- Chapter 2: This chapter introduces the topic of fear appeals and presents a thematic and chronological review and analysis of theory committed to individuals' responses to threat appeals, including an overview of meta-analyses conducted in the field of fear appeals. Furthermore, the relevant gaps in the literature as well as the existing research on fear appeal models are described.



- Chapter 3: Details the understanding of threatening message characteristics, individual differences and describes the research hypotheses. Furthermore, the underlying philosophy is presented.
- Chapter 4: The methodology of the empirical study employed to test the hypotheses is presented. Included in the methodological part are the details regarding the design of the threatening research materials and the web experiment, including the measures to be used to test the constructs and hypotheses.
- Chapter 5: presents the descriptive analysis of the data collected, including a description of the sample of participants.
- Chapter 6: presents the results of the manipulation checks and web experiments. Several factorial Analyses of Variance (ANOVAs), regression analyses, t-tests, and PROCESS calculations are conducted and reported to test the hypotheses generated.
- Chapter 7: elaborates on the main findings of the research and highlights how the results contribute to the research and business domain. Additionally, the conclusions, research contributions, and study limitations are presented.

## 1.4 Summary

This chapter has made an introduction to the topic of mortgage protection insurance in Germany. Zooming out, mortgage business is a stabilising factor for the whole German economy and gives security to millions of people. Even though the insurance market is well saturated in Germany, the concept of mortgage protection insurance is still in its infancy. The need for better protection of borrowers can be clearly stated and there is a demand for improving the sales process in order to increase take-up rates of MPI.

Furthermore, the concept of fear appeals was briefly elaborated and will provide the basis research model for this thesis. Fear appeals have been analysed for nearly 70 years and there still is room for improvement, especially within the message characteristics and understanding of individual differences that are applicable in the mortgage sales process. Additionally, the business value of improving the sales communication towards recipients is enormous and enhancements of distribution know-how is equivalent to multi-million euros of financial gains. Therefore, this chapter has presented an explanation and justification for the need for this research. In brief, this thesis plans to add empirical evidence to the body of fear appeal research, improve the understanding of additional factors on behaviour, and create significant business value for the insurance industry.

The review of the literature conducted in the next chapter will outline the main theoretical approaches implemented by researchers over the last seven decades. Furthermore, the relevant gaps in the literature as well as the existing research on fear appeal models are described.

## **2 Literature review and fear appeal models**

This chapter comprises the literature review of threat appeals and describes the most influential fear appeal models of the last 70 years as well as summarises the empirical results of decades of studies. A search of previous reviews and meta-analyses of the general threat appeal literature was conducted. A comprehensive search of electronic databases was also completed, including EBSCO, PubMed, PsycArticles, PsycInfo, Sage, MEDLINE and ScienceDirect, Dawsonera, Taylor & Francis Online, Wiley Online Library, mainly through the library search of SHU including searching beyond SHU collections. Keywords included ‘threat appeals’, ‘fear appeals’, ‘scare tactics’, ‘fear appeals OR threat appeals AND insurance OR decision making’, ‘EPPM’ and ‘Extended Parallel Process Model’ (e.g., AND ‘individual differences’), ‘optimism’, ‘risk-taking’. Key journals were trawled in the fear appeal area (e.g., Journal of Personality and Social Psychology), as well as the bibliographies of relevant articles.

### **2.1 Threat appeal variables**

The assumption has been widely upheld throughout the literature that threat appeals generate a fear response (e.g., Witte, 1992). Empirical meta-analytic overviews of theoretical models designed to explain consumer responses to threat appeals have produced equivocal results (e.g., Ruiter et al., 2014; Witte & Allen, 2000), which is a consistent theme throughout fear appeal research (see overview of meta-analyses in this chapter). As such, Johnston et al (2015, p. 113) state that “empirical assessments of the effectiveness of fear appeals have yielded mixed results”. Researchers (e.g., Chamberlain, 2015) interpret the mixed results to be a designator of the long-standing confusion about consumer responses to threat appeals as first proposed by LaTour and Rotfeld (1997). However, theoretical developments have been significant, especially the extended parallel process model (Witte, 1992) which presents the most resilient explanation of consumer responses to fear appeals to date.

Whilst it is necessary to understand the predecessor to behaviour change, the ultimate goal of threat appeals (for example, the reduction of speeding on highways)

is often neglected as a measured variable (Chamberlain, 2015). Peters et al. (2013) conducted a meta-analysis and only found thirteen studies since 1965 to satisfy the inclusion criteria containing manipulations of threat, and efficacy and measurement of behaviour as an outcome. Arguably, behaviour change is particularly difficult to study and in order to move academic understanding of the field forward, relationships between stimuli features and cognitive and emotional responses must be understood in order to create foundations for understanding behaviour change. As such, the research model presented in this thesis presents behaviour intention and expectation as dependent variables. Overall, the literature review presented in this chapter shows that the effectiveness of fear appeals has received research attention from time to time, relying on several assumptions such as the influence of severity and efficacy. As such, the intention of this thesis is also to add insights for empirical work on fear appeals, which will in turn allow for better business-related recommendations concerning the effectiveness of stimulus variables.

With the objective of understanding universal relationships between threat appeals and consumer responses to those appeals various researchers have examined the influence of threat appeal stimuli on cognitive processing (e.g., de Hoog et al., 2007; Witte, 1992). Achieving such general recommendations is difficult as the same stimulus can create completely different responses in recipients, which are also often entangled with individual differences and situational influences (Donovan & Henley, 1997). This is not a topic unique to the fear appeals context; however, the body of fear appeals research have tested many different approaches and theoretical frameworks, with very little consistency between the variables used (Chamberlain, 2015). To build more foundations upon which the understanding of consumer responses to fear appeals can further develop is part of this thesis. As such, this study implements independent variables contained in stimuli, which can be consistently used across other studies and contexts in order to test relationships and compare results across studies. It can be stated that the question which message elements generate lower or higher levels of perceived threat, evoked fear and efficacy is one of the least studied aspects in fear appeal research (Cauberghe et al., 2009).

Overall, some light must be shed on the threat component of a threat appeal in order to clarify whether the assumption that a threat appeal generates a fear response is valid. From an argumentation perspective the question arises what exactly constitutes a “threat”. In argumentation terms fear appeals as used in advertising do not generally contain actual threats, but, depending on situational and individual differences, they do present a situation that could potentially be perceived as threatening (Walton, 2013). Individuals therefore will perceive a potentially threatening message in various ways. Some may find it relevant, and some may not. Thus, the classification of the threatening situation in the message is dependent upon the individuals’ response, and not on the message characteristics. This leads to the topic of whether the typical fear appeals used in relevant research actually contain a unique threat variable, such as an intrinsic message characteristic, that is able to be consistently manipulated across subjects. The assumption that threat appeals directly or indirectly cause fear was developed within the early drive models (e.g., Hovland et al., 1953) and has been more or less upheld in the literature (e.g., I. Lewis et al., 2013). However, from argumentation perspective this assumption is called into question because the threat contained in a threat appeal is only a threat if an individual perceives it as such (Walton, 2013), and there is no guarantee that individuals will find a threat appeal threatening. Therefore, from the argumentation perspective, the threat must be perceived by each individual, and it cannot be guaranteed to be experienced by every recipient who sees a given advertisement.

From a psychological perspective it is important to understand what constitutes a threat, as well as to consider the role of the perceptual processing of threats. Viewed from the evolutionary perspective, fear is central to mammalian evolution requiring “a perceptual system to identify threats and a reflexively wired motor system to move the organism away from the danger” (Ohman & Mineka, 2001, p. 483). Escape and avoidance were common strategies designed by evolution to deal with threatening situations. This central motive state is what is commonly identified as fear. The perceptual processing claims that unconscious systems identify threats and automatic processing occurs, leading to the conscious perception of threats (Ohman & Mineka, 2001). A number of academics have distinguished between evolutionary threats (such as threats by dangerous animals), and modern threats (such as threats by guns or knives). Empirical studies have found that perceptual processing occurs

for evolutionary threat stimuli (Ohman & Mineka, 2001), a finding that has also been demonstrated for modern threat stimuli (Fox et al., 2007). Furthermore, Fox et al. (2007) have found that the detection time for snakes (also called phylogenetical) are the same to that of guns (also called ontogenetical), which indicates that the type of threat (evolutionary or modern) did not influence the detection of threats.

The focus of this thesis is to understand how recipients respond to threat appeals; especially, how cognitive, and emotional responses mediate the relationship between stimulus and response. A general aspect is also how to grab attention towards a stimulus. The use of threats in advertising appeals presumably will direct attention toward the stimulus and as such there is an attentional bias towards processing threat stimuli (Mayer et al., 2006). According to Ohman and Mineka (2001) there is a system specifically devoted to solving problems associated with threats to survival, which they call the 'fear module'. This module is assumed to have been shaped by evolution and is activated by evolutionary based threats. Being located in the amygdala it enables the perception of fear in oneself and in others and generates emotional reactions to threatening stimuli, psychophysiological responses, and activates defensive behaviour (Ohman & Mineka, 2001). The fear generated by this module cannot be controlled by conscious cognitions. On the contrary, Sander et al. (2003) view the amygdala as a more general system which evolved to detect relevance (not only threat), which entails that meanings and consequences of external events are cognitively evaluated within a specific context. Following this perspective, threatening phylogenetical stimuli are likely to be appraised as relevant, but the appraisals for these are expected to be the same for ontogenetical stimuli, as they both are relevant to some extent. It is then a matter of relevance if advertisements would increase the likelihood of attentional processing to that stimulus (Fox et al., 2007).

When confronted with an evolutionary threat recipients experience an automatic fear response and are likely to take some action to remove, or move away from, the threatening source (mostly described as the fight or flight response). Arguably, the so-called 'threats' typically used in fear appeals (e.g., vivid consequences from smoking) are not equivalent to threats that have been described above to generate fear responses (i.e., spiders, guns, etc.). More precisely, fear appeal research within

the focus area of this thesis is not containing pictures of guns or spiders, which might trigger evolutionary threat detection mechanisms and activate the fear module as understood from a psychological perspective. Genuine threats that have been found by psychological research to activate threat detection mechanisms, are those that pose a general danger to survival (e.g., Ohman & Mineka, 2001). Conversely, threats used in threat appeals tend to be associated with a specific topic, for example the threat of having an accident when using a smartphone while driving. Whilst this threat may also be seen as specific threats to the survival, one cannot assume that such situations are perceived the same as the phylogenetic and ontogenetic threats identified and tested in the psychology literature. A classical fear appeal in terms of this thesis differs in terms of the control or choices associated with the threats, meaning that when in a threatening situation with a snake or a knife an individual has relatively little direct control over the threat. However, fear appeals used in this thesis leave an element of choice or control over a situation. If an individual chooses or decides not to take a mortgage insurance and they are aware of the threat, there is a choice associated with this.

To conclude, humans have developed to detect certain stimuli as threats. However, if the ‘threats’ used in threat appeals are not phylogenetical or ontogenetical but classic fear appeal research threats, then (referring to the argumentation literature) it is only the individual’s perception of the stimulus that determines whether a given stimulus contains a threat. The perception of a threat, including its severity and relevance to the recipient is part of the cognitive response to stimuli rather than an inherent component of the stimuli itself. It is therefore likely that not all recipients would experience fear in response to a stimulus, but instead a variety of responses could arouse by the same stimulus across subjects. More precisely, the image used in the stimuli, the context, and individual differences, are all factors that may influence the generation of an emotional response.

The present thesis is a logical step forward in clarifying the intrinsic message characteristics that comprise a threat appeal and the responses to those intrinsic message characteristics. After highlighting threat appeals and responses to threat appeals in the next section, the theoretical models of fear appeal research are

discussed. These models contribute to understanding individuals' responses to threat appeals.

## **2.2 Examining threat appeals and responses to threat appeals**

Intuitively, it may seem obvious to use the term 'fear appeal' or 'threat appeal' to refer to all strategic messages that cause fear in the recipients. In practice such an approach, starting at the level of the emotional reactions of the recipients, appears to be not unproblematic: On the one hand, messages also trigger fear, which even experts would not have categorized as fear appeals, and on the other hand even prototypical fear appeals can cause a variety of emotional reactions, but not necessarily or even exclusively fear. Since hardly any message triggers fear in all recipients and this additionally should always be confirmed by measurements, it seems unlikely to generally categorize a message as fear appeal with this definitory approach (Hastall, 2016). It seems more practicable to either focus on the level of message content (e.g., addressing a strong threat or danger) or at the level of the emotional reaction of the recipient to a real or presumably existing threat intended by the commentator (e.g., triggering fear).

### **Examining "fear appeals" / "threat appeals"**

Although the level of the message content and the level of the emotional reaction should not be put equal (O'Keefe, 2003), many definitory approaches combine both levels (e.g. Witte, 1995, p. 230: "Fear appeals are defined as messages that evoke fear by focusing on severe and probable threats in order to induce adherence to recommended courses of action."). Definitions like this demand the presence of recommendations for averting the threat, which can be well reasoned, but many times they are not given in practice (E. L. Cohen et al., 2007; Ziegler et al., 2013). With a narrow focus on this demand, prototypical examples like shocking pictures or warnings on cigarette packs should no longer be classified as fear appeals. The decision in favour of a definitory approach thus has a strong influence on the type and number of messages included and excluded. For the present systematization the term fear appeal and threat appeal are used synonymously for messages that, for the purpose of persuasion, emphasize the existence of a substantial threat. The decisive factor for the definition is the largely objectively determinable threat content, which,



however, is perceived differently by the recipients. It is explicitly not assumed that such messages evoke fear in all recipients.

However, the term fear appeal suggests that, at least for some recipients, fear appeals evoke a certain degree of fear. This basic principle seems to be fundamentally confirmed (Carey et al., 2013). This is usually considered an unpleasant emotional experience which arises with concrete threats such as the sudden sight of a dangerous dog, which can be countered by escape or attack. Fear arousal is an unpleasant emotional state triggered by the perception of threatening stimuli (Ruiter et al., 2001) and comes with audience reactions, typically changes in behaviour or message acceptance (Addo et al., 2020). It is proposed that the decision to accept the recommended action of a fear appeal is a function of the perceived utility of the threat, the likelihood that the risk will occur, and the probability that the threat can be avoided or will not happen if the recommended actions are made (Addo et al., 2020).

Anxiety, on the other hand, arises when existential threats are perceived diffuse or ambiguous and a direct response for escape or attack is not possible or is perceived as not promising. Anxiety states, in comparison to fear, are typically from longer duration and with a clear sign that the person concerned is in this moment unable to successfully deal with the threat (Hastall, 2016). It remains to be said that it probably makes a big difference, whether or not threatening messages trigger fear or anxiety and that this is primarily dependent on the individual coping resources of the individual. In the research of fear appeals, however, fear has rarely been distinguished from anxiety so far (So, 2013).

To summarise, fear appeals typically provide two types of information (Ruiter et al., 2001).

1. First, an attempt is made to create fear by presenting a threat (e.g., “skin cancer”) to which the recipient is susceptible (e.g., “not using sunscreen puts you at risk for skin cancer”) and which is severe (e.g., “skin cancer is a deadly disease”).
2. Secondly, a recommended action is presented as safety condition (“e.g., by using sunscreen you can prevent skin cancer”). These actions are shown as

seemingly effective in neutralising the threat (“the use of sunscreen prevents skin cancer”) and easy to use or execute (e.g., “sunscreen is easy to use and can be bought everywhere”). This ideal structure has changed little during almost 70 years of research into fear appeals.

The scientific modelling of the effects of fear appeals began in the 1950s with comparatively simple assumptions (Hastall, 2016). Due to the inconsistent findings to date, the fear appeal theories have become increasingly complex over time and especially assigned a changing role to the emotion of fear. For almost seven decades researchers have repeatedly identified the confound between stimuli characteristics of a threatening message and their intended effects and it still holds true also for more recent studies (Chamberlain, 2015). For example, Lee and Shin (2011) have investigated fear appeals and humour appeals, and Morales et al (2012) used a neutral appeal, a fear appeal and a fear and disgust appeal, while Leshner et al (2011) studied the 2X2 interaction of high/low fear and high/low disgust pictures, assuming that stimuli as an independent variable themselves can vary in terms of some level of fear, when fear is proposedly an individual emotional response to some stimulus. Further, Mukherjee and Dubé (2012) implemented fear tension arousal at two varying fear levels, either absent or present. The idea that a stimulus has an inherent feature (such as level of fear) that causes a defined emotional response can cause confusion (Leshner et al., 2011) and is a gap in the understanding of responses to fear appeals (Chamberlain, 2015). It can be stated that ‘levels of fear’, by definition, are based on subjective interpretation of the recipient and are as such not intrinsic to the stimulus, meaning different respondents will interpret the same message as being more or less threatening. This distinction helps to understand the difference between variables that can be manipulated by researchers, and the emotional feelings or cognitive processes evoked within individuals resulting from exposure to the intended threatening stimuli.

Attributes of media, employed as independent variables, and psychological states are often being conflated in communication research, particularly with reference to the stimuli that are used for experimental studies (Tao & Bucy, 2007). According to O’Keefe (2003) researchers lose the ability to answer questions of the relationship between message properties and persuasive outcomes, when message

characteristics are defined in terms of effects rather than intrinsic properties. The independent variable of a message stimuli is supposed to be defined in terms of media characteristics or intrinsic message properties rather than psychological states (Tao & Bucy, 2007). Further, contradictions have occurred in research related to threat appeals due to a missing definition of the nature of the specific factor, or intrinsic message features to be measured (Kay, 1972). Ultimately leading to scholars believing they were all measuring the same thing, but with a certain probability were not.

Despite these long lasting acknowledgements there is little consistency across and within disciplines in terms of the variables manipulated or claimed to be manipulated in the independent variable (Chamberlain, 2015). Usually the 'level of fear' was implemented by comparing low versus high stimuli (e.g. Cauberghe et al., 2009; LaTour et al., 1996) or, for example, combining 'level of fear' with variables such as direction of message to other or self (Block, 2005), humour and degree of involvement (Cochrane & Quester, 2005), imagery processing (Block & Keller, 1998), and action framing of loss and gain (Ruiter et al., 2003). Some more recent studies have made efforts to distinguish between the threat in a message and the response of the consumer. In such cases, the independent variables are described as 'level of threat' (I. Lewis, Watson, & Tay, 2007; Wauters, 2013), predominantly comparing high versus low (e.g. Cauberghe et al., 2009; Vincent & Dubinsky, 2005) as well as combining other variables such as coping (Eppright et al., 2002), the inclusion of high efficacy or no efficacy (Muthusamy et al., 2009), and the presence of older or younger models (S. C. Jones & Owen, 2006). In another sense, the 'level of threat' independent variable commonly refers to the degree of potential consumer harm or risk visible in the stimulus, with the underlying assumption that all recipients will perceive the stimulus in the same way, and answer with a pre-defined level of fear. Nevertheless, what might not at all threaten one respondent could at the same time generate a high threat feeling in another individual (Janssens & De Pelsmacker, 2007). Using variables as concrete attributes as intrinsic message characteristics would allow for clearer identification of correlations between stimuli and responses dismantling the understanding of cause and effect. According to Chamberlain (2015) this approach would be welcomed by research scientists. Examples of concrete attributes are the use of a graphic image or a non-graphic image, the number of

visual pictures presented, the gender of the person portrayed in the message, the use of message direction and the implementation of loss and gain oriented phrases. A complementary research stream began further to investigate the so called message direction, meaning whether messages are directed to the self or others (Block, 2005; C. Miller et al., 2007). The message direction has concrete attributes and will most likely be perceived in a common manner by all recipients (Algie & Rossiter, 2010). Emotional or cognitive processes of the message may still differ from the intended behavioural change and individuals may still avoid the message, but the implementation of concrete message characteristics allow for clearer consistency across the range of independent variables. The move towards the use of more complex models such as intrinsic message characteristics is underpinned by three principles (Tao & Bucy, 2007).

1. Independent variables (=stimuli) are described in terms of intrinsic message characteristics.
2. Mental states (e.g., cognitive responses) function as intervening variables between intrinsic message characteristics and wished-for response (e.g., intended behaviour).
3. Mental states and message characteristics must be included in the testing of hypotheses to capture the complete influence of the threat.

### **Responses to threat appeals**

Across the nearly 70 years of research on fear appeals, three key independent variables have been identified: fear, perceived threat, and perceived efficacy (Witte & Allen, 2000). From 1953 to 1975 the main focus was fear, while perceived threat and perceived efficacy were first identified as crucial variables in 1975 (R. W. Rogers, 1975) and 1983 (R. W. Rogers, 1983). Perceived efficacy is constructed out of two dimensions: perceived self-efficacy (i.e., one's beliefs about the own ability to perform the recommended response) and perceived response efficacy (i.e., one's beliefs about whether the recommended response is effective in averting the threat) (Witte, 1992, 1998). Perceived threat is also composed of two dimensions: perceived severity of the threat (i.e., how much damage can be expected from a threat) and perceived susceptibility to the threat (i.e., how one feels at risk for experiencing the threat) (Witte, 1992, 1998). Conceptually, fear is described as an emotion, while threat is a cognition. Witte (2000) postulates fear and threat are reciprocally related,

such that the greater the perceived threat, the greater the fear experienced. This relation has been supported by several studies but has also been falsified by others. Interesting findings show that severity of threat is often the most prominent component of a threat appeal but is conversely seemingly the least persuasive (Chamberlain, 2015). Further, Ruiter et al (2014, p. 63) summarise “that the choice of fear appeals is often a poor choice because of the limited and even sometimes counterproductive effects of fear arousal and the extensive knowledge base available on more effective methods of behaviour change”.

Usually, scholars in the field of fear appeals manipulate the strength of a fear appeal in at least two different messages (strong, weak), then perform manipulation checks to validate the different strengths (strong and weak messages must differ significantly), and finally evaluate which message produces the stronger outcome. The outcomes appear to fall into two general cases (Witte & Allen, 2000):

- (1) results related to acceptance of the recommended responses (i.e., attitudes, intentions, behaviours) and
- (2) results related to the message rejection (i.e., defensive avoidance, reactance, denial).

As emphasised earlier there is a need for greater clarity around intrinsic message characteristics as independent variables of threat appeals, as such it is imperative to examine the mediating and dependent variables. Separating intrinsic message properties from cognitive and emotional responses, this study re-evaluates the often-neglected role of specific individual differences. The foundation of fear appeal research assumes that the mere presentation of a threatening stimulus automatically evokes a consistent fear response in recipients. Discussion about emotional response types and the influence of individual differences are far less common. Indeed, as psychology research evolved in the 1970s to focus on cognition, consideration of the effectiveness of this advertising technique continued, and cognitive responses such as perceptions of severity and efficacy became the focus of theoretical development. This overwhelming focus on cognition has become accepted within research with only little detailed scrutiny for several years. In more recent years some bodies of research have looked more into the importance of emotional responses to threat appeals (e.g. Agrawal & Duhachek, 2010; Morales et

al., 2012; Passyn & Sujan, 2006). Nevertheless, the relation between threat and fear is not the focus of attention, but rather adding other emotions to the fear appeal model. Other emotions include disgust (Morales et al., 2012), hope, challenge, guilt and regret (Passyn & Sujan, 2006) and the effect thereof on persuasion and behaviour. Chamberlain (2015) proposes that the additional consideration of numerous emotions beyond fear is beneficial as it more accurately reflects reality and therefore, she includes a large range of emotional response feelings to her research. Measuring only fear may leave a study to be somewhat restricted by design. Nevertheless, to keep this thesis on a manageable level, this research paper will focus primarily on the emotion fear.

### **2.3 Introduction and overview of models**

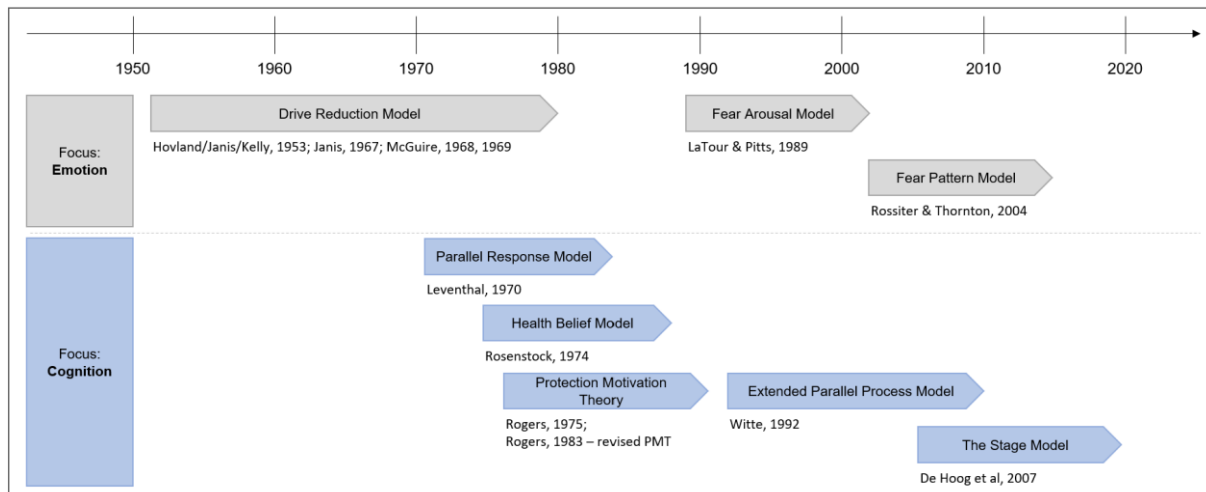
This chapter presents a review of the models and theories developed and used by researchers to understand the cognitive and emotional responses to fear appeals. Scholars have developed multiple theories to explain why and how fear message characteristics affect advertising effectiveness (Bartikowski et al., 2019). This literature review highlights many of the assumptions made in the literature and compares the theoretical approaches that have been used to understand consumer responses to threats. Additionally, the results of meta-analyses on fear appeals will be presented.

The very first fear appeal theories that were employed to explain consumer responses were the drive reductions models (e.g. Hovland et al., 1953; Janis, 1967). Proposedly, these theories were never empirically supported (Ruiter et al., 2001) but it is important to acknowledge them as the starting point of fear appeal research as well as some underlying assumptions.

In the 1970s the field of fear appeal research moved to a more cognitive focused approach. The models will be described within this chapter according to the cognitive or emotional focus, as can be seen in figure 5 below. Nevertheless, the focus of a theory in terms of emotion or cognition does not imply that there are no cognitional elements to an emotionally focused model (and vice versa). The focus of a model rather refers to the rationale behind the development of the theory, focusing either on

the importance of cognitions or emotions. Generally, it can be stated that theories focussed on cognition have received more research attention than emotion focussed theories (Chamberlain, 2015).

**Figure 5: Overview and Chronology of Fear Appeal Models**



- Drive Reduction Model: these models are focussed on emotion and have identified fear as the main driver of human behaviour. The first model from Hovland et al. (1953) was extended by Janis (1967) and McGuire (1968), adding the curvilinear hypotheses.
- Parallel Response Model: Leventhal's model (1970) added cognitive elements and differentiated between fear and danger control processes.
- Protection Motivation Theory (R. W. Rogers & Thistlethwaite, 1970): this approach further develops the cognitive stream from Leventhal's model and identifies four cognitive appraisal processes
- Extended Parallel Process Model: the theory by Witte (1992) integrates the three earlier theories to one model.

## 2.4 Drive Reduction Model

The first scientific model on the effect of fear appeals is the Drive Reduction Model (Hovland et al., 1953; G. R. Miller, 1963), which integrates social-learning theory and psychoanalytical assumptions. This model assumes that fear and fear arousing messages cause a state of emotional excitement and tension in the recipient, which

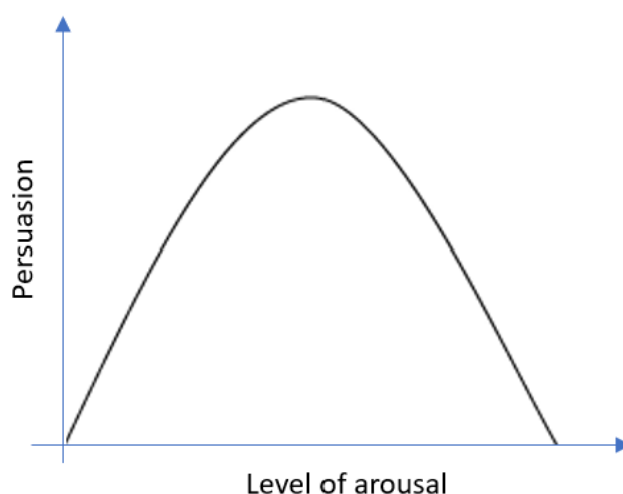
is experienced as unpleasant and creates an impulse or *drive* to end this condition. The model views the influencing effect of fear appeals as an emotional process. Drives are understood as physical conditions that generate activation (Dillard, 1994). Hence, the fear drive fulfils the function of motivating people to behave in a certain way, as individuals always strive to reduce the feeling of fear, according to this theory. A central component of the drive reduction model is that the action to reduce the threat can be presented as part of a recommendation within an advertisement. The implication therefore is that a 'stronger' threat will create a 'stronger' emotional fear response which will result in a higher probability of action. Based on social learning theory, it is proposed that the response that can reduce fear most effectively, will also be applied in the future (Sutton, 1982). Essentially, this model posits that if an advertisement can generate the ideal level of fear, then recipients will pay attention to the action recommendations and follow the suggested behaviour accordingly. The Drive Reduction Model generated two basic findings: first, an effective fear appeal must generate fear and, second, a recommended action must be given to reduce the fear (Barth & Bengel, 1998). However, if too much fear is generated and it cannot be reduced, negative effects such as defensive avoidance happen and the recommendation will not be followed (Witte, 1998). The approach does not postulate that the recipient will inevitably follow the recommendation of the fear appeal. Quite the opposite is assumed, that the final response can result in several defensive reactions to a threat appeal, such as inattention to message content, aggression towards the communicator, and individuals actively avoiding cognitions about the threat (Janis & Feshbach, 1953).

Coming from the drive reduction hypothesis Janis and Feshbach (1953) conducted an important experiment in the field of fear appeal research. The scholars presented to groups of students different slides with health-related consequences due to insufficient dental hygiene. The pictures were differentiated between weak, moderate, and strong fear appeals. The surprising result was that the recipients seeing the most drastic depiction (highest fear induction) changed their behaviour the least of all three groups (Barth & Bengel, 1998; Ruiter et al., 2001). Instead, the students responded with defensive reactions as described above.



These findings were the reason for Janis (1967) to further develop the drive reduction model towards a curvilinear model. Although an increasing level of fear should generate increasing persuasion, the model suggests that at some point the emotional tension will reach a level at which the recommended response will not sufficiently reduce the tension. The emotional tension will then allow for defensive avoidance which causes a decrease in persuasion. Figure 6 below depicts the curvilinear relationship between fear arousal and persuasion, where high levels of fear arousal decrease persuasion and low to moderate levels of fear arousal increase persuasion. Accordingly, there is an optimal fear arousal level at which fear will persuade the recipient to carry out the recommended response, but beyond that ideal point emotional tension will become so strong that resistance will set in and then, interfere with the effectiveness or intention of a fear appeal (Tannenbaum et al., 2015).

**Figure 6:** *Curvilinear Relationship of Fear Arousal and Persuasion (Janis, 1967)*



Janis (1967) extended the drive model with the 'family-of-curves' model (representing inverted U shapes) and McGuire (1968) introduced the 'reception-yielding' model. Both extensions are based on the drive reduction model and add mediating variables to the theory. As such, the 'family of curves' theory proposed that the 'optimal' point of fear arousal differs for each individual, but the curvilinear relationship is still upheld. Due to these assumptions a 'family of curves' is generated as many inverted U-shaped curves are created. Janis (1967) argues that if a recipient has an increased awareness, this influences the fear and persuasion relationship. Hence, attention to a threat is increased if awareness is increased which will lead to increased cognitive

processes in order to remove the threat. It is also proposed that the relationship between persuasion and fear is mediated by the need for reassurance by each individual, as higher need for reassurance increases an individual's motivation to accept the recommended response. According to Janis (1967) fear has persuasive functions ('facilitating effects') by increasing attention levels and the need for reassurance. But, at the same time fear also has persuasion-inhibiting functions ('interfering effects') in the form of defensive avoidance or aggression towards the communicator (also see Barth & Bengel, 1998; Sutton, 1982). Using this differentiation, Janis (1967) tried to explain the inconsistent findings within fear appeal research without specifying the explanation.

McGuire (1968) builds on this differentiation in his 'reception-yielding' model. He introduces two variables that lead to persuasion: one the one hand the message must be received with attention and must be understood ('Reception'), and on the other hand the arguments of the message must be accepted ('Yielding'). Again, an inverted U-shape is expected, but in distinction to Janis, different mechanisms mediating fear and persuasion are assumed. McGuire (1968) assumes that attention is decreasing with increasing level of fear, but the message acceptance still continues to increase with increasing fear arousal. Moderate amounts of fear are argued as being the most effective (McGuire, 1968).

Drive Reduction Models have received multiple critiques. The theories supposedly lack precision, as no prediction can be made concerning the exact positioning of the optimal fear levels. Therefore, the drive reduction hypothesis (i.e., curvilinear relationship) is not falsifiable. The theories are so flexible, that they can be adapted to any pattern of findings (e.g. Dillard, 1994; Leventhal, 1970; Sutton, 1982). Additionally, research conducted to verify the hypothesis had methodical problems (Gelbrich & Schröder, 2008). Levels of fear were differently operationalised and measured, and even if the same scales were used, the conditions of the respective experiments were different and therefore, the results not comparable (Barth & Bengel, 1998). Empirical evidence was found to be poor and most findings rather propose a positive, monotone relationship between fear arousal and message acceptance (Ruiter et al., 2001; Sutton, 1982). An observation of the hypothesized curvilinear relationship has been rare (Boster & Mongeau, 1984; Sutton, 1982; Witte, 1992) and

most scholars found a positive linear relationship between message acceptance and high fear-arousing conditions (Ruiter et al., 2001). An attempt to replicate the study by Janis and Feshbach (1953) was completed by Leventhal and Singer (1966), which resulted in finding the reverse effect: the behaviour and attitude change following a strong fear appeal was greater than after a weak or moderate fear appeal. Overall, empirical findings have not confirmed the hypothesis and the Drive Reduction Model is considered as revised in the field of fear appeal research (Barth & Bengel, 1998).

The Drive Reduction Model is fundamentally based on the idea that a threatening message will create a fear response with varying strength levels. Moderate and low levels of fear will be persuasive, and recipients will follow the recommendations, while too much fear will leave individuals overly scared and unable to carry out the recommended response. The research by Janis and Feshbach (1953) confirmed this curvilinear relationship. Furthermore, extensions to the model by Janis (1967) and McGuire (1968) focussed on defensive responses when reacting to a threatening message. Arguably, these models build the foundations on which subsequent scholars have based their theories, as will be discussed in more depth in the next chapters.

Despite their contribution, drive reduction models can be seen as problematic, although they have had an important influence on the development of threat appeals research. Chronologically, at this point in the evolution of fear appeal research around the 1970s, scholars testing threat appeals moved to a cognitive focus, which will be discussed later in this chapter. Research focusing on emotion was revisited in the late 1980s and 1990s and focused on the role of fear arousal as the response to threat appeals, which will be discussed below.

## **2.5 Fear Arousal Model and Fear Pattern Model**

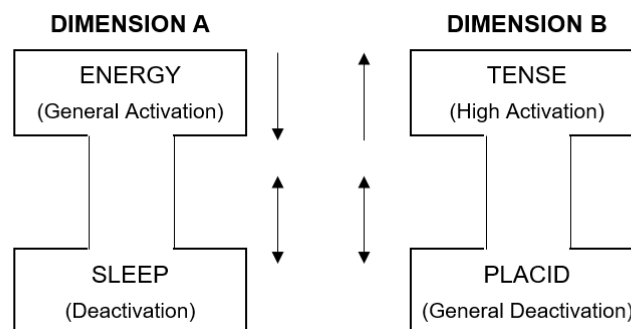
The drive reduction model and parallel response model (see section 2.6) have made two main contributions to fear appeal research. First is the proposition that overly doses of fear may inhibit, rather than induce, individual responses. Second, human responses to fear appeals or threatening situations are not straightforward. However, both models are assumed to suffer from a lack of testability and oversimplicity

(LaTour & Zahra, 1989). An explanation for this is proposedly that those models ignore the moderating effect of unique patterns of each individuals' thinking and feeling upon responses to fear appeals.

### Fear Arousal Model

One such model that accounts for individual uniqueness was offered by Thayer (1978) with the Fear Arousal Model. Whilst Thayer's model (1978) was not specifically intended to explain individuals' responses to threat appeals, later researchers applied it to this field of research (e.g., LaTour & Pitts, 1989; LaTour & Zahra, 1989). Thayer's model (1978) tries to explain the so-called 'idiosyncrasy of fear arousal' and proposes that arousal is a complex phenomenon with multiple dimensions. The model suggests that two major dimensions interact, namely dimension A and B, in forming a four-factor model of activation, as depicted in figure 7 below.

**Figure 7:** *Thayer's Two-Dimensional Arousal Model (adapted from LaTour and Pitts, 1989)*



The first dimension (A) is a continuum ranging from general activation, an energized feeling to deactivation, a feeling of fatigue. The second dimension (B) ranges from high activation, an inner tension to general deactivation, a feeling of calm. Further, dimension A, also referred to as 'energy', is associated with positive cognitions or responses, while Dimension B, also referred to as 'tension', relates to negative cognitions or responses. According to Thayer's model (1978) a stimulus or advertisement could generate mainly 'energy' in some individuals, which would result in a positive emotion. Conversely, another stimulus could generate tension arousal

as the dominant factor, resulting in negative feelings. As such, the dominant dimension (A or B) is proposed to determine the positive or negative nature of arousal experienced. In case tension does not increase beyond moderate levels, it fails to have a perceivable impact and is then correlated positively with energy. Therefore, high levels of tension are required to generate negative emotions (LaTour & Pitts, 1989). However, a negative correlation at high levels of stimulation is exhibited between energy and tension. Overall, the arousal model proposes three interactions between the two dimensions:

1. Dimension A and B are negatively correlated at high levels.
2. Dimension A and B are positively correlated at moderate levels.
3. Low level on one dimension reduces activation on both.

In the context of fear appeal research the arousal model proposes that if the individual is not overly stimulated, or 'tension' is not sufficiently high enough to suppress the energy response, energy is generated, and the recipient experiences a positive feeling towards the stimulus or advertisement. However, a negative impact on the individual's attitude towards the stimulus will occur, if tension surpasses the threshold point and the recipient experiences anxiety (LaTour & Zahra, 1989). As such, the level of fear contained in a stimulus should not be too low, otherwise the emotional response by the recipient will not emerge and the threat appeal will not receive any attention (LaTour & Pitts, 1989).

LaTour and Pitts (1989) conducted a study regarding AIDS prevention with 179 undergraduate students based on the arousal model. The study showed two video ads featuring an AIDS prevention theme and it was tested whether these advertisements provoked reactions of tension, which would suppress reactions of energy. The results indicated that a stronger fear message generated more tension arousal yet did not pass the threshold and hence created a positive reaction. In summary, the findings suggest that fear appeals can generate a reaction of energy without generating overly levels of tension, resulting in generalised positive feelings towards the stimulus. In case of AIDS prevention LaTour and Pitts (1989, p. 12) conclude that it would be "deadly" to fail to communicate the dangers of this disease.

Furthermore, LaTour et al. (1996) conducted a study on the topic of 'stun-guns' by intercepting 305 female participants in a mall and showing a 'strong' versus a 'mild' fear appeal TV advertising. The findings were that the 'stronger' fear appeal generated significantly more tension and had a more positive influence on consumers' attitudes toward the ad and purchase intentions. To further support this finding LaTour and Rotfeld (1997) conducted another study with female participants on the topic of an actual 911 emergency call regarding a rape case in order to promote stun-guns. Again, it was found that tension consistently generated energy and thus positively influenced brand and purchase intention. Nevertheless, the theoretical condition of the fear arousal model that high levels of tension will suppress energy arousal has not been supported by these studies. LaTour and Tanner (2003) also found no evidence in their more recent study regarding radon gas to indicate that a tension threshold was reached. The threatening appeals utilised in this study were categorised according to containing a 'moderate' threat or an 'explicit' threat. The hypothesis that both tension and energy would be higher in the group exposed to the explicit threat was partially confirmed. The finding was that the group exposed to the explicit threat reported significantly higher tension, yet there was no difference in reported energy between the explicit and moderate groups. As such, LaTour and Tanner (2003) rearranged their approach by combining the arousal model with protection motivation theory (which will be presented in section 2.8) and stating that the explicit threat condition activated processes of protection motivation.

In sum, the Thayer model suggests that it depends on the individual's complex psychophysiological makeup which dimension of arousal (energy versus tension) dominates. LaTour and Zahra (1989) support the model of arousal, and state that it explains why people have different fear arousal reactions as well as that it provides a basis for analysing the impact of advertisements in terms of tension and energy generation. However, the empirical evidence is missing to validate that a tension threshold can be reached with the use of a threat appeal (e.g., LaTour & Rotfeld, 1997). Even though scholars have supported the theoretical constructs of Thayers (1978) model of arousal, interest in this conceptual model has been exchanged with other theoretical models, i.e., the Extended Parallel Process Model (which will be presented in section 2.9).

From the year 2000 on a reconsideration of emotions as key component of fear appeal responses has occurred with the development of the Fear Pattern Model, which will be described subsequently.

### **Fear Pattern Model**

In a study conducted by Rossiter and Thornton (2004) the fear-drive model by Hovland et al. (1953) was reconsidered around six decades after its first presentation and the results indicated support for the fear-drive model. The scholars proposed that previous studies of fear appeals have only measured the overall level of fear and this procedure as such, cannot test the effect of drive reduction – a key causal mechanism of the fear-drive model. Therefore, Rossiter and Thornton overcame this limitation by considering patterns of fear, instead of an overall level of fear. According to the researchers fear patterns refer “to the sequence of fear and relief felt by the audience during the advertisement, if indeed there is any relief to be felt” (Rossiter & Thornton, 2004, p. 946). It is proposed to measure fear with dynamic moment-to-moment measurements to determine the fear pattern (i.e., fear arousal and relief cycle), rather than single, static ratings of fear. This is similar to the fear drive model, which identifies fear arousal, and then relief, as central constructs leading to a curvilinear relationship between fear and persuasion.

The scholars proposed that the fear drive model has not been tested properly and therefore conducted two studies where they examined anti-speeding TV commercials and the behavioural effect of heavy repetition of fear appeal advertisements (Rossiter & Thornton, 2004). Fear and relief were measured by moment-to-moment ratings for the duration of the TV ad. Out of seven ads presented in the first study, four ads exhibited a fear-relief pattern, indicating a curvilinear pattern as proposed by the fear drive model. For the second study two ads were selected and one ad again demonstrated a fear-relief pattern. According to Rossiter and Thornton (2004) it is shown that the fear-relief pattern reduces speed choices initially as well as after heavy repetition of the ad. Subsequently, Algie and Rossiter (2010) also proposed the idea of “fear-only” and “fear-then-relief” messages. These messages are measured by moment-by-moment feelings across multiple anti-speeding messages. In general, they confirmed that the dynamic responses of “tense” to “relief” for the duration of fear appeals mapped well onto the content of the ads as they moved from

more stressful to relieving. Furthermore, Nabi (2015) examines the 'emotional flow' of persuasive health messages and posits that there is strong theoretical reason to believe the idea that fear appeals involve emotional shifts, which is also supported by some empirical evidence. Nabi (2015) contemplates around theories, but does not empirically test the idea that there might be an order to emotional responses to threat appeals.

The previous two sections have described the models which focus on emotional responses, attempting to understand individuals' reactions to fear appeals. Over time, emotion focused approaches have had some popularity. To continue, the theories and models focussed more on cognitions will be discussed in detail in the next section, starting with the Parallel Response Model.

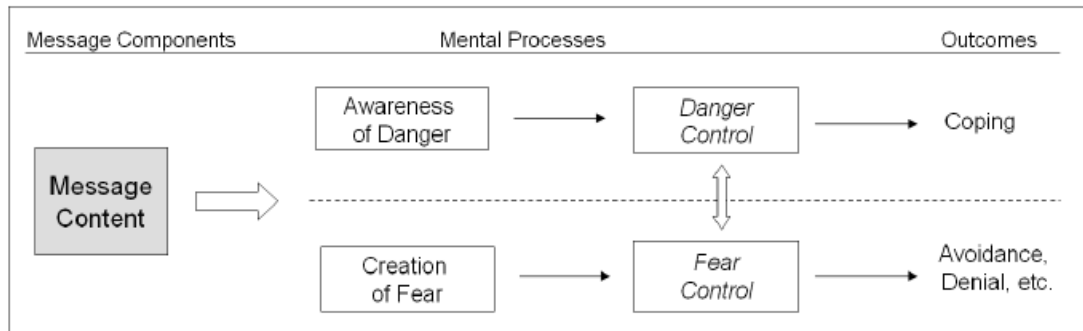
## **2.6 Parallel Response Model**

The Parallel Response Model was developed by Leventhal (1970) as an alternative to the Drive Reduction Model, and later referred to as Parallel Process Model (PPM). The theory explains why some studies confirm the positive relationship between level of fear and message acceptance, and at the same time other studies confirm the inverted U-shape. The reasons for this are proposedly the different directions of effect of emotional and cognitive processes. While the Drive Reduction Model assumes fear to be the central factor for message acceptance, the PPM proclaims that threat appeals not only lead to the emotion of fear, but also result in cognitive processes (Leventhal, 1970; Witte, 1992). Therefore, two separate processes are identified that occur in response to fear appeals: a cognitive danger control response and an emotional fear control response (Leventhal, 1970). It is argued that protective behaviour does not stem from attempts to control the fear (emotions), but from attempts to control the danger or threat (cognitions).

The two parallel mental processes are depicted in figure 8 below.



**Figure 8:** *Parallel Response Model* (see Dillard, 1994)



Fear control can be thought of as involving emotion-focussed coping (Ruiter et al., 2001) that generates reassurance through denial of the threat or avoidance of the message. It can be called maladaptive because it does not avert the perceived threat (Leventhal, 1971; Witte, 1992). On the other parallel process, danger control takes place, referring to cognitive processes concerned with the presented threat, rather than the evoked fear. Danger control responses may cause protective action.

The **cognitive process** begins with perception (awareness) of a dangerous situation. A dangerous situation is caused by external stimuli, such as being confronted with a threat appeal (Dillard, 1994). The recipient reflects about the threat and generates strategies to avoid the threat. Therefore, danger control is a process of problem solving in reality leading to adaptive behaviour (Barth & Bengel, 1998; Ruiter et al., 2001). Adaptive behaviours are reflected in the changed attitudes, intentions or behaviours of recipient who were successfully persuaded (Witte, 1992).

The **emotional process** begins with an uncomfortable feeling of fear, which was triggered by a threat appeal (Leventhal, 1970). The recipient is not at all focussed on the actual threat but is only focussed on his feeling of fear and attempts to reduce the fear. Consequently, fear control leads to defensive avoidance and denial of message content. These reactions are referred to as maladaptive responses, which reduce fear but do not counteract the actual threat (Ruiter et al., 2001). Therefore, fear control does not lead to persuasion and the threat appeal is without effect.

Leventhal (1970, 1971) argued that both control responses may function independently but that one will most likely dominate the other. However, since

cognitions and emotions are closely interwoven, danger control and fear control do not function completely separate from each other, but rather do they interact with each other (Barth & Bengel, 1998; Gelbrich & Schröder, 2008). For example, fear control reactions can hinder danger control processes, if the recipient turns away from the message too early and therefore can no longer perceive the recommended action. In case the recommended action is taken, and the behaviour is adapted based on cognitive processes, this in turn leads to a reduction of fear. Hence, it is crucial to know which of the two processes is the dominant one. Leventhal (1970) recommends various situational and individual determinants, that decide the dominating process. For example, people with high self-esteem may act directly and follow the adaptive action while people with low self-esteem are seemingly primarily concerned with fear control and turn to danger control only when fear has been reduced (Leventhal, 1971).

Empirical evidence for the Parallel Process Model is missing. Nevertheless, the intention of Leventhal (1970) was to create a conceptual framework which was successfully achieved and the scholar set an important foundation for cognitive focussed approaches by examining the cognitions and emotion of fear and considering how this process occurs. The principles and components of the theory were worth of further consideration and were reused and reconceptualised by Witte (1992) in the development of the Extended Parallel Process Model, which will be discussed later in this chapter.

## **2.7 Health Belief Model (HBM)**

The health belief model (Rosenstock, 1974) was originally developed to explain health behaviour, especially for the purpose of preventing disease or to detect diseases. It is understood as a conceptual model for understanding why individuals engage or do not engage in a wide variety of health-related actions. The HBM hypothesises that health-related behaviour depends mainly upon two variables: (1) the desire to avoid illness, and (2) the belief that a chosen health action will prevent illness (Janz & Becker, 1984). As such, it was generally not formulated to answer questions regarding the effect of fear appeals. However, the HBM consists of some of the core dimensions or constructs, that later fear appeal models have built upon,

for example protection motivation theory (see section 2.8) and the extended parallel process model (see section 2.9). According to Janz and Becker (1984) these dimensions are:

**Perceived susceptibility**, described as the dimension that individuals believe that they are personally susceptible to a particular disease or health issue, referring to one's subjective perception of the health risk.

**Perceived severity**, described as feelings concerning the seriousness of contracting an illness, or perceptions of the severity of the consequences of that disease or health issue, which vary from person to person according to the HBM.

**Perceived benefits**, which propose that a recommended health action must be perceived as feasible and efficacious in order to get accepted by the individual.

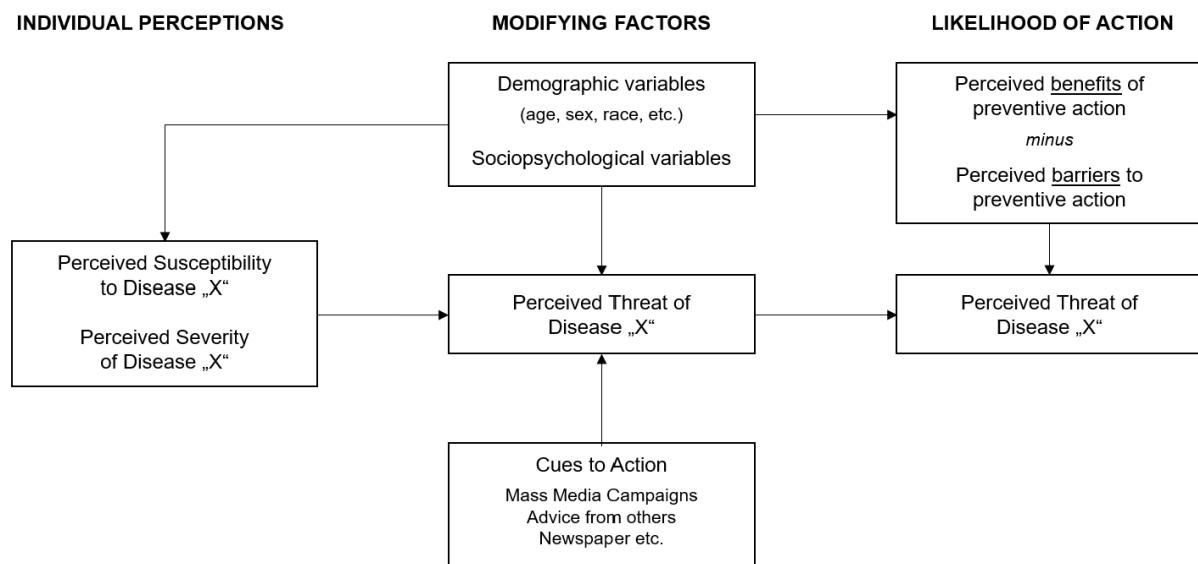
**Perceived barriers**, defined as potentially negative aspects of a particular health action which may act as impediments to undertaking the recommended health behaviour, for example an action could be perceived as inconvenient, expensive, or painful.

All of the beforementioned dimension do not fall into the category of emotional reactions, but rather into a cognitive appraisal process (Rosenstock, 1974).

Perceptions of severity and susceptibility are proposed to define the so-called perceived threat of the disease or health topic. If perceived threat will be high, i.e., the individual perceives themselves to be at risk from the health issue, and the issue is perceived to be serious, this will lead to an increase of likelihood of behaviour change (Janz & Becker, 1984). Furthermore, the HBM proposes that the likelihood of an individual following the recommended health behaviour will depend on the extent to which individuals believe that the health behaviour will result in perceived benefits that outweigh the perceived barriers associated with the health behaviour (Janz & Becker, 1984). Further, the HBM adds demographic variables, such as age, gender, and race, as well as sociopsychological variables to its framework, which are described as modifying factors that influence the cognitive appraisals of each individual (Rosenstock, 1974). Finally, and this is where fear appeals come into play, the HBM proposes that certain 'cues to action' influence perceived threat. These cues are understood as different external stimuli, such as events, mass-media campaigns, people, or things that move people to change behaviour. The elements

and the relationship between the elements as proposed by the HBM are presented in figure 9 below.

**Figure 9:** *The Health Belief Model (adapted from Janz and Becker, 1984)*



Janz and Becker (1984, p. 41) have examined 46 HBM studies conducted between 1974 and 1984 and conclude that “these investigations provide very substantial empirical evidence supporting HBM dimensions as important contributors to the explanation and prediction of individuals’ health-related behaviors”. In a meta-analysis conducted by Harrison et al. (1992) significant positive relationships were found between HBM dimensions (susceptibility, severity, benefits and barriers) and health behaviours. Conversely, a further meta-analysis undertaken by Carpenter (2010) found that the relationship between perceived severity and behaviour was low and between perceived susceptibility and behaviour was near zero. Nevertheless, it was found that the effects of the perceptions of benefits and barriers of performing the outcome behaviour were positive. Later research on the impact of the HBM components regarding protective health behaviour has found support for the model in a variety of contexts, for example AIDS prevention behaviour (Witte et al., 2002), child vaccinations (P. J. Smith et al., 2011), and flu vaccinations (Wauters, 2013). In sum, the Health Belief Model seems to be a strong explanatory framework for communication research (C. L. Jones et al., 2015) with the constructs of perceived threat, perceived severity and perceived susceptibility. Even though the HBM is not

specifically designed for the fear appeal research field, these constructs are of great importance. To continue, the HBM constructs were further developed in a threat appeals context in the protection motivation theory by Rogers (1975), which will now be discussed in the next section.

## 2.8 Protection Motivation Theory (PMT)

In many fear appeal approaches of the 1970s and 1980s the emotion of fear no longer plays an important role or just an indirect role or did not exist at all (Hastall, 2016). The focus was more on the cognitive processes of the recipients as reaction to threatening information. Rogers (1975, 1983) developed the protection motivation theory which reuses elements of both the parallel response model (Leventhal, 1970) and the health belief model (Rosenstock, 1974), as described earlier. The Protection Motivation Theory (PMT) by Rogers (1975) further develops the danger control process by clarifying one of the open questions in the field of fear appeal research. So far, fear appeals were proposed as stimuli with many facets, but Rogers identified the deciding content variables of a threatening message, which are responsible for the outcome effect (McMahan et al., 1998; Milne et al., 2000). Accordingly, a fear-arousing message has three essential components (R. W. Rogers, 1983):

- (1) the presented severity or seriousness of the threat,
- (2) the likelihood of the actual occurrence of that threat if no adaptive action is taken, and
- (3) the effectiveness of the recommended coping strategy to avert the threat.

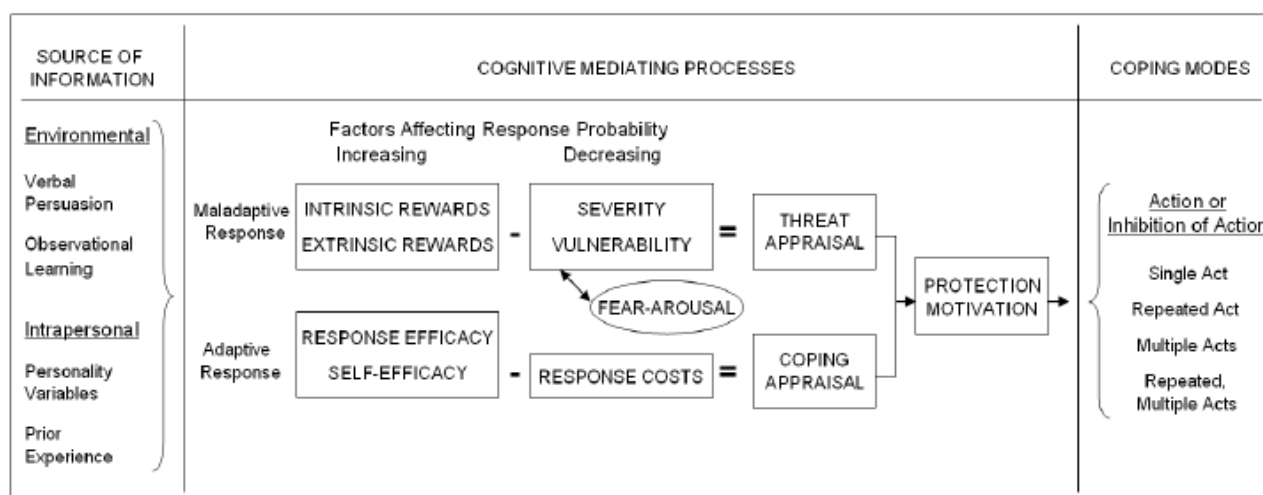
These three components each cause corresponding cognitive evaluation processes that result in the following constructs (Gelbrich & Schröder, 2008):

- **Perceived severity** of the threat presented.
- The perceived probability of the threat actually occurring (expected probability of occurrence, also ‘vulnerability’ or **susceptibility**), and
- Perceived effectiveness of the recommended coping action (perceived **response efficacy**).

Rogers (1975) proposed a three-way interaction between severity, susceptibility and response efficacy, but this was not supported by empirical research (e.g., Maddux & Rogers, 1983; R. W. Rogers & Mewborn, 1976). Based on these findings Rogers

(1983) reviewed his protection motivation theory and added further variables to the model. The revised version of the theory includes a fourth cognitive appraisal process, which culminates in the construct of **self-efficacy** (R. W. Rogers, 1983). It describes the individual assessment of whether and to what extent one is able to successfully perform a recommended coping action. The construct derives from Bandura's (1977) theory of social learning, in which a clear distinction is made between the expected outcome of an action (Response-Efficacy) and the self-assessment, to perform this action (Self-Efficacy). According to Bandura (1977), the cognitive appraisal of self-efficacy determines if coping behaviour will be started, which behaviours will be selected, how much effort will be invested, and how long it will persist. This can be the example of an anti-smoking appeal. The effectiveness of the recommended action describes the person's assessment of whether quitting smoking can prevent lung cancer. Self-effectiveness describes whether the individual is able to stop smoking (R. W. Rogers, 1983). Rogers incorporates this total of four assessment processes into his theory as shown in figure 10 below.

**Figure 10:** Revised PMT by Rogers (1983, p. 168)



Two core appraisal processes in protection motivation theory were identified by Rogers (1975) that define behaviour responses, namely coping appraisal and threat appraisal. The model specifies the sources of information on which the cognitive evaluation processes are based. These can be located both in the environment and in the person himself (also see Milne et al., 2000). Sources of the environment include persuasive communications such as fear appeals. The processes for evaluating response-efficacy and self-efficacy are combined into the **Coping**

**Appraisal Process**, which also implies a cost component (response costs). Costs incurred in the execution of the coping action, in addition to financial expenses, are intangible expenses, such as inconvenience or the overcoming of habits (perceived costs of engaging in adaptive behaviour). If costs are rated as high, the likelihood of an adaptive behaviour decreases. Likewise, high evaluations of response-efficacy and self-efficacy increase the probability of adaptive behaviour (Rippetoe & Rogers, 1987). Furthermore, the **Threat Appraisal Process**, which runs in parallel, is modified. It initially comprises the assessment of the severity and probability of occurrence of the threat (vulnerability). The latter is defined in the revised model as the perceived sensitivity or vulnerability to the threat. The higher the perceived severity and vulnerability, the more likely are adaptive responses that lead to changes in attitude and behaviour. An additional influencing factor are rewards of previous behaviour (benefits of maladaptive responses). These can be intrinsic (e.g., physical well-being) and extrinsic (e.g., social affirmation) nature. The higher these rewards are valued, the higher the probability of a non-adaptive response. The emotion of **fear**, which Rogers reintegrates into the revised version of 1983 only indirectly affects persuasion by interacting with the evaluation of threat severity in the evaluation process (Dillard, 1994; Maddux & Rogers, 1983). If a recipient perceives the threat as severe, fear is created. This in turn ensures that the threat is perceived as even more serious than before. It is important to note that in the PMT fear is treated as an incidental construct.

In his original approach, Rogers assumes a multiplicative linkage of the components, since he assumes that no action tendency arises if the valuation of one or more components takes the value zero. In the revised approach he moves away from this assumption and describes the relationship as additive. Thus, the threat appraisal is obtained by multiplying the perceived severity with the susceptibility to the threat and subtracting perceived rewards of past behaviour (Witte, 1998).

The two parallel evaluation processes act as mediators and result in the so-called **protection motivation**. It initiates an action, maintains it, and points it in a certain direction (R. W. Rogers, 1983). In order for protection motivation (i.e. the intention to perform a recommended behaviour) to take place, the perceptions of severity and susceptibility should outweigh the perceived rewards of engaging in the maladaptive

behaviour and the response efficacy and self-efficacy should outweigh the costs of engaging in the adaptive behaviour. The extent of protection motivation, which is predominantly measured as behavioural intention, is in turn crucial for the final attitudinal and behavioural change and thus for the effectiveness of the fear appeal. These behaviours, also referred to as **Coping Modes**, are specified in the revised model (R. W. Rogers, 1983). They can be single, repeated, multiple, and repeated multiple actions. These in turn can be either active actions of the recipient (e.g., restricting smoking) or omitted actions (e.g., not becoming a smoker in the future). In certain cases, the so-called **Boomerang Effect** can occur. If, for example, the recipient perceives his response-efficacy and/or self-efficacy as very low, then he does not see himself in a position to cope with the threat. A feeling of helplessness and loss of control arises (R. W. Rogers, 1983), which then leads to mal-adaptive reactions, i.e., it produces the opposite of the desired effect.

Roger's PMT belongs to the cognitive approaches in the field of fear appeal research. It represents a further development of the cognitive danger control process introduced by Leventhal and initially leaves out the emotional variable fear. According to the revised PMT, the decision for or against adopting a behavioural recommendation depends on the outcome of two distinct processes, the (1) threat assessment and the (2) assessment of the available coping resources. Even in its revised form, the role of fear remains insignificant (Witte, 1998). Rather, persuasion is dependent on the extent of protective motivation, elicited by cognitive appraisal processes (R. W. Rogers, 1983). This shift in importance from emotions to cognitions reflects a general trend in the social sciences at this time (Dillard, 1994). Although individual studies demonstrated a subordinate role of fear (e.g., R. W. Rogers & Deckner, 1975), it nevertheless remains questionable whether the exclusion of the fear component remains justified. In addition, individual differences in the PMT remain excluded. Brouwers and Sorrentino (1993), however, provide empirical evidence that the individual difference uncertainty orientation has significant effects on the impact of fear appeals. Also, it is criticized that the original model assumes that the recipient accepts all arguments presented (Jonas, 1987). Effects of different credibility of source and communicator are thus ignored.



Even in Roger's revised form, ambiguities remain (Gelbrich & Schröder, 2008). For example, the author does not explicitly comment on the link between response-efficacy and self-efficacy. He seems to assume an additive relationship. However, this seems implausible in the domain of low perceived self-efficacy, since the assessment of a certain response-efficacy can hardly compensate for the fact that a recipient does not feel able to perform this the recommended response (Jonas, 1987). Also, the interaction of the appraisal processes of threat and coping is not explicitly clarified (Witte, 1998).

Empirically, the PMT has been extensively studied. Barth and Bengel (1998) identified over 60 studies in the English-speaking world alone. The individual model components and their significance have been confirmed in numerous studies (e.g., Maddux & Rogers, 1983; Mulilis & Lippa, 1990; R. W. Rogers, 1983). Maddux and Rogers (1983), for example, examined smoking behaviour, manipulating various components of the PMT. The result showed that higher values of the manipulated variables also produced stronger intentions to reduce smoking, with self-efficacy having the greatest influence. Rippetoe and Rogers (1987) varied severity of threat and response-efficacy and self-efficacy in a fear appeal on breast cancer. The findings reveal different effects of individual model variables. Whereas the perceived severity of threat had an undirected energizing effect, the presentation of the coping strategy decided over adaptive or mal-adaptive responses. The higher response-efficacy and self-efficacy were rated, the stronger the intentions emerged. A meta-analysis showed that all variables of the PMT were significantly correlated with predicted outcomes, with ratings about the coping strategy having stronger associations with intention than evaluations of threat (Milne et al., 2000). Nevertheless, even though numerous studies have found at least some interaction-effects between coping appraisal and threat appraisal variables, an equally large number of studies have been incapable to find any of these interaction-effects (see R. W. Rogers & Prentice-Dunn, 1997).

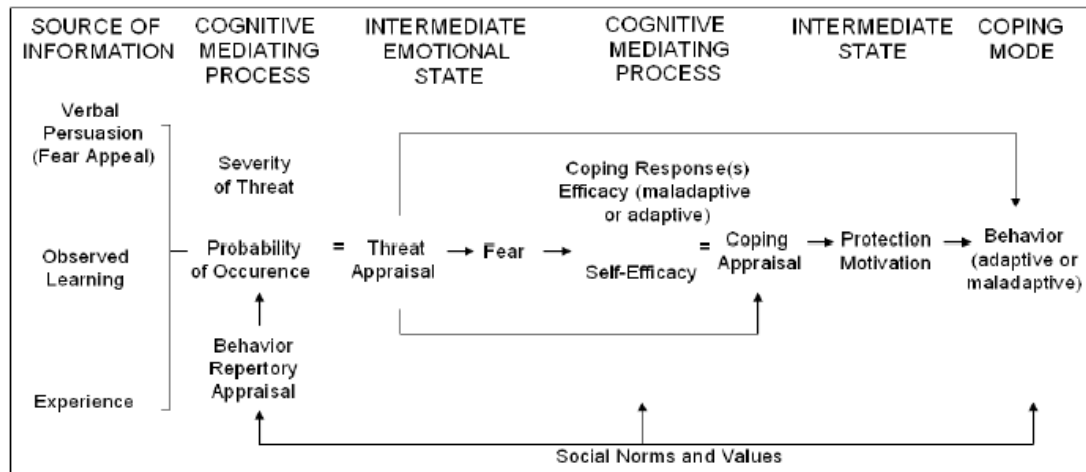
These inconsistencies in findings have been noticed since the early studies that empirically tested the PMT. However, several meta-analyses have been conducted which generate a more consistent summary of empirical results. Milne et al (2000) conducted a meta-analysis which found that both coping appraisal and threat

appraisal variables were able to predict health related behaviour intentions. Milne et al (2000) also concluded that the coping appraisal variables (i.e., self-efficacy) were found to have greater predictive power on behavioural intention than the threat appraisal variables. Furthermore, they proposed that threat appraisal (severity and vulnerability) variables are poor predictors of behaviour intention, when comparing to self-efficacy (Milne et al., 2000). Floyd et al (2000) also conducted a meta-analysis of studies that used PMT criteria and behaviour or behaviour intention as a dependent variable. The findings suggested that the coping appraisal variables (self-efficacy and response efficacy) and the threat appraisal variables (severity and vulnerability) all facilitated adaptive behaviour across the studies, although coping appraisal variables were found to have more impact on adaptive responses. Moreover, reduction of adaptive response costs and maladaptive response rewards, in turn increased adaptive behavioural intentions or behaviours. Milne et al (2000) concluded that the PMT was especially useful for the prediction of actual behaviour occurring at the time of exposure to the fear appeal in comparison to measures of behaviour intention. Pechmann et al. (2003) also reported the success of protection motivation variables in predicting behaviour.

Rogers' PMT variables were broadly confirmed, but the Protection Motivation Theory (R. W. Rogers, 1983) has been criticised on the one hand for disregarding the links between the PMT variables, which were already inaccurately described in the theory (Barth & Bengel, 1998), and on the basis that more research is needed regarding the impact of fear generated by threat appeals (e.g., Henthorne et al., 1993). Indeed, Tanner et al (1991) highlighted that a weakness of the PMT is a lack of recognising the importance of emotional responses to fear appeals.

Whereas Rogers assumes that evaluation processes take place in a disorderly manner, Tanner et al. (1991) in their Ordered Protection Motivation Theory (OPMT) assume a sequential process, see figure 11 below.

**Figure 11:** *Ordered Protection Motivation Theory by Tanner et al. (1991)*



Tanner et al. (1991) extend Rogers' PMT in four ways. First, they **reintegrate the emotion component**. Rogers' model treated **fear** as a non-significant by-product of threat appraisal. In the OPMT, on the other hand, it is seen as an important mediator between the threat appraisal and the coping appraisal: If the threat appraisal generates fear, heightened attention is created, and the threat is fully assimilated. This is followed by the evaluation of the recommended coping strategy. Thus, the fear component does not directly influence the behaviour, but it is an important link in the entire evaluation process (Gelbrich & Schröder, 2008).

Secondly, the cognitive evaluation process is presented as a **sequential process**. This begins with the threat appraisal, followed by the coping appraisal. Only if a recipient considers a threat to be relevant and fear-inducing, he continues to reflect about how to cope with this threat (Ho, 2000).

Thirdly, the model emphasises **mal-adaptive coping strategies** more than its predecessors. These reduce fear without counteracting the actual danger. The likelihood of mal-adaptive behaviour depends on past experiences. For example, sexually active people who have never made contact with sexually transmitted diseases (STD) see themselves as less at risk from them. The evaluation of one's Behaviour Repertory Appraisal thus represents an additional cognitive process that influences the threat assessment.

Lastly, the **social context** (Social Norms and Values) plays an important role. Since every behaviour has social implications, normative components also determine the choice of the coping strategy. For example, the use of a condom can imply that one of the sexual partners has a STD, which causes hesitation in the other partner. Since, in addition to this social context, previous experiences also influence individual model components, it can be assumed that the persuasive effect of a fear appeal can be influenced not only by the message components themselves but also by external factors (Schoenbachler & Whittler, 1996).

Empirically, Tanner et al. (1991) tested the OPMT using the response of students to a fear appeal on STDs. The findings supported the sequential nature of the evaluation process. However, other studies argue against the assumptions of the OPMT. Hall et al (2006) could not replicate this finding and in a study on AIDS prevention, Ho (2000) confirmed the disordered and parallel sequence of processing assumed by Rogers (1983). In addition, Schoenbachler and Whittler (1996) investigated the effect of an anti-drug campaign and showed that the generation of fear had no significant effect on the evaluation process. On the other hand, Schoenbacher and Whittler (1996) at least confirmed the importance of the social context of the coping action, which is why they advocate the use of social fear appeals. In support of this, Eppright et al (1994) proposed that prior knowledge or past experience increased susceptibility and self-efficacy which increased adaptive behaviour intention. However, it was also found that susceptibility also increased mal-adaptive behaviour intention. Overall, Tanner's OPMT remains controversial but it still utilised in several contemporary research projects (e.g., Cismaru & Lavack, 2007; Nelson et al., 2011; Ritland & Rodriguez, 2014).

Indeed, Passyn and Sujun (2006) laid focus on the coping appraisal process in response to threat appeals that add low accountability emotions (hope) or high accountability (guilt, regret, or challenge) to the appeal. The scholars identified two different levels of coping (specific and abstract) and found that the high accountability emotions (guilt, regret, and challenge) when added to fear, generated specific and concrete coping strategies (readiness for action). However, no differences were found in perceptions of severity, susceptibility, response efficacy or self-efficacy, which the PMT proposes are the key variables that influence behaviour. The findings

of the study by Passyn and Sujun (2006) therefore suggest that self-accountability and self-efficacy are separate constructs, and that self-efficacy (an individual's belief they can carry out an action) is less important than accountability (or obligation) in determining behaviour responses.

Overall, the mixed findings of the PMT studies (e.g., Floyd et al., 2000; Milne et al., 2000) serve to add confusion to the field of fear appeal research.

Several specific criticisms are presented by Witte (1992), which have led her to introduce the extended parallel process model. Specifically, Witte (1992) identifies logical errors regarding the variables in PMT (e.g. how coping appraisal and threat appraisal play together to result in protection motivation). This is in part evidenced by researchers neglecting threat appraisals while focusing only on coping appraisals. Furthermore, Witte (1992) identifies that protection motivation theory fails to offer an explanation of what happens when fear appeals do not work, precisely, how and when they may fail to generate a behavioural response. Still, it is recognised that the original constructs of the PMT (severity, susceptibility, response efficacy and self-efficacy) help to explain mediating effects between exposure to a threat appeal and message acceptance (Witte, 1992). Based on the constructs of the PMT and the criticism, Witte (1992) re-evaluated the cognitive processes of threat appeals and developed the extended parallel process model which will be discussed in the next section.

## **2.9 Extended Parallel Process Model (EPPM)**

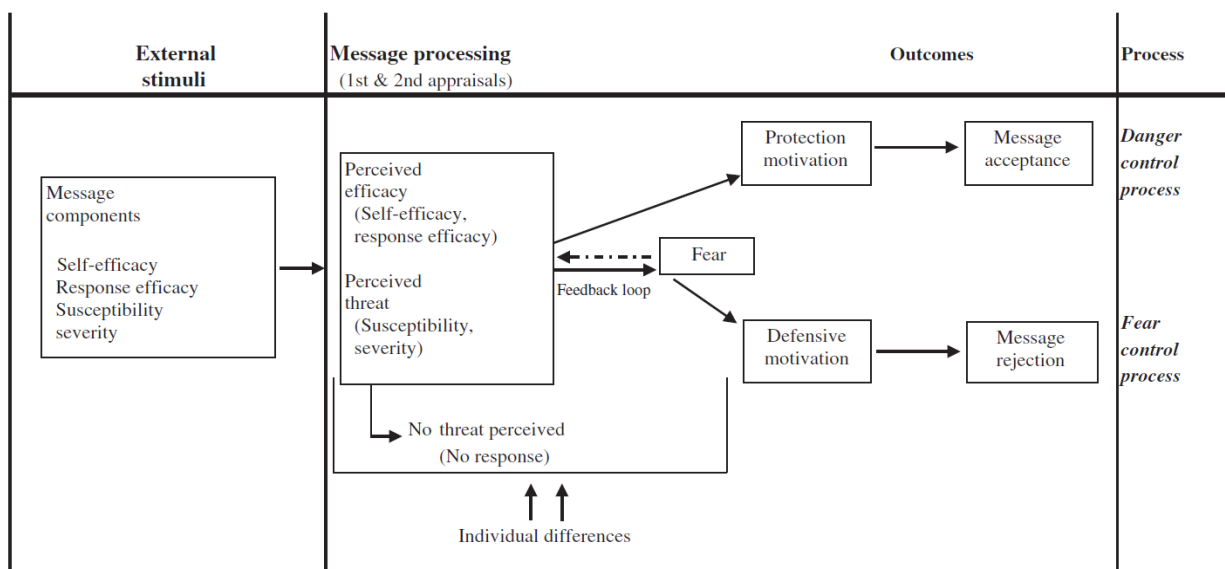
In order to counter the inadequacies of past theories, Witte (1992) develops an integrative fear appeal model. The EPPM was developed as a message design theory providing a framework for effective communication of health and risk-related information (Maloney et al., 2011). The Model is an extension of previous research and theories on fear appeals. It combines concepts and constructs from the parallel response model by Leventhal (1970), the protection motivation theory by Rogers (1975, 1983), as well as the drive-reduction model (Hovland et al., 1953). The central constructs of the EPPM are depicted in figure 12 below, which are:

1. Fear and perceived threat, comprising two components perceived severity and perceived susceptibility.
2. Perceived efficacy, with its two components response-efficacy and self-efficacy.
3. Danger control and fear control, as responses to external stimuli, i.e., fear appeals.

On the one hand, Leventhal's (1970) model of parallel processes was used as a framework to differentiate between danger and fear control.

- In the cognitive process of **danger control** which leads to adaptive behaviour, the EPPM is based on Rogers' (1983) revised PMT. However, Witte (1992), unlike Rogers, also specifies the variables and processes that lead to mal-adaptive responses.
- The EPPM extends the emotional process of **fear control** by defining fear as a central variable and, like Janis (1967), associating it with mal-adaptive outcomes.

**Figure 12:** *Extended Parallel Process Model by Witte (1992)*



According to the EPPM, an external stimulus initiates the cognitive evaluation of a fear appeal message, which is composed of the perceived threat and perceived efficacy. Here Witte (1992) assumes a sequential sequence of the evaluation processes. The first appraisal is the evaluation of a threat (perceived threat),

composed of perceived severity and susceptibility. In case this threat is perceived as low and/or irrelevant, no further processing of the message takes place (e.g., Gelbrich & Schröder, 2008; Witte, 1998). If, on the other hand, the recipient feels a threat (threat reaches a certain threshold level), fear arises, which motivates further processing of the message. This initiates the second appraisal with the evaluation of perceived efficacy, which is composed of the efficacy of the recommended course of action (response efficacy) and the individuals' belief about their ability to carry out the recommended response (self-efficacy). The second appraisal of perceived efficacy determines whether the recipient of a threatening message will engage in fear control or danger control processes.

If both the perceived threat and the perceived efficacy are perceived as high, the danger control process is initiated (Neurauter, 2005). This process runs - as described in the PMT - mainly cognitive and conscious. It triggers a protection motivation, which finally leads to the adaptive result of **message acceptance**. Message acceptance describes traditional persuasion outcomes such as attitude, intention, or behaviour change.

If, on the other hand, a recipient rates the perceived threat higher than the perceived efficacy of the recommended response, he no longer sees himself in a position to deal with the threat. The recipient reaches a critical point where it is no longer the threat but the fear that is controlled. The emotional fear control process is partly unconscious and automated (Gelbrich & Schröder, 2008). Defensive motivation arises, which causes defence mechanisms such as defensive avoidance, denial of the message content or reactance (Witte & Morrison, 2000). In case the recipient feels manipulated by a threat message (i.e., restricted in one's freedom of choice), one reacts defensively (Barth & Bengel, 1998). This can lead to a boomerang-effect, meaning resisting the message and acting against the recommendations (Witte, 1992). Since all these reactions only reduce the perceived fear but do not counteract the actual threat, they are considered mal-adaptive. As a result, the message is rejected (**message rejection**).

The EPPM proposes that high perceptions of threat lead to cognitive appraisal responses (Chamberlain, 2015). Nevertheless, when the threat is perceived to be low the message is not processed. This concept of low threat perception and no further

message processing is supported by results from a meta-analysis conducted by Witte and Allen (2000). Furthermore, it was stated and replicated by other researchers that high perceived efficacy (self-efficacy and response efficacy) in combination with high perceptions of threat (susceptibility or severity) had the strongest persuasive impact (Roberto & Goodall, 2009; Witte & Allen, 2000; Wong & Cappella, 2009). More detailed, it was also found that perceptions of low threat and low efficacy were less persuasive than high threat and low efficacy perceptions. This leads to the conclusion that high threat perceptions (severity and susceptibility) enable message processing while low efficacy does not have influence on the processing. The conclusion was also supported in a study on antidrug attitudes and behaviours to avoid drug abuse, as perceived severity had a significant correlation to message processing (Allahverdipour et al., 2007). However, other studies have identified efficacy to have an impact on persuasion but not severity. Perceptions of efficacy can be significantly correlated with behaviour changes, attitudes, and intentions regarding the use of condoms to prevent AIDS (Witte, 1994) or regarding tractor safety (Witte, 1993).

**Fear** is of central importance in the EPPM. It initially arises from the cognitive evaluation of the threat and increases attention to that threat. Conceptually, fear is a negative emotional reaction to a perceived threat (Popova, 2012). The relationship between perceived severity and fear is described as bidirectional. In the model, this is represented as a **feedback loop**: The triggered fear is cognitively evaluated, which can lead to a perception of the threat being more severe than originally thought. This increased threat perception can in turn intensify the fear perception. Thus, fear is continuously assessed in the danger control process and retroactively increases the threat perception. Through this relationship, it operates as a mediator and indirectly influences adaptive outcomes (Witte, 1998). This relationship has already been demonstrated in numerous empirical studies (e.g., see list in Witte, 1992). Lewis et al (2007) found a significant direct effect of fear on message acceptance. However, if the perceived efficacy is low, fear is further intensified and can reach a critical level at which the recipient feels overwhelmed and defence mechanisms are initiated. Thus, in the fear control process, fear acts directly on mal-adaptive outcomes. Witte (1994) stated that for recipients with high perceived efficacy, neither perceived threat nor fear was related to attitude changes. However, fear both directly and indirectly



affected behavioural intentions. Wauters (2013) confirmed the EPPM by showing that perceived severity, self-efficacy and response efficacy have a positive effect on the behavioural intention. This behavioural intention is also influenced by the evoked feelings of fear, which are caused by the recipients' perceived severity.

Furthermore, the critical point when threat perceptions start to outweigh efficacy perceptions, is a key concept in the EPPM (Witte et al., 1996). At this point, recipients shift from danger control to fear control responses and therefore people refrain from controlling the danger and focus instead on controlling their fear. Witte (1995) proposes a simple mathematical formula to identify and predict when recipients engage in danger control processes or when they engage in fear control processes.

$$\begin{aligned} & (Z \text{ for perceived efficacy}) \\ & - (Z \text{ for perceived threat}) \\ & = \text{discriminating value} \end{aligned}$$

This formula was created so that practitioners and researchers could calculate whether recipients were engaged in fear control or danger control and adjust their threatening messages accordingly (Witte et al., 1996). To operationalise the 'discriminating value formula', Witte et al. (2012) developed the 'Risk Behavior Diagnosis Scale' (RBD), which is a 12-item scale that evaluates perceptions of response efficacy, self-efficacy, severity, and susceptibility on a 7-point scale. First, scale items measuring threat and efficacy are summed and standardised to retrieve the scores for perceived threat and perceived efficacy. Then, the threat score is subtracted from the efficacy score, leading to the discriminating value. A discriminating value of zero would indicate that the recipient is at the critical point (Maloney et al., 2011). If the calculated score is positive ( $>0$ ), then the recipient is expected to engage in danger control processes as perceptions of efficacy outweigh perceptions of threat (Witte et al., 1996). Positive discriminating value scores will probably motivate further action. In case the obtained score is negative ( $<0$ ), then the recipient is expected to engage in fear control processes as perceptions of threat outweigh perceptions of efficacy. Negative discriminating value scores indicate that threatening messages should increase emphasis on the recipient's ability to perform the recommended action as well as on the effectiveness and ease with which

recommended responses avert a threat. Also, messages that are too threatening may cause backfires for those recipients with a negative score (Witte et al., 1996).

In summary, the effect of a fear appeal according to the EPPM can be described as follows. The *danger control process* consists of attempts that focus on the avoidance of the threat or to minimize their consequences and ideally happens by adopting the recommended behaviour. *Fear control processes* are, in contrast, aimed at reducing the tension and emotional excitement caused by the message (Hastall, 2016). Fear appeal messages are evaluated in terms of threat and efficacy of the coping response, leading to three possible outcomes (Witte et al., 2002; Witte & Allen, 2000):

- If the perceived threat is too low, there is **no response**.
- If the threat and efficacy are perceived to be high, the danger control process follows, leading to **message acceptance**.
- If the threat is perceived to be high but the efficacy is perceived to be low, the fear control process follows, resulting in **message rejection**.

Thus, “perceived threat determines the strength or how much of a response there is to a fear appeal, whereas perceived efficacy determines the nature of the response – whether a fear appeal induces danger control or fear control processes” (Witte, 1998, p. 431).

In order to eliminate past ambiguities about precise definitions of terms, Witte et al. (1996) summarised the essential constructs of their model in a table, which is presented as table 3 below.

**Table 3:** *EPPM Key Fear Appeal Constructs by Witte et al. (Witte et al., 1996, p. 320)*

Construct	Description
<b>Fear</b>	Fear is an internal emotional reaction composed of psychological and physiological dimensions that may be aroused when a serious and personally relevant threat is perceived.
<b>Threat</b>	A threat is a danger or harm that exists in the environment whether we know it or not. Perceived threat is cognitions or thoughts about that danger or harm. Perceived threat is composed of two underlying dimensions, severity and susceptibility.

Construct	Description
<b>Perceived susceptibility</b>	Beliefs about one's risk of experiencing the threat (e.g., "I'm at risk for skin cancer because I don't use sunscreen").
<b>Perceived severity</b>	Beliefs about the significance or magnitude of the threat (e.g., "Skin cancer leads to death").
<b>Efficacy</b>	Efficacy pertains to the effectiveness, feasibility, and ease with which a recommended response impedes or averts a threat. Perceived efficacy is thoughts or cognitions about its underlying dimensions, response efficacy, and self-efficacy.
<b>Response efficacy</b>	Beliefs about the effectiveness of the recommended response in deterring the threat (e.g., "Using sunscreen consistently will prevent my getting skin cancer").
<b>Self-efficacy</b>	Beliefs about one's ability to perform the recommended response to avert the threat (e.g., "I am able to use sunscreen consistently to prevent my getting skin cancer").
<b>Danger control</b>	A cognitive process eliciting protection motivation that occurs when one believes she or he is able to effectively avert a significant and relevant threat through self-protective changes. When in danger control, people think of strategies to avert the threat.
<b>Danger control responses</b>	Belief, attitude, intention, and behaviour changes in accordance with a message's recommendations.
<b>Fear control</b>	An emotional process eliciting defensive motivation that occurs when people are faced with a significant and relevant threat but believe themselves to be unable to perform a recommended response and/or they believe the response to be ineffective. The high levels of fear caused by this condition produce defensive motivation resulting in coping responses that reduce fear and prevent danger control responses from occurring.
<b>Fear control responses</b>	Coping responses that diminish fear such as defensive avoidance, denial, and reactance (including issue and message derogation and perceived manipulative intent).

Conceptually, the EPPM distinguishes between **threat** as a message component and **perceived threat** as well as **efficacy** as a message component and **perceived efficacy** (Popova, 2012). For the former, threatening message components provide factual and / or visual information about the severity of the threat and the recipient's susceptibility to the threat. In experimental research, both susceptibility and severity are often manipulated by using vivid language for high threat conditions or neutral language for low threat conditions (e.g., Witte, 1994). The EPPM claims that a threatening message induces perceived threat, which is a subjective evaluation of the threat contained in the message (Witte, 1992). In practice, usually manipulation checks are performed to prevent a conflation of threat as a message component versus perceived threat. Furthermore, in EPPM experiments efficacy is also often manipulated into high-efficacy and low-efficacy groups (e.g., McKay et al., 2004;

Witte, 1994). Due to ethical concerns about low-efficacy messages (e.g. condom use is not effective), the tendency in numerous studies is to not manipulate the efficacy level, mainly by presenting only high-efficacy messages (Popova, 2012).

Furthermore, Witte (2002) presents a chart that describes the relationships between perceptions of efficacy and threat, as well as a suggested message strategy, see table 4 below. These message strategies can be used via interpersonal channels or mass media channels.

**Table 4:** *EPPM Variables, Expected Responses, and Message Strategies by Witte (2002, p. 167)*

<b>PERCEPTIONS</b>	<b>High Efficacy</b> Beliefs that one is able to avert a threat and that recommended response work in averting a threat.	<b>Low Efficacy</b> Beliefs that one cannot avert a threat, and even if s/he could, it wouldn't work anyway.
<b>High Threat</b>  Beliefs that one is at-risk for a significantly harmful threat	Response: <b>Danger Control</b> (take protective action)  <i>Message Strategy:</i> Emphasize severity and susceptibility to the threat; reinforce response and self-efficacy beliefs.	Response: <b>Fear Control</b> (in denial, defensive avoidance, reactance)  <i>Message Strategy:</i> Emphasize response and self-efficacy only (already motivated to act given high threat perceptions).
<b>Low Threat</b>  Beliefs that a threat is irrelevant and/or trivial	Response: <b>Lesser Amount of Danger Control</b> (some protective action taken but little motivation to act)  <i>Message Strategy:</i> Emphasize severity and susceptibility to the threat to motivate action; reinforce response and self-efficacy beliefs.	Response: <b>No Response</b> (no threat perceived; no motivation to act)  <i>Message Strategy:</i> Emphasize response and self-efficacy first, then emphasize severity and susceptibility to the threat to motivate action.

As can be seen in the graphical representation of the model, there are also **individual differences** in the processing of the message, which is also a focus area of this thesis. A later modification to the original EPPM focuses primarily on this component (Witte, 1998), adding a new proposition to the model: “Individual differences influence outcomes indirectly, as mediated by perceived threat and efficacy” (Witte, 1998, p. 439) . Individual differences can be previous experiences, demographic variables, cultural values, or character traits. Especially personality traits, such as anxiety or self-confidence, have a significant influence on coping processes (Gelbrich & Schröder, 2008).

Individual differences can directly or indirectly influence the perceptions or actions of the recipient of a fear appeal (Witte & Morrison, 2000). A **direct**, moderating effect was demonstrated by Murray-Johnson et al. (2001) in a study on the effect of AIDS campaigns. According to this, cultural orientation interacts with the fear generated. The authors showed American students of different origins posters that emphasised either the personal consequences of contracting AIDS or the consequences for the family. African Americans, who were classified as individualistic based on past findings, feared the personal threat more, while immigrants from Mexico and Latin America, who were considered collectivist, felt more fear derived of the threat against the family. An earlier field study by Burnett and Oliver (1979), which examined advertisements for health insurance, also identifies individual differences, such as demographic and socio-psychological factors (e.g. self-esteem), as moderating variables.

Furthermore, individual differences can have an **indirect** effect, mediated by the mediators "perceived threat" and "efficacy" (Witte, 1998; Witte & Morrison, 2000). It can be assumed, for example, that people with low self-confidence tend to rate their self-efficacy lower and are more likely to control fear, whereas people with high self-confidence tend to control danger due to their higher rated self-efficacy. Although the perspective of indirect effect predominates and is also favoured (Witte & Morrison, 2000), it could not be completely confirmed in a study on AIDS prevention. The findings of this study confirmed that although the character trait anxiety seemed to influence threat perception and efficacy, no link (either direct or indirect) was found to behaviour outcomes.

Furthermore, Witte (1998) adds another modification to the EPPM. Originally, she argued that the evaluation of efficacy determines fear or danger control. Later, however, she found only partial confirmation for this hypothesis. Therefore, Witte reformulated her model assumptions and suggested that there is a direct link between fear and message rejection, whereas perceived efficacy is unrelated to maladaptive outcomes. This could imply that the evaluation of efficacy influences danger control processes but plays a subordinate role for fear control processes, since fear control is strongly emotional and partly unconscious or automated (Ruiter et al., 2001).

Overall, the EPPM offers better and more precise explanations for fear appeal processes than previous approaches. However, it assumes primarily sequential processes, which are difficult to prove, as they occur at a very high speed (Ruiter et al., 2001). The exact functioning of the feedback loop is also largely unclear (Gelbrich & Schröder, 2008). Despite these evidently mixed results, it is claimed that the EPPM is a good explanatory model of fear appeals. As claimed, threat appeals generate both danger and fear control responses and the stronger the threat appeal, the more motivated recipients are to process the message (Witte & Allen, 2000). Ideally, next to depicting a significant and relevant threat, there is also an effective response available which appears easy to accomplish. Based on the aforementioned explanatory power of the EPPM, researchers have examined the use of the model in different contexts (e.g., Chamberlain, 2015; So, 2013). Chamberlain (2015) used the EPPM constructs to examine the full range of emotion variables regarding fear appeals about speeding. Interestingly, she found that anticipated emotions play a key role in influencing future behaviour. Lewis et al (2013) add further emotions to threat appeals and examine a fear appeal, an annoyance / agitation appeal, a pride appeal and a humour appeal using the EPPM in the context of road safety. Support was found for the EPPM irrespective of emotional appeal type. It was concluded that high levels of efficacy and threat maximised message acceptance and minimised message rejection for the annoyance/ agitation, pride and humour appeals but not the fear appeal. Nabi (2019) added the emotion hope to fear appeal research and found that the efficacy component of the EPPM likely associates not with fear but with a different emotional experience, i.e. hope. Lewis et al (2013) suggest that the explanatory power of the EPPM is not limited to a fear appeals context and can be widened to also take into account the relationship between other types of emotional appeals and persuasion.

Empirical testing of the EPPM has resulted in mixed findings, but seemingly the EPPM had a positive influence in advancing understanding of responses to fear appeals (de Hoog et al., 2007). Indeed, contemporary researchers continue to use the EPPM as a basis to explore improvements in the model (e.g., Chamberlain, 2015; I. Lewis et al., 2013). Improvements to the EPPM have been developed by Das et al. (2003) and Strobe et al. (2000) by creating the stage model of processing of fear-arousing communications. The next section will give a brief description of the

model and relevant empirical results, outlining the recent theoretical developments of cognitive focused theories.

## 2.10 The Stage Model

This chapter describes the stage model of processing of fear-arousing communications (Das et al., 2003; de Hoog et al., 2005; Stroebe, 2000), which is largely based on the theoretical constructs of the EPPM by Witte (1992) and integrates constructs from dual process theories of persuasion (e.g., Chaiken, 1980) to explain how cognitive processing affects persuasion in fear appeals. This model assumes that individuals exposed to fear appeals engage in two types of appraisals (or stages): first, appraisal of the threat and second, appraisal of coping strategies to reduce, avoid or eliminate the threat. In other words, the first appraisal is the cognitive processing of the fear-arousing communication (which emphasizes the severity of the health risk and individual vulnerability), and the second appraisal is the cognitive processing of the recommended action (which provides information on how to avoid the health risk). As the stage model is more recent than other models described in this chapter, studies that test the model are scarce (Das et al., 2003; de Hoog et al., 2005) and as such the field of research examining its theoretical proposition is not yet notable.

The processing of the fear appeal in **stage one** is determined by the perceptions of severity and vulnerability (i.e., susceptibility). The processing mode (i.e., depth of processing) and the processing goal (accuracy or defence motivation) define how the fear appeal is processed. According to the stage model, if a recipient is exposed to a high-severity threat and perceived susceptibility is also high, this will seriously threaten the recipient's self-definitional belief about his or her health status and arouse defence motivation as well as the motivation for deep information processing (de Hoog et al., 2005). This contrasts with the EPPM, as it is posited that high perceptions of severity generate deep processing of the message avoidance. It is assumed that processing will be deep instead of shallow because high-threat messages are likely to require a thorough evaluation. Defence motivation induced by high threat perceptions manifests itself not in avoidance reactions as proposed by the EPPM (e.g., Witte, 1992) but in biased deep processing. The impact of perceptions

of severity of susceptibility on processing mode and goal defined by the stage model are shown in table 5 below.

**Table 5:** *The Impact of Severity and Susceptibility on Processing Mode and Goal (adapted from de Hoog et al., 2005, p. 26)*

	<b>SEVERITY of Threat</b>	
	<b>LOW</b>	<b>HIGH</b>
Susceptibility <b>LOW</b>	Shallow processing Accuracy motivation	Deep processing Accuracy motivation
Susceptibility <b>HIGH</b>	Deep processing Accuracy motivation	Deep processing Defence motivation

Deep processing and defence motivation occurs when recipients experience a high-severity and high-susceptibility condition, as the fear appeal represents a threat to an individual's self-belief. It is assumed that the severity of a threat determines whether a person processes a message systematically (i.e., careful analysis of arguments posited) or heuristically (i.e., simple decision rules or cognitive shortcuts) (Maloney et al., 2011). According to the dual processing theories of persuasion (e.g., Chaiken, 1980) the processing will be systematic rather than heuristic. When recipients use a systematic message processing, they scrutinise the threatening arguments, while in a heuristic message processing style, they create attitudes following the threatening message without analysis of the arguments. In the high-severity/high-susceptibility condition the message makes a recipient feel susceptible to a severe threat and he or she will undertake a detailed cognitive examination rather than rely on simple decision rules. Conversely, according to the EPPM perceptions of high severity and high efficacy are assumed to be effective in generating fear coping responses.

In the stage model, depending on efficacy, recipients may be motivated to believe the presented arguments (defence motivation) or to scrutinize the argument strength



(accuracy motivation). Therefore, defence motivation can be part of biased systematic processing, where the bias is positive in appraisal of coping strategies and negative in the appraisal of a threat or alternatively an avoidance reaction, as proposed by the EPPM (Witte, 1992). In order to reduce a threat through a thorough examination of the message, inconsistencies of logic will be highlighted (to criticise the message) or the information may be minimised (e.g., by downplaying the information). Therefore, evaluation of evidence will be biased in the direction of the recipients' preferred conclusion. However, if this strategy is unsuccessful because even biased processing is constrained by evidence, recipients will have to accept that they are personally at risk. If this occurs, the subsequent cognitive processing of the information will be biased as well, but in the opposite direction (in stage 2). Maximising any action recommendation because the recommendation will offer a solution to the threat can then moderate cognitions generated and negative emotional responses as a result of exposure to the fear appeal (de Hoog et al., 2005).

If perceptions of susceptibility and severity are low, only little effort will be invested in cognitions (shallow processing), and instead heuristic processing modes are adopted. Alternatively, if perceptions of susceptibility are high and perceptions of severity are low the heightened susceptibility should encourage systematic processing of the message (deep processing). Furthermore, if perceptions of susceptibility are low and perceptions of severity are high recipients are likely to deeply process the contents of the message as it is useful to be well informed about a serious health risk, even if the individual does not feel vulnerable to the threat. As such, vulnerability (i.e., susceptibility) is considered to be a component of threat as it is in the EPPM but is expected to operate independently of severity. Vulnerability is assumed to have no impact on attitudes (when the threat is severe individuals form attitudes consistent with messages). However, it is assumed to have an impact on behaviours and behavioural intentions (if perceptions of susceptibility are high, the recipient will behave in a manner that is consistent with message recommendations).

As described earlier, the EPPM assumes an interaction between threat perception components (susceptibility and severity) and perceptions of efficacy (self-efficacy and response efficacy) (Witte, 1992). According to the EPPM, high perceptions of threat will only lead to persuasion if the recommended action is perceived to be effective.

However, the stage model assumes that a recommended action is already effective, if it is plausible to a certain extent in helping to reduce the threat. Some empirical studies have been conducted to evaluate the propositions of the stage model. De Hoog et al. (2007) found in their meta-analysis results consistent with the stage model regarding the impact of severity and argument quality on attitudes. Main effects for severity, susceptibility, and response efficacy emerged for behavioural intentions, and main effects for susceptibility and severity were found for behaviours, instead of the predicted severity by vulnerability interaction supposed to impact behavioural intentions and behaviours. Thus, this is not consistent with the EPPM's predicted threat by efficacy interaction influencing behaviour. Das et al. (2003) found a positive bias in the processing (stage 2 of action recommendation processing) when individuals had perceived high susceptibility. Susceptibility was found to be the only factor of engaging in the recommended action regarding behavioural intentions. To support this, de Hoog et al. (2005) also found that susceptibility influenced behavioural intention.

In sum, while the stage model refers to the distinction between primary (threat) and secondary (coping) appraisal, earlier models (e.g., Leventhal, 1970; Witte, 1992) emphasize the distinction of two parallel modes of coping, namely, emotion-focused coping (fear control), versus problem-focused (danger control). The stage model especially looks at the properties of susceptibility which is a fresh approach. Furthermore, these two types of appraisals are related to modes and motives of information processing (deep and shallow processing). It is proposed by the stage model, that the added variables of attitudes, behavioural intentions, depth of processing and other moderators could offer valuable insight to the EPPM and other literature on fear appeals (Maloney et al., 2011).

The stage model is more recent than the EPPM and the purpose for its inclusion here is to demonstrate the continuation of thought concerning fear appeal research. Whilst there is a need for more empirical research to test the theory, the initial insights regarding the importance of susceptibility are in line with those presented as part of the EPPM. The stage model particularly introduces a temporal dimension with the consideration of different stages of individuals' cognitive evaluation of threat appeals.

## **2.11 Distinguishing the EPPM from other fear appeal models**

Each of the models prior to the EPPM explained some aspects of reactions to fear appeals. Janis (1967) offered theoretical explanations as to why fear appeals sometimes failed. Leventhal (1970) described the mechanisms and provided insights into the underlying reactions to fear appeals and studies conducted by Rogers (1975, 1983) demonstrated the conditions under which fear appeals appear to work. The extended parallel process model differs from other threat appeal models in four important ways (Witte et al., 2001a).

1. First, in earlier risk message models, no distinction was made as to how recipients initially process fear-arousing messages.

The assumption was made that people exposed to a threatening message would process the information all at once. In the PMT, for example, four cognitive mediators (severity, susceptibility, self-efficacy, response efficacy) were proposed to be automatically induced by the four components of a threat message. In comparison, the EPPM claims that two appraisals happen sequentially. The first appraisal results in a certain threshold level of perceived threat before recipients consider the recommended response in the efficacy appraisal. When the threshold is reached, then the second step in the appraisal process is triggered and the efficacy of the recommended response is evaluated. The EPPM proposes that a threat defines how strongly recipients respond to risk messages (i.e., how much defensive avoidance or behavioural change), and efficacy determines which of the responses occur (i.e., either fear or danger control) (Witte et al., 2001a).

2. Second, there is a conceptual distinction between fear and perceived threat. Earlier studies have used the terms “fear” and “threat” as synonyms. The EPPM however proposes that although threat and fear are highly correlated, they are different concepts resulting in fundamentally varying outcomes. More precisely, the EPPM claims that fear directly causes fear control processes and is not related to danger control responses. Hence, fear is the dominating factor in the emotional fear control processes and cognitive reflections about the threat and about the efficacy of the proposed response dominate in the cognitive danger control processes (Witte, 1998).

3. Third, earlier models measured only attitude, intention, and behaviour changes to health risk messages.

Earlier scholars did not measure other outcomes that might interfere with these changes, even though health risk messages can produce more outcomes. The EPPM therefore suggests that fear control responses such as defensive avoidance, denial, or reactance should be added to the measurement (Witte, 1992).

4. Fourth, previous research made no distinction as to why health risk messages failed.

The EPPM broadens the scope of reactions produced by fear appeals. Prior models focused on two possible outcomes: message failure (non-adoption of the recommended response) and message acceptance (adoption of the recommended attitudes or behaviours). According to the EPPM, two reasons for message failure are suggested: (1) the fear appeal produced fear control responses such as defensive avoidance, denial, or reactance; or (2) the message had no effect and produced no response with recipients simply not processing any message (Witte, 1992).

## Overview of twelve EPPM propositions and their support

Witte (1998) has formulated twelve propositions for the EPPM in her revised theoretical review, which are depicted in table 6 below. Empirical tests of these propositions are scattered across studies and a summary of the extent to which they have been supported is not clear. Popova (2012) analysed 29 studies which have researched at least one of the twelve propositions with the result that none of the propositions have received strong support so far. Some propositions have been barely tested (number 1, 5, 7, 8, 10, and 11) and for most, support has been mixed. Findings on each proposition will be discussed in this chapter.

**Table 6:** *Propositions for the EPPM (Witte, 1998, p. 439)*

Proposition	Description
Proposition 1	When perceived threat is low, regardless of perceived efficacy level, there will be no further processing of the message.
Proposition 2	As perceived threat increases when perceived efficacy is high, so will message acceptance.
Proposition 3	Cognitions about the threat and efficacy cause attitude, intention, or behaviour changes (i.e., danger control responses)
Proposition 4	As perceived threat increases when perceived efficacy is low, people will do the opposite of what is advocated (boomerang).
Proposition 5	As perceived threat increases when perceived efficacy is moderate, message acceptance will first increase, and then decrease, resulting in an inverted U-shaped function.
Proposition 6	Fear causes fear control responses.
Proposition 7	When perceived efficacy is high, fear indirectly influences danger control outcomes, as mediated by perceived threat.
Proposition 8	When perceived efficacy is high, there is a reciprocal relationship between perceived threat and fear.
Proposition 9	Cognitions about efficacy are unrelated to fear control responses.
Proposition 10	Cognitions about threat are indirectly related to fear control responses.

**Table 6 continued:** *Propositions for the EPPM*

Proposition	Description
Proposition 11	Perceived threat determines the intensity of a response (how strong the response) and perceived efficacy determines the nature of the response (either fear or danger control).
Proposition 12	Individual differences influence outcomes indirectly, as mediated by perceived threat and efficacy.

**Proposition 1** proclaims that there will be no response to the fear appeal because the message is not processed any further. This proposition has not been explicitly tested. No studies using the EPPM framework directly measured the extent of message processing. So far, lack of message processing has been implicitly derived from a lack of changes in intention, behaviour, and attitudes. Witte et al. (1998) have used this approach and found that for recipients with low threat perceptions there was no significant difference in either fear control responses or in danger control responses. Additionally, it was found by Wong and Cappella (2009) that when the threat level of a message was low, intentions to stop smoking did not vary considering the level of message efficacy. However, it seems proposedly erroneous to take a lack of attitude or behaviour change as evidence of lack of message processing (Popova, 2012). Message processing can surely take place even in case of a lack of threat, as the responses may just be deemed unnecessary.

**Proposition 2** is based on the explanation that many investigators have found that fear appeals with high levels of perceived threat and high levels of perceived efficacy produce message acceptance (Witte, 1992). This proposition has yielded mixed support. Numerous studies found no effects of threat on behaviours, intentions, or attitudes. In a study on tractor safety, Witte et al. (1993) found no effect of threat levels, only of efficacy levels. Recipients with perceptions of high efficacy had higher scores of intentions, behaviour, and attitudes. Also, Witte and Morrison (1995) evaluated the effects of threat message attributes on intention, behaviour, and attitudes towards condom use, monogamy, and abstinence in an experimental study. Keeping efficacy consistently on a high level, no significant effect of threat on the

danger control responses emerged. Additionally, in two cases recipients in the low-threat group had more positive attitudes regarding monogamy and reported more condom use in the months after the threat treatment. This finding is the opposite of proposition 2 and is evidence against this proposition. Nevertheless, McMahan et al. (1998) have found support for proposition 2 if message acceptance is operationalised as danger control responses. In this study behaviour and avoidance of exposure to electromagnetic fields was measured. For groups with high-efficacy scores, high threat generated higher attitudes and higher intentions to avoid exposure. but it did not change behaviour. Also, in an experiment regarding bulimics to seek for help, Smalec and Klinge (2000) found that perceived threat was positively correlated with cognitive and behavioural message acceptance if levels of efficacy were high. When focussing on threats to others (physicians proscribing kidney tests to patients) Roberto and Goodall (2009) found that the highest behavioural intentions and actual behaviour reached the highest levels in the high efficacy/high threat group. Another study also found support for proposition 2 regarding the intention to stop smoking. As such, Wong and Cappella (2009) concluded in their experiment that high message threat had a greater impact on recipients' intentions to quit smoking if message efficacy was perceived to be high. Thus, some support has been found for proposition 2. Notably, even though the language used in the proposition regarding threat suggests a continuous variable ("as perceived threat increases"), it is mostly tested using either high or low threat (e.g., McMahan et al., 1998). Furthermore, when efficacy and threat are measured as existing perceptions without being manipulated as message components, it is common in EPPM research to create low and high groups through median splits. This procedure of 'dichotomisation' has received a lot of criticism as it has serious costs and no benefits, like loss of variance, power and effect size (Irwin & McClelland, 2003). Popova (2012) proposes that scholars should go beyond median splits and increasingly use regression and correlational analysis on the original (undichotomised) measures, as it was implemented, for example, by Smalec and Klinge (2000) to test proposition 2 using multiple regression.

**Proposition 3** has not been explicitly tested as it can only be assessed using correlations. Most scholars manipulate threat and/or efficacy within the EPPM research. Even though the cognitions about threat and efficacy are measured, the direct effects of cognitions on danger control responses were not evaluated (Popova,

2012). In case of preventing AIDS through the use of condoms, Witte (1994) confirmed that cognitions concerning efficacy were correlated with intentions, behaviour, and attitudes. However, in her experiment, cognitions about threat were only correlated with intentions, and not with attitude and actual behaviour to use condoms. Allahverdipour et al. (2007) conducted a study with high school students regarding drug abuse and found that cognitions about efficacy conditions (self-efficacy and response efficacy) were positively correlated with attitudes and intentions to avoid drugs, as well as cognitions about perceived severity were correlated with intentions to avoid drugs and antidrug attitudes. Nevertheless, McMahan et al. (1998) could not find any influence of cognitions about severity of health impacts on predicting the intent to implement control measures. Thus, proposition 3 only received partial support. Ideally, to test this proposition, Popova (2012) recommends the use of a longitudinal study assessing the effect of threat and efficacy perceptions at Time 1 to predict intention, behaviour, and attitude at Time 2.

**Proposition 4** proclaims the 'boomerang effect' of fear appeals. To control the overwhelming fear, recipients deny or react opposite to the message, and do even more of the mal-adaptive behaviour (e.g., increase smoking). Witte (1992) states that in numerous studies high perceived threat in combination with low perceived efficacy resulted in message rejection and boomerang responses (e.g., Kleinot & Rogers, 1982; Rippetoe & Rogers, 1987; R. W. Rogers & Mewborn, 1976). Also, this proposition was supported by the data summarised in Witte and Allen's (2000) meta-analysis, showing that mal-adaptive responses increased as threat messages got stronger. Other studies such as in the experiment from McMahan et al. (1998) found no support for this proposition, as recipients with low efficacy scores showed no difference whether they perceived the threat as low or high. Furthermore, conditions with low efficacy and low threat perceptions had the most defensive avoidance, manipulation intent, and message derogation effects in a survey conducted by Witte et al. (1993). Thus, proposition 4 has received mixed results. To test this proposition in further research it is recommended to keep perceived efficacy low or measure in its original values and present the threat appeal at variable levels (Popova, 2012).

**Proposition 5** has received no support so far and has only been evaluated in meta-analyses by Witte and Allen (2000) and by Boster and Mongeau (1984). Both meta-analyses conclude that there is no evidence for the curvilinear relationship between fear appeals and outcomes. To test this proposition, recipients with moderate efficacy



levels should be analysed separately and the perceptions of threat and danger control responses should be continuously evaluated.

**Proposition 6** only found limited support so far. Witte (1992) proposed that fear directly increases avoidance coping patterns, following earlier findings by Rippetoe and Rogers (1987). However, Witte (1994) concluded in her study that fear was negatively associated with message derogation and defensive avoidance, but positively correlated with perceived manipulation. These findings are consistent with Rippetoe and Rogers (1987) who found that fear is reduced by some of the fear control processes, i.e. defensive avoidance, but not for all. Furthermore, Witte and Allen (2000) found that with increasing threat appeals, fear control responses also intensified. Additionally, in a study conducted by Tay and Watson (2002) message rejection was positively related to fear arousal. In comparison, Lewis et al. (2010) stated that increasing levels of fear are associated with reduced message rejection and that this effect was mediated by response efficacy. In order to test this proposition, it is necessary to first ensure that groups with different levels of threat also differ in their levels of fear and, second, to unwind the relationship between fear and fear response process (Popova, 2012). Fear therefore needs to be measured on a continuous basis.

**Proposition 7** posits that, if perceived efficacy is high, the level of fear arousal will be cognitively evaluated and will then influence threat perceptions, which will then indirectly influence adaptive responses (Witte, 1992). Therefore, threat perceptions are conceptualised as intervening variables between fear and adaptive outcomes. After cognitively evaluating fear, it is used as a hint that affects threat assessment, which, in turn, influences danger control responses. This proposition has generated mixed results. Roger and Mewborn (1976) have found that perceived severity (a cognition about the level of threat) was affected by fear, which then affected intentions (an adaptive response), but the aroused fear did not directly predict intentions. In another study Witte (1994) found that fear and perceived threat were unrelated to attitude changes in a high-efficacy group and, moreover, fear directly and indirectly affected behavioural intentions and only indirectly influenced behaviour as posited by proposition 7. Furthermore, Lewis et al. (2010) also concluded that fear had a direct impact on message acceptance.

**Proposition 8** postulates that, in case perceptions about efficacy outweigh threat perceptions, the relation between perceived threat and fear is bidirectional, also

called nonrecursive (Witte, 1992). The EPPM proposes that fear and behaviours or attitudes are modestly correlated because perceived threat (an underlying variable) explains the relationship between them. The idea of this indirect relationship between fear and adaptive outcomes is explained as that fear leads to perceived threat which then leads to adaptive outcomes (such as attitude change or intentions/behaviour), under the condition of high perceived efficacy (Witte, 1992). The empirical support for this proposition is again mixed. Also, it has not been tested within the EPPM framework. Rippetoe and Rogers (1987) did not find a relation from fear to threat, only the other way from threat to fear. Support was found by Rogers and Mewborn (1976) who concluded that the relationship between fear and behavioural intentions was mediated by perceived threat. In a meta-analysis by Boster and Mongeau (1984) the scholars found moderate correlations between fear arousal and attitude ( $r = .21$ ) and between fear arousal and behaviour ( $r = .10$ ), offering support for the proposed indirect relationship between fear and adaptive responses. To test this proposition in further research, scholars might need to implement structural equation modelling and tests of nonrecursive relationships between fear and threat perceptions (Popova, 2012).

**Proposition 9** postulates that as fear is not necessary for danger control responses, so are cognitions not necessary for fear control processes (Witte, 1992). The support of this proposition is mixed. Witte et al. (1993) and McMahan et al. (1998) found significant effects of efficacy on all fear control responses (message derogation, defensive avoidance, perceived manipulation). Additionally, Witte and Allen (2000) discovered in their meta-analysis negative effects of efficacy on fear control responses. On the contrary, Witte (1994) found no correlation between perceived efficacy and fear control responses and Tay and Watson (2002) confirmed that self-efficacy was unrelated to maladaptive behavioural intentions.

**Proposition 10** understands fear as intervening variable between fear control processes and cognitions about the threat, stating that perceived threat causes fear (Witte, 1992). Similar to proposition 7, indirect relations between cognitions about threat and maladaptive responses have found mixed results. Witte (1994) found support for negative correlations between threat perception and defensive avoidance and message derogation, suggesting a direct relationship between threat and fear control responses. On the other hand Rippetoe and Rogers (1987) discovered some support for an indirect relationship through fear.

**Proposition 11** was added by Witte (1998) at a later stage and specifies how threat and efficacy operate in influencing outcomes. Proposition 11 has not been tested often. McMahan et al. (1998) supported the EPPM proposition for electromagnetic fields, where threat influenced stronger or weaker attitudes, but efficacy defined whether the attitudes were negative or positive. Furthermore, a negative correlation between fear control and danger control responses are concluded by Witte and Allen (2000) to provide evidence for this proposition. Also, Witte et al. (1998) demonstrated in their study on STDs (genital warts), that recipients exposed to high threat messages showed greater danger control scores if efficacy was high, as well as those people with low efficacy demonstrated stronger fear control outcomes than those with high efficacy. Nevertheless, the scores of fear control and danger control responses have not been directly compared in this study. Popova (2012) proposes to compare the means of the fear control and danger control responses across the different groups in order to directly compare the results.

**Proposition 12** was also added by Witte (1998) at a later stage and specifies the relationship between individual differences and outcomes. The relationship between individual differences and responses to fear appeals remains mostly unclear (Witte, 1998). The proposition posits that the appraisal of threat and efficacy is influenced by individual differences, which are responsible for the critical points (thresholds), where the type of response is determined. Scholars have researched a limited range of individual differences, such as self-esteem, self-control, coping skills, sensation seeking, need for cognition, health status, and predisposition to anxiety (Popova, 2012). Proposition 12 is very broad and includes all individual difference variables that might have an effect on threat perceptions and efficacy perceptions. In some studies support was found while in others support was lacking. Schoenbacher and Whittler (1996) for example have added 'sensation seeking' and concluded that this individual difference variable was important in responses to threat communication, but level of threat (a communication factor), was not. Witte and Morrison (1995) also found that sensation seeking was related to danger control responses (practice safe sex and monogamy). Nabi (2019) supports the proposition that feelings of hope in response to fear appeals contribute to a successful persuasion, while Hine & Gifford (1991) have assessed seven individual differences such as political orientation, political extremism, optimism about future levels of water pollution, involvement in past activism, gender, and perceived threats to oneself and to the environment from

environmental hazards. Millar and Houska (2007) researched the effect of masculinity on health behaviours and found a positive effect of masculinity on intentions and attitudes towards the message. However, threat perceptions and efficacy perceptions were not measured which does not allow to evaluate their mediating effects. Furthermore, the individual difference of need for cognition was found to be related to danger control responses, but not to fear control responses (Ruiter et al., 2004). Only recipients with high scores in need for cognition adopted the recommended danger control response after being exposed to a threatening message. McKay et al. (2004) found that health status and age in the context of cardiovascular diseases had an effect on perception of threat and efficacy, but only in groups with high efficacy. The individual difference of trait anxiety was analysed by Witte and Morrison (2000) and in the meta-analysis by Witte and Allen (2000). Both studies concluded that trait anxiety was unrelated to persuasive outcomes, showing no influence on the processing of fear appeals.

In summary, the EPPM postulates 12 theoretical proposition and none of them has received strong support so far. Mostly, support has been mixed and some propositions have been rarely tested. The next chapter will give an overview of meta-analyses findings in threat appeals research.

## **2.12 Meta-analyses on threat appeals**

The high number of postulated approaches and the predominantly inconsistent empirical findings suggest that fear appeals involve a range of cognitive and emotional processes in the recipients, whose complex interactions are only understood rudimentary. Despite substantial differences in some areas many approaches agree that fear appeals can, under different conditions, have an effect, but negative reactions also must be expected. The emotion of fear is in many models rather associated with negative effects on the recipients and is mostly associated as an indirect influencing factor. This paves the way for the search of the decisive mediators and moderators. A high degree of self-efficacy (ability to minimize or avoid the communicated threat) is often postulated as essential for a success in persuasion. The EPPM is currently regarded as the most popular fear appeal approach. This thesis will therefore also focus on the EPPM as basis for the empirical research.

After almost seven decades of fear appeal research in several scientific disciplines the relevant state of the research is not only comprehensive and methodologically inconsistent, but also contradictory. Fear appeals have been extensively tested, and several meta-analyses have been conducted. These studies on fear appeals focus on the four main variables: severity and susceptibility (usually combined as threat) and response efficacy and self-efficacy (usually combined as efficacy). The general fear appeal literature from the 1960s–1990s has been widely reviewed, with many papers providing conceptual and methodological analyses of this field of research (e.g., Boster & Mongeau, 1984; LaTour & Rotfeld, 1997; Milne et al., 2000; Rotfeld, 1988; Soames Job, 1988; Strong & Dubas, 1993; Sutton, 1982; Witte & Allen, 2000). Several more meta-analyses then covered the body of research from the 1990s-2010s (e.g., Albarracín et al., 2005; Carey et al., 2013; Carpenter, 2010; de Hoog et al., 2007; Earl & Albarracín, 2007; Peters et al., 2013; N Rhodes et al., 2013; Ruiter et al., 2014; Tannenbaum et al., 2015)

The empirical findings are presented in table 7 below. In view of the multitude of existing investigations and contradictory nature of the individual findings, the discussion of the effect of fear appeals is based on existing meta-analyses. Similar to the individual studies they come up with inconsistent results, but the similarities predominate here. They differ in terms of the studies included and statistical tests, which is why they can be of different relevance depending on the specific question (e.g., depending on the area of threat). Out of the 14 meta-analyses presented in table 7 below, eleven provide evidence for a positive effect of fear appeals on danger control responses and nine see fear appeals as a useful tool in order to motivate behaviour change. On the contrary, five meta-analyses do not recommend the use of fear appeals, especially because of negative effects that can occur when threat levels are too severe or simply because no positive effect on behaviour was recorded.

**Table 7: Meta-Analyses on Fear Appeals and Main Findings**

Meta Analysis	Main Findings	N <sup>1</sup>	Danger control response <sup>2</sup>	Usability <sup>3</sup>
Sutton (1982)	<ul style="list-style-type: none"> <li>Increases in fear are consistently associated with increases in acceptance (intentions and behaviour)</li> <li>Increasing the efficacy of the recommended action strengthens intentions to adopt that action.</li> <li>Curvilinear hypothesis (inverted-U-shaped pattern in the response variable) received only poor support.</li> </ul>	35	Yes	Yes, but fear appeals do not create strong manipulations.
Boster & Mongeau (1984) Mongeau (1998);	<ul style="list-style-type: none"> <li>"Fear appeal manipulations produce moderate associations between reported fear and strength of fear appeal. Thus, researchers have not used strong fear appeal manipulations.</li> <li>Fear appeal manipulations produce modest but reliable relationships between the strength of a fear appeal and attitude change and between the strength of a fear appeal and behaviour change."</li> </ul>	40	Yes, modest	Yes, but fear appeals do not create strong manipulations.
Harrison et al. (1992)	<ul style="list-style-type: none"> <li>Positive relationships between HBM dimensions (Susceptibility, Severity, Benefits and Costs) and health behaviours.</li> </ul>	16	Yes	Yes
Witte & Allen (2000)	<ul style="list-style-type: none"> <li>The stronger the fear appeal, the greater the fear aroused, the greater the severity of the threat perceived, and the greater the susceptibility to the threat perceived. Thus, the stronger the fear aroused by a fear appeal, the more persuasive it is.</li> <li>Fear has a relatively weak but reliable effect on attitudes, intentions, and behaviours.</li> <li>Message features (severity, susceptibility, self-efficacy, response efficacy) in fear appeals have moderately low but reliable effects on attitudes, intentions, and behaviours.</li> <li>The stronger the efficacy message, the stronger the perceptions of response efficacy and self-efficacy. Also, the stronger the response efficacy and self-efficacy in a message, the stronger the attitudes, intentions, and behaviours toward the recommended response.</li> <li>Severity manipulations in fear appeals produce the strongest effects on perceptions. Also, the stronger the severity and susceptibility in the message, the more attitude, intention, and behaviour changes.</li> <li>No evidence was found for any kind of curvilinear relationship between fear appeals and outcomes.</li> </ul>	98	Yes, weak	Yes, if efficacy is high

**Table 7 continued: Meta-Analyses on Fear Appeals and Main Findings**

Meta Analysis	Main Findings	N <sup>1</sup>	Danger control response <sup>2</sup>	Usability <sup>3</sup>
Witte & Allen (2000) continued	<ul style="list-style-type: none"> <li>Higher levels of both threat and efficacy, in their various combinations, lead to more persuasion.</li> <li>As the fear appeal increases in strength, so do defensive responses. In addition, the weaker the efficacy message, the greater the fear control response.</li> </ul>	98	Yes, weak	Yes, if efficacy is high
Milne et al. (2000)	<ul style="list-style-type: none"> <li>All message variables were found to be significantly associated with intention. Severity had the weakest association, self-efficacy the strongest.</li> <li>Concurrent and subsequent behaviour was best predicted by intention. Associations with message variables were small (susceptibility, severity) to moderate (self-efficacy, response efficacy).</li> <li>Threat appraisal variables are poor predictors of intention and behaviour, and self-efficacy is a major factor in determining both motivation and health-protective behaviour.</li> </ul>	29	Yes	Yes, if efficacy is high
Floyed et al. (2000)	<ul style="list-style-type: none"> <li>Increases in threat severity, threat vulnerability, response efficacy, and self-efficacy facilitated adaptive intentions or behaviours.</li> <li>Meta-analysis consistently found main effects of threat and efficacy, implying that higher threat simply results in behaviour change.</li> </ul>	65	Yes	Yes
Albarracin et al. (2005)	<ul style="list-style-type: none"> <li>No positive effects of fear appeals on attitudes and behaviour.</li> <li>No interactions between fear appeals and strategies that can increase threat coping yielded the predicted positive effect of threat appraisal plus coping.</li> </ul>	194	No	No
Earl & Albarracin (2007)	<ul style="list-style-type: none"> <li>Fear appeals have negative effects on the knowledge about the correct use of condoms in the short-term and long-term.</li> <li>Fear appeals increased perceptions of risk at the immediate follow-up but decreased knowledge and condom use.</li> <li>Inducing fear is not an effective way to promote HIV-relevant learning or condom use either immediately following the intervention or later on.</li> </ul>	76	No	No

**Table 7 continued: Meta-Analyses on Fear Appeals and Main Findings**

Meta Analysis	Main Findings	N <sup>1</sup>	Danger control response <sup>2</sup>	Usability <sup>3</sup>
de Hoog et al. (2007)	<ul style="list-style-type: none"> <li>Severity had a positive effect on attitudes, whereas susceptibility did not.</li> <li>Both severity and susceptibility had positive effects on intentions, behaviours, perceived fear and minimizing thoughts about the fear appeal.</li> <li>Extremely 'fear-arousing' messages are no more effective than messages that simply state the negative consequences of a certain behaviour.</li> <li>For fear appeals to be effective, it is not necessary to make the communication as gruesome as possible.</li> <li>It is important for fear appeals to make sure people will feel susceptible to the portrayed risk.</li> </ul>	105	Yes	Yes, if severity is moderate
Carpenter (2010)	<ul style="list-style-type: none"> <li>The relationship between perceived severity and behaviour was low and between susceptibility beliefs and behaviour was near zero.</li> <li>Effects of the perceptions of benefits and barriers of performing the outcome behaviour were positive.</li> </ul>	18	Yes, low	Yes, if efficacy is high
Peters et al. (2013)	<ul style="list-style-type: none"> <li>Threat and efficacy interact in their effects on behaviour, such that threat only has an effect if efficacy is high, and efficacy only has an effect if threat is high.</li> <li>Fear appeals are only effective if self-efficacy is high.</li> <li>Recommendation to avoid threatening communication; Meta-analyses indicate that using threatening communication is at best ineffective, and at worst causes health-defeating behaviour, unless the intervention contains an element that effectively enhances response efficacy and self-efficacy.</li> </ul>	13	Yes, if efficacy is high	No, only if efficacy is high
Carey et al. (2013)	<ul style="list-style-type: none"> <li>No positive effects of fear appeals on attitudes and behaviour</li> <li>Threat appeals can lead to increased fear arousal, but do not appear to have the desired impact on driving behaviour.</li> </ul>	13	No	No



**Table 7 continued: Meta-Analyses on Fear Appeals and Main Findings**

Meta Analysis	Main Findings	N <sup>1</sup>	Danger control response <sup>2</sup>	Usability <sup>3</sup>
Rhodes et al. (2013)	<ul style="list-style-type: none"> <li>• Fear appeals with low and high threat levels have the same persuasion power.</li> <li>• Higher efficacy was associated with stronger persuasive effects for high fear messages, but the level of fear was not related to stronger persuasive effects.</li> <li>• When death threat was explicit, fear appeals with high efficacy resulted in greater persuasion.</li> <li>• However, implicit messages are associated with a boomerang effect under conditions of low efficacy, indicating defensive processing.</li> </ul>	80	Yes, if efficacy is high	Yes, if efficacy is high
Ruiter et al. (2014)	<ul style="list-style-type: none"> <li>• Severity information is most used in fear appeals, but the least persuasive component.</li> <li>• Increasing efficacy (response efficacy and self-efficacy) is more important for danger control responses.</li> <li>• Information about the severity of negative consequences may generate defensive responses.</li> <li>• Choice of fear appeals is often a poor choice</li> </ul>	6 (meta-analyses)	Yes	No, alternative methods should be used

1: N = number of studies included in the meta-analysis

2: Influence of fear appeals on danger control responses

3: Recommendation to use fear appeals to influence behaviour

Various meta analyses demonstrated that higher levels of perceived fear generate greater persuasion (e.g., Boster & Mongeau, 1984; Mongeau, 1998; Sutton, 1982; Witte & Allen, 2000). Also, seven separate meta-analyses (Boster & Mongeau, 1984; Carpenter, 2010; Milne et al., 2000; Mongeau, 1998; Peters et al., 2013; Sutton, 1982; Witte & Allen, 2000) all concluded that fear appeals used together with high efficacy messages are more effective at generating positive changes in attitudes, intentions, and behaviours than fear appeal messages alone.

In a review of the Protection Motivation Theory and its application to health-related behaviour, Milne et al. (2000) assessed by a vote-count procedure and by meta-analysis a total of 29 studies. They describe the separate effects of coping-appraisal variables (severity, susceptibility, response and self-efficacy, response costs, and

fear [severity and susceptibility combined]) on intention, concurrent and subsequent behaviour. In the meta-analysis on intention (total of 12 studies), all variables were found to be significantly associated with intention. Severity and susceptibility had the weakest association with intention, whereas self-efficacy was most often significantly associated with intention. The result of the analysis of PMT variables of the vote-count (total of 21 studies) showed that self-efficacy was found most often significantly associated with intention, whereas severity and susceptibility were least frequently associated with intention. In the meta-analysis on concurrent behaviour (total of 8 studies), concurrent behaviour was best predicted by intention, followed by moderate associations with response efficacy, self-efficacy, and response costs. The associations with severity and susceptibility were small. In the vote-count (total of 12 studies), concurrent behaviour was again best predicted by intention, followed by self-efficacy, response costs and fear. In the meta-analysis on subsequent behaviour (total of 5 studies), subsequent behaviour was also best predicted by intention, followed by self-efficacy and response costs. The association with susceptibility was small and that with severity was not significant. In the vote-count (total of 8 studies), subsequent behaviour was again best predicted by intention, followed by response costs and self-efficacy. The associations with severity and susceptibility were small and that with fear was not significant. Milne et al. (2000) concluded that threat appraisal variables are poor predictors of intention and behaviour, whereas self-efficacy is a major factor in determining both motivation and health-protective behaviour. Moreover, they concluded that coping appraisal variables have stronger associations with intention and behaviours than threat appraisal variables, which was also found by Floyd et al. (2000).

Floyd et al. (2000) included 65 studies on PMT in their meta-analysis, based on approximately 30.000 samples and representing over 20 health issues. In general, they described increases in threat severity, threat vulnerability (i.e., susceptibility), response efficacy, and self-efficacy facilitated adaptive intentions or behaviours. Conversely, decreases in maladaptive response rewards (i.e., implicit, and explicit benefits associated with continuing the risky behaviour) and adaptive response costs increased adaptive intentions or behaviours. Floyd et al. (2000) conclude that the meta-analysis consistently found main effects of threat and efficacy, implying that

higher threat simply results in behaviour change. They also state that coping appraisal variables have more impact than threat appraisal variables.

The meta-analysis of Witte and Allen (2000) updated and expanded on the results of prior meta-analyses by assessing the relative fit of the data to each fear appeal model and examining the influence of fear appeals on both unintended (i.e., defensive avoidance, reactance) and intended (i.e., attitudes, intentions, behaviours) outcomes. The results suggest that strong fear appeals produce high levels of perceived severity and susceptibility and are more persuasive than low or weak fear appeals. In addition, they found that fear appeals motivate adaptive danger control actions such as message acceptance and maladaptive fear control actions such as defensive avoidance or reactance. It is concluded that strong fear appeals, and high-efficacy messages produce the greatest behaviour change, whereas strong fear appeals with low-efficacy messages produce the greatest levels of defensive responses. Moreover, they found that higher perceptions of fear have a relatively weak but reliable effect on increases in attitudes, intentions, and behaviours, which was also true for the effect of message features in fear appeals (severity, susceptibility, self-efficacy, response efficacy). Severity manipulations in fear appeals produced the strongest effects on perceptions. Lastly, they found that as the fear appeal increases in strength, so do defensive responses (i.e., fear control responses). In addition, they found that the weaker the efficacy message, the greater the fear control response (i.e., negative relation between fear control responses and persuasion). The scholars concluded that effective fear appeals need to depict a significant and relevant threat, and they must outline effective responses that appear easy to accomplish (Witte & Allen, 2000, p. 604).

De Hoog et al. (2007) conducted a meta-analysis to examine whether the assumptions of the stage model held up empirically. They evaluated their hypothesis that defensive reactions may in fact contribute to the effectiveness of fear appeals. They evaluated 105 studies in their meta-analysis in which severity and susceptibility were manipulated independently and in which at least one of three dependent variables was measured: attitudes, intentions and/or behaviours. Severity had a positive effect on attitudes, whereas susceptibility did not. Both severity and susceptibility had positive effects on intentions, behaviours, perceived fear and

minimizing thoughts about the fear appeal. Therefore, regarding the impact of severity and argument quality on attitudes results were consistent with the stage model's assumptions. Susceptibility had a positive effect on positive thoughts about the recommendation. There was no difference in effect between severity manipulations with written text or with using vivid scary images. De Hoog et al. (2007) conclude that for fear appeals to be effective, it is not necessary to make the communication as gruesome as possible and it is important for fear appeals to make sure people will feel susceptible to the portrayed risk.

Earl and Albarracin (2007) examined the long-term effects of both fear-inducing arguments and HIV counselling and testing on knowledge and condom use. Analysing data from 150 treatment groups and 39 control groups, they included 76 studies promoting condom use that had a pre-test, post-test and follow-up. The scholars found that fear appeals have negative effects on the knowledge about the correct use of condoms in the short-term and long-term, with a stronger negative effect at follow-up. Interestingly, fear appeals increased perceptions of risk at the immediate follow-up but decreased knowledge and condom use. All these effects were stronger in populations with high HIV incidence. Earl and Albarracin (2007) concluded that generating fear is not an effective way to promote HIV-relevant learning or condom use either immediately following the intervention or in a follow-up.

According to the above mentioned meta-analyses, Ruiter et al. (2014) state that the elements of fear appeals most likely to motivate danger control responses are: (a) empowering self-efficacy (i.e., proposing that the person can successfully perform the recommended response); (b) strengthening response efficacy (i.e., proposing that the recommended action will help to avoid the danger); (c) creating awareness of susceptibility (i.e., proposing that the threat is relevant to the recipient); and not, (d) messages suggesting in an emotional way that the threat is severe. Importantly, the reported meta-analyses consistently found main effects of threat and efficacy, implying that higher threat simply results in behaviour change.

A meta-analysis by Peters et al. (2013) provided further support for the role of perceived efficacy in moderating the effectiveness of fear appeals. The scholars only included studies that (1) manipulated threat and efficacy independently, and (2)

measured behaviour as an outcome, which led to only 13 studies that were included in the meta-analysis. The objective was to provide a robust answer to the question whether fear appeal theory holds. Meta-analysis of the studies that satisfied the inclusion criteria showed a significant interaction between threat and efficacy, such that threat only had an effect under high efficacy, and efficacy only had an effect under high threat. Therefore, Peters et al.(2013) conclude that the postulated interaction of threat and self-efficacy was empirically proven and prior inconsistent results regarding the effectiveness of threatening communication can likely be attributed to flawed methodology. For the researchers the results clearly indicate that fear appeals are only effective if self-efficacy is high and threatening communication is at best ineffective, and at worst causes health-defeating behaviour, unless the fear appeal contains an element that effectively enhances response efficacy and self-efficacy. Avoiding threatening communication is recommended.

Ruiter et al. (2014) reviewed the current state of empirical evidence on the effectiveness of fear appeals by analysing the findings of six meta-analytic studies. The findings indicate that information about severity of a threat is most used in fear appeals, but in fact the least persuasive component. To generate danger control responses, it is much more important to increase efficacy (response efficacy and self-efficacy). It is concluded that the choice of fear appeals is most likely a poor choice in light of sometimes counterproductive effects of fear arousal, such as the information about the severity of negative consequences may generate defensive responses. Consequently, the scholars recommend to rather switch to more effective methods of behaviour change.

To sum up, the meta-analyses show that fear appeals can produce the hoped-for positive effects on a low to moderate level. This seems to be especially the case when a high level of self-efficacy expectation is communicated or existent. The findings also suggest that fear appeals are generally not superior to other message components and that with increasing threat the risk of problematic defensive reactions also increases. Comparatively inconsistent findings appear concerning the question, which third party variables influence the effect of fear appeals as moderators or mediators. Meta-analyses therefore provide supporters and opponents of fear appeals empirical evidence for their respective views.

## **2.13 Identification of gaps in the literature**

Fear appeal research has dominated marketing studies in the past (Witte & Allen, 2000) but appears to be neglected in recent times (Addo et al., 2020). Threat appeals have been used for decades in advertising to influence attitudes and behaviours of individuals (Bennett, 1996; Faseur et al., 2015). They are defined as “persuasive messages designed to scare people by describing the terrible things that will happen to them if they do not do what the message recommends” (Witte, 1992, p. 329). Threat appeals are a message strategy aiming to provoke a mental reaction by creating feelings of fear among the recipients of the message to stimulate a wished-for behaviour or reduce unhealthy behaviour, like smoking or speeding (Rotfeld, 1988). As such, the studies primarily focus on health communication, while threat appeals in a more commercial surrounding (e.g. for insurances) have received limited academic attention (Hastings et al., 2004; J. Tanner, 2006). This thesis is focused on a commercial setting of selling mortgage insurance to customers to gain practical insights from a theoretical threat appeal model and its comprising components.

Commercial marketers are constantly searching for ways to attract attention and push enormous amounts of advertisements towards consumers (B.-K. Lee & Lee, 2007). This can be done by using threat appeals by emphasising a certain risk or the disadvantages of not using a product or service (Sternthal & Craig, 1974; Vincent & Dubinsky, 2004). According to Dickinson & Holmes (2008) two major threat types can be distinguished: social threats and physical threats. Social threat appeals are concerned with the social rejection resulting from not using the product, while physical threat appeals refer to the physical consequences of not enacting on the promoted behaviours (Laroche et al., 2001; Schoenbachler & Whittler, 1996). It can be assumed that physical threats have been used more regularly as injuries, accidents, and death are most likely more persuasive than social rejection. Although previous studies have put their focus on the effectiveness of physical threat appeals, recent studies show that social threat appeals can lead to more adaptive coping responses and, consequently, to higher message effectiveness (e.g., Dickinson and Holmes, 2008). Physical threats, in the form of images or TV advertisements, have been researched in various contexts including dental hygiene (Janis & Feshbach, 1953), cigarette smoking (e.g. Insko et al., 1965; Kees et al., 2010; Leventhal & Niles,

1964), driving practices (Leventhal & Niles, 1964) and drug abuse (Schoenbachler & Whittler, 1996), but none for threat appeals within the sales process of mortgage protection insurance (see comprehensive overview in table 8 below). Physical threats are communicated in the context of the research subject, with the overarching attempt to integrate physical danger into the threat appeal (Higbee, 1969). To create physical threats, images of young people lying on a hospital barrow, amputation of limbs and resultant death have been previously used to create fear around drug abuse (Schoenbachler & Whittler, 1996). In the context of smoking, pictures of people coughing or lying dead in a hospital bed (Dickinson & Holmes, 2008) and cancerous lungs (Insko et al., 1965) have been already used. Researchers have applied threat communications always in the context of the topic of interest showcasing the main physical threats that can arise from engaging in a particular behaviour (i.e., taking drugs or smoking). Most recently also COVID-19 was added to the fear appeal research (Addo et al., 2020).

**Table 8:** *Selected Fear-Related Research Topics and Findings*

Health Topic	Author, year	Major finding
AIDS	(Bennett, 1996)	Low fear best for high self-esteem subjects but high fear best for low-self-esteem subjects.
AIDS	(Blumberg, 2000)	When people are motivated to defend against a threatening message, the best intervention may be an attention-capturing and culturally sensitive intervention.
AIDS	(R. P. Hill, 1988)	Moderate fear appeals were better than low or high fear appeals
AIDS	(Murray-Johnson et al., 2001)	Fear appeals should address cultural orientation (i.e., individualist versus collectivist orientation) to achieve maximum effectiveness.
AIDS	(Witte et al., 2002)	Perceived susceptibility, self-efficacy, and response efficacy, were the only significant predictors of condom use.
AIDS	(Witte, 1994)	High fear most effective in attitude change.
Alcohol use	(Agrawal & Duhachek, 2010)	Research suggests that guilt and shame appeals should be used cautiously.
Alcohol use	(Brown & West, 2015)	For the high-distress message, greater persuasion was observed for the recommendation-threat than the threat-recommendation sequence.
Anti-Drug	(Allahverdi-pour et al., 2007)	Including self-control as a complementary factor within the EPPM could be effective for designing primary drug abuse prevention programs and predicting pre drug abuse related behaviours.
Anti-Drug	(Feingold & Knapp, 1977)	Explicit conclusion more effective. Boomerang effect - high levels of threat produced favourable attitude toward drug use
Anti-Drug	(Schoenbachler & Whittler, 1996)	Social threat communications were more persuasive than physical threat communications.
Anti-Drug	(Smart & Fejer, 1974)	Positive relationship between level of threat and attitude, intent when non-existent drug was subject. No significant effects when the type of drug was real (marijuana)
Anti-Smoking	(Beck & Davis, 1978)	No relationship between topic relevance, level of threat and attitude change. Positive relationship between level of threat and attitude change.
Anti-Smoking	(Borland et al., 2009)	Forgoing cigarettes as a result of noticing warnings and quit-related cognitive reactions to warnings are consistent prospective predictors of making quit attempts.
Anti-Smoking	(Dickinson & Holmes, 2008)	Social threats produce the most adaptive coping response vs physical threats, Physical threats produce the strongest emotional response vs social threats.



Health Topic	Author, year	Major finding
Anti-Smoking	(Halkjelsvik & Rise, 2015)	There were no benefits of using disgust elements when level of fear was held constant.
Anti-Smoking	(Insko et al., 1965)	Negative relationship between fear and persuasion
Anti-Smoking	(Janis & Terwilliger, 1962)	Negative relationship between fear and persuasion High level of threat produced more defensive reactions
Anti-Smoking	(Kees et al., 2010)	Increasing the graphic depiction of the pictorial warnings will result in stronger intentions to quit smoking.
Anti-Smoking	(Kessels et al., 2010)	Daily smokers attend less to high-threat information about smoking (e.g., picture of a diseased lung) than to low-threat smoking information.
Anti-Smoking	(Laroche et al., 2001)	Physical threat ads had a much greater effect on the Anglo subjects than on the Chinese.
Anti-Smoking	(Leshner et al., 2011)	Both fear and disgust content in anti-tobacco television ads have significant effects on resources allocated to encoding the messages, on recognition memory, and on emotional responses.
Anti-Smoking	(Leventhal & Niles, 1964)	High fear was better in persuading people to stop smoking.
Anti-Smoking	(Leventhal & Watts, 1966)	Negative relationship between fear and persuasion.
Anti-Smoking	(Leventhal et al., 1967)	High fear resulted in greater intentions to quit but no change in actual behaviour. Level of threat positively related to attitude. Recommendations influenced actual behaviour.
Anti-Smoking	(Kessels et al., 2014)	Neuroscientific support for the hypothesis that threatening health information causes more avoidance responses among those for whom the health threat is self-relevant.
Anti-Smoking	(Niles, 1964)	Negative relationship between fear and persuasion.
Anti-Smoking	(Pechmann et al., 2003)	Social risk severity and vulnerability are distinguishable from their health risk counterparts and social risk severity perceptions are especially predictive of adolescents' behavioural intentions.
Anti-Smoking	(Quinn et al., 1992)	Suggest that, as too much fear can result in dysfunctional anxiety, moderate levels of fear perform better, producing an inverted-U-shaped model
Anti-Smoking	(Shen & Coles, 2015)	As long as the high levels of fear are reduced by efficacy information or positively valenced information (e.g., humor), psychological reactance can be mitigated and/or avoided.
Anti-Smoking	(Snider, 1962)	Negative relationship between fear and persuasion.

Health Topic	Author, year	Major finding
Anti-Smoking	(Thompson et al., 2009)	More attention needs to be paid to different strategies to attempt to address the undeniable health implications for those who continue to smoke.
Anti-Smoking / Cervical cancer	(Hall et al., 2006)	Informing women of the link between smoking and cervical cancer increases their intentions to stop smoking.
Anti-Smoking / Venereal disease / Speeding	(R. W. Rogers & Mewborn, 1976)	Effect of fear on behavioural intent mediated by severity of threat.
Atomic bomb testing	(Haefner, 1956)	Positive relationship between fear and persuasion.
Blood donation	(Powell & Miller, 1967)	Social approval and disapproval messages more effective than those with no consequences.
Cancer (Breast Cancer)	(R. B. Anderson, 2000)	Self-efficacy moderates the effect of fear on attitude and behaviour change.
Cancer (Lung cancer)	(R. W. Rogers & Thistlethwaite, 1970)	High levels of threat more persuasive when high reassurance present. Low levels more effective with no reassurance.
Cancer (Skin cancer)	(McMath & Prentice-Dunn, 2005)	High threat-appraisal information is the most powerful predictor of intentions to take precautionary measures against skin cancer.
Cancer (Skin cancer)	(Mukherjee & Dubé, 2012)	Increasing the level of fear tension arousal decreases persuasion when humor is absent but increases persuasion when humor is present.
Cancer (Skin cancer)	(Vincent & Dubinsky, 2005)	Compared to a low level of threat, a high level induces greater fear and leads to a higher likelihood of purchasing the advertised product.
Cancer (Testicular cancer)	(Eppright et al., 2002)	Without adaptive coping response information, high threat information and fear cause avoidance and other maladaptive responses.
COVID-19 equipment	(Addo et al., 2020)	Fear appeal is associated with the sharp dynamics in the online purchase as related to the COVID-19.
Dental hygiene	(Baron et al., 1994)	High-fear subjects showed evidence of more careful message processing than low-fear patients.
Dental hygiene	(Evans, 1970)	Physical threat messages more effective for intent and self-reported behaviour. Social approval message most effective when actual behaviour monitored.
Dental hygiene	(Goldstein, 1959)	Negative relationship between fear and persuasion.
Dental hygiene	(Haefner, 1956)	Negative relationship between fear and persuasion.

Health Topic	Author, year	Major finding
Dental hygiene	(Janis & Feshbach, 1953)	Negative relationship between fear and persuasion. High threat levels aroused more emotion. Moderate threat produced greatest change in intent and behaviour.
Dental hygiene	(Leventhal et al., 1966)	Negative relationship between fear and persuasion.
Dental hygiene	(R. P. Singer, 1965)	Negative relationship between fear and persuasion.
Dental hygiene (amid COVID-19)	(Shirahmadi et al., 2020)	When perceived efficacy of the recommended health behaviours overcame the perceived threat, the likelihood of preventive health behaviours regarding COVID-19 increased
Deodorant advertisement	(Faseur et al., 2015)	For high self-esteem individuals fear evoked by a social threat is effective only when perceived self-efficacy is increased (in line with the EPPM).
Electromagnetic fields (unknown risk)	(McMahan et al., 1998)	Effective risk messages for unknown risks should promote high levels of perceived threat or fear and at the same time promote high levels of response and self-efficacy.
Fallout shelters	(Hewgill & Miller, 1965)	Positive relationship between fear and persuasion High levels of threat most persuasive. No interaction between source credibility and level of threat.
Fallout shelters	(G. R. Miller & Hewgill, 1966)	Positive relationship between fear and persuasion.
Fallout shelters	(Powell, 1965)	Threat messages directed toward family or individual more effective than those aimed at impersonal referent.
Health maintenance organisation	(Burnett & Oliver, 1979)	High fear caused greater attitude change but only in two out of four segments.
Health maintenance organisation	(Burnett & Wilkes, 1980)	High levels of threat more persuasive with clusters preferring high threat. Moderate levels more effective with remaining segments.
Information Security / Sanctions	(Johnston et al., 2015)	Informal sanction rhetoric effectively enhances conventional fear appeals, thus providing a significant positive influence on compliance intentions.
Roundworms	(Chu, 1966)	Positive relationship between fear and persuasion Magnitude, likelihood, and imminency of loss influenced fear arousal and development of resistance to messages.
Seatbelt use	(Berkowitz & Cottingham, 1960)	Positive relationship between fear and persuasion. High levels of threat more effective if topic relevance minimal. Low levels effective if topic relevance high.
Sexual	(Witte & Morrison, 1985)	Low fear most effective in changing attitude towards condom

Health Topic	Author, year	Major finding
behaviour	1995)	use and monogamy.
Sexually transmitted diseases (Genital Warts)	(Witte et al., 1998)	Fear appeals can be powerful persuasive devices if they induce strong perceptions of threat and fear and if they induce strong perceptions of efficacy regarding a recommended response.
Sexually transmitted diseases	(J. F. Tanner et al., 1991)	Higher levels of threat produced greater levels of fear arousal.
Speeding	(Chamberlain, 2015)	Individual message characteristics (i.e., frame, direction, graphicness) can have impacts on individual cognitive and emotional responses.
Speeding	(I. Lewis et al., 2013)	Irrespective of emotional appeal type, high levels of threat and efficacy enhanced message outcomes via maximizing acceptance and minimizing rejection.
Speeding	(Nancy Rhodes, 2017)	Messages with medium message sensation value (MSV) resulted in intentions to drive more slowly than messages with low or high MSV.
Speeding	(Tay & Watson, 2002)	The level of fear arousal could be lowered without a significant effect on the message acceptance rates but could result in a lower rate of message rejection.
Speeding / Alcohol use	(King & Reid, 1990)	High levels of threat produced more counterarguments and fear arousal
Stress-related health problems	(Das et al., 2003)	Participants who felt vulnerable to the health threat were more persuaded, experienced more negative emotions, and had more favorable cognitive responses.
Tuberculosis	(Dewolfe & Governale, 1964)	Negative relationship between fear and persuasion Low threat levels more effective when topic relevance high.
Tuberculosis	(Rosenblatt, 1962)	Negative relationship between fear and persuasion.
Vaccination (Flu shot)	(Wauters, 2013)	Perceived severity, self and response efficacy have a positive effect on the behavioural intention to get a flu shot. This intention is also influenced by the evoked feelings of fear.
Vaccination (Tetanus)	(Dabbs & Leventhal, 1966)	Positive relationship between fear and persuasion Behaviour and intent a function of level of threat. Attitude a function of specificity of recommendation.
Vaccination (Tetanus)	(Kornzweig, 1968)	Positive relationship between fear and persuasion
Vaccination (Tetanus)	(Leventhal et al., 1965)	Positive relationship between level of threat and attitude. Actual behaviour a function of specificity of coping suggestion.

Health Topic	Author, year	Major finding
Vaccination (Tetanus)	(Leventhal et al., 1965)	The arousal of fear resulted in more favourable attitudes toward inoculation and the expression of stronger intentions to get shots.
Vaccination (Tetanus)	(Leventhal et al., 1966)	Positive relationship between fear and persuasion.
Vaccination (Tetanus)	(Ordonana et al., 2009)	Following of behavioural recommendation was higher among subjects who were exposed to the high threat / high efficacy stimulus, those who reported high perceived threat.
Violent crime	(Henthorne et al., 1993)	Results lend credibility to the idea of a "threshold" separating a two-part continuum of increasing tension.
Window protection device	(McDaniel & Zeithaml, 1984)	Positive association between fear and purchase intentions.

Nevertheless, due to various gaps and lack of clarity in the literature, the academic insights into the most effective use of threat appeals are not reliable or have led to equivocal results. Gaps include concerns about the effectiveness of using disturbing pictures in ads (Brown & West, 2015), how perceived threat and efficacy interact (Peters et al., 2013), and questions about the science used when implementing imagery warnings on cigarette packaging (Ruiter et al., 2014). Some scholars still see “significant gaps in understanding how individuals process such messages” (Leshner et al., 2011, p. 77) and that “empirical assessments of the effectiveness of fear appeals have yielded mixed results” (Morales et al., 2012, p. 383). Moreover, for example Peters et al. (2013, p. S8) state “Despite decades of research, consensus regarding the dynamics of fear appeals remains elusive”.

The concepts of fear (as a response) and threat (as a stimulus) have a tendency within the fear literature of being conflated (Donovan & Henley, 1997; LaTour & Rotfeld, 1997). The failure to define how stimulus materials might arouse fear, and unclear specifications about what low, moderate, and high levels of fear really are, is widespread (Hastings et al., 2004; Moore & Harris, 1996). Another issue is that studies employ limited or weak measures of effectiveness, as consumers are simply questioned how a fear message is believed to be effective (Biener & Taylor, 2002), while actual behaviour and self-reported behaviour does not correlate well (Austin et al., 1999). Even though research has found mixed and equivocal results, and

scholars proposing the use of alternative message strategies instead of threat appeals (e.g. Hastings et al., 2004), this is not a justification to move away from research about scaring messages. As stated, given the large body of literature from various fields and the identified confusion in literature, it is important that further studies are conducted to analyse the effectiveness of threat appeals (Chamberlain, 2015). Therefore, whilst suggesting other methods of communication may be more effective (Ruiter et al., 2014), researcher should further put emphasis on the understanding of the effects of threat appeals.

The state of research in the threat appeals field has been evaluated by Ruiter et al (2014) and the scholars identified key problems with current knowledge based on the analysed empirical findings. The authors summarised that there is a need for more experimental tests of fear appeal theory, but at the same time the findings reported in the meta-analysis are robust in terms of effect size and replication strength (Ruiter et al., 2014). It was also concluded from the review that the information provided by a threatening advertisement regarding response effectiveness and self-efficacy (how to cope with the identified threat) is more important than the presented fear-arousing threat itself, or the perception of risk from that threat.

This opens the question of analysing more individual personality factors that might influence the coping process. Weaver and Schwarz (2018, p. 1684) state that “individual differences variables make certain psychological processes more or less likely, and it is the process level understanding (in the context of appropriate theoretical formulations) that will allow researchers greater abilities to predict attitudes and behaviors”. Next to the content of the threat appeal, several studies have confirmed external or personal influences, such as the credibility of the communicator, prior experiences of the recipient, or the characteristics of the medium, that is transmitting the message (Gelbrich & Schröder, 2008). Also, individual differences such as cultural values, authoritarianism, social context, self-esteem, cognitive avoidance, or fearfulness are proposed to have an effect on behaviour (Arthur & Quester, 2004; Higbee, 1969; Nestler & Egloff, 2012; Neurauter, 2005; J. Tanner, 2006). Witte (2000, p. 601) states the outcome of a meta-analysis as “it appears not to matter whether individuals are anxious or repressors by nature; their response to fear appeals is not affected by their level of trait anxiety”. Schoenbacher and Whittler (1996) for example have added ‘sensation seeking’, which is quite

similar to risk-taking, to the threat message model as an individual difference of recipients. The study concluded that this individual difference variable was important in responses to threat communication, but level of threat (a communication factor), was not. Risk-taking is one of the main individual differences to be assessed within this thesis, as insurance and diffusion of risk are closely related (Ranyard & McHugh, 2012a) and very relevant for the research subject.

Nabi (2019) supports the proposition that feelings of hope in response to fear appeals contribute to a successful persuasion, while Hine & Gifford (1991) have assessed seven individual differences such as political orientation, political extremism, optimism about future levels of water pollution, involvement in past activism, gender, and perceived threats to oneself and to the environment from environmental hazards.

Next to risk-taking, this thesis is especially focused on the concept of optimism which is an interesting aspect of individual difference, as optimistic people engage more actively in health promoting behaviour (McMath & Prentice-Dunn, 2005) and insurance and optimism are, arguably, connected. A great amount of studies have been conducted on optimism, which is described by the belief that events a life will have positive outcomes (Scheier & Carver, 1992). Optimistic individuals evaluate threatening health situations with an adaptive and problem-focused coping mechanism and are less likely to move away from the adaptive task (Scheier & Carver, 1992). In this context, optimistic bias occurs, which is the belief that bad things happen to other people (Chapin & Pierce, 2012). The existence of an optimistic bias was demonstrated by Weinstein (1982), where individuals underestimate the probability of negative health outcomes (such as diseases or accidents). Further research findings confirm optimistic bias regarding a broad range of health risks, including sun tanning and cancer risks (Craciun et al., 2010), risky driving (Dean, 2010), smoking (Wagener et al., 2010), and natural disasters (Gierlach et al., 2010). These findings are especially interesting as the question arises if threat appeals persuade optimistic individuals in their willingness to accept the threatening message and complete the wished for action, or as McMath (2005) states, if the risk vulnerability is underestimated and the health-protective behaviour is not started. Optimistic beliefs can lead individuals to perceive a threat to be personally irrelevant (Walton & McKeown, 2001). Lewis et al. (2007) acknowledges that various biases

appear to influence driver perceptions about the likelihood of being involved in a car accident, for instance optimism bias.

To elaborate, a significant gap in understanding is the role of responses to threat appeals in terms of individual differences of the recipients. Indeed, a noteworthy assumption that underpins the theoretical foundations of the entire six decades of research is that threat appeals contain a threat that generates an instinctive fear response. Witte and Morrison (2000) state that individual differences do not seem to have much influence on the processing of fear appeals. But, at the same time Witte and Morrison (2000) only analysed for trait anxiety (with the result: unrelated to persuasive outcomes), gender, age, ethnicity, group membership, need for cognition, or uncertainty orientation.

Numerous other individual differences can be considered, especially in the setting of a sales conversation where an advisor has the possibility to assess individual differences before presenting the threat appeal. Therefore, the topic of interest for this thesis to be assessed is the role of risk-taking and optimism/pessimism as personality traits and the influence on the acceptance or denial of a threatening message in the field of a personal sales process of mortgage protection and the influence hereof on willingness-to-pay and behaviour intention. As these character traits can be easily assessed by a mortgage advisor with a short needs assessment, these factors seem predestined to add value not only to theory but also to business practice.

### **Threat appeal models**

Several models have been used to describe threat appeal effectiveness in terms of both attitudinal and behavioural change. These models comprise the fear drive model (Janis, 1967; Janis & Feshbach, 1953), the parallel response model (Leventhal, 1970), the Protection Motivation Theory (PM) (R. W. Rogers, 1975, 1983), and the Extended Parallel Process Model (EPPM) (Maloney et al., 2011; Witte, 1992). These models provide an understanding of how physical threat communications impact on the attitudes of targeted individuals and they have established the importance of an individual's coping response. This coping response, after exposure to a physical threat communication, is important because it has the purpose of removing the threat



(adaptive coping response – message acceptance), and/or decreasing the fear associated with the threat (maladaptive coping response – message avoidance) (J. F. Tanner et al., 1991). Application of these concepts to various contexts, and target audiences also provides a better understanding of these relationships, given that an emotional response may not be limited to just the emotion of fear (King & Reid, 1990; Nabi, 2015; J. F. Tanner et al., 1991).

The model of choice for this thesis is the Extended Parallel Process Model (EPPM) by Witte (1992). The EPPM argues that the impact of threat appeals, especially in health communication, is moderated by an individual's evaluation of his or her capacity to reduce the evoked fear level by implementing the solution proposed in the appeal (Faseur et al., 2015). Several gaps still exist within the EPPM literature itself that should also be addressed in future research, such as which moderating factors to the persuasion process within the EPPM exist (Maloney et al., 2011). The current study will further investigate whether individual differences (i.e., optimism/pessimism and risk-taking) moderate the effectiveness of a physical threat appeal in a commercial setting (sales process). In addition, as personality traits may moderate the effectiveness of threat appeals (e.g. Mowen et al., 2004; Ruiter et al., 2001), the current study will examine the moderating impact of optimism-pessimism and risk-taking on the interaction effect between perceived level fear evoked by a threatening message on behaviour (intention and expectation), and on willingness-to-pay for mortgage protection insurance.

## **2.14 Discussion and chapter summary**

This chapter gave an overview of theoretical development of responses to threat appeals, from theories with an emotion focus to those with a cognitive focus. Overall, the literature review shows that the effectiveness of threat appeals has received intermittent research attention, relying on several assumptions. As shown in table 9 below, the fear appeal literature has cycled through several theoretical perspectives over the past 70 years (Nabi, 2015), including

(1) the drive model by Hovland et al. (1953), which conceptualized fear as a drive-like state, motivating people to follow recommendations expected to alleviate the unpleasant affect, as well as proposing an inverted U-shaped relationship between fear and message acceptance; (2) the parallel process model by Leventhal (1970), which distinguished between cognitive and emotional appraisals of fear appeals, suggesting that those who respond to fear appeals

with fear (emotion) would engage in maladaptive responses, whereas those responding by focusing on the threat (cognition) would engage in adaptive responses,

(3) the expectancy value-based protection motivation theory by Rogers (1975, 1983), which focused on four components of thought generated in response to fear appeals—appraisal of severity, susceptibility, response efficacy, and self-efficacy—and how they might combine to predict message acceptance; and

(4) the extended parallel process model by Witte (1992), which extended the parallel process model and protection motivation theory, proposing the discriminating value and predicting that if perceived threat outweighs perceived efficacy, then fear control and maladaptive behaviours will result but if perceived efficacy outweighs perceived threat, danger control and adaptive change will follow, and, finally,

(5) the stage model of processing of fear-arousing communications (Das et al., 2003; de Hoog et al., 2005; Stroebe, 2000), which specifies the cognitive processes leading to persuasion, proposing that threat-induced defensive processes contribute to message effectiveness, and predicts differences in attitude based on threat severity and susceptibility manipulations.

**Table 9:** *Overview of Fear Appeal Research History adapted from Johnston et al. (2015)*

Scholars	Achievement	Theoretical Model
Hovland et al. (1953)	Investigated factors which determine the effectiveness of fear appeals	Drive Model
Janis (1967)	Described an inverted U-shaped relationship between fear and message acceptance	Drive Model
McGuire (1968)	Described a two factor (cues and fear) theory to explain an inverted U-shaped relationship between fear arousal and attitude change	Drive Model
Leventhal (1970, 1971)	Distinguished between cognitive and emotional appraisals of fear appeals	Parallel Process Model
Rogers (1975, 1983)	Specified perceived susceptibility, perceived severity, and response efficacy as components of a fear appeal	Protection Motivation Theory
Maddux & Rogers (1983)	Added a fourth component, self- efficacy, to fear appeal composition	Protection Motivation Theory
Witte (1992)	Extended the parallel process model by describing cognitive and emotional appraisals as sequential processes and established the role of fear as an indirect motivator of behavioural change	Extended Parallel Process Model
de Hoog et al. (2005)	Specifies the cognitive processes leading to persuasion, proposes that threat-induced defensive processes contribute to message effectiveness, and predicts differences in attitude based on threat severity and susceptibility manipulations	Stage Model

No model of fear appeals has been put forward as accurately capturing the process of fear effects on decision making and behaviour, although meta-analyses of fear appeal research in principle suggest that the cognitions identified in the protection motivation theory, and later in the EPPM, are important predictors of fear appeal effectiveness (see overview of meta-analyses presented in this thesis). In any case, most findings support a positive linear relationship between fear and attitude, behavioural intention, and behaviour change. As such, to the extent that message features create perceptions of threat severity, susceptibility, response efficacy, and self-efficacy, fear may in fact moderate persuasive outcome, though important questions about the interrelationships among these components remain unanswered. Nevertheless, due to inconsistent findings and potentially negative consequences, it is also recommended that scholars and practitioners should carefully assess if the implemented fear appeal can be exchanged for other methods of persuasion.

To summarise, fear appeals are as popular as they are controversial. It is so far undisputed that fear appeals can have positive effects but can also cause problematic reactions. The conclusions seem permissible that fear appeals can be an effective instrument for persuasion in certain constellations, but also that due to their low effectiveness combined with a high probability for negative reactions it is difficult to justify the use from an ethical and moral standpoint. Another aspect of prior fear appeal research can be found in the topic that the overall largest amount of conducted studies originates in the Anglo-American language area. Intercultural comparisons have indicated that German test persons are more defensive than people from the USA (Dowd, 1996) as well as that they more strongly avoid threatening information (Hastall & Knobloch-Westerwick, 2013). This leaves room for increased research in the German-speaking area to validate the findings from the Anglo-American area. In addition, the question deserves more attention, what kind of threats are involved since different kinds of threats evoke different kinds of reactions e.g., fear appeals that have death threats should have different effects than others. Threats that can happen if an insurance is not taken are inherently different to deadly threats by e.g., car accidents when using a mobile phone. Furthermore, the studies so far have not investigated if there is an influence on the willingness-to-pay for an insurance depending on the level of threat and self-efficacy.

The chapter also presented an overview of threat appeal variables, which were examined from the perspective of argumentation theory and from the perspective of the psychology. From these discussions it can be concluded that intrinsic message characteristics are required to allow for more theoretical development, which will be discussed in the next chapter. As such, the message variables of direction of message, use of vivid negative images, and message frame, are identified as the characteristics most appropriate for this research framework.

### **3 Research framework and research hypotheses**

In the previous chapter the conceptual EPPM framework was described. The focus now moves in chapter 3 to the description of message characteristics, immediate emotions, the derivation of selected individual differences, the research hypotheses, and the process used to generate data to test the research model. Furthermore, the research methodology will be aligned with the researcher's ontological and epistemological position.

#### **3.1 Message characteristics of threat appeals**

When analysing consumer responses to intrinsic message characteristics of fear appeals, the variables of interest are manipulated, but all other message features are held constant. This is to make sure that variances in responses can be attributed to variations of a specific message characteristic or interaction between message characteristics (Chamberlain, 2015). As stated earlier, in particular the images used in the stimuli, the context, and individual differences, are all factors that may influence the evaluation of an emotional and cognitive response. The position of this thesis is that a solid fundament for understanding the relationships between fear appeals variables and responses must be built by isolating key variables as much as possible, before starting to examine complex interactions of many intrinsic message characteristics. As such, the intrinsic message characteristics of a threatening message of this thesis is described in this section and later operationalised in the form of differentiating fear appeal messages.

##### **Vivid negative images**

The commonly known element of a fear appeal is the presentation of vivid or personalised language and images that showcase “a personally relevant and significant threat” (Witte, 1992, p. 114). Vivid images and language form an integral component of a threat appeal and require further examination in order to evaluate the assumption that a threat appeal will generate a fear response. Information processing of visual images has been empirically proven to be superior to that of verbal information, or just words (e.g. MacInnis and Price, 1987; Cautela and McCullough, 1978). Vivid images are not only used to capture the attention of

individuals, but also to present information concerning the severity of the threat in the fear appeal (Dahl et al., 2003). Research shows that the implementation of vivid images in a fear appeal increases perceptions of threat (e.g., Cauberghe et al., 2009), and as such, the intrinsic message characteristic of vivid images intends to generate cognitions concerning severity of threat and susceptibility in a threat appeal.

In practical terms, vividness in advertisements is accomplished using specific rather than abstract illustrations. Further, the effect of vividness is considered to be present when the pictures presented are more persuasive than text-only messages (Block & Keller, 1997). In a threat appeals context, scholars found that adding relevant visual vividness to a threat appeal increased the perception of perceived threat (e.g., Sabanne et al., 2009), as well as having a positive effect on persuasion (e.g., Mowen et al., 2004). Conversely, negative or no effects have also been found (Kisielius & Sternthal, 1986; Sullivan & Macklin, 1988). Furthermore, the study by Block and Keller (1997) demonstrated that individuals with high self-efficacy had a preference for vivid stimuli. These results are likely to indicate that a vivid picture plays a role in influencing the perception of a threat in a threat appeals context. The topic of vivid images is especially up to date in the field of cigarette packets. In 43 countries worldwide vivid images are placed on cigarette packets with the assumption to reduce smoking consumption (Andrews et al., 2014). Andrews et al (2014) found that graphic warnings in combination with smoking frequency influenced fear, which in turn lead to negative health beliefs about smoking and increased intentions to stop smoking. Another study on smoking by Kees et al. (2010) found that 'highly' graphic images increased smokers intention for smoking cessation which was mediated by a fear response. Research has also considered variations in warning messages on cigarette packets, using conditions of text only and text with picture. Veer and Rank (2012) conducted a study that compared cigarette packets with text-only labels and with graphic visual warning labels. Cigarette packets with graphic images are found to significantly increase the level of cognitive processing as well as increase the intentions to quit smoking. However, Erceg-Hurn and Steed (2011) also exposed smokers to graphic or text-only warnings and then completed reactance measures and found exposition to graphic warnings were more likely to generate elevated and extreme levels of reactance (i.e., maladaptive responses).

An extending perspective of vivid images has emerged more recently which focusses specifically on the role of images intending to generate disgust. For example, Morales et al (2012) found that message persuasion was increased when adding a 'disgust image' to a fear appeal. The scholars attribute the specific features of disgust as responsible for increasing message acceptance and compliance in comparison to a 'fear only' condition. Conversely, Leshner et al (2011) demonstrated that a combination of disgust as well as fear inducing elements of the stimuli were too strong for recipients to cope with, and thus further processing of the message was inhibited.

When it comes to designing the right image stimuli for this research subject of mortgage protection insurance, the question arises how a vivid picture is best defined. Graphic images can be defined as "references to blood, body parts or secretions, orifices, especially urinary/faecal, gases, odours, disease, parasites, bodily harm (e.g. dismemberment), death and decay" (Dahl et al., 2003, p. 270), whereas Nabi (2019) reduces the categories of graphic images to blood, vomit, faeces, inappropriate sexual acts, rodents or bugs. This categorisation of image types might be useful to operationalise for health-related fear messages (e.g., smoking) or for speeding and car accidents. However, due to legal restrictions in the German law such vivid images are not allowed in the context of insurance marketing (Gelbrich & Schröder, 2008). Nevertheless, images used in this thesis (as outlined in the stimuli design section) can be operationalised by negative feelings associated with them. The operationalisation of the use of image within this thesis is described later in this chapter.

### **Direction of Message**

Advertisers in general assume that the most persuasive advertising appeals are ones that are actively self-relevant because self-referenced advertisements are not only more persuasive but also memorable (Block, 2005). As such, a differentiation in advertising literature is made regarding the viewer of the advertisement (self-relevant), and those that are not (focussing on other or general). As messages focussing on others do not access one's self-schema and therefore are not as memorable and persuasive, scholars proclaim that referencing to the self has been identified as an advantageous mnemonic strategy for young and older (Hamami et al.,

2011). Self-referential processing (i.e., the self-reference effect) takes place when an individual stores information into memory in reference to the self. Scholars have found that the probability of accurately remembering information once it has undergone self-referential processing is greater in comparison to information stored when focussing on other persons or regarding its semantic properties (T. B. Rogers et al., 1977). The self-reference effect was originally documented in a study by Rogers et al. (1977, p. 684), where the researchers compared responses to encoding tasks that varied in depth of processing with the result that memory for self-referenced encoding ("Indicate whether the word describes you.") is superior over semantic, phonemic, and structural encoding. Keller and Block (1996) describe the emerging view that information about the self includes a broad array of knowledge (e.g. physical appearance, past experiences, behaviour patterns, attitudinal likes and dislikes, and relationships towards others), and it is this awareness that makes the self the source of the most elaborate networks in memory. The beforementioned scholars found that self-reference and imagery processing, increased the persuasiveness of a low-fear appeal by stimulating elaboration on the harmful consequences of smoking, whereas the use of reference to others and objective processing, increased the persuasiveness of a high-fear appeal.

Unsurprisingly, researchers have applied this theory of self-referencing to fear appeals. However, it has been found that when the message information is negative (as in a threat), the self-reference effect is reversed (Sedikides & Green, 2000). The scholars provided subjects with negative self- or other-referenced information and the results showed more shallow processing and less memory for negative self-referent than other-referent material. It was concluded that subjects are motivated to protect the self against threat, regardless of how minimal or hypothetical the threat is. As such, in a threat appeal context the self-referencing effect can be questioned because when recipients are threatened, defence mechanisms can be activated in order to protect individuals' self-image (Block, 2005; Sherman et al., 2000). An individual's self-image, consisting of values, experiences, important relationships, and behaviours, is an important regulator of the individual's motivational and behavioural systems (Sherman et al., 2000). For individuals who try to preserve a self-image as positive, moral, and adaptive, the threatening nature of fear appeals may arouse defensive responses. This connects to the fear control processes



identified in the EPPM. However, given that fear appeals in the field of mortgage protection insurance may not contain a threat in the original sense it most likely cannot be assumed that the threat causes fear mechanism will operate accordingly.

The self-reference effect has been researched in a wide range of contexts and has been shown to increase persuasion when message arguments are strong (Bull et al., 2001; Burnkrant & Unnava, 1995), the memory of messages (Hamami et al., 2011; T. B. Rogers et al., 1977), attitudes and intentions mediated by self-referencing (Ahn & Bailenson, 2011), positive brand attitudes (C. Chang, 2005), and leading to a favourable evaluation of advertised products (Escalas, 2006). The use of other or general-focussed terms has also been researched in a fear appeals context by Basil et al. (2008) who have manipulated high (self-reference) versus low (general reference) levels of empathy in the context of donation intention. The results showed that the high empathy condition (self) reduced maladaptive responses and increased anticipated guilt and donation intention. Furthermore, Keller and Block (1996) demonstrated that other/general-referenced conditions increased the persuasiveness of a high-level fear appeal, by reducing the extent to which individuals denied the harmful consequences portrayed, while self-referencing conditions enhanced the persuasiveness of a low-level fear appeal by influencing individuals to think about the negative consequences of smoking.

A small body of academic research has already considered the influence of the direction of a threatening message towards the self ('you') or another person ('other/general') as intrinsic message characteristics (e.g., Block, 2005; Chamberlain, 2015). Creating self or other/general-directed messages in order to manipulate intrinsic message components is an approach to encourage differential elaborative processing of the message. Whilst the focus of the thesis is on understanding cognitive responses as well as fear as an emotional response to threat appeals in the context of insurance, it is important to recognise that these cognitive and emotional responses are connected. The message being appraised by the recipient must be found to be relevant to the individual before cognitive processing can occur, which then leads to emotional responses (Lerner & Keltner, 2001). In a fear appeals context, the threatening messages are designed to persuade recipients that a threat is present, that the consequences are serious, and to encourage the adoption of the

recommendation in the message. Therefore, elaborative processing, which is proposedly influenced by the direction of the message, must occur in order for the message recommendation to be accepted by the recipient. Other/general-referenced messages have been found to increase elaboration (Basil et al., 2008) and evoke anticipatory worry (Chamberlain, 2015). As such, empirical evidence proposes that a threatening message to an individual's self-concept will receive low processing and elaboration which is a reversal of the self-reference effect. Fear appeals often point to issues concerning individuals' central self-concept, for example health, therefore recipients will be motivated to reach a preferred conclusion by selectively processing information to support their own beliefs or actions, such as continuing to smoke. Based on this, if recipients avoid a message or do not evaluate the message as relevant to the self, then other/general-directed messages may receive more elaboration and as a result be more effective. The operationalisation of the message direction within this thesis is described later in this chapter.

### **Message framing**

The above discussion identified two specific intrinsic message characteristics of fear appeals which manipulate the threat in terms of the type of image used to grab attention (vividness of image) and the recipient who is subject to the threat (self vs. other-/general-reference). The last component of the intrinsic message characteristic of interest for this thesis is the manipulation of the message frame, which can be generally described as the recommendation regarding how to reduce or eliminate the consequences of the threat. As most definitions of fear appeals lay focus on the presentation of a negative consequence, which can be reduced or avoided by following the recommended response action as part of the threat appeal (e.g., Witte, 1992) the exact communication of the recommendation has important implications. Therefore, message framing techniques place either a positive or negative emphasis on the recommended behaviour and what happens when the behaviour is not adopted as recommended.

The concept of framing of content plays an important role in communication science and originally stems from the prospect theory by Kahneman and Tversky (1979). This theory states that individuals do not evaluate decision options rationally, but relative to a so-called reference point. This point is individually different and separates

expectations into gains and losses (e.g., Gierl et al., 2002; Meyerowitz & Chaiken, 1987). As such, an individual will evaluate the potential outcomes as certain or uncertain and make a decision based upon this evaluation. Framing enables researchers to vary the reference point experimentally and thus influence decisions (e.g., Mintz & Redd, 2003; Scheufele, 2013). In order to frame a message, first a constant decision problem (with unchanged content) is described in different ways. Depending on the perspective of the description certain aspects of reality are emphasised, while others recede into the background (e.g., Gierl et al., 2002; Scheufele, 2013). The different linguistic formulations create perceived illusions and influence cognitions (Levin et al., 1998). As proposed, individuals then react differently which leads to framing effects (e.g., Gierl et al., 2002; Mintz & Redd, 2003; S. M. Smith & Petty, 1996).

In a well-known study, Tversky and Kahneman (1980) presented participants with information about a hypothetical disease (also known as Asian Disease Problem) that would kill 600 people. Participants were requested to select one of two options in order to solve the situation. Plan A was presented as a certainty in either a loss framed, or a gain framed message (e.g., Gain frame: if plan A is adopted, 200 people will be saved; or Loss frame: 400 people will die). Plan B on the other hand presented an uncertain result which was either gain framed or loss framed (e.g., Loss frame: if plan B is adopted, there is a 1/3 chance that nobody will die and a 2/3 chance probability that 600 people will die; or Gain frame: there is a 1/3 chance that 600 people will be saved and a 2/3 chance that no people will be saved). The ultimate outcome of the messages is exactly the same, i.e., 200 people will be saved but 400 people will not be saved. However, the way the information was presented and the framing of the message, generated different evaluations and therefore decisions. Indeed, in this study, in plan A participants preferred the gain framed message when the outcome is certain but in plan B the loss framed option when the outcome is uncertain. The results from this study indicate that decision making depends on the risk perception associated with the presented outcomes. When exposed to messages that present a loss framed perspective, individuals are persuaded to decide to choose risky behaviours to alleviate the loss.

Levin et al. (1998) differentiate three types of framing, which have also been adopted and confirmed by other authors (e.g., Gierl et al., 2002; Scheufele, 2013). The simplest of the three types is **attribute framing**. Depending on how a certain characteristic or property of an object is described, the evaluation about it changes. For example, meat can be described as 80% lean (positive attribute frame) or 20% fat (negative attribute frame). As a rule, positive attributes lead to more favourable evaluations. This is probably because positive information is more easily retained in the memory (Levin et al., 1998).

A second type is **risky choice framing**, which influences the willingness to choose risky options. If a potential decision outcome is presented positively (e.g., regarding the success rate), recipients prefer to make risk-averse decisions. If, on the other hand, the same outcome is described negatively (loss rate), people are more likely to react in a risk-averse manner. This finding has already been established in studies on the so-called Asian Disease Problem (e.g., Scheufele, 2013; Tversky & Kahneman, 1980) and proved to be consistent across numerous studies. As a possible explanation for this finding a statement of the Prospect Theory is drawn on, according to which losses weigh more heavily than gains and are therefore to be avoided at all costs (loss aversion) (e.g., Ganzach & Karsahi, 1995; Gierl et al., 2002).

The third type is **goal framing**, which distinguishes between gain frames and loss frames. Emphasising the positive consequences of a behaviour (obtain gain) or the negative consequences of not carrying out a behaviour (suffer loss) influences the persuasive effect of a communication (Gelbrich & Schröder, 2008). In the majority of the studies conducted on this topic, a stronger effect of loss frames became apparent. The assumption of loss aversion offers an explanation in this case as well. Another explanation is the negative bias hypothesis, according to which negative information generally receives more attention due to its relative rarity or due to violations of expectations (Gelbrich & Schröder, 2008). Goal framing has been used in fear appeals by including negative and positive consequences and presenting in terms of gain or loss framed messages (e.g., Chamberlain, 2015). Loss framed messages emphasise the disadvantages of failing to adopt the recommendation (e.g., disadvantages, or failure to benefit from advantages) whereas gain or loss avoiding framed messages emphasise the advantages of following the recommendation (e.g.,

advantages, or the avoidance of disadvantages). The general principle of message framing research is that individuals exposed to a loss framed message will respond differently in terms of cognitive evaluations (e.g., persuasion) to individuals exposed to a gain framed message (Rothman et al., 1999).

A fundamental study on goal framing is that of Meyerowitz and Chaiken (1987) on the early detection of breast cancer through self-examination. The scholars assumed that a loss frame has a more persuasive effect due to higher fear induction. Their findings showed that recipients of the loss frame did attain more positive attitudes and intentions, but this was not due to a higher fear induction. Whilst several studies have shown that gain framed messages are more effective (e.g., Reinhart et al., 2007) these findings have not been consistent across the literature. For example, Rothmann et al. (1999) found that gain-framed messages are more effective when promoting health affirming (prevention) behaviours, but loss-framed messages are more effective when promoting illness-detecting (screening) behaviours. Ganzach and Karsahi (1995) found with regard to retaining credit card customers that also in this commercial area the loss framed message was more persuasive, with more than double the percentage of customers who started to use the card in the loss condition. Berger and Smith (1998), who examined advertising messages for a video camera, found no significant message framing effect. Gierl (2005) examined the effect of goal framing in a field study on the advertisement of a car dealership. Above all, the scholar sees the reference point of the prospect theory as a moderating variable for the choice of the optimal frame. While in the case of a low reference level, i.e., a low level of financial possession of the recipient or of his social environment, a gain frame message has a better effect, in the case of a high reference level a loss frame is more advantageous, because then there is a threat of losing what already exists. Furthermore, a meta-analytic review of the relative persuasiveness of loss- and gain-framed messages by O'Keefe and Jensen (2006) with a sample size of  $N = 50,780$  found that loss-framed appeals are not generally more persuasive than gain-framed appeals, or vice versa. Indeed, empirical results regarding message framing effects are equivocal.

Tversky and Kahneman (1980) examined the use of loss and gain framed messages in a general decision making context and researchers then have applied the theory to

the broad area of health education messages and more specifically threat appeals. Whilst threat appeals specifically use a threat to arouse emotional and cognitive responses resulting in behaviour change, health education messages more broadly frame messages according to a specific health issue (Rothman et al., 1999). In the health education literature, there is a distinction made between behaviours that help to detect a health problem (e.g., skin, breast or testicular self-examination) from behaviours that help to prevent a health issue (e.g., using sunscreen, drinking more water). Following the prospect theory, detection behaviours have been identified to be associated with a higher risk perceptions because engaging with those behaviours could lead to finding out an individual is unwell (Meyerowitz & Chaiken, 1987). As a result, loss framed messages are most appropriate, as individuals have been shown to be risk seeking when considering losses (Ruiter et al., 2003). Prevention behaviours, conversely, are presented as low risk because, by definition, they reduce the risk of illness. As such, gain framed messages are most appropriate, as gain framed information motivates individuals to follow lower risk solutions (Rothman et al., 1999).

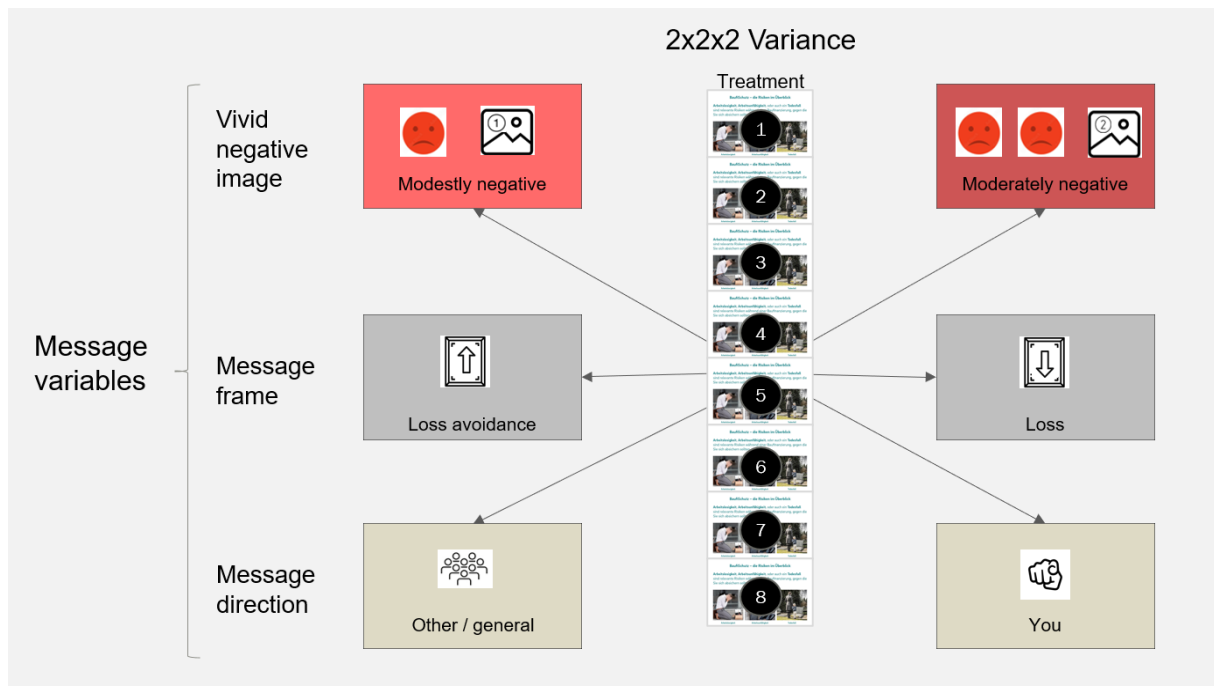
In the context of fear appeals, self-efficacy is the belief that an individual is capable of adopting the recommended action and response efficacy is an individual's belief that the recommended response will avoid or reduce the threat (Witte, 1992). Together they comprise perceived efficacy which has demonstrated to moderate the effects of loss and gain framed messages, as such that loss framed messages generate a greater perception of threat than gain framed messages (Shen & Dillard, 2007). This would indicate that loss framed messages would increase perception, if the assumption is taken, that increases in threat perception lead to persuasion (Witte & Allen, 2000).

Overall, it should be noted that goal framing is also dependent on external factors, such as current financial ownership or involvement and therefore no general conclusion can be posited whether positively or negatively framed advertising messages are more persuasive. Nevertheless, goal framing is the framing type of choice for this thesis as it fits very well to an insurance context. As taking an insurance is very much about preventing a risk, in this case of repaying a mortgage loan, the assumption that gain framed messages are most appropriate is permissible.

The operationalisation of the message framing within this thesis is described later in this chapter.

In sum, the intrinsic message characteristic manipulated as independent variables are depicted in figure 13 below.

**Figure 13:** *Depiction of Intrinsic Message Characteristics*



### 3.2 Emotional responses to threat appeals

In order to better understand recipients' emotional responses, especially fear, to the intrinsic message characteristics contained in threat appeals (as discussed earlier) it is important to generate an understanding of the theoretical perspectives surrounding emotions. As identified in chapter 2, fear is conceptualised as the single emotional response to threat appeals in the EPPM developed to explain responses to threat appeals. Furthermore, many scholars have measured only fear in their research (e.g., Roberto & Goodall, 2009; Witte, 1992; Wong & Cappella, 2009), further reinforcing the assumption that fear is the only emotional response a threat appeal can generate. This thesis plans to continue this stream of research and measure only fear, yet adding the emotion of uncomfortable feelings, but acknowledges that some researchers have identified the need to widen considerations of emotional responses (e.g., Chamberlain, 2015).

Henley and Donovan (1997) state that for the use of fear appeals associated with death or threats of death other potentially relevant emotions than just fear are identified, such as guilt and remorse, sadness and anger. More scholars have also begun to move away from the view that fear is the only response to threat appeals and have analysed various emotional responses, such as disgust (Algie & Rossiter, 2010), self-conscious emotions (Agrawal & Duhachek, 2010), and self-accountability emotions (Passyn & Sujan, 2006). Based on the tenet that not everyone experiences a fear response to threat appeals, it seems necessary to explore in more depth the emotional responses that can be created by fear appeals. As such, Chamberlain (2015) has analysed the full range of emotional responses to a threat appeal designed with intrinsic message characteristics (as described in the section above) concerning obeying or following the speed limits. Five immediate emotions, seven anticipatory emotions, and thirty-six anticipated emotions were measured after the threat appeal was depicted. Her results indicate that emotional responses to threat appeals are not restricted to fear, and that different responses to threat appeals were clearly attributed to specific intrinsic message characteristics. The scholar has therefore developed a novel conceptual focus on the emotional and cognitive responses to threat appeals, namely anticipated, anticipatory and immediate emotions alongside elaboration and cognitive appraisal.

When considering different schools of thought, emotions can be conceptualised according to a circumplex (Russell, 1980), dimensions or bipolar concepts (Watson et al., 1988; Watson & Tellegen, 1985), or to discrete categories (e.g., Izard, 1977). It is not the purpose of this thesis to define emotion itself or to present a comprehensive overview of research on emotions, but the perspective that is most likely closest to the common understanding of emotions is that emotions are discrete entities (for example, fear, sadness, happiness, hostility, guilt, surprise, and interest). As such, emotions are assumed to be unique experiential states that are present from birth origin from distinct causes (Izard, 1977). The assumption behind this perspective is that individuals experience emotion because people have internal mechanisms for a limited set of reactions, which are usually anger, fear, happiness, love, and sadness (Fehr & Russell, 1984). Once an emotion is triggered, it can be measured objectively. The assumption that shapes the scientific treatment of emotions is that discrete



emotions are understood as entities that researchers can make discoveries about (Feldman Barrett, 2004).

Emotions have played an important role in research on judgement and decision-making field (JDM), which emphasises the role of emotion in decision making and has become increasingly relevant in the context of utility. In particular, the concept of experienced utility, which describes the utility a decision maker experiences from the outcome of a chosen option (e.g., Kahneman, 2003). Basically, experienced utility refers to the pleasure and pain that we experience from outcomes of our choices (Västfjäll & Slovic, 2013). Thus, in the context of fear appeals, utility can be considered to be fundamentally concerned with emotional experiences and refers to the pleasure or displeasure and comfort or discomfort derived from choices. As such, the aspect of how comfortable a recipient feels in response to a fear appeal and its intrinsic message characteristics will be evaluated within this thesis.

Kahneman (1997) identified four different types of utility and of these, predicted utility is most relevant to this discussion, as predicted utility influences future behaviour. It is commonly accepted that utility has an emotional and cognitive component, which can be observed in examples such as gambling (Webb et al., 2014). This perspective raises interest in the context of fear appeals, since there is a clear time difference between exposure to a stimulus that is intended to change behaviour (such as a fear appeal) and the behaviour to be adapted. Chang and Pham (2013) claim that emotions are incorporated more into decision making when the outcome of the decision is closer to the present than in decisions where the outcome is more distant in time. This claim is especially interesting in the context of presenting a fear appeal to influence behaviour in a one-to-one mortgage insurance sales process. Usually, the recipient will have the opportunity to take the insurance immediately after being confronted with the fear appeal. Following this logic would lead to the conclusion that emotions are very relevant for the take up of mortgage protection insurance.

Furthermore, alongside cognitive processes, emotional responses can be considered to act as mediating influences in the decision-making process towards a future behaviour intention. It is important to acknowledge that emotional responses and cognitive appraisals have not been neglected by fear appeal research. For example,

the EPPM has proposed and empirically tested four cognitive appraisals (perceived severity, perceived susceptibility, response efficacy and self-efficacy) along with the emotion of fear (Witte, 1992). Fear in the EPPM can be considered an interplay between cognitions and emotional response. As described earlier a key concept of the EPPM is the critical point where recipients shift from danger control to fear control responses and therefore people refrain from controlling the danger and focus instead on controlling their fear (Witte et al., 1996). As a reminder, the calculation of this critical point is stated with a simple formula:

$$\begin{aligned} & (Z \text{ for perceived efficacy}) \\ & - (Z \text{ for perceived threat}) \\ & = \text{discriminating value} \end{aligned}$$

Therefore, fear is not directly measured through the 'Risk Behavior Diagnosis Scale' (RBD), which is a 12-item scale that evaluates perceptions of response efficacy, self-efficacy, severity, and susceptibility on a 7-point scale. But the result of the calculation to reach the discriminating value could indicate if fear was generated through a threat appeal if the perceived threat is high and the discriminating value is negative. As this is a mostly indirect evaluation of fear arousal using the RBD, this thesis additionally evaluates the immediate emotion of fear (and uncomfortable feelings) with a self-report scale, which will be described later in this chapter. In a threat appeals context, perception of threat is an important cognitive evaluation. Furthermore, according to the risk-as-feelings hypothesis (Loewenstein et al., 2001) emotional reactions to risky situations often diverge from cognitive assessments of those risks. When such divergence occurs, emotional reactions often drive behaviour. Accordingly, experiencing the immediate emotion of fear, because of exposure to a vivid image, will drive behaviour when the cognitive evaluation of threat, severity, and susceptibility divergences from this experience.

The operationalisation of the immediate emotion of fear und uncomfortable feelings is described later in this chapter.

### **3.3 Optimism and pessimism**

The personality trait optimism-pessimism has been studied in psychological research for more than three decades. The most widely used construct definition is that of

Scheier and Carver (1985), who view optimism and pessimism as expectations regarding future events. People differ in their expectation of future events happening in their life. Whilst some people generally expect positive things to happen to them, others tend to anticipate negative outcomes. While optimists expect "good" things to happen to them most of the time, pessimists tend to expect "bad" things. According to Scheier and Carver (1985), such optimistic/pessimistic expectations do not relate to individual areas of life but rather pertain to life in general. Optimism and pessimism can therefore be seen as generalised versions of confidence and doubt (Carver et al., 2010). Based on their characteristics (within this personality trait), optimists and pessimists differ fundamentally in their approach to life. Empirical findings confirm that interindividual differences in this personality trait can have profound effects on people's lives, for example on their life satisfaction, self-concept, health, ways of coping with everyday problems and challenges, socio-economic success, career satisfaction and relationships with others (e.g., Carver et al., 2010; Nes & Segerstrom, 2006; Rasmussen et al., 2009; Scheier & Carver, 1992; Williamson et al., 2005).

These advantageous outcomes seem to be due to an increased ability of optimists to cope with the challenges and threats of everyday life compared to pessimists (Scheier & Carver, 1985). Optimism plays a crucial role in the self-regulation of behaviour. For example, optimists were found to be positively associated with approach coping strategies aiming to eliminate, reduce, or manage stressors or emotions, and furthermore negatively associated with avoidance coping strategies seeking to ignore, avoid, or withdraw from stressors or emotions (Nes & Segerstrom, 2006). Moreover, optimists are more committed to their high priority goals and more persistent in their effort to reach them even when obstacles arise (Carver et al., 2010; Solberg Nes et al., 2011). Optimists see positive outcomes as achievable and as such are more likely to invest continued effort in order to reach their goals (Solberg Nes et al., 2011). This type of behaviour may also impact how optimists cope with self-regulatory demands. For example, in a study examining pursuit of personal goals in female patients with Fibromyalgia Syndrome, optimistic patients were less likely to reduce effort or give up on goals, even on challenging days (Affleck et al., 2001), suggesting that optimists may persist longer in situations requiring self-regulatory effort.

According to these results, optimism can be considered a central personal resource that is beneficial for a healthy, happy, and successful life (Christoph J Kemper et al., 2017). However, there is reason to believe that the coping strategies and cognitive tendencies of optimists may lead to less adaptive behaviour in some areas of life. For example, for risky investment decisions, study results found that men tend to be more willing to take risks compared to women, which could be due to an interaction of gender and trait optimism (Felton et al., 2003). These study results show that optimism is related to a broad range of other traits and outcomes, and thus highly relevant to diverse research questions addressed in the behavioural sciences (Christoph J Kemper et al., 2017). Therefore, fear appeals in combination with optimism and pessimism is seemingly an interesting field of research to be addressed.

Optimistic people typically report less distress across a broad range of situations, including stressful situations (Andersson, 1996), which is an interesting aspect when considering fear appeals that are designed to create some sort of stress. In the context of a threatening message, it could be assumed that optimistic people feel less stress, e.g., fear, and are therefore more likely to cognitively solve situations by evaluating the perceived threat (severity, susceptibility) and perceived efficacy (response efficacy, self-efficacy) with a lower fear level. Furthermore, optimism is also positively correlated with the construct of self-efficacy (e.g., Karademas, 2006; Schwarzer et al., 1997), meaning that people with a high value for self-efficacy are assumed to also have a high value for optimism, and vice versa. Self-efficacy is one of the important components of the EPPM, where it is assumed (in combination with response efficacy) that high efficacy scores will lead to danger response behaviour, e.g., following the recommended action. The assumption could be made, that in a fear appeals context, optimistic people will tend to follow the recommendation, if the cognitive evaluation leads to this result (high efficacy, relevant threat). Nevertheless, when confronted with insurance decisions, study results show that optimistic participants incur a higher total cost of risk and are more likely to underinsure than non-optimistic participants, even when taking up insurance maximizes expected payoffs (Coats & Bajtelsmit, 2021). Underinsurance is defined as declining to insure when the expected payoff is higher with insurance than without it. The reason for this is the optimism bias, or the tendency to assign higher subjective probabilities to

favourable outcomes which is well documented in the psychology and economics literature. General optimism about events outside of one's own control, e.g., events to insure such as life, disability, or unemployment insurance, may cause optimists to underestimate their actual risk, which may lead them to make suboptimal financial decisions (Coats & Bajtelsmit, 2021). For example, it was found that underestimation of expected losses may result in reduced demand for insurance (Kunreuther & Pauly, 2004). It is noteworthy that optimism causes individuals to underestimate their risk and, therefore, underinsure. This effect is stronger for insurance covering risks that depend on one's own performance versus insurance covering exogenous risks (Coats & Bajtelsmit, 2021). Thus, for mortgage protection insurance it could be assumed that optimists will tend to correctly insure life and disability insurance (exogenous risks), while unemployment insurance will be underinsured (dependent of own performance). As optimists underestimate the actual risk they are facing, Spinnewijn (2013) proposes that insurance companies may screen both risk-tolerant and optimistic types by providing less coverage at a lower premium to make the insurance offer more attractive.

Huang et al. (2010) found that in the context of insurance the rational type of individual takes precautions to reduce the loss probability, whereas the optimistic type of individual will not make any effort. Therefore, the optimistic individuals evaluate their subjective loss probabilities lower than their objective loss probabilities while the rational type of individuals assess their loss probability correctly. In their model, higher optimism leads to lower probability of insurance purchase. Arad (2014) designed a study in which participants are aware of objective likelihoods but may assign a higher or lower probability due to their own personal motivations that are unrelated to the random event, similar to an optimistic person. The belief that one's actions can affect the result of some chance event, when in fact its probability is independent of those actions, is commonly referred to as "magical thinking". Arad (2014) notes that beliefs about one's own good or bad luck, regardless of probability distribution can also lead to suboptimal insurance decisions. It is important to note that excessive optimism can end up being hazardous. Underestimating risk may reduce precautionary behaviour such as safe sex, attending medical screenings or buying insurance (Sharot, 2011).

Although optimism is widely discussed in the psychology and economics literatures, the influence of this behavioural bias on insurance decision-making has received less attention. This thesis attempts to add some knowledge to this field of research by combining not only optimism and insurance take-up intention, but also evaluating the mediating effect of intrinsic message characteristics of fear appeals. The operationalisation of optimism and pessimism is described later in this chapter.

### **3.4 Risk-taking**

People differ systematically in their willingness to take risks (Zuckermann, 2007). Conceptualised as a personality trait, risk-taking describes a general preference to choose or avoid risky behavioural options, encapsulating an individual's preferences for sensation seeking (Kam, 2012). However, the theoretical classification of the construct risk-taking within the framework of established personality theories is controversial. Some researchers see risk-taking as part of the facet "experience seeking", a sub-dimension of the Big-Five-dimension extraversion (e.g., Whiteside & Lynam, 2001). Other researchers criticise that risk-taking is only insufficiently taken into account in the Big Five model (e.g., Becker, 1999). Andresen (2003) therefore integrates risk-taking as an independent dimension in his six-dimension personality model.

The personality trait sensation seeking is described as the search for stimuli that involve (high) risks, seeking intense experiences and a willingness to take physical, social, legal and financial risks for these experiences (Beauducel et al., 2003). The concept of risk-taking is seen here as one aspect of sensation seeking. People with a high trait value in sensation seeking are more willing to take these risks (e.g., Zuckermann, 2007). Correlations of risk-taking with other psychological variables have been reported for life satisfaction (Dohmen et al., 2011), self-efficacy (Bandura, 1997), entrepreneurial self-efficacy (Barbosa et al., 2007), consumer involvement (Ramesh & Kumar, 2016), and impulsivity (Mishra et al., 2010). Impulsivity is understood as a tendency to prefer short-term rewards, without planning or foresight, with the potential for immediate or future costs (Eysenck et al., 1985). Impulsivity and sensation seeking are often considered as one construct, although empirical evidence contradicts this assumption. According to Steinberg (2008) age differences

in sensation seeking, which are linked to pubertal maturation, follow a curvilinear pattern, while age differences in impulsivity follow a linear pattern.

In research, a distinction is made between (verbalised) risk appetite and concrete risk behaviour. The readiness to take risks has a significant influence on the risk behaviour of individuals (Zuckermann, 2007). Accordingly, people who describe themselves as highly ready to take risks also tend to engage in risky behaviour more often.

The concrete behaviour in a risk situation depends on both stable behavioural predispositions and situational influencing factors. Ferrey and Mishra (2014) showed that different compensation methods significantly influence participants' risk-taking propensity, where participants who received session-based payment engaged in significantly greater risk-taking than participants who received decision-based payment or no payment at all. Behavioural predispositions also include risk perception, which is determined by the probability and the amount of a potential loss as well as the amount of the potential gain (Sokolowska & Pohorille, 2000). A person's willingness to take risks can also vary intra-individually between different areas or contexts. For example, a person may be more risk-averse when it comes to financial investments, whereas they are less risk-averse when it comes to sports. However, empirical findings support the assumption that self-reported risk-taking is a personality trait that transcends time, situation and context (Zuckermann, 2007). For example, high stabilities of risk taking were reported across time points (Beauducel et al., 2003) and high consistencies of self-assessed risk taking were found between different life domains such as driving fast, or engaging in risky sports (Dohmen et al., 2011). Several empirical studies have also presented correlations of risk taking with different behavioural variables, such as gambling (Mishra et al., 2010), or propensity to make risky financial decisions (Badunenko et al., 2009). Further studies have also shown systematic differences in the degree of risk-taking with regard to different socio-demographic groups (Dohmen et al., 2011). In a meta-analysis, Byrnes et al. (1999) came to the conclusion that men are more willing to take risks than women. This is questioned in regard to financial investment decisions, where it was found that the investments in more and less risky assets were not due to gender differences of the participants but due to the amount of assets available (Badunenko et al., 2009).

Nevertheless, the tendency that males are more willing to take risks was found to be consistent across different domains, e.g., health-related, financial or ethical decisions. Harris and Jenkins (2006) attribute this result to the fact that women perceive the probability of negative consequences of risky behaviour to be higher. Dohmen et al. (2011) also found that risk taking and the tendency to engage in risky behaviour decrease with age and that persons with severe health impairments and unemployed persons reported a lower risk propensity.

Personal factors, particularly cognitive and affective characteristics, shape individual risk behaviour (Hönl et al., 2017). Individual cognition has been frequently assumed to affect risk behaviour (Kahneman, 2003). In essence, most scholars in the field of judgment and decision-making argue that individual (biased) cognition, i.e. risk propensity and risk perception, is one of the most important factors for explaining risky choices and risk behaviour (Kahneman, 2011; Sitkin & Pablo, 1992). Cognitive biases that describe deviations from traditional economic rationality have been linked with higher risk-taking (C. Anderson & Galinsky, 2006; Simon et al., 2000). Interestingly, the cognitive phenomena of optimism has also been linked with higher risk taking (Sharot, 2011; Weinstein & Klein, 1996) which implies a connection between risk-taking and optimism, such that the evaluation of risky outcomes is influenced with respect to individual probability estimates. Based on the findings of past studies, the following remarks can also be drawn:

1. The attitude towards risk (whether risk averse or risk seeking) is found to have a significant relationship with risk perception in many past studies (e.g., Sahul Hamid et al., 2013; Sitkin & Weingart, 1995; Weber et al., 2002; Weber & Milliman, 1997)
2. Risk perception is proposed to have a significant mediating effect on the relationship between risk attitude and the individuals' choice in decision making (e.g., Sahul Hamid et al., 2013; Sitkin & Weingart, 1995; Weber & Milliman, 1997)

Mortgage protection insurance is a long-term promise, covering a future period of loan repayment between 10-30 years. Consumers can defuse the financial risks of credit default by taking mortgage payment protection insurance (Ranyard & McHugh, 2012b). One part of mortgage protection insurance is life insurance, where the



individuals' risk perception towards life insurance might become a significant determinant for their decision to own life insurance. Sin (2018) found that risk perception has a significant relationship in determining the individuals' life insurance ownership. In the process of purchasing life insurance, individuals would weigh their level of risk perception towards life insurance. Since individuals are known to be loss averse, they would be reluctant to take up life insurance when life insurance is perceived to be a risky (loss) investment. Huber and Schlager (2011) have also found that participants who perceive life insurance as a risky investment, due to the uncertainties regarding its performance and claim settlement, have lower likelihood to take up life insurance. Nam and Hanna (2019) found that the likelihood of owning term life insurance decreases as risk aversion increases. Some studies suggest that risk preferences (De Meza & Webb, 2001) or heterogeneity of risk perceptions (Spinnewijn, 2013) are assumed to explain the negative correlation between risk and insurance coverage found in some markets. For example, differences in risk perceptions may lead some high-risk types to believe that they are low-risk types, which can reduce demand for insurance at offered prices. In contrast, Coats (2021) proposes that, for example, a high-risk individual might prefer an insurance contract that provides relatively full coverage for a higher insurance premium (i.e., price), whereas an individual with a lower risk of loss might select a partial-coverage policy for a lower insurance premium. As such, optimal insurance purchase decisions will differ based on risk attitudes. Therefore, it is proposed that risk-neutral or risk-averse people should purchase insurance whenever the expected loss exceeds the insurance premium.

The operationalisation of risk-taking is described later in this chapter.

### **3.5 The conceptual research framework of this thesis**

In Chapter 2 the history and models of fear appeal research have been described, placing a focus on the extended parallel process model (EPPM) by Witte (1992) and its comprising message components, individual differences, influences on fear control processes and danger control processes and corresponding academic findings. Within this chapter 3 the additional concepts of intrinsic message features, immediate emotion of fear, optimism-pessimism, and risk-taking have been

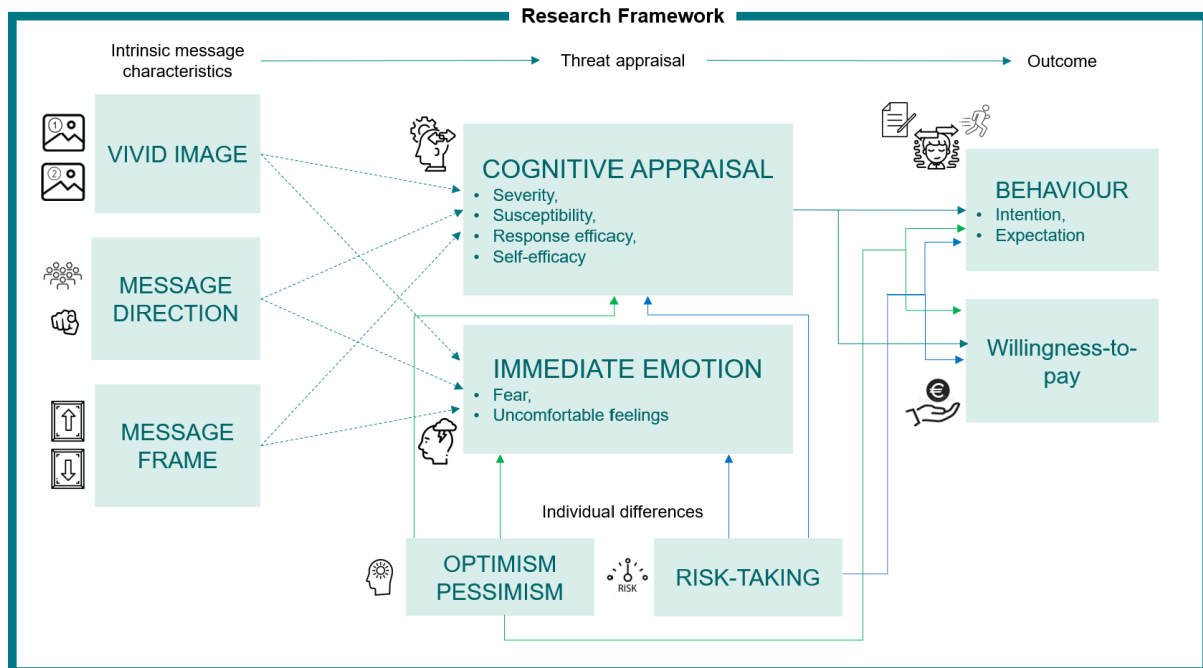
introduced. The conceptual research framework will be outlined in this section and the hypotheses will be presented in the next section.

The research framework as depicted in figure 14 outlines the role of the immediate emotion of fear and uncomfortable feelings, resultant from manipulation of the intrinsic message characteristics of message direction, message frame and vivid image. The emotional and cognitive responses to the threat appeal manipulations are expected to influence behaviour intention and expectation, as well as willingness-to-pay. The individual differences in optimism-pessimism and risk-taking are expected to influence emotional and cognitive reactions to the threat appeals, as well as influence behaviour intention and expectation, as well as willingness-to-pay. The rationale for this approach is based on the review of the literature presented in chapters 2 and 3. The intrinsic message characteristics used as independent variables in the model are the use of vivid images, direction of message, and message frame. These variables link directly to the defined common message components of threat appeals (severity, susceptibility, response-efficacy, self-efficacy). The use of a vivid image is defined as a core feature of a threat appeal (e.g., Witte, 1992), the direction of message (towards self or other/general) relates to the positioning of the threat from a personal standpoint, and the message frame (loss or loss avoidance/gain) relates to the presentation of the threat in a more positive (loss avoidance) or negative (loss) way towards the recommended action. The intrinsic message characteristics (use of vivid image, message direction, and message frame) have empirically been shown to influence cognitive and emotional variables identified in well-known threat appeal models (Chamberlain, 2015). More specifically, the variables of perceived severity of threat, perceived susceptibility, response efficacy, self-efficacy as proposed by the EPPM (Witte, 1992) and the immediate emotion of fear.

The conceptual model and hypotheses presented address the fundamental assumption so common in existing relevant literature that threat appeals generate an instinctive fear response, also in the context of mortgage protection insurance. The conceptual framework frames responses to threat appeals as a decision about future behaviour. The model acknowledges the role of the immediate emotions of fear and uncomfortable feelings but also includes individual differences (optimism –

pessimism, risk-taking) as they are expected to influence behavioural intention and behavioural expectation, which are generally accepted to strongly predict future behaviour (Västfjäll & Slovic, 2013). Willingness-to-pay is also presented as a dependent variable that will be influenced by intrinsic message characteristics, cognitive appraisal, emotions and by individual differences.

**Figure 14:** *Conceptual Research Framework of this Thesis*



To summarize, based on the discussion presented in the previous chapters, the present study attempts to make an original contribution to knowledge in the threat appeals domain as well as create a significant business value in the field of mortgage protection insurance distribution, which includes:

1. Intrinsic message characteristics associated with the main characteristics of threat appeals that have been demonstrated to influence emotional and cognitive appraisals, namely message direction, message frame and use of vivid images.
2. Key cognitive appraisal variables of the EPPM (severity, susceptibility, response efficacy, and self-efficacy) that have been shown in the extant literature to be core responses to fear appeals and to influence decision making.

3. The introduction of optimism-pessimism and risk-taking, to better understand the appraisal process and decision making about behaviour and willingness-to-pay for insurance.
4. Relevant outcome variables (i.e., behaviour intention and expectation to take up mortgage protection insurance, and WTP), which represent a decision about future behaviour as a result of exposure to a fear appeal.

The next section outlines and justifies the hypotheses for the present study in more detail.

### **3.6 Research hypotheses**

As presented in figure 14 above a conceptual framework has been developed based on the review of the literature presented in this thesis. The conceptual framework outlines the role of cognitive appraisals and immediate emotions, resultant from manipulation of the intrinsic message characteristics of vivid image, message direction, and message frame. Furthermore, the influence of individual differences optimism-pessimism and risk-taking will be considered. The cognitive responses to the threat appeal manipulations as well as individual differences are expected to influence behaviour intention and expectation, as well as willingness-to-pay. Prior to the empirical test of the conceptual research framework the research hypotheses will now be presented. To enhance clarity of discussion, the hypotheses have been split into sections, the first three of which correspond to one intrinsic message characteristic (i.e., independent variable) each. The following two sections are concerned with the influence of individual differences (mediating variables).

#### **3.6.1 The use of vivid negative images**

As discussed the use of vivid negative images in threat appeals to grab attention is widespread (Dahl et al., 2003). Commonly, the first element of a threat appeal therefore is the presentation of a vivid negative image (Witte, 1992) that shows “a *personally relevant and significant threat*” (Witte, 1994, p. 114). Mass-reach research methods often induce threat using vivid and disturbing images, including graphic

depictions of diseased organs, severe pain, injuries, and physical and emotional trauma (Brown & West, 2015). These images are designed to draw audience attention to messages (Baron et al., 1994) and generate emotional responses that motivate behavioural change (D. Hill et al., 1998).

In general, there is broad empirical evidence that identifies the information processing of visual images as superior to that of verbal information (e.g., Cautela & McCullough, 1978; MacInnis & Price, 1987). Perceptions of threat, based on perceived severity and susceptibility, are a cognitive response to a threat appeal, and fear is one possible emotional response to a threat appeal, as described in the EPPM (Witte, 1992). Empirical research has demonstrated that the inclusion of vivid images with a threat appeal increases perceptions of threat (e.g., Cauberghe et al., 2009; Sabanne et al., 2009). The intrinsic message characteristic that is expected to generate cognitions concerning severity of threat and susceptibility to threat in a fear appeal, is the implementation of a vivid negative image. As such,

*H1a: Vivid negative images will have an effect on the perception of severity.*

*H1b: Vivid negative images will have an effect on the perception of susceptibility.*

Academic research has identified several immediate emotional responses to vivid images that are not limited to fear (e.g., Chamberlain, 2015) and adding vivid negative images to threat appeals has also been found to make these appeals more persuasive (Dahl et al., 2003; Sabanne et al., 2009). However, fear is still the main emotion that is supposed to be triggered when using a fear appeal, for example, it was found that graphic warnings on cigarette packets and smoking frequency influenced fear (Andrews et al., 2014) and that graphic images regarding speeding resulted in the immediate emotion of fear (Chamberlain, 2015). Research has also demonstrated that vivid images generate other discrete emotional responses (e.g., disgust), which appear to contribute to message effectiveness (e.g., Niederdeppe et al., 2007). The position in this thesis is to focus on the immediate emotion of fear as well as add the emotion of uncomfortable feelings. The latter emotion is relevant for this thesis because the emotional well-being of a potential customer in the sales

process of mortgage protection insurance is an important business value. As such, the following is hypothesised:

*H2a: Vivid negative images will induce fear, i.e. elicit the immediate emotion of fear..*

*H2b: Vivid negative images will induce uncomfortable feelings, i.e. elicit the immediate emotion of uncomfortable feelings.*

As outlined in figure 14 above, fear appeals are hypothesised to generate emotional and cognitive responses that influence decisions about future behaviour.

Furthermore, examining the mechanisms behind this decision-making process is a focus area of this study. More precisely, a central purpose of the present study is to examine how the intrinsic message characteristics of fear appeals can be manipulated to evoke emotional and cognitive processes that change behaviour in accordance with the recommended action in the threat appeal (e.g., take up mortgage protection insurance). As such, responses to threat appeals are conceptualised within a decision-making research set-up, which are expected to influence future behaviour through decisions regarding intentions and expectations and mediated through cognitive appraisal. Especially, perceived severity (severity and susceptibility) is evaluated as mediating factor, as perceived efficacy is held constant through all variations of message variables.

*H3a: Vivid negative images will have an effect on behavioural intention (take up mortgage protection insurance), mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).*

*H3b: Vivid negative images will have an effect on behavioural expectation (take up mortgage protection insurance), mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).*

### **Introducing willingness-to-pay (WTP)**

There is no simple way to measure the economic value of insurance products because the primary use of these products deals with the control of risk (Hansen et al., 2016). The willingness-to-pay (WTP) can be defined as the utmost amount of

money that an individual is prepared to spend on a given good or service (e.g., Wertenbroch & Skiera, 2002). Several studies attempt to estimate the WTP for insurance products using risk preferences from data on insurance claims and deductible choices, while other studies attempt to estimate WTP using stated choice methods or contingent valuation that are based on hypothetical questions (A. Cohen & Einav, 2007). Contingent valuation and stated choice methods are based on survey questions with no consumption or real purchase consequences for the respondents. Therefore, these methods might attract a “hypothetical bias”, which is measured as the difference between the real and hypothetical WTP. There is widespread evidence of participants in contingent valuation studies to overstate the amount they are willing to pay for an incremental unit of private goods (e.g., Blumenschein et al., 2008; Murphy et al., 2005).

Being able to adequately estimate consumer preferences and WTP is crucial for many business-related areas (e.g., strategy formulation, product design, demand assessment, sales management), and, most notably, pricing decisions. Accordingly, over the past decades, there has been substantial progress around WTP measurement. Unsurprisingly, the core determinants of consumer behaviour are now well-understood for a broad range of goods and services. However, this development seems not to fully apply to the insurance sector, where prices are still largely set based on cost considerations (Braun et al., 2016). Considering empirical research on WTP in the context of insurance, studies have been conducted on WTP for crop insurance (e.g., Sherrick et al., 2003), livestock insurance (e.g., Khan et al., 2013), flood insurance (e.g., Botzen & van den Bergh, 2012), health insurance (e.g., van den Berg et al., 2008), long-term care insurance (e.g., Jacobs-Lawson et al., 2010), weather insurance (e.g., Musshoff et al., 2008), payment protection insurance (2012b), as well as auto, home, and house insurance (Hansen et al., 2016), and finally, term-life insurance (Braun et al., 2016)

Hansen et al. (2016) estimated how much Danish households are willing to pay for auto, home, and house insurance. The results show that the willingness to pay is marginally higher than the actuarially fair value under expected utility theory, but significantly higher under rank-dependent utility theory, and up to 600 percent higher than the actuarially fair value. Braun et al (2016) conducted a study on term-life

insurance by running a choice-based conjoint analysis. They found that the monthly insurance premium dominates term-life insurance in the price-sensitive market in Germany, but additional features (i.e., brand, CI rider, underwriting procedure) were found to be important nonprice characteristics for the average consumer. They also found that some respondents were prepared to pay relatively high monthly premiums, while a large fraction exhibited no WTP for term life insurance at all, presumably because of the absence of a need for mortality risk coverage.

Also, in the UK, Ranyard and McHugh (2012b) investigated customer decision-making in the payment protection insurance (PPI) market. In this market, indications of willingness to pay for PPI are not affected by large shifts in quality of coverage. Pryce and Keoghan (2001) have conducted a survey regarding the take-up of mortgage payment protection insurance in Scotland (note: no life insurance included) and have found that insurance premiums have a negative but marginal effect on take-up. The scholars conclude that even if premiums could be reduced, there would be no guarantee that take-up rates would increase strongly. Consumers may simply be insensitive to changes in price. Their purchase decision may be driven by other criteria, such as whether mortgage payment insurance covers the most important risks of relevance, and their perception of, and response to, risk generally. In light of mortgage protection insurance, the finding that products that are perceived to overcome a specific risk or dangers, fomenting fear, are more successful in reducing perceptions of danger, and attract higher purchases (McDaniel & Zeithaml, 1984) might lead to the assumption that the willingness-to-pay will be above the actuarial level of the price calculation. Thus, Addo et al. (2020) found that a fear appeal will have a positive relationship with the purchase behaviour.

While some authors have suggested to view WTP as a range (e.g., Wang et al., 2007), the present study follows the more common conceptualization of treating it as a point estimate. According to the results from Braun et al. (2016) on term-life insurance a large part of respondents did not feel a need for mortality risk coverage. The question arises if the implementation of a fear appeal, and more precisely, do intrinsic message characteristics influence WTP for mortgage protection insurance. As such,



*H3c: Vivid negative images will have an effect on Willingness-to-pay, mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).*

### **3.6.2 Message direction**

As described earlier, advertisers in general assume that the most persuasive advertising appeals are ones that are actively self-relevant because self-referenced advertisements are not only more persuasive but also memorable (Block, 2005). A differentiation in advertising literature is made regarding the viewer of the advertisement (self-relevant), and those that are not (focussing on other or general). As messages focussing on others do not access one's self-schema and therefore are not as memorable and persuasive, scholars proclaim that referencing to the self has been identified as an advantageous mnemonic strategy for young and older (Hamami et al., 2011).

This thesis examines the effect of manipulating the direction of a fear appeal (towards the self or other/general) on immediate emotions and cognitive appraisals. These variables are somewhat different to the generalised persuasion variables commonly utilised in the literature, as they are conceptualised as elements of a decision-making process responding to exposure to a fear appeal regarding an individual's future behaviour. As such, the present research focuses on the effects of message direction on immediate fear, and uncomfortable feelings, and it is hypothesised that

*H4a: Self-directed messages will induce fear, i.e. elicit the immediate emotion of fear.*

*H4b: Self-directed messages will induce uncomfortable feelings, i.e. elicit the immediate emotion of uncomfortable feelings.*

*H4c: Self-directed messages will have an effect on perceptions of severity.*

*H4d: Self-directed messages will have an effect on perceptions of susceptibility.*

*H4e: Self-directed messages will have an effect on perceptions of self-efficacy.*

As outlined in the research model and in accordance with vivid negative images, fear appeals are hypothesised to generate emotional and cognitive responses that influence decisions about future behaviour. As such, a central purpose of the present study is to examine how the intrinsic message characteristics of fear appeals can be manipulated to change behaviour regarding the recommended action in the threat appeal (e.g., take up mortgage protection insurance). As such, message direction is expected to influence future behaviour through decisions regarding intentions, expectations, and WTP. Especially, perceived severity (severity and susceptibility) is evaluated as mediating factor, as perceived efficacy is held constant through all variations of message variables.

*H5a: Self-directed messages will have an effect on behavioural intention (take up mortgage protection insurance), mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).*

*H5b: Self-directed messages will have an effect on behavioural expectation (take up mortgage protection insurance), mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).*

*H5c: Self-directed messages will have an effect on Willingness-to-pay, mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).*

### **3.6.3 Message framing effects**

The negative and positive consequences inherent in fear appeals can be designed in terms of loss avoiding (or gain) or loss framed messages. The general principle of message framing research is that individuals exposed to a loss framed message will respond differently in terms of cognitive evaluations (e.g., perceived threat) to individuals exposed to a gain framed message (Rothman et al., 1999). Though most studies have demonstrated that gain or loss avoiding framed messages are more effective in a general sense (e.g., Reinhart et al., 2007), in some cases loss framed

messages are more effective (e.g., Shen & Dillard, 2007), while in other studies no difference in effect was measured (e.g., O’Keefe & Jensen, 2006). The approach taken in the present thesis is to examine the influence of message frame (namely loss avoidance and loss) on the cognitive and emotional constructs and behaviour, as well as on WTP.

Recalling that the message frame (loss / loss avoidance) in the fear appeals context focuses on either emphasising the disadvantages of failing to adopt the recommendation (e.g., suffering a loss) or on the advantages of adopting the recommendation (e.g., avoiding a loss), it is questionable if the message frame will generate an immediate instinctive emotional response in individuals. Some scholars rather propose that message frame manipulations are more likely to have emotional reactions in individuals in the form of anticipatory emotions instead of immediate emotions (Baumgartner et al., 2008; Chamberlain, 2015). Anticipatory emotions are understood as emotions experienced in the present but are caused by consideration of the prospect of a future event (Baumgartner et al., 2008). Nevertheless, research has also shown that loss framed messages generate fear (Witte & Allen, 2000). As such, the distinction between anticipatory emotions and instinctive immediate responses is not usually clearly determined and is also not subject to this thesis. First, the influence of message frame on immediate emotions will be examined, second a consideration of the influence of message frame on cognitive appraisals and third, the influence of message frame on behaviour and WTP. In the context of an advisory meeting with an insurance or mortgage expert on the topic of mortgage protection insurance, it is important to evaluate if a customer feels an immediate emotion that might hinder the sales process, e.g., too much fear, and therefore it is hypothesised:

*H6a: Loss framed messages will induce fear, i.e. elicit the immediate emotion of fear.*

*H6b: Loss framed messages will induce uncomfortable feelings, i.e. elicit the immediate emotion of uncomfortable feelings.*

There is wide-ranging academic evidence that indicates message frame influences cognitive appraisals. For example, perceptions of severity and susceptibility are

found to be generated by loss framed messages (Bartels et al., 2010; Rothman et al., 2006). Further studies have shown that loss framed messages generate perceptions of susceptibility and severity which subsequently created behavioural intentions (e.g., Gerend & Cullen, 2008). Regarding the effect of loss avoidance messages, the claim is put forward that perceptions of severity and susceptibility have no causal relationship with loss avoiding messages. Therefore, only the influence of loss frames on perceived severity and susceptibility will be included in the hypotheses.

*H7a: Loss framed messages will have an effect on perceptions of severity.*

*H7b: Loss framed messages will have an effect on perceptions of susceptibility.*

Conversely, loss avoidance message frames will likely have an influence on an individual's efficacy perceptions (response efficacy and self-efficacy). To recall, self-efficacy is the belief that an individual is capable of adopting the recommended action (Witte, 1992) and response efficacy is an individual's belief that the recommended action will avert or reduce the threat (Ruiter et al., 2001). When presented with loss avoidance messages in a fear appeals context, recipients are assumed to have higher response efficacy and self-efficacy, because the recommended action is presented as an effective measure on how to reduce the threat (Witte & Allen, 2000). Consequently, the loss avoidance message amplifies the effectiveness of the recommended action (e.g., insurance will cover the risks of mortgage default) in reducing the threat. As such,

*H7c: Loss avoidance messages will have an effect on perceptions of self-efficacy.*

*H7d: Loss avoidance messages will have an effect on perceptions of response efficacy.*

As outlined, a central purpose of the present study is to examine how the intrinsic message characteristics of fear appeals can be manipulated to change behaviour regarding the recommended action in the threat appeal (e.g., take up mortgage protection insurance). As such, message frame is expected to influence future behaviour through decisions regarding intentions, expectations, and WTP. Rothman

(2006) stated that loss-framed messages are more effective when targeting behaviours that detect the presence of a disease, and gain-framed messages are more effective when targeting behaviours that prevent the beginning of a disease. In line with this, Bartels et al. (2010) found that when the risk associated with a health behaviour was low, recipients of the threat appeal responded more favourably to gain-framed messages. However, when the risk associated with the health behaviour was high, participants responded more favourably to loss-framed messages. The assumption of this thesis is that the risk associated with mortgage default is relevant to the recipient, and that the participant is at the point in time where he or she is made aware of the risks of credit default, as such detecting the presence of this risk. Especially, perceived severity (severity and susceptibility) is evaluated as mediating factor, as response efficacy is held constant through all variations of message variables. Therefore, it is hypothesised:

*H8a: Loss framed messages will have an effect on behavioural intention (take up mortgage protection insurance), mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).*

*H8b: Loss framed messages will have an effect on behavioural expectation (take up mortgage protection insurance), mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).*

*H8c: Loss framed messages will have an effect on Willingness-to-pay, mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).*

Following the discussions about all hypotheses regarding the intrinsic message characteristics (vivid negative image, message direction, message frame), it is of special interest which combination of these characteristics will lead to the wished for outcome – increasing the take-up rate of mortgage protection insurance, finding the highest willingness-to-pay, and improving the attitude towards mortgage protection insurance. As such, vivid negative images together with self-directed messages and a loss frame presentation are assumed to yield the optimal business outcome. It is therefore hypothesised:

*H9a: Self-directed messages will interact with loss frames and vivid negative images and will have an effect on the level of perceived threat (severity and susceptibility).*

*H9b: Self-directed messages will interact with loss frames and vivid negative images and will have an effect on behavioural intention (take up mortgage protection insurance).*

*H9c: Self-directed messages will interact with loss frames and vivid negative images and will have an effect on behavioural expectation (take up mortgage protection insurance).*

*H9d: Self-directed messages will interact with loss frames and vivid negative images and will have an effect on WTP.*

Moreover, improving the attitude towards mortgage protection insurance is a key business value. It is therefore hypothesised:

*H9e: Variations of message characteristics will have an effect on attitude towards BaufiSchutz insurance.*

*H9f: Presenting information regarding BaufiSchutz, associated risks and a threatening message will have an effect on attitude to mortgage insurance after the stimuli compared to attitude to mortgage insurance before the stimuli.*

### **3.6.4 Influence of optimism and pessimism**

As mortgage insurance is a very long-term contract (usually 10-30 years) it seems relevant to add a general optimistic or pessimistic world view of people into the field of research. The relationship between optimism - pessimism and message acceptance shall be analysed with the following hypotheses. Witte (1992, p.345) states that "individual differences are likely to influence an appraisal of threat and efficacy, which will then affect the critical point at which individuals begin to cope with fear, instead of danger". The extended parallel process model posits as proposition

twelve that individual differences will influence outcomes (behaviour, emotions, WTP) indirectly, as mediated by perceived threat and efficacy. This puts individual differences in the place of responsibility for determining the thresholds and critical points and therefore influencing in what type of response a recipient will be engaging in (Witte, 1992). Several studies have confirmed external or personal influences, such as the credibility of the communicator, prior experiences of the recipient, or the characteristics of the medium, that is transmitting the message (Gelbrich & Schröder, 2008).

According to empirical results regarding the individual difference of optimism, it was found that optimism can be considered a central personal resource that is beneficial for a healthy, happy, and successful life (Christoph J Kemper et al., 2017). However, there is reason to believe that the coping strategies and cognitive tendencies of optimists may lead to less adaptive behaviour in some areas of life. Optimistic people typically report less distress across a broad range of situations, including stressful situations (Andersson, 1996), which is an interesting aspect when considering fear appeals that are designed to create some sort of stress. In the context of a threatening message, it could be assumed that optimistic people feel less stress, e.g., fear or uncomfortable feelings, and as such it can be hypothesised that:

*H10a: Optimism will will reduce the immediate emotion of fear.*

*H10b: Pessimism will will induce fear, i.e., elicit the immediate emotion of fear.*

*H10c: Optimism will reduce the immediate emotion of uncomfortable feelings.*

*H10d: Pessimism will induce uncomfortable feelings, i.e., elicit the immediate emotion of uncomfortable feelings.*

As optimism leads to a lower stress level, it can be assumed that optimistic people are therefore more likely to cognitively solve situations by evaluating the perceived threat (severity, susceptibility) and perceived efficacy (response efficacy, self-efficacy) with a lower fear level. Nevertheless, when confronted with insurance decisions, study results show that optimistic participants incur a higher total cost of

risk and are more likely to underinsure than non-optimistic participants, even when taking up insurance maximizes expected payoffs (Coats & Bajtelsmit, 2021). As such,

*H11a: Optimism will have an effect on perceptions of severity.*

*H11b: Pessimism will have an effect on perceptions of severity.*

*H11c: Optimism will have an effect on perceptions of susceptibility.*

*H11d: Pessimism will have an effect on perceptions of susceptibility.*

Also, individual differences such as cultural values, self-esteem, or fearfulness are proposed to have an effect on behaviour (Higbee, 1969; Neurauter, 2005; J. Tanner, 2006). Conversely, Witte (2000, p. 601) states the outcome of a meta-analysis as “it appears not to matter whether individuals are anxious or repressors by nature; their response to fear appeals is not affected by their level of trait anxiety”. It will be interesting to evaluate the influence of optimism – pessimism on behaviour. As such,

*H12a: Optimism will have an effect on behavioural intention (take up mortgage protection insurance).*

*H12b: Pessimism will have an effect on behavioural intention (take up mortgage protection insurance).*

*H12c: Optimism will have an effect on behavioural expectation (take up mortgage protection insurance).*

*H12d: Pessimism will have an effect on behavioural expectation (take up mortgage protection insurance).*

In light of mortgage protection insurance, the finding that products that are perceived to overcome a specific risk or dangers, fomenting fear, are more successful in reducing perceptions of danger, and attract higher purchase prices (McDaniel & Zeithaml, 1984) might lead to the assumption that the willingness-to-pay will be



above the actuarial level of the price calculation. Assumably, optimistic attitudes will contradict this tendency, as optimism leads to reduced fear levels. Therefore, it will be interesting to evaluate the influence of optimism – pessimism on WTP. As such,

*H13a: Optimism will have an effect on Willingness-to-pay.*

*H13b: Pessimism will have an effect on Willingness-to-pay.*

### **3.6.5 Influence of risk-taking**

The willingness to take risks describes the inclination of a person to take risks or to avoid them (Beierlein et al., 2015). Conceptualised as a personality trait, risk-taking describes a general preference to choose or avoid risky behavioural options.

Correlations of risk-taking with other psychological variables have been reported for self-efficacy (Bandura, 1997). The readiness to take risks has a significant influence on the risk behaviour of individuals (Zuckermann, 2007). Accordingly, people who describe themselves as highly ready to take risks also tend to engage in risky behaviour more often. Consequently, it can be assumed that, along the lines of optimism, people willing to take risks are less sensitive to feeling stress in the context of a threatening message. It is therefore hypothesised that:

*H14a: Risk-taking will induce fear, i.e. elicit the immediate emotion of fear.*

*H14b: Risk-taking will induce uncomfortable feelings, i.e. elicit the immediate emotion of uncomfortable feelings.*

Personal factors, particularly cognitive and affective characteristics, shape individual risk behaviour (Hönl et al., 2017). Individual cognition has been frequently assumed to affect risk behaviour (Kahneman, 2003). In essence, most scholars in the field of judgment and decision-making argue that individual (biased) cognition, is one of the most important factors for explaining risky choices and risk behaviour (Kahneman, 2011; Sitkin & Pablo, 1992). Cognitive biases that describe deviations from traditional economic rationality have been linked with higher risk-taking (C. Anderson &

Galinsky, 2006; Simon et al., 2000). Therefore, it is assumed that people who are more willing to take risks are cognitively biased, in the sense that the evaluation of severity and susceptibility will result in a lower personal score. As such,

*H15a: Risk-taking will have an effect on perceptions of severity.*

*H15b: Risk-taking will have an effect on perceptions of susceptibility.*

### **Interactions in between individual differences and behavioural influences**

Interestingly, the cognitive phenomena of optimism has also been linked with higher risk taking (Sharot, 2011; Weinstein & Klein, 1996) which implies a connection between risk-taking and optimism, such that the evaluation of risky outcomes is influenced with respect to individual probability estimates. On the lines of optimism, it can be assumed that people who are more willing to take risks are more likely to incur a higher total cost of risk and are more likely to underinsure than risk-averse participants, even when taking up insurance maximizes expected payoffs. Furthermore, it is also assumed that WTP will be lower for high scores in optimism and risk-taking. As such,

*H16a: Increased risk-taking has a positive interaction effect with increased optimism on the reduction of fear.*

*H16b: Risk-taking has an interaction effect with optimism on behavioural intention (take up mortgage protection insurance).*

*H16c: Risk-taking has an interaction effect with optimism on behavioural expectation (take up mortgage protection insurance).*

*H16d: Risk-taking has an interaction effect with optimism on WTP.*

*H16e: Optimism, mediated by risk-taking, has an effect on WTP.*

*H17a: Risk-taking will have an effect on behaviour intention (take up mortgage protection insurance).*

*H17b: Risk-taking will have an effect on behaviour expectation (take up mortgage protection insurance).*

*H17c: Risk-taking will have an effect on WTP.*

### **3.6.6 Influence of cognitive appraisals**

As depicted in the research framework, it is not expected that intrinsic message characteristics will have a direct effect on behaviour intention or expectation. Rather, the cognitive appraisals and emotional responses mediate the relationship between message characteristics and behavioural intention and expectation.

Cognitive appraisals, specifically perceptions of susceptibility, severity, response efficacy, and self-efficacy, have been widely acknowledged to influence behaviour intention and expectation (e.g., I. Lewis et al., 2013). Milne et al (2000) found in their meta-analysis that perceptions of self-efficacy have twice as much influence as perceptions of severity on behaviour outcome results. Furthermore, Witte and Allen (2000) state in their meta-analysis that perceptions of susceptibility and severity have a significant effect on behaviour intention, as well as that self-efficacy and response efficacy have a significant effect on behaviour intention and behaviour expectation. A strong influence of severity perceptions on behaviour intention was also found by Pechmann et al. (2003), whilst Tay and Watson (2002) found response efficacy and self-efficacy to strongly influence behaviour intention. It will be interesting to evaluate in the context of mortgage protection insurance which of the cognitive appraisal variables will have the greatest impact on behaviour (intention and expectation) as all variables have been widely shown to influence behaviour intention. As such,

*H18a: Cognitive appraisals, and specifically, severity will influence behavioural intention (take up mortgage protection insurance).*

*H18b: Cognitive appraisals, and specifically, susceptibility will influence behavioural intention (take up mortgage protection insurance).*

*H18c: Cognitive appraisals, and specifically, response efficacy will influence behavioural intention (take up mortgage protection insurance).*

H18d: Cognitive appraisals, and specifically, self-efficacy will influence behavioural intention (take up mortgage protection insurance).

As well as influence behavioural expectation:

*H19a: Cognitive appraisals, and specifically, severity will influence behavioural expectation (take up mortgage protection insurance).*

*H19b: Cognitive appraisals, and specifically, susceptibility will influence behavioural expectation (take up mortgage protection insurance).*

*H19c: Cognitive appraisals, and specifically, response efficacy will influence behavioural expectation (take up mortgage protection insurance).*

*H19d: Cognitive appraisals, and specifically, self-efficacy will influence behavioural expectation (take up mortgage protection insurance).*

Furthermore, Addo et al. (2020) found that a fear appeal will have a positive relationship with the purchase behaviour and the question arises if the implementation of a fear appeal will have an effect, and more precisely, do cognitive appraisals influence willingness-to-pay for mortgage protection insurance. Therefore, it is hypothesised that:

*H20a: Cognitive appraisals, and specifically, severity will influence WTP.*

*H20b: Cognitive appraisals, and specifically, susceptibility will influence WTP.*

*H20c: Cognitive appraisals, and specifically, response efficacy will influence WTP.*

*H20d: Cognitive appraisals, and specifically, self-efficacy will influence WTP.*

Furthermore, the findings across the literature state that high perceptions of threat and efficacy have the most persuasive impact (e.g., Roberto & Goodall, 2009; Witte, 1992; Wong & Cappella, 2009). It is therefore hypothesised:

*H20e: High threat perceptions (severity and susceptibility), combined with high efficacy perceptions (response efficacy and self-efficacy) have the most persuasive impact on behavioural intention (take up mortgage protection insurance).*

### **Fear control and danger control processes**

Witte (1992, p.345) states that “individual differences are likely to influence an appraisal of threat and efficacy, which will then affect the critical point at which individuals begin to cope with fear, instead of danger”. This will affect the critical point at which individuals begin to cope with fear, instead of danger. It will be interesting to evaluate the proposition of the EPPM regarding the discriminating value, which either leads to fear control or danger control processes. The expected outcomes are hypothesised as follows:

*H21a: According to the EPPM, a negative discriminating value will lead to fear control processes. In case of fear control, defensive avoidance and message derogation will be high, while behaviour intention (take up mortgage protection insurance) will be low.*

*H21b: In case of fear control, defensive avoidance and message derogation will be high, while behaviour expectation (take up mortgage protection insurance) will be low.*

*H22a: According to the EPPM, a positive discriminating value will lead to danger control processes. In case of danger control, defensive avoidance and message derogation will be low, while behaviour intention (take up mortgage protection insurance) will be high.*

*H22b: In case of danger control, defensive avoidance and message derogation will be low, while behaviour expectation (take up mortgage protection insurance) will be high.*

*H23: The discriminating value will have an effect on willingness-to-pay.*

### **3.6.7 Summary**

The aim of this section was to introduce the conceptual research framework of this thesis which focuses on the cognitive and emotional responses to threat appeals (namely immediate emotions alongside cognitive appraisal), manipulated by different message characteristics. These variables are assumed to influence decision about future behaviour of mortgage customers and to influence willingness-to-pay for mortgage protection insurance. Furthermore, the individual differences of optimism-pessimism and risk-taking were integrated into the research model following the constructs of the EPPM, next to cognitive appraisals and fear. This thesis is in line with most of the existing threat appeals research which focuses primarily on cognitions, with the addition of immediate emotional responses of fear and adding uncomfortable feelings. Drawing from conceptual argument and existing empirical support, 23 formal hypotheses with a total of 74 variations were stated which are outlined in table 10 below. The hypotheses are categorised depending on the topic:

- Vivid negative image (seven hypotheses)
- Message direction (eight hypotheses)
- Message frame (nine hypotheses)
- Message characteristics interactions (six hypotheses)
- Optimism / pessimism (fourteen hypotheses)
- Risk-taking (four hypotheses)
- Individual differences interaction (five hypotheses)
- Cognitive appraisal (sixteen hypotheses)
- Fear control (two hypotheses)
- Danger control (three hypotheses)

**Table 10:** *An Overview of the Research Hypotheses*

Topic	Label	Hypothesis
Vivid negative image	H1a	Vivid negative images will have an effect on the perception of severity.
	H1b	Vivid negative images will have an effect on the perception of susceptibility.
	H2a	Vivid negative images will induce fear, i.e. elicit the immediate emotion of fear.
	H2b	Vivid negative images will induce uncomfortable feelings, i.e. elicit the immediate emotion of uncomfortable feelings.
	H3a	Vivid negative images will have an effect on behavioural intention (take up mortgage protection insurance), mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).
	H3b	Vivid negative images will have an effect on behavioural expectation (take up mortgage protection insurance), mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).
	H3c	Vivid negative images will have an effect on Willingness-to-pay, mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).
Message direction	H4a	Self-directed messages will induce fear, i.e. elicit the immediate emotion of fear.
	H4b	Self-directed messages will induce uncomfortable feelings, i.e. elicit the immediate emotion of uncomfortable feelings.
	H4c	Self-directed messages will have an effect on perceptions of severity
	H4d	Self-directed messages will have an effect on perceptions of susceptibility
	H4e	Self-directed messages will have an effect on perceptions of self-efficacy
	H5a	Self-directed messages will have an effect on behavioural intention (take up mortgage protection insurance), mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).
	H5b	Self-directed messages will have an effect on behavioural expectation (take up mortgage protection insurance), mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).
Message frame	H5c	Self-directed messages will have an effect on Willingness-to-pay, mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).
	H6a	Loss framed messages will induce fear, i.e. elicit the immediate emotion of fear.
	H6b	Loss framed messages will induce uncomfortable feelings, i.e. elicit the immediate emotion of uncomfortable feelings.
	H7a	Loss framed messages will have an effect on perceptions of severity

Topic	Label	Hypothesis
	H7b	Loss framed messages will have an effect on perceptions of susceptibility
	H7c	Loss avoidance messages will have an effect on perceptions of self-efficacy
	H7d	Loss avoidance messages will have an effect on perceptions of response efficacy
	H8a	Loss framed messages will have an effect on behavioural intention (take up mortgage protection insurance), mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).
	H8b	Loss framed messages will have an effect on behavioural expectation (take up mortgage protection insurance), mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).
	H8c	Loss framed messages will have an effect on Willingness-to-pay, mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).
	H9a	Self-directed messages will interact with loss frames and vivid negative images and will have an effect on the level of perceived threat (severity and susceptibility).
	H9b	Self-directed messages will interact with loss frames and vivid negative images and will have an effect on behavioural intention (take up mortgage protection insurance).
	H9c	Self-directed messages will interact with loss frames and vivid negative images and will have an effect on behavioural expectation (take up mortgage protection insurance).
Message characteristics interactions	H9d	Self-directed messages will interact with loss frames and vivid negative images and will have an effect on WTP.
	H9e	Variations of message characteristics will have an effect on attitude towards BaufiSchutz insurance.
	H9f	Presenting information regarding BaufiSchutz, associated risks and a threatening message will have an effect on attitude to mortgage insurance after the stimuli compared to attitude to mortgage insurance before the stimuli.
Optimism / pessimism	H10a	Optimism will will reduce the immediate emotion of fear.
	H10b	Pessimism will will induce fear, i.e. elicit the immediate emotion of fear.
	H10c	Optimism will reduce the immediate emotion of uncomfortable feelings.
	H10d	Pessimism will induce uncomfortable feelings, i.e. elicit the immediate emotion of uncomfortable feelings.
	H11a	Optimism will have an effect on perceptions of severity.
	H11b	Pessimism will have an effect on perceptions of severity.



Topic	Label	Hypothesis
	H11c	Optimism will have an effect on perceptions of susceptibility.
	H11d	Pessimism will have an effect on perceptions of susceptibility.
	H12a	Optimism will have an effect on behavioural intention (take up mortgage protection insurance).
	H12b	Pessimism will have an effect on behavioural intention (take up mortgage protection insurance).
	H12c	Optimism will have an effect on behavioural expectation (take up mortgage protection insurance).
	H12d	Pessimism will have an effect on behavioural expectation (take up mortgage protection insurance).
	H13a	Optimism will have an effect on Willingness-to-pay.
	H13b	Pessimism will have an effect on Willingness-to-pay.
Risk-taking	H14a	Risk-taking will induce fear, i.e., elicit the immediate emotion of fear.
	H14b	Risk-taking will induce uncomfortable feelings, i.e., elicit the immediate emotion of uncomfortable feelings.
	H15a	Risk-taking will have an effect on perceptions of severity.
	H15b	Risk-taking will have an effect on perceptions of susceptibility.
Individual differences interaction	H16a	Increased risk-taking has a positive interaction effect with increased optimism on the reduction of fear
	H16b	Risk-taking has an interaction effect with optimism on behavioural intention (take up mortgage protection insurance).
	H16c	Risk-taking has an interaction effect with optimism on behavioural expectation (take up mortgage protection insurance).
	H16d	Risk-taking has an interaction effect with optimism on WTP.
	H16e	Optimism, mediated by risk-taking, has an effect on WTP.
Cognitive appraisals	H17a	Risk-taking will have an effect on behaviour intention (take up mortgage protection insurance).
	H17b	Risk-taking will have an effect on behaviour expectation (take up mortgage protection insurance).
	H17c	Risk-taking will have an effect on WTP.
	H18a	Cognitive appraisals, and specifically, severity will influence behavioural intention (take up mortgage protection insurance).
	H18b	Cognitive appraisals, and specifically, susceptibility will influence behavioural intention (take up mortgage protection insurance).
	H18c	Cognitive appraisals, and specifically, response efficacy will influence behavioural intention (take up mortgage protection insurance).

Topic	Label	Hypothesis
	H18d	Cognitive appraisals, and specifically, self-efficacy will influence behavioural intention (take up mortgage protection insurance).
	H19a	Cognitive appraisals, and specifically, severity will influence behavioural expectation (take up mortgage protection insurance).
	H19b	Cognitive appraisals, and specifically, susceptibility will influence behavioural expectation (take up mortgage protection insurance).
	H19c	Cognitive appraisals, and specifically, response efficacy will influence behavioural expectation (take up mortgage protection insurance).
	H19d	Cognitive appraisals, and specifically, self-efficacy will influence behavioural expectation (take up mortgage protection insurance).
	H20a	Cognitive appraisals, and specifically, severity will influence WTP
	H20b	Cognitive appraisals, and specifically, susceptibility will influence WTP
	H20c	Cognitive appraisals, and specifically, response efficacy will influence WTP
	H20d	Cognitive appraisals, and specifically, self-efficacy will influence WTP
	H20e	High threat perceptions (severity or susceptibility), combined with high efficacy perceptions (response efficacy and self-efficacy) have the most persuasive impact on behavioural intention (take up mortgage protection insurance).
Fear control process	H21a	According to the EPPM, a negative discriminating value will lead to fear control processes. In case of fear control, defensive avoidance and message derogation will be high, while behaviour intention (take up mortgage protection insurance) will be low.
	H21b	According to the EPPM, a negative discriminating value will lead to fear control processes. In case of fear control, defensive avoidance and message derogation will be high, while behaviour expectation (take up mortgage protection insurance) will be low.
Danger control process	H22a	According to the EPPM, a positive discriminating value will lead to danger control processes. In case of danger control, defensive avoidance and message derogation will be low, while behaviour intention (take up mortgage protection insurance) will be high.
	H22b	According to the EPPM, a positive discriminating value will lead to danger control processes. In case of danger control, defensive avoidance and message derogation will be low, while behaviour expectation (take up mortgage protection insurance) will be high.
	H23	The discriminating value will have an effect on willingness-to-pay.

The research model and hypotheses presented in this chapter are based on a review of the literature and the hypotheses address relevant priorities for theory development in the threat appeals domain as well as present a chance for mortgage and insurance brokers to enhance their sales process when discussing the topic of mortgage protection insurance. As such, the main assumptions that have been identified in the literature are addressed. Having reviewed the extant literature and stated a series of hypotheses together with a research model, the next sections describe the research philosophy, the research design and methodology utilised to test the hypotheses presented in table 10 above.

### **3.7 Ontological / Epistemological position and general approach**

The choice of research method is a consideration of the philosophy of science and philosophical position of the researcher. Indeed, it is important to acknowledge the importance of philosophy of science upon the methodological approach to any study. Epistemology is the relationship between reality and the researcher, and methodology is the technique used by the researcher to discover that reality (Johnson & Duberley, 2000).

As in any discipline or profession where knowledge claims are commonly made, epistemology contributes by clarifying the conditions and limits of what is interpreted as justified knowledge – whether or not people involved recognize this as so (Johnson & Duberley, 2000). It is not possible for managers or researchers to stand outside epistemological processes. It seems clear that every management strategy or tactic, which is based on evidence, articulates an epistemological position that authorizes the knowledge claims justifying the decisions made. Hence, it is eminent that managers should possess the ability to reflect critically on their ‘fact-based’ decisions by at least being aware of their taken-for-granted assumptions about their version of reality.

The researcher sees the possible ontological positions as a continuum, with the strictly realist view on the one end and totally subjectivist view on the other. Hence, there are also positions in between which the researcher can relate to. The first intention was that the realist ontological position seems to fit the researcher’s way of

seeing the world. Everything is taken for real and can be explained in an objective manner with rational and systematic arguments. The researcher likes this view in general but thinks that this doesn't fully fit his assumptions. As such, it is realized that everything which is perceived is also what is made of it as being one own's reality. On the continuum of possible positions, the researcher sees himself more in the direction towards an *ontological realist*. Thinking about how one's ontological world is constructed (McAuley et al., 2014) is a valuable insight for your view on life.

When it comes to the *epistemological position*, the researcher feels quite flexible. The researcher likes the 'fact'-driven objectivist approach but does realize that this is just because it makes one's own understanding of knowledge much easier to grasp. It leaves out important issues about meanings, cultural and situational influences and just derives knowledge through statistical reliance - therefore, 'real' knowledge especially in management research can probably be better produced with the subjectivist epistemological approach. Theoretically, in an ideal world there would be unrestricted access to people and their opinions, no timely limitations, neutral research setups and unbiased researchers with total comprehension of all influencing factors. Under these circumstances research results would probably achieve significant new knowledge. Unfortunately, the researcher believes that this is not 'realistic' or in any way achievable. Hence, the preferred standpoint is being *pragmatic*. Whatever suits the topic best will determine the choice of research methodology and design.

In light of such comparisons, the *positivist and realist paradigms* which aim to discover, explain, and generalize cause-effect linkages are best suited to the present research. As this study focuses on testing phenomena which cannot be directly observed, for example consumer emotional responses to threat appeals, this research is anchored in the *realist paradigm*. Whilst positivists indicate that only associations can be truly observed, and thus that causality is an irrelevant concept; realists consider the purpose of science to be an attempt to uncover the complexity of causal relations (N. Lee & Lings, 2008). Indeed, the development of the conceptual model and hypotheses of this study are based on the logic of causal relationships between the variables of interest.

#### **4 Research methodology and research approach**

In the previous sections a conceptual framework and its corresponding hypotheses were introduced. It is now the time to move the process of this thesis to the methodology designed to test the theoretical and practical expectations. As a reminder, the proclaimed research questions under examination of this thesis are as follows:

1. *To explain the effects of moderate and modest fear appeals on behaviour intention, behaviour expectation, and willingness-to-pay regarding mortgage protection insurance in Germany using constructs of the Extended Parallel Process Model.*
2. *To provide empirical evidence of the impact of individual differences (optimism/pessimism and risk-taking) on behaviour intention, behaviour expectation, and willingness-to-pay concerning MPI in Germany.*
3. *To analyse whether moderate or modest fear appeals are effective to establish the most appropriate 'fear level' of threatening message constructs in order to develop a guiding communication for German mortgage and insurance salespersons.*

The general research approach is guided by an experimental methodology in order to generate insights into the dependencies between independent variables, individual differences, cognition, and emotion on behaviour and willingness-to-pay as discussed earlier. Experimental methods are widely seen as something of a 'gold standard' regarding researching the nature of causality (Churchill, 2004). To operationalise the experimental method, an online experiment is developed following the objectives of this research. In the next sections the design of the web experiment is introduced and explained. First, the experimental design is described. Second, the selection and development of the stimuli (i.e., the independent variables) is presented and thirdly, the variables are explained in detail. Subsequently, the design of the data collection instrument is introduced and finally, the data collection process is described.

Some research approaches are more fitting to a positivist and realist projects such as this, even though the methods used to evaluate hypotheses are not themselves depending on the epistemology. It is necessary to consider the research approach to be undertaken based on the philosophical position of the researcher to move the discussion of choice of method forward. Generally speaking, the distinction between a inductive and deductive research approach is clear (N. Lee & Lings, 2008). An inductive research approach starts with the collection of data, usually observations. As a result of the subsequent data analysis a theory is developed (Gill & Johnson, 2010). In contrast, a deductive approach is characterised by the consideration of theory or theoretical model which is used to develop research hypotheses. Then, the hypotheses are tested, and results are used to further deduce an explanation for behaviour or phenomena (Gill & Johnson, 2010). For this thesis a deductive approach has been adopted, based on the research objectives identified. The review of relevant literature in chapter 2 highlighted the basic assumptions that have pervaded the threat appeals field and the constructs of the EPPM were presented, which are utilised within this research. The theory around the EPPM forms the basis of investigation leading to the development of the research hypotheses. As such, a deductive approach is appropriate, in accordance with the positivist and realist position of the researcher.

The research strategy which is based on deductive approaches can be either exploratory, descriptive, or causal. An exploratory research design is frequently employed to gain background information, define terms, clarify problems, and establish research priorities in order to provide the precise nature of a problem while providing more understanding of the context where, how and when this problem occurs (Gill & Johnson, 2010). Therefore, scholars use exploratory research when they are confronted with a vague or large research problem and need some flexibility to solve it. This research can then be allocated into different research issues with the fitting hypotheses (Churchill, 2004). Overall, exploratory research is flexible and typically uses small samples to provide insight and understanding using qualitative techniques (Gill & Johnson, 2010).

On the other hand, descriptive research is usually employed to establish the relationship between two variables, or the frequency of occurrences of an event or

phenomenon. As such, descriptive research excludes the explanatory element of why behaviour or phenomena occur and thus, only analyses an occurrence in descriptive terms. This research strategy can be used to further build on findings achieved from exploratory research (Churchill, 2004). Generally, descriptive research can be designed as a cross-sectional or longitudinal study, where cross-sectional studies accumulate data considered to be representative of the population at one point in time, and where longitudinal studies use defined samples of respondents and accumulate data at more than one point in time (Gill & Johnson, 2010).

Lastly, a causal research design is understood to create a cause-and-effect relationship between variables and therefore, solves the weakness of descriptive research by highlighting the explanatory element of 'why' events or behaviour occur. Despite its name, in a proposed condition of "if y then z" casual research does not prove that y has caused z but rather demonstrates that y made the occurrence of z more likely (Churchill, 2004). To operationalise causal research, experimental designs usually employ independent variables as a cause which are manipulated and controlled for. At the same time, the measured effects are employed as dependent variables, which can be observed as a result of the manipulation (Gill & Johnson, 2010). Causality is a claim that must meet four conditions to be valid (Mooi, 2011). First, two or more variables of interest must be correlated (related to one another), and second, the cause must happen before the effect. Third, it is important to control for other effects (control variables). Last, the underlying theory must have a strong explanatory power. Mooi (2011) proposes that if all four conditions are in place, then a causal design is most appropriate in case a scholar plans to manipulate variables in order to identify and evaluate both the factors that influence an event, and the relationships and interactions between those variables. The fitting and rigid nature of causal research, using larger samples to test specific hypotheses and relationships (Gill & Johnson, 2010) is well suited to meet the objectives of this research study. This thesis examines the causal effects of manipulating message variables of threat appeals on emotions, cognitions, behaviour, and willingness-to-pay. Therefore, a causal research design is most appropriate for this research project.

In accordance with the first step of choosing a causal research design for this study, the second step is to decide for the research techniques employed to collect data for

analysis. A main distinction between types of research technique can be made in terms of qualitative or quantitative methods. Qualitative research is commonly recognised as having an underlying unit derived from a methodological commitment to *verstehen* (Gill & Johnson, 2010). Gill and Johnson (2010, p. 149) define *verstehen* as “the assumption that all human action, or behaviour, has an internal logic of its own which must be understood and described in order for researchers to be able to explain that behaviour”. As such, qualitative methods view human behaviour as the consequence of how individuals interpret their world and therefore employ techniques to attempt to capture this process of interpretation. In general, qualitative techniques are ideal for exploratory research and the inductive generation of hypotheses and therefore, are not appropriate to meet the research objectives of this thesis.

Quantitative research in contrast, involves a large number of respondents and requires the utilisation of structured questions in which the response options have been predefined (Gill & Johnson, 2010). Quantitative research is supposedly objective and tries to identify facts and causes regarding events and phenomena. Usually, producing statistical evidence by testing hypotheses is employed by quantitative research techniques that emphasise the reliability of numbers. As such, only quantitative research can provide sufficient data for the purpose of generalisation (Churchill, 2004). Limitations of quantitative research are especially the missing exploration of subjective feelings and attitudes of participants of a study (Gill & Johnson, 2010). Given the positivist and realist position of the researcher and the hypotheses developed, quantitative research is most appropriate for this thesis.

After having identified that a causal research design will be employed through a quantitative research method, the thinking moves on to the best suited data collection method for this study. Data collection methods can be differentiated between non-interactive methods where a scholar records information about recipients of a manipulation, usually through observation, and interactive methods which involves the questioning of participants in some sort of way and recording the answers (N. Lee & Lings, 2008). Given the definition of a causal research design and the hypotheses developed, the interactive method seems best suited to collect the data required to test the research questions. In line with the research objective of



investigating the effect of manipulating threatening message characteristics on emotions, cognitions, behaviour and willingness-to-pay an interactive experimental design is best suited to control for appropriate factors and examine the relationship between cause and effect. Discussion will now move to a consideration of experimental design and the most appropriate design for the present study, in order to select the most appropriate method of research.

#### **4.1 Experimental design**

Distinguishing between causes and the measured effects is one of the main strengths of experimental causal research designs (Churchill, 2004). Conducting experimental research enables the researcher to use images or messages as independent variables, supporting more meaningful research setting closer to reality. Because researchers are able to control some manipulations of the independent variable (i.e., cause), they can be more confident that the relationships discovered are “true” relationships (Churchill, 2004). The “classical” or “true” experimental design enables a researcher to test theories and hypotheses systematically since it has the following three characteristics (Gill & Johnson, 2010). First, the researcher is able to allocate subjects to control and experimental groups in a random or systematic manner. Second, the researcher is then able to manipulate the incidence of the independent variables and measure the change in the dependent variables. Third, a true experiment occurs through the direct manipulation of the researcher because of these characteristics. As such, the most appropriate research method for this thesis is an experimental design, which enables the utilisation of message stimuli in its procedure and is capable of providing evidence of causal relationships. Giving the researcher control over the cause in order to prove evidence is the main advantage of an experimental design. Nevertheless, this is also one of the problems of experimental design. As the researcher purposely induces changes in the independent variable, depending on the nature of these changes, and depending on the moral code of the researcher, ethical problems might ensue (Gill & Johnson, 2010).

Causal experimental research design methods can be categorized into two groups, the randomised “true” experiment, and the quasi-experiment (Gill & Johnson, 2010).

Applying a randomised experiment means conducting an experiment in which units (e.g., people, period in time or institution) are assigned to receive the treatment or the alternative condition by a random process, i.e., to a treatment by chance (such as a table of random numbers). At least two groups that are similar to each other on average are created and the outcomes of observed differences between the groups are likely to be an effect of the treatment stimuli (Shadish et al., 2002). As is the case for a true experiment, i.e., a randomised experiment, the foremost aim of a quasi-experiment is to evaluate causal relationships between independent and dependent variables (Gill & Johnson, 2010). However, a quasi-experiment does not take place in laboratory conditions and has a focus on real-life, naturally occurring events. As such, subjects of the experiment cannot be randomly or systematically assigned to experimental and control groups. Therefore, some degree of control over the extraneous variables is lost due to this lack of equivalence between groups. A quasi-experiment is typically adopted by researchers when they plan to investigate causal relationships in conditions where manipulation of the independent variable is not ethically or practically feasible (Gill & Johnson, 2010).

Given the research hypotheses the most appropriate method is a randomised “true” experiment where participants are assigned to treatments by a random process. This enables for a confident allocation of variations in observed effects to the treatment variables, which is not possible with quasi-experiments.

#### **4.1.1 Factorial experimental design**

A randomised experiment is the most appropriate method to collect data to measure the differences between treatments. As described in the derivation of the hypotheses, this thesis investigates the effects of three independent variables manipulated in threat message stimuli on emotion, cognition, behaviour variables and willingness-to-pay. By far the most common approach to including multiple independent variables (which are often called factors) in an experiment is the factorial design (Wickens & Keppel, 2004). In a factorial design, each level of one independent variable is combined with each level of the others to produce all possible combinations. Each combination, then, becomes a condition in the experiment.

Generally, there are three different factorial designs (Wickens & Keppel, 2004). There is the within-subjects factorial design, where a single sample of subjects is assigned to every experimental stimulus. Alternatively, there is the between-subjects factorial design, where every treatment is allocated to a different sample of units. Lastly, mixed designs adopt some within-subjects factors and some between-subjects factors. As the subjects of this study are allocated to different stimuli, a between-subjects factorial design seems most appropriate because of the efficiency of the design, the facilitated analysis, and the requirement of the least number of statistical assumptions in comparison to the other factorial designs.

Accordingly, a 2x2x2 between-subjects factorial design is employed, with a manipulation between-subjects of a negative vivid image (moderate negative and modest negative image), the direction of threat (self or other / general), and the message frame (loss or loss avoidance). Thus, this results in eight experimental stimuli conditions. Taking the research effort of this study into account, a within-subject design would have been too demanding for the participants. Even though this would have had the advantage of a better statistical comparability of groups, evaluating eight different stimuli would certainly have generated respondent fatigue. Consequently, employing a between-subjects design allows for a better manageable complexity for the researcher. Moreover, to address the lack of sensitivity that characterises between-subject designs (Wickens & Keppel, 2004), a large number of 1,000 subjects were recruited for the data collection. The eight between-subjects treatments are outlined in table 11 below.

**Table 11:** *Factorial Design of Experimental Stimuli*

Experimental Condition	Between-subjects factors		
	Image	Message Direction	Message Frame
1	Moderately negative	Other / General	Loss
2	Moderately negative	Other / General	Loss Avoidance
3	Moderately negative	Self	Loss
4	Moderately negative	Self	Loss Avoidance
5	Modestly negative	Other / General	Loss
6	Modestly negative	Other / General	Loss Avoidance
7	Modestly negative	Self	Loss
8	Modestly negative	Self	Loss Avoidance

## **4.2 Selection and development of the stimuli**

After determining the experimental design for this study in the previous section, the focus now moves to the development of the threat appeal message which is used as treatment stimulus. As described above there are eight between-subjects treatments which account for the manipulation of the independent variable. It is key for a successful implementation of the message manipulation, that recipients receive the treatment as intended by the research objectives. It is necessary to acknowledge that in reality there may be issues concerning the valid implementation of the treatment and it is necessary to recognise potential obstacles in the process of designing stimuli (Gill & Johnson, 2010). Therefore, the pre-testing of stimuli and the recognition of potential obstacles provides a robust experimental manipulation.

### **4.2.1 Selection of the stimuli**

The most frequently employed approach when designing a stimulus is the development of an ad or message for testing as a whole entity, where the elements of the stimulus (e.g., headline and image) are designed as a whole and manipulations implemented to create the different treatments (e.g., Agrawal & Duhachek, 2010; Block, 2005; Morales et al., 2012; Passyn & Sujan, 2006).

Alternatively, when employing the message component research design the stimuli are broken down into constituent elements and responses to each of those elements are measured. This last approach is difficult to operationalise within this research project due to practical reasons. Overall, fear appeal researchers generally present the stimuli as a whole and therefore the interaction of the included elements is an important factor for consideration. As such, a somewhat mixed approach is chosen where different elements of the stimuli are developed and then tested as a whole entity.

Furthermore, the stimulus medium is also an important factor that might influence the relationships between variables. Fear appeals research has mainly used print advertisement (e.g., Agrawal & Duhachek, 2010; Janssens & De Pelsmacker, 2007), but also television ads (e.g., Potter et al., 2006), as well as leaflets (e.g., Passyn & Sujan, 2006). Print ads can be easily controlled as it is the case for web-based experiments. The practical business value of this study is to find out how fear appeals can influence customers of mortgage protection insurance in their behaviour of taking-up an insurance contract. A very popular method of mortgage advice in Germany is the digital telephone/video advisory, where the advisor and the customer are not in the same location and the mortgage advisor is able to share the computer screen with the customer. Hence, the customer will be faced with a computer screen where the advisor's arguments are presented. To follow this setup and to move close to a realistic setting, the web-experiment as stimulus medium seems ideal for conducting this research.

Next, the selection of the research topic is clear to the researcher. Even though in fear appeal research the topic of insurance distribution was not found in the extant literature (see table with research topics in chapter 2), insurance and fear are seemingly connected. Furthermore, this thesis attempts to add to the business value of selling mortgage protection insurance, which is also relevant to the general public as mortgage default and financial problems regarding loan repayments are important topics to be addressed. Moreover, the chosen topic must be perceived by participants as realistic, in other words that it is a threat that they or someone close to them may encounter. With over one million new mortgage contracts annually in Germany and a relevant high number of risks involved (see chapter 1.1.2) the topic

of MPI is very realistic. As stated above, the MPI advisory meetings are conducted virtually on a computer screen, and even in a person-to-person setting a computer screen is always used to place arguments and visual elements into the advisory. Therefore, the consequences of the threatening message are able to be depicted visually, which fits very well to the stimuli design. Lastly, the chosen topic for the threat must be applicable to both individuals' understanding of self and to others, because of the direction of message independent variable used in this study. This is also true for MPI as the risks involved apply to each person in Germany that takes up a mortgage loan. Employing a threat appeal in the context of mortgage protection insurance therefore appears to be a suitable topic.

As outlined earlier the stimulus variables for manipulation are vivid negative image, message direction, and message frame. The following sections will describe how these variables are manipulated in the experimental stimuli, whilst controlling for confounds and ensuring validity.

#### **4.2.2 Development of stimuli**

Eight stimuli were developed as described in table 11 above. It is imperative that the experimental treatments (message stimuli) only manipulate the variables of interest and no other factors. The following section will outline the manipulations and the factors that are controlled for in the design of the message stimuli.

According to Witte and Allen (2000) researchers and practitioners can develop effective threatening messages by increasing references to the severity of the threat (i.e., the magnitude of harm) and references to the target population's susceptibility to the threat (i.e., their probability of experiencing the threat). Furthermore, vivid language and images that describe the negative consequences of a threat increase perceptions of severity, and personalistic language (e.g., "You face a 25% chance of experiencing the threat") that emphasizes the similarities between victims of a health threat and the target audience increase susceptibility perceptions. In line with this recommendation the fear appeal message of this thesis was developed by taken into

consideration the vivid negative image, the message direction, and the message frame.

The independent variable of vivid negative image is manipulated with the use of the pictorial element of the stimuli. This is a usual method of manipulation for this variable (e.g., Chamberlain, 2015; Leshner et al., 2011; Witte & Allen, 2000). Recalling the mortgage protection product 'BaufiSchutz' (see chapter 1.1.2), it comprises three different types of risk that are covered by the insurance contract: death, temporary disability, and unemployment. For each risk, negative vivid images were selected.

Typically within fear appeals research, the graphic condition portrays gruesome situations or injuries with blood in severe and less severe conditions (e.g., Chamberlain, 2015; Janssens & De Pelsmacker, 2007). Nevertheless, in Germany the legal regulation concerning advertisements as well as the practical use of the stimuli need to be considered. Emotional appeals that exploit people's psyche for commercial purposes can be immoral (Gelbrich & Schröder, 2008). Therefore, legal limits are placed on their use. In Germany, the immorality of advertising is regulated in §1 - §7 "Gesetz gegen den unlauteren Wettbewerb" (Law Against Unfair Competition, 2023). According to the consensus view in case law and literature, unlawful advertising in the area of fear appeals exists if, irrespective of the truth content of the advertising, feelings of fear are evoked or intensified in the person being advertised to as a result of the manner in which the information is presented, in order to increase sales of the goods (Gelbrich & Schröder, 2008). If this is the case, it is a case of unobjective influence. But advertising for products that are closely related to fears and inevitably appeal to them is subject to differentiated legal treatment. As such, a fear appeal can be considered ethically and usually also legally justifiable under the following conditions (Neurauter, 2005):

1. Motive of the communicator: the communicator does not act exclusively in his own interest, but also in the interest of the recipients.
2. Manipulation: The fear appeal is not manipulative but leaves room for critical questions.
3. Extent of the threat: The threat is real and not exaggerated.

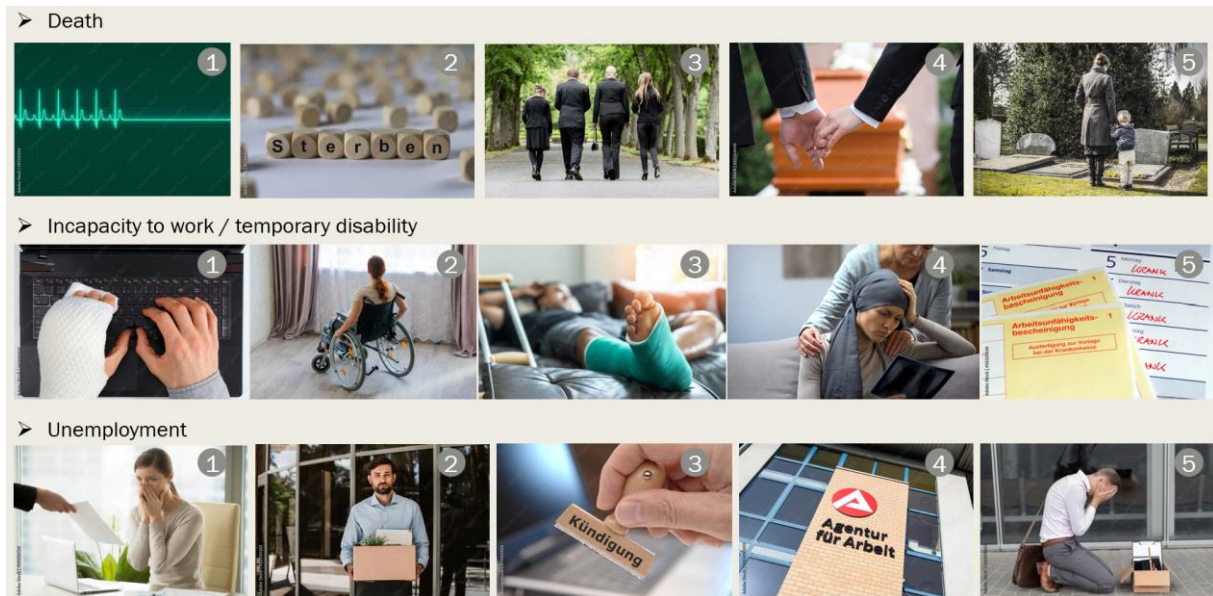
All three conditions are considered in the creation of the message stimuli. Even though the stimuli will not be employed as an advertisement, but rather as a one-to-one sales support material, and insurance and fear are closely related, the legal regulation is arguably not irrelevant and has to be considered when creating a fear appeal for sales communications (not for advertisements). Furthermore, the conceptual idea accompanying this thesis is also to add practical business value to the sales process. Therefore, the selection of stimuli must comply with the ethical rules of insurance companies in order to actually use the results in practice. Hence, the operationalisation of the image variable, in the context of mortgage protection insurance, determined the negative consequence to be depicted in the stimuli as a mix between physical and social injury, guided by negative feelings associated with the images, but on a moderate level. This is in line with research focussed on emotion as a more generalized motivational state characterized by two broad affective dimensions, usually labelled arousal (high/low activation) and valence (pleasure/displeasure) (Nabi, 2015). Research from this perspective typically focuses on how the degree of positive or negative feeling evoked by a stimulus affects various cognitive and behavioural outcomes. Finally, the selection of “level of threat” of the images was guided by the legal constraints, ethical policies, and practical business use and resulted in images that depict either a moderate or a modest negative vivid image, depending on the negative feelings associated with the image.

The selection of vivid negative images was conducted through a keyword search of Adobe Stock (Adobe, 2023), a leading online image database. The 22 keywords used ranged from “heart attack”, “death”, “dismissal job”, to “serious accident” and resulted in 109 images that were pre-selected. For example, LaTour and Zahra (1989) propose that images concerning death cover could provide a relief of worry about financially destitute survivors. The final selection of images was conducted in a two-step process. The first step of the selection process was completed by three business experts from the fields of sales, marketing and consumer behaviour who were recruited to conduct a selection task in cooperation with the researcher. The selection task was designed to simply choose five different images for each risk out of the 109 images according to fulfilling the requirements of being a good fit to the risk topic, as well as being aligned with the legal constraints, ethical policies, and practical business use. The selection task resulted in respectively five images for the



risk death, temporary disability, and unemployment. The selected five images per risk are depicted in figure 15 below (see Appendix 9.1 for copyright information).

**Figure 15:** *Step 1 of Selecting Vivid Images*



The second step was the final selection of two images per risk (out of the five), which were then supposed to be used as a treatment in the survey as moderate and modest negative vivid image. This step was completed through an online survey using an independent third-party provider, i.e. Norstat, in order to gain access to participants of the German population. The sample selection is based on the target audience of the mortgage protection insurance. As average customers in Germany are aged 40 years and the relevant mortgage and mortgage protection customer is between the age of 25-55 years (BNP Paribas Cardif, 2022), the sample selection follows the relevant target audience of age 25-55 years. For each of the three risks (death, temporary disability, unemployment) all five images were ranked by median score according to negative feelings associated with the images in regard to the underlying risk on a 5-point Likert scale, which was adapted from the scale developed by Lewis et al. (2013) for severity of injury. The samples were homogenous in terms of age and gender and fit perfectly well into the target segment of mortgage customers. The results of the image selection survey are presented in table 12 below.

**Table 12: Results of the Image Selection Survey**







<b>Survey question (translated)</b>	Thinking about the topic "unexpected death" / "unemployment" / "incapacity to work" of a person between 25-55 years old: please rate the pictures in terms of your negative feelings, from "less negative feelings" to "very negative feelings".		
<b>Risk</b>	<b>Death</b>	<b>Incapacity to work</b>	<b>Unemployment</b>
<b>N<sup>1</sup></b>	102	101	102
<b>Average age</b>	39.8	40.0	40.7
<b>% Male / Female</b>	55% / 45%	52% / 48%	55% / 45%
<b>Rank 1<sup>2</sup></b>	5	4	5
<b>Rank 2</b>	4	2	1
<b>Rank 3</b>	3	3	3
<b>Rank 4</b>	1	1	4
<b>Rank 5</b>	2	5	2

1: N equals the number of survey participants

2: Rank equals the ranking of the image, where rank 1 has the highest mean value for negatively associated feelings and rank 5 has the lowest mean value for negatively associated feelings.

The images selected for each risk were rank 1 (moderate) and rank 5 (modest), as these images had the most distinctive negatively associated feelings, which corresponds to the typical fear appeal setup of “high-threat” and “low-threat” (e.g., Witte & Allen, 2000). Consequently, for the risk “death” image number 5 was ranked 1 (moderate negative vivid image) and image number 2 was ranked 5 (modest negative vivid image). For the risk “temporary disability” (incapacity to work) image number 4 was ranked 1 and image number 5 was ranked 5, and lastly, for the risk “unemployment” image number 5 was ranked 1 and image number 2 was ranked 5. The result of the image selection process is depicted in figure 16 below.

**Figure 16: Final Selection of Image Stimuli**

	➤ Death	➤ Incapacity to work / temporary disability	➤ Unemployment
Level of threat			
Moderate			
Modest			

Next to the image selection, the message frame and message direction manipulations are conducted using the text in the stimuli. With the goal to keep the text constant for all stimuli, aside from the manipulated variables, a text format was constructed where words could be changed to a large extent according to the manipulation. Due to German sentence constructs some parts of the text modules were adapted to reflect the correct intention of message direction and message frame. The text construct as such is in German and is built like a realistic sales presentation slide and includes one headline and four text modules. According to the definitions of threat appeals, it is crucial to present a warning or threat, the consequences and then a recommended action (Witte & Allen, 2000). Therefore, the following format was adopted:

Headline:	Summary containing threat, consequences and recommended action
Text module 1:	Warning
Text module 2:	Consequences
Text module 3:	Consequences and recommendation
Text module 4:	Recommendation

As the stimuli text, as well as the complete survey, is in German language, the English translation does not reflect the same correct sentence structure. The

structure of each text component is presented as follows (where blanks signify manipulations):

**Headline:**

\_\_\_\_\_ *Arbeitslosigkeit, Arbeitsunfähigkeit, oder auch ein Todesfall sind relevante Risiken während einer Baufinanzierung* \_\_\_\_\_

English translation:

\_\_\_\_\_ *unemployment, disability, and death are relevant risks of mortgage default, as such it is recommended* \_\_\_\_\_ *to get insured.*

**Text module 1:**

\_\_\_\_\_ *BaufiSchutz* \_\_\_\_\_ *bei unerwarteten Schicksalsschlägen eine weitere problemlose Bezahlung der Finanzierungsraten* \_\_\_\_\_ *und* \_\_\_\_\_ *finanzielle Schieflage* \_\_\_\_\_

English translation:

\_\_\_\_\_ *BaufiSchutz,* \_\_\_\_\_ *continue paying the financing instalments* \_\_\_\_\_ *in the event of unexpected strokes of fate, and a financial imbalance* \_\_\_\_\_

**Text module 2:**

*Folglich kann eine* \_\_\_\_\_ *Absicherung einer größeren Kreditverpflichtung zu schwerwiegenden Problemen* \_\_\_\_\_, *wie beispielsweise die Aufgabe der Wohnung, eine Zwangsversteigerung, oder dadurch verursachte psychische Belastung* \_\_\_\_\_

English translation:

*Consequently,* \_\_\_\_\_ *secure a major credit obligation can* \_\_\_\_\_ *serious problems, such as abandonment of the home, foreclosure, or psychological distress* \_\_\_\_\_ *caused by it.*

**Text module 3:**

\_\_\_\_\_ *BaufiSchutz abschließt,* \_\_\_\_\_ *gegen die wichtigsten Risiken abgesichert und kann unangenehme Gedanken wie "Was wäre wenn..."* \_\_\_\_\_ *beiseite schieben.*

English translation:

\_\_\_\_\_ *take out BaufiSchutz,* \_\_\_\_\_ *covered against the most important risks* \_\_\_\_\_ *and put aside unpleasant thoughts such as "What if..."*

#### **Text module 4:**

\_\_\_\_\_ *absichert, lebt* \_\_\_\_\_ *Sorgen.*

English translation:

*If* \_\_\_\_\_ *who protect* \_\_\_\_\_ *worries.*

The scenario is easy to understand and involves the pressure of taking-up a BauFiSchutz insurance, the severity of consequence is kept constant, and the action recommendation is constant, but the formulation is varied depending on message frame and message direction. The direction of message manipulation is operationalised as towards the self 'you' or the 'other / general public'. For the purposes of this study, to avoid ambiguity or defensive processing, the operationalisation of this variable is employed as focussing on the general public which in the German language is typically done by using the word "man" or "jeder" (equal to 'everyone') and formulating the general sentence structure accordingly. The 'self' directed construct is very clear and uses the word "Sie" (equal to "you").

As outlined in Chapters 3, the message frame manipulation focuses on loss or avoidance of loss. Given the topic (mortgage protection insurance) and the consequences (default of payment through death, disability, or unemployment) it would be inappropriate to utilise a gain frame in this context, rather it is a loss avoiding frame. The message frame (loss and loss avoidance) is operationalised according to Gerend and Cullen (2008) and adapted to the insurance topic where loss avoidance is manipulated by stating the individual in question could follow the recommended action and avoid credit default, and loss is manipulated by stating the individual would default on his loan if insurance is not taken up. Therefore, the manipulation for message frame and for message direction for every text construct is as follows in table 13:

**Table 13: Message Frame and Message Direction of Stimuli Text**

Message Direction	Message Frame	Headline
Other / General public	Loss	Arbeitslosigkeit, Arbeitsunfähigkeit, oder auch ein Todesfall sind relevante Risiken während einer Baufinanzierung, gegen die sich jeder absichern sollte. <i>(Unemployment, incapacity to work, or even death are relevant risks during mortgage financing against which everyone should insure themselves.)</i>
Other / General public	Loss avoidance	Ohne Absicherung stellen Arbeitslosigkeit, Arbeitsunfähigkeit, oder auch ein Todesfall relevante Risiken während einer Baufinanzierung dar. <i>(Without insurance, unemployment, incapacity to work, or even death are relevant risks during mortgage financing.)</i>
Self	Loss	Arbeitslosigkeit, Arbeitsunfähigkeit, oder auch ein Todesfall sind relevante Risiken während einer Baufinanzierung, gegen die Sie sich absichern sollten. <i>(Unemployment, incapacity to work, or even death are relevant risks during construction financing against which you should insure yourself.)</i>
Self	Loss avoidance	Ohne Absicherung stellen Arbeitslosigkeit, Arbeitsunfähigkeit, oder auch ein Todesfall relevante Risiken während einer Baufinanzierung für Sie dar. <i>(Without insurance, unemployment, incapacity to work, or even death are relevant risks for you during construction financing.)</i>
Message Direction	Message Frame	Text Module 1
Other / General public	Loss	Ohne den BauFiSchutz ist bei unerwarteten Schicksalsschlägen eine weitere problemlose Bezahlung der Finanzierungsraten nicht möglich und eine finanzielle Schieflage kann somit nicht abgefangen werden. <i>(Without the BauFiSchutz, it is not possible to continue paying the financing instalments without problems in the event of unexpected strokes of fate, and a financial imbalance can therefore not be absorbed.)</i>
Other / General public	Loss avoidance	Der BauFiSchutz ermöglicht bei unerwarteten Schicksalsschlägen die problemlose Bezahlung der Finanzierungsraten und verhindert eine finanzielle Schieflage. <i>(In the event of unexpected strokes of fate, BauFiSchutz enables problem-free payment of the financing instalments and avoids financial distress.)</i>
Self	Loss	Ohne den BauFiSchutz sind Sie nicht in der Lage, bei unerwarteten Schicksalsschlägen, die Finanzierungsraten problemlos weiter bezahlen zu können und geraten in finanzielle Schieflage. <i>(Without BauFiSchutz, you will not be able to continue paying the financing instalments without any problems in the event of unexpected strokes of fate, and you will find yourself in financial difficulties.)</i>
Self	Loss avoidance	Der BauFiSchutz ermöglicht Ihnen bei unerwarteten Schicksalsschlägen die problemlose Bezahlung der Finanzierungsraten und verhindert Ihre finanzielle Schieflage. <i>(BauFiSchutz enables you to pay the financing instalments without any problems in case of unexpected strokes of fate and prevents your financial difficulties.)</i>

Message Direction	Message Frame	Text Module 2
Other / General public	Loss	Folglich kann eine fehlende Absicherung einer größeren Kreditverpflichtung zu schwerwiegenden Problemen führen, wie beispielsweise die Aufgabe der Wohnung, eine Zwangsversteigerung, oder dadurch verursachte psychische Belastung. <i>(Consequently, failure to secure a major credit obligation can lead to serious problems, such as abandonment of the home, foreclosure, or psychological distress caused by it.)</i>
Other / General public	Loss avoidance	Folglich kann die Absicherung einer größeren Kreditverpflichtung schwerwiegende Probleme, wie beispielsweise die Aufgabe der Wohnung, eine Zwangsversteigerung, oder dadurch verursachte psychische Belastung, vermeiden. <i>(Consequently, securing a major credit obligation can avoid serious problems, such as abandonment of the home, foreclosure, or psychological distress caused by it.)</i>
Self	Loss	Folglich kann eine fehlende Absicherung einer größeren Kreditverpflichtung für Sie zu schwerwiegenden Problemen führen, wie beispielsweise die Aufgabe der Wohnung, eine Zwangsversteigerung, oder dadurch verursachte psychische Belastung. <i>(Consequently, failure to secure a major loan obligation can lead to serious problems for you, such as abandonment of the home, foreclosure, or psychological distress caused by it.)</i>
Self	Loss avoidance	Folglich können Sie mit der Absicherung einer größeren Kreditverpflichtung schwerwiegende Probleme, wie beispielsweise die Aufgabe der eigenen Wohnung, eine Zwangsversteigerung, oder dadurch verursachte psychische Belastung, vermeiden. <i>(Consequently, by securing a major credit obligation, you can avoid serious problems, such as giving up your own home, a foreclosure, or psychological stress caused by it.)</i>

Message Direction	Message Frame	Text Module 3
Other / General public	Loss	Wenn man keinen BauFiSchutz abschließt, ist man somit nicht gegen die wichtigsten Risiken abgesichert und kann unangenehme Gedanken wie "Was wäre wenn..." nicht beiseite schieben. <i>(If one doesn't take out BauFiSchutz, one is not insured against the most important risks and cannot put aside unpleasant thoughts such as "What if...".)</i>
Other / General public	Loss avoidance	Ein abgeschlossener BauFiSchutz sichert somit die wichtigsten Risiken ab und unangenehme Gedanken wie "Was wäre wenn..." können beiseite geschoben werden. <i>(A BauFiSchutz policy thus covers the most important risks and unpleasant thoughts such as "What if..." can be put to one side.)</i>
Self	Loss	Wenn Sie keinen BauFiSchutz abschließen, sind Sie somit nicht gegen die



		wichtigsten Risiken abgesichert und können unangenehme Gedanken wie "Was wäre wenn..." nicht beiseite schieben. <i>(If you do not take out BauFiSchutz, you are not covered against the most important risks and cannot put aside unpleasant thoughts such as "What if...".)</i>
Self	Loss avoidance	Wenn Sie einen BauFiSchutz abschließen, sind Sie somit gegen die wichtigsten Risiken abgesichert und können unangenehme Gedanken wie "Was wäre wenn..." beiseite schieben. <i>(If you take out BauFiSchutz, you are thus covered against the most important risks and can put aside unpleasant thoughts such as "What if...".)</i>

Message Direction	Message Frame	Text Module 4
Other / General public	Loss	Wer sich nicht absichert, lebt mit Sorgen. <i>(If one doesn't get insurance, one lives with worries.)</i>
Other / General public	Loss avoidance	Wer sich absichert, lebt sorgenfrei. <i>(Those who protect themselves live carefree.)</i>
Self	Loss	Ohne Absicherung leben Sie nicht sorgenfrei. <i>(Without coverage, you won't live worry-free.)</i>
Self	Loss avoidance	Leben Sie abgesichert und sorgenfrei. <i>(Live your life with insurance and you are carefree.)</i>

In order to perform an initial test of the manipulations, again the three participant judges from the fields of sales, marketing and behaviour were asked to perform another two-stage sorting task. The experts were presented with the text construct presented in table 13 above. The experts were first asked to sort the statements according to the message direction, which was successfully completed by all three participants. Subsequently, the experts were asked to sort the statements according to the message frame and again, all three experts sorted the statements as intended. As such, the message frame and message direction manipulations are confidently upheld at this point.

Subsequent to the initial developmental stages, the message stimuli were constructed and designed for implementation into the final survey. The image and text elements of the message stimuli were initially tested separately. In order to move to the survey design, it is necessary to combine the elements to generate a complete stimuli design.



It is important to hold all other factors constant except from the variables under manipulation when constructing experimental stimuli. The picture is placed in the top-middle of the stimulus, which is a standard format in advertising. Following similar research (e.g., Chamberlain, 2015; Dens et al., 2008) the text is located above and below the picture. The images used in all conditions were the same size and the text was always placed in the same position and was consistent in size across all conditions. Furthermore, the differences in terms of text module length and number of words were kept to a minimum. It was necessary to include slightly more words in the loss condition than the loss avoidance condition in order to present the message effectively, but as this is a between-subjects study (each participant is only exposed to one condition) any variation in response this may have caused was controlled. Accordingly, eight stimuli were developed. The complete stimuli message depiction was designed using Adobe InDesign according to realistic sales materials in order to add a realistic business value. The final designs of all eight stimuli can be found in the Appendix 9.1.

#### **4.3 Mediating variables, dependent variables, and control variables**

The variables of interest in the conceptualisation of the survey are now discussed in terms of their operationalisation. An overview of the measures utilised in this study, and item lists are presented in Appendix 9.2. Given the long-lasting research in the various fields and the robust and reliable measures already accessible and tested extensively in the academic field, their use in this thesis was justified. Hence, all measures have been previously utilised in research studies, and as such are valid and reliable.

Existing measures were mostly translated from English to German and adapted at a minimum level to retain the constructs' reliability or utilised as proposed by the inventor of the scale (e.g., Witte et al., 2001b). In all cases, adaptation merely involved changes in the (translated) wording of items to match the specific research context and Likert scales were adopted as is the case in the majority of web-based experiments. Most constructs were measured either by 7-point Likert scales or by 7-point bipolar adjective scales as proposed by the literature.

### **4.3.1 Mediating variables**

As outlined in Chapter 3.5 several variables have been hypothesised to mediate the relationship between the independent stimulus variables and dependent behaviour variables. These can be categorised as immediate emotions, cognitions, optimism-pessimism, and risk-taking. These will be considered in turn, in the following sections.

#### **4.3.1.1 Immediate emotions**

There are several different conceptualisations of emotional constructs. Therefore, various valid and reliable methods to collect self-reported emotion data exist, according to the different theoretical paradigms. As previously stated, one focus of the study is not to examine the full range of emotional responses, but rather to examine the elicitation of immediate emotions of ‘immediate fear’ and ‘uncomfortable feelings’ generated as a result of exposure to the message stimulus. Given the range of theoretical approaches and variables of interest, many immediate emotion measures are employed in the extant literature.

When fear is measured in an empirical research, it is typically assessed by participants indicating how “scared” they are concerning a specific health threat (McMahan et al., 1998). Witte (1992) used self-reports of fear because self-report items evaluated the subjective experience of fear, which fit Witte’s conceptualisation of fear. Furthermore, Mewborn and Rogers (1976) stated that verbal measures of fear may be more sensitive than measuring heart rate or skin conductance. Therefore, self-report measures of fear to operationalise the EPPM constructs have the highest utility and are easier to administer (Popova, 2012).

For the self-report measures of ‘immediate fear’ several differing scales are utilised in the existing literature. As depicted in table 14 below, Richins (1997) uses the items ‘scared, afraid and panicky’ to measure fear, McMahan et al. (1998) use ‘scared, frightened, anxious’, while Laros and Steenkamp (2004) use ‘scared, afraid, panicky, nervous, worried, and tense’ to measure fear. Alternatively, the perceived fear index (Block, 2005) uses ‘scared and afraid’ to measure fear. Yet, Power (2006) uses the items ‘anxiety, nervousness, tense, worried and shy’ to tap into immediate fear.

Additionally, Dillard et al (2007) use a measure of immediate fear with the items ‘scared, afraid, and fearful’, and Chamberlain (2015) employs ‘scared, afraid, panicky, fearful’.

**Table 14:** *Measures of Immediate Fear in the Literature*

Authors	Richins (1997)	McMahan et al. (1998)	Laros and Steenkamp (2004)	Block (2005)	Power (2006)	Dillard et al. (2007)	Chamberlain (2015)
Items used	Scared	Scared	Scared	Scared		Scared	Scared
	Afraid		Afraid	Afraid		Afraid	Afraid
	Panicky		Panicky				Panicky
		Frightened				Fearful	Fearful
			Nervous		Nervousness		
			Worried		Worried		
			Tense		Tense		
					Shy		
		Anxious			Anxiety		

Obviously, there are similarities between the scales utilised (for example, scared is implemented by six of the seven examples presented above). However, from the chosen examples above the best suited scale must be applicable to business as well, so it should ideally be manageable and not include too many items, which excluded Laros and Steenkamp (2004) and Power (2006) from the relevant list of scales. Given that immediate emotions of fear are a core construct of interest, the scale should also include multiple items to address more detail to this emotion. As such, the most recent scale from Chamberlain (2015) appeared to suit all conditions and was therefore chosen.

The immediate emotion of ‘uncomfortable feelings’ is an item in the fear scale by Witte (1992) and is also utilised in the extant literature (e.g., Chamberlain, 2015; So, 2013). As outlined in chapter 3.2 this is a conceptually different construct than fear and therefore is implemented as a single item measure of this construct. Further authors (e.g., Baumgartner et al., 2008) also measure ‘uncomfortable feelings’ as a single item and therefore this was deemed to be acceptable.

#### **4.3.1.2 Cognitions**

As identified in chapter 2, the cognition constructs from the extended parallel process model (Witte, 1992) are applied to the research framework. Therefore, the items developed by Witte et al. (2001b) as part of the Risk Behaviour Diagnosis Scale for severity, susceptibility, response efficacy, self-efficacy, defensive avoidance are utilised as shown in Appendix 9.2. These items have been successfully used in many other research studies (e.g., Chamberlain, 2015; Wauters, 2013) and therefore were chosen to be acceptable measures of the cognition constructs.

#### **4.3.1.3 Optimism - pessimism**

One option to measure dispositional optimism is the 10-item Life Orientation Test–Revised (LOT-R) by Scheier et al. (1994). Typically, large-scale surveys operate with relevant monetary and time constraints. As such, Kemper et al. (2013) developed an even more economical ultrashort scale, the two-item German-language Skala Optimismus–Pessimismus–2 (Optimism–Pessimism Short Scale–2; SOP2). This short scale has proved to be a psychometrically sound measure (objectivity, reliability, validity) that is strongly correlated to LOT-R ( $r = .68$ ) and allows for the measurement of dispositional optimism in approximately 20 seconds (Nießen et al., 2022).

Therefore, optimism-pessimism is measured using the German-language Optimism-Pessimism Short Scale-2 (SOP2) scale by Kemper et al. (2013; 2014) aimed to measure the construct with as few items as possible whilst at the same time still capturing the fundamental aspects of the definition of dispositional optimism proposed by Scheier and Carver (1985). SOP2 is constructed by two items only and is easy to administer in different survey modes, making it an ideal solution for research and managerial implementations. The two items enable the measurement of confidence and generalized positive expectations about the future as well as doubt and generalized negative expectations about the future, respectively. SOP2 scale was thoroughly validated by the authors based on a large and diverse random sample representative of the adult population in Germany in terms of age, gender, and educational background. The psychometric properties were also confirmed for the English language version (Nießen et al., 2022). The two items of the SOP2 scale are rated on a 7-point rating scale from not at all optimistic/pessimistic to very optimistic/pessimistic. The SOP2 scale is utilised as shown in Appendix 9.2.

#### **4.3.1.4 Risk-taking**

Risk-taking is regularly included in population-representative surveys (e.g., in the German Longitudinal Election Study, GLES, the Socioeconomic Panel, SOEP). Risk taking is usually measured in surveys using self-report scales as well as in experimental studies. In the SOEP, risk-taking has been surveyed since 2004 utilising a self-report scale with only one item. However, multi-item scales also exist. For example, Weber et al. (2002) presented a measurement instrument with 40 items to assess domain-specific risk attitudes and risk behaviours. Because of the theoretical overlap between the constructs, scales originally developed to measure sensation seeking or impulsivity are also frequently used to assess risk taking. These include, for example, the 12-item "Risk Taking" scale of the UPPS Impulsive Behaviour Scale (Whiteside & Lynam, 2001) and the "Danger and Adventure Seeking" scale of the Sensation Seeking Scales - Form V with 10 items (Beauducel et al., 2003). Based on this history of scales Beierlein et al. (2015) developed the short scale Risikobereitschaft-1 (R-1) (readiness to take risks) to enable an economic measurement of risk-taking in social science surveys or studies. Even though the R-1 scale only comprises one item, it allows for a reliable and valid measurement of the construct despite the brevity of the scale (Coppola, 2014). The answer format consists of a 7-step rating scale from "not at all willing to take risks" to "very willing to take risks". The R-1 scale is utilised as shown in Appendix 9.2.

#### **4.3.2 Dependent variables**

The dependent variables of this study are behaviour intention, behaviour expectation, and willingness-to-pay. To measure behaviour (intention and expectation) in this context two measures are employed, which are based on behavioural measures developed by Carrera et al. (2012) and by Witte (2001b). Behaviour expectation is measured using the single item scale by Carrera et al (2012), and behaviour intention is measured using the single item scale by Witte (2001b), which is identical to the scale by Carrera et al. (2012). These single item behaviour intention and behaviour expectation scales are distinct as behaviour expectation is an estimate of the likelihood an individual will perform the behaviour whereas behaviour intention is the

amount of intrinsic motivation an individual has to perform a behaviour. Self-report scales for behaviour intention and expectation have been widely tested across the literature (e.g., Carrera et al., 2012; Chamberlain, 2015; Hibbert et al., 2007), and especially constructed as single item gives these scales an advantage over multi-item scales in terms of participant fatigue reduction and practical business implementation.

The measurement of willingness-to-pay was constructed as a decision task and operationalised in the online survey with a text field and connected slider to insert the amount of EUR (see Appendix 9.3). Participants were presented with a hypothetical mortgage scenario which was intended to activate an individual's decision process regarding the amount of EUR each participant is willing to pay for a predefined mortgage solution. Participants could either directly type in a EUR amount or move the slider on a range between 0 and 200 EUR, which equals the maximum amount of the real premium of the mortgage protection insurance. As the insurance premium depends on personal factors such as age, smoking status and health status the realistic price range is between 40 and 180 EUR for the same insurance solution. Therefore, participants were given all the required information to make a decision concerning what they would be willing to pay in that situation and as such data acts as a predictor for ideal pricing of mortgage protection insurance from a consumer perspective.

### **4.3.3 Control variables**

Some control variables must be taken into account and as such will act mostly as covariates. The measures used for this purpose are presented below, along with the manipulation checks used to verify if the stimuli were perceived as intended.

#### **4.3.3.1 Attitude to insurance and mortgage**

Attitude to insurance was measured using the six-item scale developed by Lewis et al. (2007) for speeding which suits nicely to the survey questions about insurance and mortgage. The wording of the question was adjusted to reflect the content of the

stimulus message which was concerning 'taking up a mortgage' and 'taking up mortgage protection insurance', instead of speeding.

Furthermore, a question was added concerning the prior experience with insurance contracts. For example, Wheatley (1971) found that the respondents who owned life insurance had an overall negative reaction to the fear appeal advertisement while nonowners had a positive reaction. From a business perspective it gives valuable insights if prior experience with life insurance has an effect on the dependent variables.

#### **4.3.3.2 Confound, perceived manipulation and message derogation**

The items developed by Witte et al. (2001b) included in the Risk Behaviour Diagnosis Scale for confound, perceived manipulation and message derogation are utilised to validate the experimental treatments and act as a control covariate.

#### **4.3.3.3 Social Desirability**

As the present study is based on self-report measures, it may be distorted by several response biases, including socially desirable responding. Socially desirable responding can be understood as a tendency to give "right" answers (Paulhus, 1989). Participants' responses might be influenced by their beliefs about researchers' expectations, and furthermore by the desire to protect their own image (Hatfield et al., 2008). The likelihood of socially desirable responding is particularly present when there are clear social norms attached to the items that are being measured. This appears relevant to mortgage protection insurance and the behaviours, attitudes and beliefs concerning taking-up an insurance to protect the family or oneself as a guiding social norm. For example, negative images of the consequences of health risks while having a mortgage contract may cause some respondents to under-report their underinsured situation in order to avoid being similarly categorised (Corbett, 2001). Therefore, correlation of measured items with social desirability bias can present information regarding the validity of a scale (Spector, 1992).

Social Desirability was measured using the five-item scale developed by Hays et al. (1989). This scale is a short measure of a socially desirable response set which is based on the longer (33 items) and unpractical Marlowe –Crowne scale (Crowne & Marlowe, 1960) and therefore deemed appropriate to use in this study.

#### **4.3.4 Manipulation checks**

The manipulations checks (presented Appendix 9.2) were adopted from prior studies. The vivid image manipulation check is that used by Kees et al. (2010) and Dahl et al. (2003). The message direction measure was adopted from Block (2005) and the message direction (loss/ loss avoidance) measure was developed by Gerend and Cullen (2008). The items developed by Witte et al. (2001b) included in the Risk Behaviour Diagnosis Scale for message confound, perceived manipulation and message derogation are used to ensure the validity of the experimental treatments.

#### **4.4 Design of data collection instrument**

Once the stimuli were developed and the appropriate measures were identified (as outlined above) the construction of the data collection instrument was planned. As the present study undertakes a randomised 2x2x2 between-subjects experiment the method of administration and sample size were considered.

##### **4.4.1 Method of administration and sample selection**

The method of administration is a web experiment, which has been successfully implemented for a variety of classic cognitive experiments for a long time already (e.g., Birnbaum, 2004). There is little difference in information loss, whether the data is collected using a laboratory computer or using a web experiment, even though the researcher is not physically present (Reips, 2002). Furthermore, compared to traditional field experiments, web experiments are associated with lower costs, increased efficiency and allow for time differences as they are available 24 hours a day (Birnbaum, 2004). Web experiments are also beneficial regarding the options to control the length of exposure to the stimuli, which is especially relevant in the present study. The stimuli presentation must be viewed for at least 30 seconds by



each participant, before it was possible to move to the next page. Additionally, web experimentation allows researchers to collect information immediately and in the correct data format for analysis. Following these considerations, web experimentation was deemed as the most suitable administration method for this study.

The web-based survey was developed in Microsoft Excel and Microsoft Word and then programmed by the researcher in the survey software of a third-party provider, offering participants server-side access to the web experiment. The third-party subcontractor is Norstat (<https://norstat.de/>), a trusted and leading European market research company. Norstat was solely instructed to provide access to their research panel in order to facilitate and increase the speed of data collection. All panel members of the Norstat community are representatives of the German population and therefore guarantee a high-quality sample. The study is conducted in Germany with German speaking participants only. Norstat provides one of the highest quality panel networks in Germany and is subject to the strict GDPR regulation applying in Germany. Participants of the study are anonymous to the researcher and there is no personal data involved in the survey. The panel is not specific to the research project. The researcher was responsible for creating the questionnaire, collecting the data and solely relies on an existing panel network for availability of respondents. The survey data was deleted at the third-party company after transfer to the researcher. As Norstat provides the highest quality panel in Germany and facilitates the access to research participants, the contraction of Norstat for providing their panel network was appropriate and ideal for collection of data for the present study.

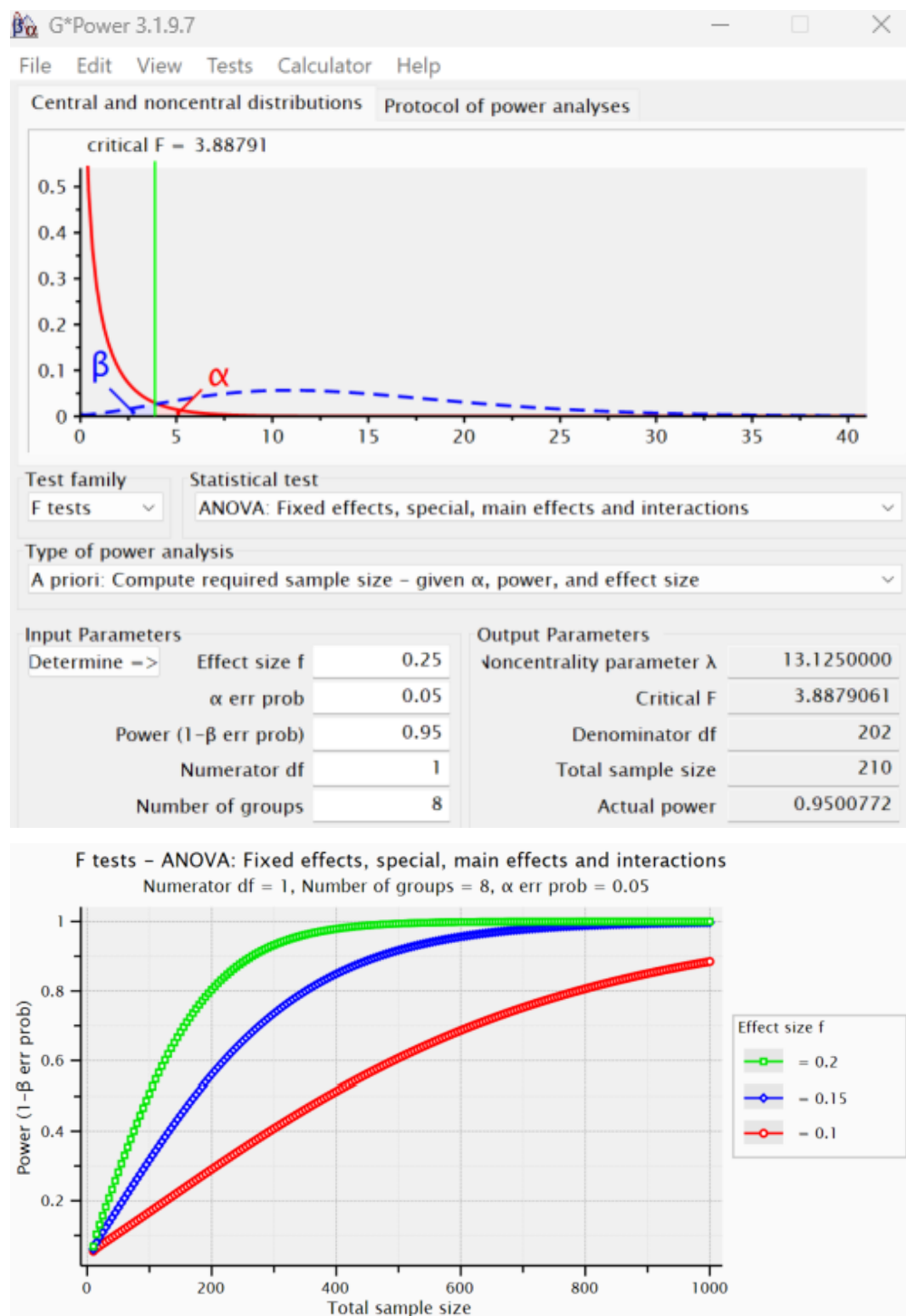
The sample selection is based on the target audience of mortgage protection insurance in Germany. As average customers in Germany are aged 40 years and the relevant mortgage and mortgage protection customer is between the age of 25-55 years (BNP Paribas Cardif, 2022), the sample selection follows the relevant target audience of age 25-55 years. This is also an important distinction to most of research conducted on fear appeals, as most commonly this research has been undertaken with students, typically psychology or marketing students (Hastings et al., 2004; Schoenbachler & Whittler, 1996). Several studies have suggested that fear appeals are likely to work differently with young people compared with adults (Hastings et al., 2004), where the typical mortgage customer is rather middle aged at around 30-45

years. It is expected that fear appeals will be more effective with adults because adults have increased sense of their own mortality (Hastings et al., 2004; Pechmann et al., 2003). Participants of the panel are already screened by the subcontractor within the panel network in terms of age (25-55 years) and are pre-selected to fit into the age group. As this is a DBA with business value, it is not relevant to the researcher to include more age groups. The source of the sample is selected through the extant panel network of the subcontractor, representing all ranges of participant types. The sample was quoted to be homogenous in age and gender, providing valid scientific results.

The validity and explanatory power of this experiment depends on several factors, including the magnitude or size of the treatment effects, the significance level  $\alpha$ , and the sample size  $N$  (Wickens & Keppel, 2004). The foremost way to increase the anticipated power of a test is to increase the sample size  $N$ . At the planning stage of a research project, a priori power calculations support to determine an adequate sample size for the estimation of experimental treatment effects and are therefore very crucial for a successful study implementation. To calculate the necessary sample size, researchers can pre-define the size of the effects that they wish to detect, the desired significance level, and the desired power of the test. The present study involves many factors and interactions and thus, the use of power charts or software packages (Faul et al., 2009) is imperative. Widely used formulas for calculating sample sizes for categorical data such as Cochran's (1977) do not take multi-factor experiments with a mixed subjects design into account. For the purpose of a priori power analysis in this study, the software G\*Power by Faul et al. (2009) was used. With this software solution different types of power analyses including a priori F-tests for multi-factor experimental designs and multiple regression analyses can be performed. To calculate the minimum sample size for this present study, the researcher needs to set the desired effect size measure ( $f$ ), the  $\alpha$  level (error probability), the desired power level, the number of groups and the number of repetitions in the design. According to Cohen (1988), there are small, medium, and large effect size conventions which are set to small:  $f=0.10$ , medium:  $f=0.25$  and large:  $f=0.40$ . For an a priori power analysis of a multi-factor F-test in ANOVA, G\*Power uses the effect size conventions proposed by Cohen (1988).

This study attempts to have a good chance of detecting medium effects, as such the standard was set to an effect size of  $f = 0.25$ . The significance level alpha ( $\alpha$ ) was set at 0.05 and the desired power level at 0.95, which reflects the most common setting in G\*Power. For practical reasons, the researcher assumes that all factors and interactions are equally important for the analysis. As previously mentioned, the design of the experiment is a 2x2x2 between-subjects design with 2 factors respectively (each independent variable metric has 2 different values). Hence, the number of groups in the experiment is 8 and according to Faul et al. (2009) the numerator value  $df$  is 1 (calculated as  $(2-1)*(2-1)*(2-1) = 1$ ). Based on this, the a priori power analysis in G\*Power suggests that the study requires a minimum of 210 participants in order to estimate the factorial effects with a power of 0.9500. This implies a minimum of 27 respondents in each group. As such, the calculated target sample is a minimum of 210 participants and any sample larger than this will increase power accordingly.

**Figure 17:** A Priori Sample Size Calculation using G\*Power



The sample size was set by the researcher to 1.000 participants from the Norstat panel network, split into 8 stimuli groups (125 each group), which surpasses the calculated minimum sample size to increase statistical power to 1, as can be seen in figure 17 above. To recruit the participants to the Web experiment, an e-mail was sent out to the relevant survey target segment by Norstat with an invitation to take

part in the study. The participants are then guided to the landing page of the survey. Also, to ensure consistent data collection, a participation to the study could only be done on a desktop screen and not on a mobile device.

#### **4.4.2 Structure and design of the survey**

Subsequent to the selection of the appropriate tool for administration and the sample selection, focus now turns to the design and structure of the survey. The introduction to the survey and one introductory question are largely defined by ethical considerations and required by the universities ethical guidelines. However, the reduction of possible boredom of the participants was offset with a modern survey design, integration of a progress bar, as well as by the fact, that the participants are already used to this kind of panel survey. An overview of the survey structure is depicted in figure 18 below.

Dividing questions into logical sub-sets by the researcher is widely considered appropriate in order to enable participants to easily answer the questions as they are perceived to be clear and logical (e.g., Gill & Johnson, 2010). Moreover, it is important to guide the participants through the survey with explanations and instructions where appropriate. As such, sub-sets of questions were developed together with brief and user-friendly explanations and instructions (see Appendix 9.3 for a copy of the survey).

The first section of the survey concerns an introduction to the experiment as well as instructions, participant consent and four screening questions. Participants are required to read the information page and to consent to taking part in the study. They can also decline and leave the study. Additionally, participants have to answer a screening question concerning past traumatic experiences which would exclude them from the study due to ethical considerations. The further screening questions ensure the ideal target sample regarding age, income level, and interest in mortgage financing. The second section of the questionnaire concerns the collection of demographic information and prior experience with insurance products. Given the introduction to the research project had to provide information about the topic of the

study it was deemed appropriate to collect information about the topic of interest such as prior experience with mortgages and insurances. Afterwards, participants are forced to think about themselves and not the topic prior to exposure to the experimental treatment by answering questions about social desirability, individual differences, and attitude to mortgage and mortgage protection insurance.

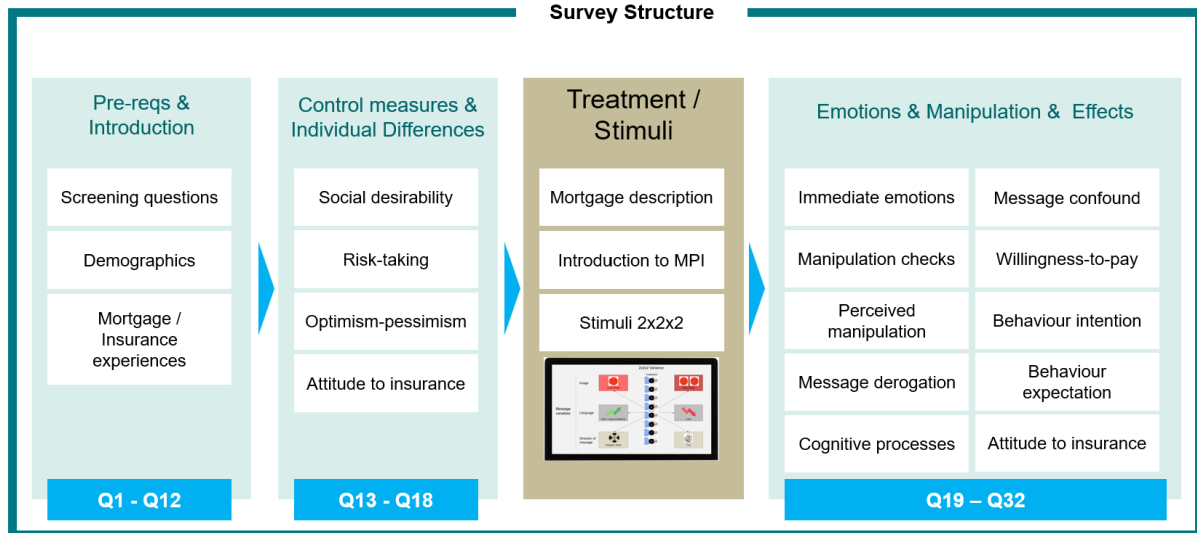
The third element is an introduction the mortgage protection product “BaufiSchutz”, as well as a short description how to take-up BaufiSchutz and an information on the process of how to make a claim in case of death, temporary disability, or unemployment. This information serves a constant level of efficacy, as it is recommended in the fear appeal research (e.g., Witte & Allen, 2000). Furthermore, the participants view a summary of the statistical likelihoods for each of the three risk types to occur during a mortgage repayment phase as well as the corresponding monetary safeguards by social security agencies in Germany. This is an important information to create awareness for the need of insurance and is a standard advisory practice in Germany in the field of insurance and mortgage. As such, this information reflects the reality of an objective advisory information without manipulating the recipient. Furthermore, fear appeal research found that information about the severity of possible negative consequences from risk behaviour may generate defensive responses. To avoid these counterproductive responses, instruction on how to successfully implement the recommended actions have to be provided as well as convincing people that they are personally susceptible to the threat (Kok et al., 2014). The last part of this section was a brief introduction to an exemplary mortgage construct. As participants are all part of the relevant target group and have proclaimed to have general interest in mortgage financing, this text was easy to understand. The selection of the mortgage case is based on the latest mortgage rates available on the market for first-time buyers (Europace AG, 2022) and represented about average offers with a loan amount of 300,000 EUR, a fixed interest term of 10 years, and a monthly annuity payment of 1,350 EUR.

The fourth element of the experiment is exposure to one of the eight experimental treatments. The randomisation function of the Norstat panel software made it possible to randomly allocate participants to one of the eight treatment conditions and therefore a participant is exposed to only one of the eight treatments accordingly.

Participants were presented with an instruction page detailing that they were about to view a mock marketing information on mortgage protection insurance alongside instructions with viewing the material and progressing with the study. Furthermore, the stimuli had a time block of exposure for a minimum of 30 seconds before participants could move on to the next page. This ensures the full comprehension of the stimuli. The graphical designs used in the survey were created using Adobe InDesign (<https://www.adobe.com/de/products/indesign>) to mimic a professional and realistic marketing setting.

Post exposure to the stimuli, participants were first asked questions with items to capture immediate emotions experienced as a result of exposure to the experimental treatment as well as answer manipulation check questions. Immediate emotions were placed right after the stimuli as the very nature of this emotional construct in question means it will deteriorate relatively quickly and therefore should be asked when the impressions of the stimuli are still top of mind. Subsequently, questions were asked including the manipulation checks to ensure the treatment had been perceived as intended and message derogation items to evaluate any fear control processes. Participants were then asked the sub-set of questions regarding cognitions about the treatment and then message confound items. The final section of the survey is the willingness-to-pay decision task, the two single item behaviour intention and behaviour expectation measures, and a closing evaluation of the attitude to mortgage protection insurance. All questions were labelled by the researcher with question IDs from Q1 – Q32 for later analysis, as presented in figure 18 below.

**Figure 18: Survey Structure**



#### 4.5 Main data collection

The main data collection was conducted within the network of Norstat, the third-party provider. To recruit the participants to the Web experiment, an e-mail and smartphone notification was sent out to a defined target sample of the network. Participant were already screened in terms of age (25-55 years) by Norstat and the study was only accessible on a desktop PC or tablet. Participants are rewarded to take part in the study with bonus points that can be used to get rebates on products and services. This is a common process within the Norstat panel network and not especially set-up for this study. A total of 1,014 respondents to the web experiment were achieved within a timeframe of one week. The raw data collected was then handed over to the researcher for analysis.

#### 4.6 Ethical considerations

The experimental stimuli, the survey questionnaire and the explanation of the process of the web experiment as well as data protection regulations were submitted to the Sheffield Hallam Business School ethics committee through a Converis application (ID ER21321627) and approved on 22 December 2022.

The researcher adhered to the ethical guidelines of SHU and the four main principles of beneficence (do positive good), non-maleficence (do no harm), informed consent,



and confidentiality/anonymity. The following guidelines of SHU that were considered as a basis for development of the survey and stimuli were:

- The EU General Data Protection Regulation (GDPR): Guidance for Researchers
- Guidance on Ethical Issues in Visual Research (photographs, film and video)
- Research Ethics Guidelines for Internet-mediated Research
- Ethics guidelines for online questionnaires
- Participant consent form

As described earlier the data collection was conducted by relying on a third-party panel network provider, namely Norstat. Participants of the study are part of a registered panel network of the trusted third-party provider Norstat, a professional European market research company. The panel is already set-up, and not specific to the research project. In terms of data protection, the researcher acts as a data controller who determines the purposes and means of processing personal data, and Norstat acts as a data processor responsible for processing personal data on behalf of a controller. Each participant gives Norstat consent to the GDPR to join the subcontractors network. Norstat is obliged to follow the strict GDPR which is in line with SHU guidelines. The subcontractor has confirmed that personal data points are pseudonymised. The research data is stored on a SHU storage and deleted on any private devices as well as deleted on the storage of the third-party provider.

According to the “Research Ethics Guidelines for Internet Mediated Research” online questionnaires are required to supply information about the study before participants undertake it and how consent is to be obtained. As such, a screening procedure was put in place for participants to raise any issues, make complaints or withdraw from the study at any time. Before starting the online survey, an introductory text based on the SHU participant consent form informed the participants about the background of the study and about the images depicted, which might arouse uncomfortable feelings. Furthermore, ethical guidelines were outlined at the beginning of the survey intended to circumvent possible concerns over confidentiality. In addition, the wording at the beginning of the study was specifically designed to make participants aware of the topic of the study, that they may be exposed to vivid images and actions to take if

they experienced distress during the study. As such, all participants were presented with a high level of detail and asked for consent prior to conducting the study.

The experiment was completely anonymous as respondents were not required to provide any personal data. Given the sensitive topic around risks of life and the desire to avoid unnecessary distress, screening questions were implemented to rule out individuals with an age below 25 and with prior experiences (either themselves or loved ones) of cases of death or of traumatic accidents.

Fear appeals are not without controversy in their application as the graphic condition usually portrays gruesome situations or injuries with blood in severe and less severe conditions. Ethical concerns about threat appeals include maladaptive responses such as chronic heightened anxiety among those most at risk and therefore, relate primarily to the accusation that fear appeals are illegitimate emotional appeals that manipulate consumers (Hastings et al., 2004). Some critics also see the well-being of the recipient at risk, since it is not yet clear how fear appeals affect mental health. Furthermore, emotional appeals that exploit people's psyche for commercial purposes can be immoral (Gelbrich & Schröder, 2008). As stated in section 3.10.2 these ethical aspects as well as the German legal regulation concerning advertisements were considered when designing the stimuli.

#### **4.7 Reputation issues for insurance companies**

Reputation and trust of a brand are key equities of any commercial company. This is especially true for insurance companies that rely on the trust of customers that their claims will be paid for when the situation arises. Large investments are made to create positive brand awareness and as such commercial marketers are very careful about how they use and portray their brands, and do not allow them to be placed in inappropriately themed advertisements, of which threat appeals may be an example (Hastings et al., 2004). However, little actual research has examined how the use of fear appeals affects the reputation of insurance companies. Some evidence found suggests a need for caution. For example, in case the target group perceives a threatening message as exaggerated or the threat does not reflect the target group's personal beliefs and experiences might result in the target group discrediting the

communicator of the message (Hastings et al., 2004). Moreover, some research has suggested that dislike of an ad (e.g., it uses unpleasant images) can lead to an unfavourable attitude toward the brand, although this has been disputed as a general finding (LaTour et al., 1996). In general, advertising propositions are recommended to be consistent with the brand image, otherwise, the brand could be damaged. For campaigns that employ fear, there is a particular need to investigate both how the threatening message, especially if prolonged, plays back on the brand.

It is acknowledged that fear appeals should be cautiously used in practice considering the potentially negative effects on insurance brands. Nevertheless, this study is not placing fear appeals in the field of advertisement of insurance companies, but rather in the field of a personal sales process of mortgage brokers and insurance brokers. As such, the issue of brand effect is rather transferred to the distributor, i.e. the broker. That said, it is also for the broker by any means recommended to manipulate the threatening message regarding level of fear and uncomfortable feelings at a maximum to a moderate level.

#### **4.8 Summary**

Chapter 3 has outlined the research framework and its comprising components, namely message characteristics, cognitive appraisal, immediate emotions, individual differences, behaviour outcomes, and willingness-to-pay. Further, the 74 research hypotheses were presented and justified. In chapter 4 the methodology chosen to address the research questions and hypotheses was presented. Following the development of stimuli and measurement instrument (see Appendix 9.1) an online survey was developed and received 1,014 valid responses. This data is first described in the following chapter 5 and then the hypotheses are tested and analysed in the subsequent chapter 6.

## 5 Descriptive Analysis Results

The previous chapter described the details of the methodology utilised for data collection for this study. The following two chapters are ordered to present the analysis of the collected data; firstly, the descriptive analysis, which is outlined in Chapter 5 and then, manipulation checks and hypothesis testing which is presented in Chapter 6.

This chapter presents the descriptive analysis to enable hypothesis testing and it has two main components. First, an analysis of the demographic profile variables of participants was conducted and second, the measures were tested for potential contamination with social desirability bias.

### 5.1 Demographic profiles of participants

This section gives an overview of the experimental participants according to demographic variables. Table 15 below shows the distribution of gender among the participants of the research study. There were no missing values and there is almost an even distribution between male (48.3%) and female (51.6%). One person has answered with diverse. Given the randomised experimental design, this data is therefore acceptable.

**Table 15:** *Descriptive Analysis of Gender of Participants*

Gender	<i>N</i>	<i>Percentage</i>
Female	523	51.6%
Male	490	48.3%
Diverse	1	0.1%
<b>Total</b>	<b>1014</b>	<b>100%</b>

Participants were requested to give their age and were screened out if they were younger than 25 and older than 55, as this is the relevant age group for mortgage protection insurance. Table 16 below outlines the age categories and there were no

missing values. Again, the age groups are evenly distributed, and the mean age of 40.54 ( $SD=8.46$ ) years fits perfectly well into the target group of mortgage protection.

**Table 16:** *Descriptive Analysis of Age Categories*

Age category	<i>N</i>	Percentage
25-34	319	31.5%
35-44	342	33.7%
45-55	353	34.8%
<b>Total</b>	<b>1014</b>	<b>100%</b>

Furthermore, a relevant criterion for mortgage protection is the financial income of the household, as only a certain group of people can get access to mortgage loans. As such, participants with net household incomes of less than 2,500 EUR were screened out. Table 17 below presents the result of the income analysis which shows that around 70% of participants have a net-income between 2,500 EUR and 5,000 EUR. 43.8% of participants stated, that they are the main income earner of their household. Overall, this distribution is in line with the general target group of mortgage customers as described in chapter 1.1.1.

**Table 17:** *Descriptive Analysis of Net-Income of Participants*

Net household income	<i>N</i>	Percentage
2,500-3,500 EUR	269	26.5%
3,501-5,000 EUR	438	43.2%
5,000 – 7,000 EUR	209	20.6%
> 7,000 EUR	98	9.7%
<b>Total</b>	<b>1014</b>	<b>100%</b>

Moreover, all participants were asked to quote their interest in mortgage in question Q4. The result showed that 54.3% of participants have already taken up a mortgage

in their life and the rest of participants (45.7%) are generally interested in taking up a mortgage. Interestingly, 67.4% of participants stated that they already had signed either life insurance or permanent disability insurance, or both, signalling that the sample is familiar with these insurance products. There was no missing data. Participants signalling no interest in mortgage were screened out. Additionally, to adhere to the ethical policies, participants were screened out, when they had experienced traumatic accidents or cases of death in the near family. Also here, there was no missing data, keeping the sample of 1,014 participants. In terms of family situation, 85% of participants identified themselves to be in a partnership (married or other) and 63% of participants have one or more children. This analysis of demographic and family factors also fits very well to the target group of mortgage protection customers.

This section has outlined an analysis of the demographic profile variables of the panel participants. No major issues were identified regarding gender, age, financial situation, relationship, and family status and therefore, confidence was high in the sample as a basis for further analysis. As scales were employed that already were tested thoroughly in prior research (e.g., Chamberlain, 2015; Witte et al., 2012), it was not deemed necessary to conduct any analysis of measure procedures, such as exploratory factor analysis. Internal consistency of scales was defined as given by prior research.

## **5.2 Analysing social desirability bias**

All multi-item scales employed in this research project were examined for the effects of social desirability. This procedure is meaningful, as responses by participants might be conflated by the tendency to give “right” answers and therefore biased towards making themselves appear favourable according to social standards (Paulhus, 1989). Findings of strong correlations between the social desirability score and another variable indicate either self-deception about, or intentional misrepresentation of respondent’s behaviours, thoughts and feelings (Hatfield et al., 2008).

To operationalise the analysis of social desirability bias, all multi-item scales were correlated with the social desirability bias measure. In case of finding a strong and significant correlations, this would have indicated that the scale was influenced by social desirability bias and needed to be transformed against social desirability bias using the unstandardised regression residual.

All variables were analysed using Pearson correlation with the social desirability bias measure. The results are presented in table 18 below. *N* was 1,014 for all correlations. According to the guidelines developed by Cohen (1988), the correlation coefficients range for a strong correlation from .50 to 1. For this study, only for these strong cases a transformation would have been necessary. All other correlation ranges, with small correlation coefficients range from .10 to .29 and for a medium correlation from .30 to .49, were not deemed necessary to adjust the scale measures. It can be seen in the table that all variables, except for optimism and pessimism, only have a small correlation with social desirability bias. Optimism and pessimism have a slightly medium correlation. Even though the *p*-value was significant for most variables, no variable identified a strong correlation with social desirability bias. Therefore, the further analysis could be proceeded without the need for transforming the measures.

**Table 18:** *Correlations between Variables and Social Desirability Bias*

Construct	$r^1$	$p^2$ (two tailed)	Variable type
Perceived Fear	-.115**	.000	Mediating
Uncomfortable Feeling	-.171**	.000	Mediating
Defensive Avoidance	-0.056	.072	Mediating
Susceptibility	-0.044	.153	Mediating
Severity	.086**	.006	Mediating
Response efficacy	.128**	.000	Mediating
Self-efficacy	.151**	.000	Mediating
Risk-taking	-0.014	.655	Mediating
Optimism	.332**	.000	Mediating
Pessimism	-.309**	.000	Mediating
Attitude to mortgage	.274**	.000	Control
Attitude to insurance	.060	.055	Control
Perceived Manipulation	-.228**	.000	Control
Message confound	.278**	.000	Control
Message derogation	-.200**	.000	Control
Behaviour intention	.184**	.000	Dependent
Behaviour expectation	.170**	.000	Dependent
WTP	.180**	.000	Dependent
Attitude to BaufiSchutz	.235**	.000	Dependent

1:  $r$  = regression coefficient

2:  $p$  = p-value, level of significance, correlation significant at  $p < .05$  (two tailed), and for \*\* correlation significant at  $p < .01$  (two tailed)



### 5.3 Control variables

The analysis of control variable measures is depicted in table 19 below. All items were measured on a 7-point Likert scale where a score of 4 is the middle of the scale. The scores for message derogation ( $M = 3.27$ ) indicate that the stimuli messages were correctly stated and did not overstate the insurance situation. Also, message confound ( $M = 5.41$ ) was high and perceived manipulation ( $M = 3.01$ ) was low, indicating that the information provided was well and correctly understood. This result has business value as the product information and stimuli text employed was designed to be as close as possible to a realistic setting. Furthermore, attitude values for mortgage ( $M = 5.47$ ) are very positive while the same scores are significantly more negative towards insurance ( $M = 3.79$ ) before the stimuli presentation.

**Table 19:** *Descriptive Analysis Results of Control Variables*

Control variable	$M$ ( $SD$ )	$N$
Message derogation	3.27 (1.71)	1014
Perceived manipulation	3.01 (1.39)	1014
Message confound	5.41 (1.11)	1014
Attitude to mortgage	5.47 (1.04)	1014
Attitude to insurance	3.79 (1.64)	1014

### 5.4 Summary

Chapter 5 provided a descriptive analysis of the main variables of interest in this study. All tests were performed using the IBM SPSS Statistics Version 26 software package. The obtained data was first described in terms of demographics and further characteristics. Second, the results for control variables were presented. The overall data was evaluated for reliability and validity of the existing measures. Furthermore, any social desirability bias was rejected through data analysis. All measured items provided statistically acceptable values grounding the floor for the next step of hypotheses testing, which will be presented in the following chapter.

## 6 Results

This chapter presents the results of the hypothesis testing coming from the data generated from the online survey. Having described the characteristics of the sample of participants and responses to variables of interest, the focus now turns to the analysis methods used to examine the theoretical model and associated hypotheses. The between-subject randomised experiment employed in this study was conducted using a 2x2x2 variance of message characteristics. The corresponding sample size of each experimental condition is stated in table 20 below. As can be seen, the sample sizes are evenly distributed between all eight conditions.

**Table 20:** *Sample Size per Experimental Group*

Experimental Condition	Between-subjects factors (independent variables)			Sample Size
	Image	Message Direction	Message Frame	
1	Moderately negative	Other / General	Loss	127
2	Moderately negative	Other / General	Loss Avoidance	126
3	Moderately negative	Self	Loss	127
4	Moderately negative	Self	Loss Avoidance	130
5	Modestly negative	Other / General	Loss	124
6	Modestly negative	Other / General	Loss Avoidance	126
7	Modestly negative	Self	Loss	127
8	Modestly negative	Self	Loss Avoidance	127
<b>Total</b>				1014

Next, the examination of the results of the manipulation checks are presented. These checks are employed to verify the suitability of the experimental stimuli and the manipulation of the independent variables.

## 6.1 Manipulation checks

Before analysing the results of the hypotheses testing, several manipulation checks were performed. The effectiveness of the independent variables of message characteristics (i.e., vivid negative image, message frame, message direction) were evaluated through the application of simple t-tests. Each t-test compared the mean, standard deviation and standard error for image, frame, and direction, respectively. Each message characteristic was grouped in SPSS (i.e., image: high threat, low threat; frame: gain, loss; direction: self, other) in order to allow for the correct computation of the t-test. Furthermore, homogeneity of variances was asserted using Levene's Test.

### 6.1.1 Vivid image

For vivid image, the means of the manipulation check item was significantly higher for moderate image than for modest image, as shown in table 21 below. Also, Levene's test was not significant and thus showed that equal variances could be assumed ( $p = .691$ ). The homogeneity assumption was therefore confirmed and the Welch's robust test of equality of means showed a significant difference across the frames ( $F(1,1012) = .158, p < .000$ ). The results show a statistically significant effect of the moderate vivid image versus the modest vivid image experimental condition on perception of vivid image in the expected direction. The vivid negative image was therefore understood by the participants as intended by the researcher.

**Table 21:** *Manipulation Check for Vivid Image*

Message characteristic	<i>N</i>	<i>M (SD)</i>	SE <sup>1</sup>
Moderate image	510	4.15 (1.329)	.063
Modest image	504	3.62 (1.426)	.059

<sup>1</sup> SE = standard error

### 6.1.2 Message frame

For message frame, the means of the manipulation check items were slightly higher for loss avoidance frame than for loss frame, as shown in table 22 below. Also, Levene's test was not significant and thus showed that equal variances could be assumed ( $p = .626$ ). The homogeneity assumption was therefore confirmed and the Welch's robust test of equality of means showed a significant difference across the frames ( $F(1,1012) = .237, p < .041$ ). The results show a statistically significant effect of the loss avoidance frame versus the loss frame experimental condition on perception of message frame in the expected direction. The message frame was therefore understood by the participants as intended by the researcher.

**Table 22:** *Manipulation Check for Message Frame*

Message characteristic	<i>N</i>	<i>M (SD)</i>	SE <sup>1</sup>
Loss avoidance	509	4.45 (1.247)	.055
Loss	505	4.29 (1.317)	.059

<sup>1</sup> SE = standard error

### 6.1.3 Message direction

For message direction, the means of the manipulation check item was almost identical for other-directed messages and for self-directed messages, as shown in table 23 below. Although Levene's test was not significant and thus showed that equal variances could be assumed ( $p = .626$ ), the Welch's robust test of equality of means did not show a significant difference across the frames ( $F(1,1012) = .000, p = .611$ ). The results do not show a statistically significant effect of the self-directed message direction versus the other-directed experimental condition on perception of message direction. Even though the message direction was clearly differentiated by the researcher within the stimuli, the intended manipulation of message direction was not understood as intended. This was probably due to the fact, that all participants were informed before the stimuli about the mortgage protection product and associated risks, which are identical for every person. In combination with high mean

values of > 4 for both conditions (high value = other/general), this leads to the assumption that even participants receiving the self-directed message were influenced by the information that was presented before the stimuli. As this presentation was necessary to inform the participant in a realistic manner about the topic of interest and cannot be avoided in practice, the result of this manipulation check is deemed acceptable. Nevertheless, hypotheses analysis results regarding message direction are most likely conflated by the fact that the direction of message was not understood as intended.

**Table 23:** *Manipulation Check for Message Direction*

Message characteristic	<i>N</i>	<i>M (SD)</i>	SE <sup>1</sup>
Self	511	4.90 (1.506)	.067
Other	503	4.95 (1.501)	.067

<sup>1</sup> SE = standard error

The next section details the method for analysis, namely analyses of variance (ANOVA), regression analyses, and PROCESS calculations.

## 6.2 Methods of analysis

In section 3.6 a comprehensive set of research hypotheses was outlined to test the research framework of this thesis, which evaluates emotional, cognitive, and behavioural responses and willingness-to-pay to fear appeals. The research project includes various variables under examination and contains several hypothesised relationships between these variables. As such, the most suited statistical technique for many of these use cases is the ANOVA as well as the implementation of regression analysis. ANOVA allows for an examination of the effects of the individual intrinsic message characteristics (message frame, message direction and use of graphic image) as well as for the effects of individual differences and the interactions between these independent variables, upon the hypothesised dependent variables of interest. The use of ANOVA is common across the threat appeals literature (e.g., Agrawal & Duhachek, 2010; Block, 2005; Chamberlain, 2015).

Hypotheses with mediating variables were calculated using PROCESS v4.2 for SPSS 4.2 by Hayes (2022), which enables researchers to conduct process analysis for mediation. The model calculates direct and indirect effects from independent variables on dependent variables, mediated by other variables. Mediation analyses using the PROCESS macro by Hayes (2022), which uses ordinary least squares regression, yielding unstandardized path coefficients for total, direct, and indirect effects. Bootstrapping with 5000 samples together with heteroscedasticity consistent standard errors (Davidson, 1993) were employed to compute the confidence intervals and inferential statistics. Effects were deemed significant when the confidence interval did not include zero.

The next section details the results of the hypothesis testing. For purposes of clarity, the results are presented in subsections arranged according to the dependent variable under consideration (e.g., immediate emotions, cognitive appraisals) and it is clearly stated which hypotheses are tested in each sub section.

### 6.3 Hypothesis testing

In order to analyse the influence of the independent variables the eight individual treatments from the 2x2x2 factorial research design were coded with a binary 1 or 0, as can be seen in table 24 below. As such, three new variables were created in the data file (image, frame, direction). For example, the experimental condition 1 would receive the code 111 (moderate image, other-direction, loss frame). This allows for analysis of individual treatment effect and their interactions.

**Table 24:** *Coding of the Eight Experimental Conditions*

<b>Experimental Condition</b>	<b>Image</b>	<b>Image code</b>	<b>Message Direction</b>	<b>Message direction code</b>	<b>Message Frame</b>	<b>Message Frame code</b>
<b>1</b>	Moderately negative	1	Other / General	1	Loss	1
<b>2</b>	Moderately negative	1	Other / General	1	Loss Avoidance	0
<b>3</b>	Moderately negative	1	Self	0	Loss	1
<b>4</b>	Moderately negative	1	Self	0	Loss Avoidance	0
<b>5</b>	Modestly negative	0	Other / General	1	Loss	1
<b>6</b>	Modestly negative	0	Other / General	1	Loss Avoidance	0
<b>7</b>	Modestly negative	0	Self	0	Loss	1
<b>8</b>	Modestly negative	0	Self	0	Loss Avoidance	0

The structure of the hypotheses testing follows the research model presented in chapter 3.5, where each component will be treated in the next sections, starting with immediate emotions.

#### 6.3.1 Immediate emotions

##### 6.3.1.1 Fear

Seven hypotheses relating to the immediate emotion of fear were originally hypothesised in chapter 3. Three of these were supported by the analysis. A one-way ANOVA demonstrated that the effect of a vivid negative image was significant for

perceived fear,  $F(1, 1012) = 16.73, p < .001$ . A negative effect was found for modest vivid negative image and perceived fear in the regression analysis ( $\beta = -.364, p < .001$ ). The supported hypothesis in the expected direction was H2a, that vivid negative images will evoke immediate emotions of fear. Also, it was confirmed that the images used were perceived to be modest to moderate as the mean values for both image manipulations were below the score of 4, as depicted in table 25 below.

Conversely H4a, that self-directed messages will evoke fear, did not yield a significant result ( $F(1, 1014) = 0.14, p = .714$ ). This was also the case for H6a, loss framed messages did not have an effect on perceived fear ( $F(1, 1014) = 0.48, p = .487$ ). The results of intrinsic message variables and perceived fear are presented in table 25 below.

**Table 25:** Descriptive Statistics and Correlations for Image, Direction, and Frame on Perceived Fear  
Dependent variable: perceived fear

Variables	<i>M (SD)</i>	<i>N</i>	$\beta^1$	Std. Error	$p^2$
Modest image	2.84 (1.34)	504	-.364	.089	< .001
Moderate image	3.20 (1.48)	510	0 <sup>3</sup>		
Self-directed	3.00 (1.36)	511	-.033	.090	.714
Other-directed	3.04 (1.49)	503	0 <sup>3</sup>		
Loss avoidance	2.99 (1.43)	509	-.062	.090	.487
Loss	3.06 (1.43)	505	0 <sup>3</sup>		

1:  $\beta$  = regression coefficient

2:  $p$  = p-value, level of significance, set at  $p < .05$

3: this parameter is set to 0, because it is redundant

Individual differences optimism (H10a) and pessimism (H10b) demonstrated an effect on perceived fear, for optimism  $F(1, 1014) = 8.61, p = .003$  and for pessimism  $F(1, 1014) = 88.25, p < .001$ . As such, a negative effect was found for optimism and perceived fear ( $\beta = -.106, p = .003$ ) and a positive effect was found for pessimism and perceived fear ( $\beta = .280, p < .001$ ). Both results are in the expected direction.



Furthermore, it was hypothesised that risk-taking will have an effect on the immediate emotion of fear (H14a), but this was not confirmed to be significant ( $F(1, 1009) = .211, p = .103$ ). Moreover, hypothesis H16a, that increased risk-taking has a positive interaction effect with increased optimism on the reduction of fear, also did not yield a significant result ( $F(1, 1009) = .211, p = .646$ ). The summary of hypotheses testing regarding perceived fear is presented in table 26 below.

**Table 26:** *Summary of Hypotheses regarding Perceived Fear*

<b>H2a</b>	Vivid negative images will induce fear, i.e. elicit the immediate emotion of fear.	Supported
<b>H4a</b>	Self-directed messages will induce fear, i.e. elicit the immediate emotion of fear.	Not supported
<b>H6a</b>	Loss framed messages will will induce fear, i.e. elicit the immediate emotion of fear.	Not supported
<b>H10a</b>	Optimism will will reduce the immediate emotion of fear.	Supported
<b>H10b</b>	Pessimism will will induce fear, i.e. elicit the immediate emotion of fear.	Supported
<b>H14a</b>	Risk-taking will will induce fear, i.e. elicit the immediate emotion of fear.	Not supported
<b>H16a</b>	Increased risk-taking has a positive interaction effect with increased optimism on the reduction of fear.	Not supported

### 6.3.1.2 Uncomfortable feelings

Six hypotheses relating to the immediate emotion of uncomfortable feelings were originally developed in chapter 3. Three of these were supported by the analysis. A one-way ANOVA demonstrated that the effect of a vivid negative image was significant for uncomfortable feelings,  $F(1, 1010) = 26.24, p < .001$ . A negative effect was found for modest vivid negative image and perceived fear in the regression analysis ( $\beta = -.568, p < .001$ ). The supported hypothesis in the expected direction was H2b, that vivid negative images will evoke uncomfortable feelings.

Conversely H4a and H6b, that self-directed messages ( $F(1, 1010) = 0.116, p = .734$ ) or loss framed messages ( $F(1, 1010) = 0.050, p = .824$ ) will have an effect on

uncomfortable feelings, did not show significant results. The results of intrinsic message variables and uncomfortable feelings are presented in table 27 below.

**Table 27:** *Descriptive Statistics and Correlations for Image, Direction, and Frame on Uncomfortable Feelings*

*Dependent variable: uncomfortable feelings*

Variables	<i>M (SD)</i>	<i>N</i>	$\beta^1$	Std. Error	$p^2$
Modest image	3.08 (1.69)	504	-.568	.111	< .001
Moderate image	3.64 (1.83)	510	0 <sup>3</sup>		
Self-directed	3.00 (1.36)	511	.038	.111	.734
Other-directed	3.04 (1.49)	503	0		
Loss avoidance	2.99 (1.43)	509	.025	.111	.824
Loss	3.06 (1.43)	505	0		

1:  $\beta$  = regression coefficient

2:  $p$  = p-value, level of significance, set at  $p < .05$

3: this parameter is set to 0, because it is redundant

Individual differences optimism (H10c) and pessimism (H10d) demonstrated an effect on uncomfortable feelings, for optimism  $F(1, 1009) = 25.97, p < .001$ , and for pessimism  $F(1, 1009) = 61.04, p < .001$ . As such, a negative effect was found for optimism and uncomfortable feelings ( $\beta = -.227, p < .001$ ) and a positive effect was found for pessimism and uncomfortable feelings ( $\beta = .294, p < .001$ ). Both results are in the expected direction. Furthermore, it was hypothesised that risk-taking will have an effect on uncomfortable feelings (H14b), but this was not confirmed to be significant ( $F(1, 1009) = .546, p = .460$ ). The summary of hypotheses testing regarding uncomfortable feelings is presented in table 28 below.

**Table 28:** *Summary of Hypotheses regarding Uncomfortable Feelings*

<b>H2b</b>	Vivid negative images will induce uncomfortable feelings, i.e. elicit the immediate emotion of uncomfortable feelings.	Supported
<b>H4b</b>	Self-directed messages will induce uncomfortable feelings, i.e. elicit the immediate emotion of uncomfortable feelings.	Not supported
<b>H6b</b>	Loss framed messages will induce uncomfortable feelings, i.e. elicit the immediate emotion of uncomfortable feelings.	Not supported
<b>H10c</b>	Optimism will reduce the immediate emotion of uncomfortable feelings.	Supported
<b>H10d</b>	Pessimism will induce uncomfortable feelings, i.e. elicit the immediate emotion of uncomfortable feelings.	Supported
<b>H14b</b>	Risk-taking will induce uncomfortable feelings, i.e. elicit the immediate emotion of uncomfortable feelings.	Not supported

### 6.3.2 Cognitive appraisals

#### 6.3.2.1 Perceived severity

Six hypotheses relating to perceived severity were originally hypothesised. However, only one of these hypotheses was statistically significant. H15a stated that risk-taking will have an effect on perceptions of severity, which is supported by the ANOVA results ( $F(1, 1009) = 7.71, p = .006$ ). A negative effect was found for risk-taking and perceived severity in the regression analysis ( $\beta = -.093, p = .006$ ), which indicates that increased risk-taking reduces the perception of severity, which is in the expected direction.

All other five hypotheses were not supported. As such, none of the three message characteristics had a significant effect on the perceptions of severity. It is surprising that the message manipulations (H1a, H4c, H7a) did not yield any differences in effect, especially for vivid image ( $F(1, 1010) = 0.01, p = .919$ ) and for loss framed messages ( $F(1, 1010) = 0.16, p = .692$ ) this would have been expected, as the vivid images had an effect for perceived fear and uncomfortable feelings and avoidance of loss is less severe than experiencing loss. However, this was not supported by the analysis. Nevertheless, the general severity of the threat was perceived as relatively

high through all conditions as can be seen in the mean values in table 29 below, almost reaching 5 points on average. It can be assumed that the general risk assessment of defaulting on a mortgage payment is a severe threat in any of the cases of message manipulation.

H7a stated that self-directed messages will increase perceptions of severity, which also was not supported, with  $F(1, 1010) = 0.79$ ,  $p = .373$ . Again, this would have been a surprising result, as the self-reference effect would suggest that individuals who feel their sense of self is threatened by serious repayment problems, would perceive this consequence to be more severe. However, as direction of message was not understood as intended (see manipulation check) this effect was expected to be supported by the results. The results of intrinsic message variables and perceived severity are presented in table 29 below.

**Table 29:** Descriptive Statistics and Correlations for Image, Direction, and Frame on Perceived Severity

*Dependent variable: perceived severity*

Variables	<i>M (SD)</i>	<i>N</i>	$\beta^1$	Std. Error	$p^2$
Modest image	4.83 (1.52)	504	-.010	.096	.919
Moderate image	4.84 (1.53)	510	0 <sup>3</sup>		
Self-directed	4.88 (1.46)	511	.085	.096	.373
Other-directed	4.80 (1.58)	503	0 <sup>3</sup>		
Loss avoidance	4.86 (1.52)	509	.038	.096	.692
Loss	4.82 (1.53)	505	0 <sup>3</sup>		

1:  $\beta$  = regression coefficient

2:  $p$  = p-value, level of significance, set at  $p < .05$

3: this parameter is set to 0, because it is redundant

Furthermore, individual differences optimism (H11a) and pessimism (H11b) did not demonstrate an effect on perceived severity, for optimism  $F(1, 1009) = 0.36$ ,  $p = .549$  and for pessimism  $F(1, 1009) = 3.06$ ,  $p = .081$ . The p-value for pessimism was close to the significance level but did not reach it. It can be stated that optimism

and pessimism, both with high mean values of  $M = 4.84$  for perceived severity, do not influence the perceptions of severity, which is an interesting finding itself. The summary of hypotheses testing regarding perceived severity is presented in table 30 below.

**Table 30:** *Summary of Hypotheses regarding Perceived Severity*

<b>H1a</b>	Vivid negative images will have an effect on the perception of severity.	Not supported
<b>H4c</b>	Self-directed messages will have an effect on perceptions of severity	Not supported
<b>H7a</b>	Loss framed messages will have an effect on perceptions of severity	Not supported
<b>H11a</b>	Optimism will have an effect on perceptions of severity.	Not supported
<b>H11b</b>	Pessimism will have an effect on perceptions of severity.	Not supported
<b>H15a</b>	Risk-taking will have an effect on perceptions of severity.	Supported

### 6.3.2.2 Perceptions of susceptibility

Six hypotheses relating to perceived susceptibility were originally hypothesised. Again, only one of these hypotheses was statistically significant. H11d stated that pessimism will have an effect on perceptions of susceptibility, which is supported by the ANOVA results ( $F(1, 1009) = 52.75, p < .001$ ). A positive effect was found for pessimism and perceived susceptibility in the regression analysis ( $\beta = .215, p < .001$ ), which indicates that pessimism increases the perception of susceptibility, which is in the expected direction.

All other five hypotheses were not supported. Similar to perceived severity, none of the three message characteristics had a significant effect on the perceptions of susceptibility. H1b stated that vivid images will generate increased perceptions of susceptibility, which was also not supported with  $F(1, 1009) = 0.30, p = .586$ . H4b stated that self-directed messages will have an effect on perceptions of susceptibility, which was not significant ( $F(1, 1009) = 0.71, p = .401$ ). Lastly, H7b stated that loss framed messages will have an effect on perceptions of susceptibility, which was also not supported with  $F(1, 1009) = 0.19, p = .665$ . Like perceived severity the findings are surprising. However, these results do not necessarily conclude that participants

did not perceive their own susceptibility, but rather that there were no differences across the different message treatments. According to the mean values for the different message manipulations described in table 31 below, the numbers indicate that the perceived susceptibility is rated rather in the middle of the scale and therefore the general perception of susceptibility is neither high nor low.

**Table 31:** *Descriptive Statistics and Correlations for Image, Direction, and Frame on Perceived Susceptibility*

*Dependent variable: perceived susceptibility*

Variables	<i>M (SD)</i>	<i>N</i>	$\beta^1$	Std. Error	$p^2$
Modest image	3.85 (1.38)	504	-.060	.087	.492
Moderate image	3.91 (1.38)	510	0 <sup>3</sup>		
Self-directed	3.92 (1.37)	511	.069	.087	.425
Other-directed	3.85 (1.41)	503	0 <sup>3</sup>		
Loss avoidance	3.92 (1.34)	509	.063	.087	.468
Loss	3.85 (1.43)	505	0 <sup>3</sup>		

1:  $\beta$  = regression coefficient

2:  $p$  = p-value, level of significance, set at  $p < .05$

3: this parameter is set to 0, because it is redundant

Furthermore, the individual difference optimism (H11c) did not influence perceived susceptibility with  $F(1, 1009) = 2.86, p = .091$ . The p-value for optimism was close to the significance level but did not reach it. Furthermore, H15b stated that risk-taking will have an effect on perceptions of susceptibility, but this was not significant with  $F(1, 1009) = 0.84, p = .361$ . The summary of hypotheses testing regarding perceived susceptibility is presented in table 32 below.

**Table 32:** *Summary of Hypotheses regarding Perceived Susceptibility*

<b>H1b</b>	Vivid negative images will have an effect on the perception of susceptibility.	Not supported
<b>H4d</b>	Self-directed messages will have an effect on perceptions of susceptibility	Not supported
<b>H7b</b>	Loss framed messages will have an effect on perceptions of susceptibility	Not supported
<b>H11c</b>	Optimism will have an effect on perceptions of susceptibility.	Not supported
<b>H11d</b>	Pessimism will have an effect on perceptions of susceptibility.	Supported
<b>H15b</b>	Risk-taking will have an effect on perceptions of susceptibility.	Not supported

### 6.3.2.3 Self-efficacy and response efficacy

Three hypotheses relating to self-efficacy and response efficacy were originally developed. However, none of these hypotheses were statistically significant. H4e stated that self-directed messages will have an effect on perceptions of self-efficacy, which was not supported with  $F(1, 1011) = 0.45, p = .503$ . It was also stated that loss avoidance messages will have an effect on perceptions of self-efficacy (H7c) and on response efficacy (H7d), of which both were not supported with  $F(1, 1011) = 1.63, p = .202$  and  $F(1, 1012) = 1.77, p = .102$ , respectively.

Under the condition that self-efficacy refers to an individual's belief that they are capable to carry out the recommended action, it would be surprising that self-directed messages do not influence this. Nevertheless, according to the (failed) manipulation check of message direction, this result was expected. Furthermore, as described in table 33 below the mean values for self-efficacy and response efficacy are very high and it can be assumed that the information regarding the insurance product itself was well designed. Additionally, it is unfortunate but not surprising that there was no effect of loss framed messages on response efficacy, as the efficacy level did not vary between the eight treatment conditions. Interestingly, the mean values for response efficacy also show very high scores (see table 34) which indicates that the information provided regarding the take-up of the insurance was well formulated. This is a positive result for the use of this kind of information process in business.

**Table 33:** Descriptive Statistics and Correlations for Image, Direction, and Frame on Self-Efficacy  
Dependent variable: self-efficacy

Variables	<i>M (SD)</i>	<i>N</i>	$\beta^1$	Std. Error	$p^2$
Self-directed	5.37 (1.16)	511	.051	.076	.503
Other-directed	5.32 (1.27)	503	0 <sup>3</sup>		
Loss avoidance	5.39 (1.16)	509	.097	.076	.202
Loss	5.30 (1,26)	505	0 <sup>3</sup>		

**Table 34:** Descriptive Statistics and Correlations for Image, Direction, and Frame on Response Efficacy  
Dependent variable: response efficacy

Variables	<i>M (SD)</i>	<i>N</i>	$\beta^1$	Std. Error	$p^2$
Loss avoidance	5.25 (1.27)	509	.137	.084	.102
Loss	5.11 (1,39)	505	0 <sup>3</sup>		

1:  $\beta$  = regression coefficient

2:  $p$  = p-value, level of significance, set at  $p < .05$

3: this parameter is set to 0, because it is redundant

The results of hypotheses testing regarding self-efficacy and response efficacy are presented in table 35 below.

**Table 35:** Summary of Hypotheses regarding Self-Efficacy and Response Efficacy

<b>H4e</b>	Self-directed messages will have an effect on perceptions of self-efficacy.	Not supported
<b>H7c</b>	Loss avoidance messages will have an effect on perceptions of self-efficacy.	Not supported
<b>H7d</b>	Loss avoidance messages will have an effect on perceptions of response efficacy.	Not supported



### 6.3.2.4 Perceived threat

H9a stated that self-directed messages will interact with loss frames and vivid negative images and will have an effect on the level of perceived threat, see table 36. Perceived threat is the sum of severity and susceptibility (Witte, 1992). Unfortunately, this hypothesis was not supported by the data with  $F(1, 1006) = 0.62$ ,  $p = .744$ . This seems to be a logical result after the beforementioned hypotheses, as none of the three message manipulations had a significant effect on the perceptions of severity and susceptibility.

**Table 36:** *Summary of Hypotheses regarding Interaction Effects of Message Characteristics on Perceived Threat*

<b>H9a</b>	Self-directed messages will interact with loss frames and vivid negative images and will have an effect on the level of perceived threat (severity and susceptibility).	Not supported
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Nevertheless, when considering the relatively high mean values above 4 for perceived threat (see table 37 below), it can be assumed that the threatening stimuli did have an effect in the desired direction, namely creating a slightly threatening message.

**Table 37:** *Descriptive Statistics for Perceived Threat*  
*Dependent variable: perceived threat*

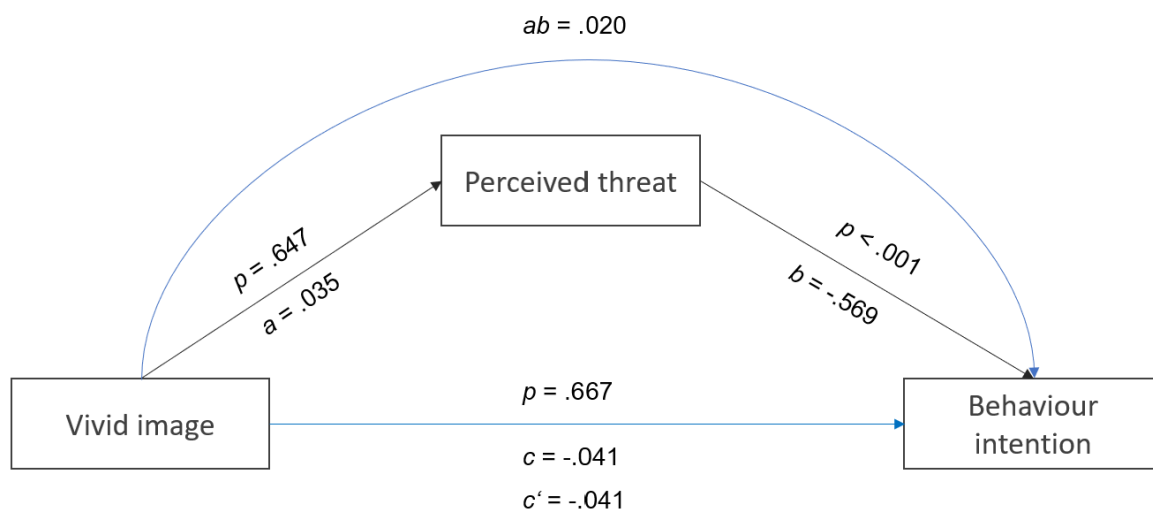
Variables	<i>M (SD)</i>	<i>N</i>	<i>Std. Error</i>
Modest image	4.34 (1.19)	504	.053
Moderate image	4.38 (1.23)	510	.054
Self-directed	4.40 (1.16)	511	.051
Other-directed	4.32 (1.26)	503	.056
Loss avoidance	4.39 (1.18)	509	.052
Loss	4.34 (1.25)	505	.055

### 6.3.3 Behavioural intention

Fifteen hypotheses relating to behavioural intention were originally hypothesised in chapter 3. Eight of these were supported and two were partially supported by the analysis. Hypotheses H3a, H5a, and H8a with mediating variables were calculated using PROCESS v4.2 for SPSS 4.2 by Hayes (2022), which enables researchers to conduct process analysis for mediation. The model calculates direct and indirect effects from independent variables on dependent variables, mediated by other variables. Effects were deemed significant when the confidence interval did not include zero.

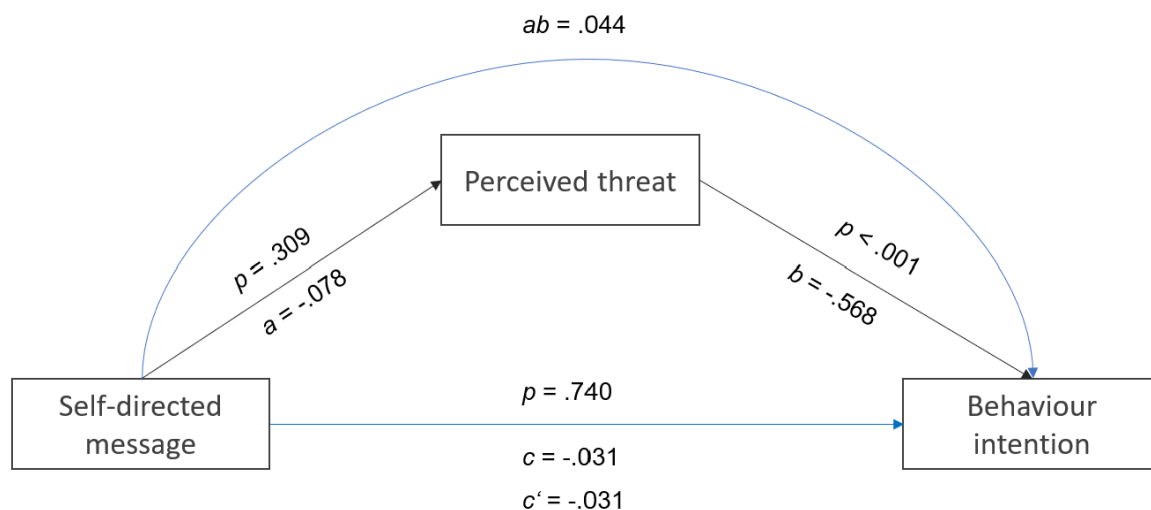
A PROCESS procedure demonstrated for H3a that the effect of a vivid negative image was not significant for perceived threat ( $F(1, 1012) = 0.21, p = .647$ ). No effect was found between vivid negative image and perceived threat ( $a = .035, p = .647$ ). Conversely, the effect of perceived threat was significant for behaviour intention ( $F(2, 1011) = 105.90, p < .001$ ). A strong positive effect was found between perceived threat and behaviour intention ( $b = .569, p < .001$ ). No direct effect of vivid image on behaviour intention was found ( $c = -.041, p = .667$ ). Consequently as depicted in figure 19 below, it was found that the relationship between vivid image and perceived threat on behaviour intention is not mediated by the support of perceived threat on behaviour intention, indirect effect  $ab = .020, 95\%-CI[-.0637, .1045]$ .

**Figure 19:** Mediated Effect of Vivid Image on Behaviour Intention (H3a)



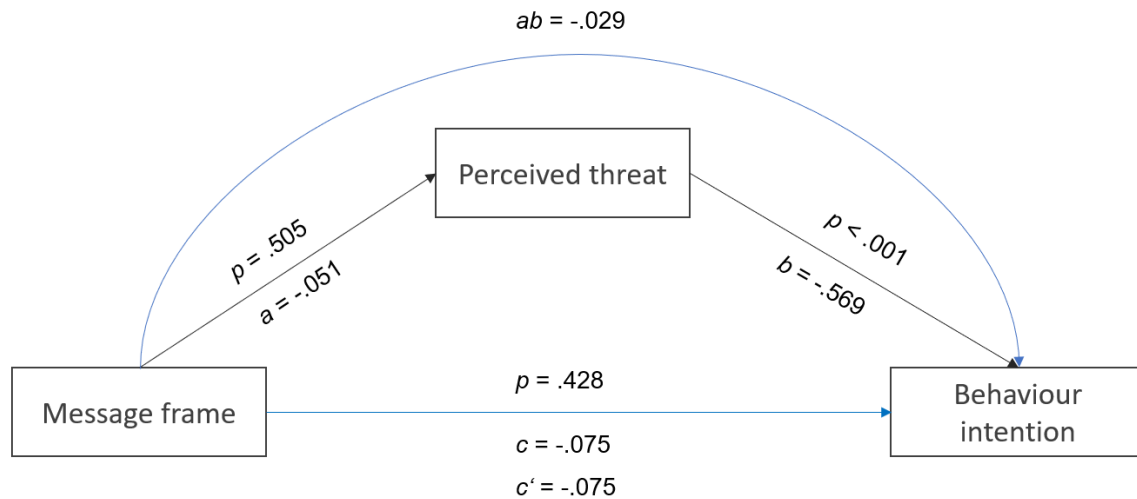
The same is true for H5a which stated that self-directed messages will have an effect on behavioural intention, mediated by cognitive appraisal, and specifically, perceived threat. As depicted in figure 20 below, it was found that the relationship between self-directed message and perceived threat on behaviour intention is not mediated by the support of perceived threat on behaviour intention, indirect effect  $ab = .044$ , 95%-CI[-.1285, .0415]. Again, the effect of perceived threat was significant for behaviour intention ( $F(2, 1011) = 105.86, p < .001$ ). A strong positive effect was found between perceived threat and behaviour intention ( $b = .568, p < .001$ ).

**Figure 20:** Mediated Effect of Self-Directed Message on Behaviour Intention (H5a)



Again, H8a is also not supported for the effect of message frame on behaviour intention, mediated by perceived threat. As depicted in figure 21 below, it was found that the relationship between message frame and perceived threat on behaviour intention is not mediated by the support of perceived threat on behaviour intention, indirect effect  $ab = .029$ , 95%-CI[-.1169, .0585]. Again, the effect of perceived threat was significant for behaviour intention ( $F(2, 1011) = 106.17, p < .001$ ). A strong positive effect was found between perceived threat and behaviour intention ( $b = .569, p < .001$ ).

**Figure 21:** Mediated Effect of Message Frame on Behaviour Intention (H8a)



Overall, it can be stated that the three message manipulations (image, direction, frame) did not yield any indirect effects on behavioural intention, when mediated by perceived threat. Interestingly though, all models showed the result of a positive effect of perceived threat on behaviour intention. It can be assumed, that the threat of mortgage default is perceived as a relevant threat with effect on intention but is not influenced by the message manipulations. Therefore, the feeling of perceived threat is likely to be inherent in the topic of mortgage payment default itself, independent of threatening messages presented.

Furthermore, it was hypothesised in H9b that interactions of message manipulations will have an effect on behavioural intention. Unfortunately, none of the variations of message characteristics showed a significant result with  $F(7, 1006) = 0.72$ ;  $p = .654$ . Several studies have analysed the effect of high threat perceptions and high efficacy perceptions on persuasion. This finding was replicated with H20e and support was found with  $F(1, 1012) = 341.15$ ;  $p < .001$ . A slightly positive effect was found for high perceived threat, high perceived efficacy on behaviour intention in the regression analysis ( $\beta = .083$ ,  $p < .001$ ).

Next, individual differences were analysed for the effect on behavioural intention. It was stated that optimism (H12a) and pessimism (H12b) will have an effect on behavioural intention. This was supported in an ANOVA for optimism with  $F(1, 1012) = 26.46$ ;  $p < .001$ . A positive effect was found for optimism on behaviour intention in

the regression analysis ( $\beta = .214, p < .001$ ), indicating that optimism increases behavioural intention. This finding is not in the expected direction, as it was proposed, that optimism would reduce the need for insurance. The ANOVA for pessimism did not yield significant results with  $F(1, 1012) = 1.40; p = .043$ . Furthermore, H16b stated that risk-taking will have an interaction effect with optimism on behavioural intention. This was supported in a regression analysis with  $F(1, 1012) = 23.96; p < .001$ . A slightly positive effect was found for the interaction of risk-taking and optimism on behaviour intention in the regression analysis ( $\beta = .025, p < .001$ ), indicating that risk-taking with optimism increases behavioural intention. This finding is not in the expected direction, as it was proposed, that risk-taking and optimism would reduce the need for insurance. Lastly, it was stated in H17a that risk-taking will have an effect on behaviour intention, which was also supported with  $F(1, 1012) = 8.22; p = .004$ . A slightly positive effect was found for the effect of risk-taking on behaviour intention in the regression analysis ( $\beta = .010, p = .004$ ), indicating that risk-taking increases behavioural intention. But this effect is mainly caused by the influence of optimism, as can be compared to the findings of H16b.

Four hypotheses regarding cognitive appraisal and the effect on behaviour intention were developed. It was stated that severity(H18a), susceptibility (H18b), response efficacy (H18c) and self-efficacy (H18d) will have an effect on behaviour intention. All four hypothesis were supported by the ANOVA results with  $F(1, 1012) = 212.62; p < .001$  for severity,  $F(1, 1012) = 78.57; p < .001$  for susceptibility,  $F(1, 1012) = 217.93; p < .001$  for response efficacy, and  $F(1, 1012) = 174.80; p < .001$  for self-efficacy. Furthermore, all three hypotheses showed positive effects in the regression analysis with  $\beta = .452, p < .001$  for severity,  $\beta = .320, p < .001$  for susceptibility,  $\beta = .523, p < .001$  for response efficacy, and  $\beta = .524, p < .001$  for self-efficacy. The results indicate that cognitive appraisal components increase behavioural intention, which is also in the expected direction.

Lastly, it was stated in H21a that when the discriminating value is negative, this will lead to fear control processes and thus, defensive avoidance and message derogation will be high, while behaviour intention will be low. Additionally, it was stated in H22a that for a positive DV defensive avoidance and message derogation will be low, while behaviour intention will be high. The discriminating value (DV) was

computed as described by Witte (2001b) by subtracting perceived threat from perceived efficacy. The descriptive results are depicted in table 38 below, which show that for the majority of the sample perceived efficacy was greater than perceived threat ( $DV > 0$ ).

**Table 38:** *Descriptive Statistics for Behaviour Intention and Discriminating Value (DV)*  
*Dependent variable: Behaviour intention*

DV	<i>M (SD)</i>	<i>N</i>	Percentage
<b>&lt; 0 (negative DV)</b>	4.43 (1.49)	156	15.5%
<b>= 0 (neutral DV)</b>	4.73 (1.62)	114	11.3%
<b>&gt; 0 (positive DV)</b>	4.60 (1.69)	739	73.3%
<b>Total</b>	4.59 (1.66)	1009	100%

The hypotheses H21a and H22a are partially supported. In fact, neither a negative, a neutral, nor a positive DV had an effect on behaviour intention with  $F(1, 1006) = 1.17$ ;  $p = .311$ . But, a negative DV showed effects on defensive avoidance with  $F(1, 1006) = 9.61$ ;  $p < .001$  and on message derogation with  $F(1, 1006) = 4.98$ ;  $p = .007$ . As such, both measures showed positive effects for  $DV < 0$  in the regression analysis compared to  $DV > 0$  (constant term = 3.67) with  $\beta = .379$ ,  $p < .001$  for defensive avoidance,  $\beta = .427$ ,  $p = .004$  for message derogation. This result indicates that neither a negative nor a positive DV have an effect on behaviour intention, but a negative DV does increase defensive avoidance by .379 (on a 7-point Likert scale) and message derogation by .255, and a positive DV reduces defensive avoidance and message derogation, which is in the expected direction. The summary of all hypotheses regarding behaviour intention is depicted in table 39 below.

**Table 39:** *Summary of Hypotheses regarding Behavioural Intention*

<b>Nr.</b>	<b>Hypotheses</b>	<b>Result</b>
<b>H3a</b>	Vivid negative images will have an effect on behavioural intention (take up mortgage protection insurance), mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).	Not supported
<b>H5a</b>	Self-directed messages will have an effect on behavioural intention (take up mortgage protection insurance), mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).	Not supported
<b>H8a</b>	Loss framed messages will have an effect on behavioural intention (take up mortgage protection insurance), mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).	Not supported
<b>H9b</b>	Self-directed messages will interact with loss frames and vivid negative images and will have an effect on behavioural intention (take up mortgage protection insurance).	Not supported
<b>H12a</b>	Optimism will have an effect on behavioural intention (take up mortgage protection insurance).	Supported
<b>H12b</b>	Pessimism will have an effect on behavioural intention (take up mortgage protection insurance).	Not supported
<b>H16b</b>	Risk-taking has an interaction effect with optimism on behavioural intention (take up mortgage protection insurance).	Supported
<b>H17a</b>	Risk-taking will have an effect on behaviour intention (take up mortgage protection insurance).	Supported
<b>H18a</b>	Cognitive appraisals, and specifically, severity will influence behavioural intention (take up mortgage protection insurance).	Supported
<b>H18b</b>	Cognitive appraisals, and specifically, susceptibility will influence behavioural intention (take up mortgage protection insurance).	Supported
<b>H18c</b>	Cognitive appraisals, and specifically, response efficacy will influence behavioural intention	Supported
<b>H18d</b>	Cognitive appraisals, and specifically, self-efficacy will influence behavioural intention (take up mortgage protection insurance).	Supported
<b>H20e</b>	High threat perceptions, combined with high efficacy perceptions have the most persuasive impact on behavioural intention (take up mortgage protection insurance).	Supported

Nr.	Hypotheses	Result
H21a	According to the EPPM, a negative discriminating value will lead to fear control processes. In case of fear control, defensive avoidance and message derogation will be high, while behaviour intention (take up mortgage protection insurance) will be low.	Partially supported
H22a	According to the EPPM, a positive discriminating value will lead to danger control processes. In case of danger control, defensive avoidance and message derogation will be low, while behaviour intention (take up mortgage protection insurance) will be high.	Partially supported

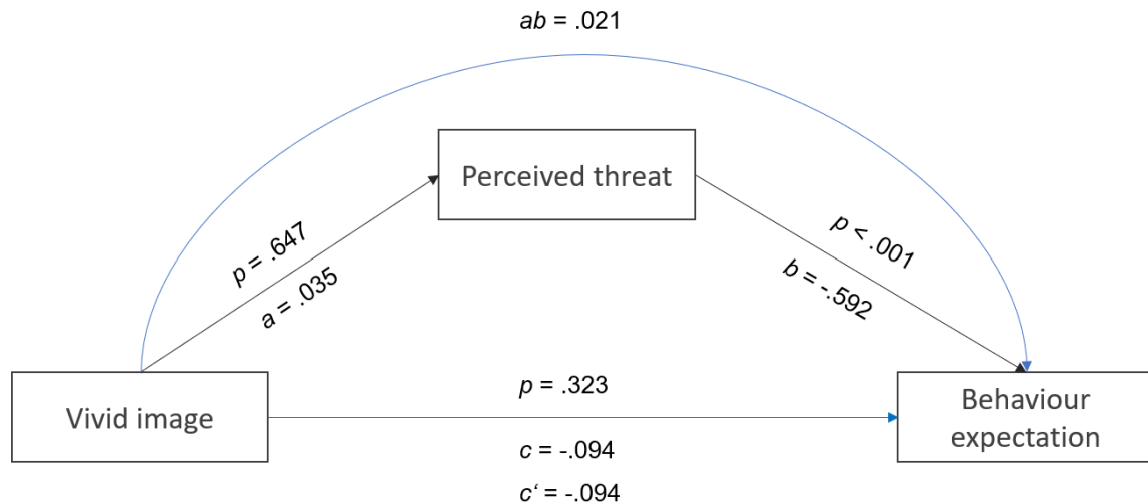
### 6.3.4 Behavioural expectation

Fourteen hypotheses relating to behavioural intention were originally hypothesised in chapter 3. Seven of these were supported and two were partially supported by the analysis. Similar to behaviour intention, hypotheses H3b, H5b, and H8b with mediating variables were calculated using PROCESS v4.2 for SPSS 4.2 by Hayes (2022).

A PROCESS procedure demonstrated for H3b that the effect of a vivid negative image was not significant for perceived threat ( $F(1, 1012) = 0.21, p = .647$ ). No effect was found between vivid negative image and perceived threat ( $a = .035, p = .647$ ). Similar to behaviour intention, the effect of perceived threat was significant for behaviour expectation ( $F(2, 1012) = 0.21, p < .001$ ). A strong positive effect was found between perceived threat and behaviour expectation ( $b = .592, p < .001$ ). No direct effect of vivid image on behaviour expectation was found ( $c = -.094, p = .323$ ). Consequently as depicted in figure 22 below, it was found that the relationship between vivid image and perceived threat on behaviour expectation is not mediated by the support of perceived threat on behaviour expectation, indirect effect  $ab = .021, 95\%-CI[-.070, .1077]$ .

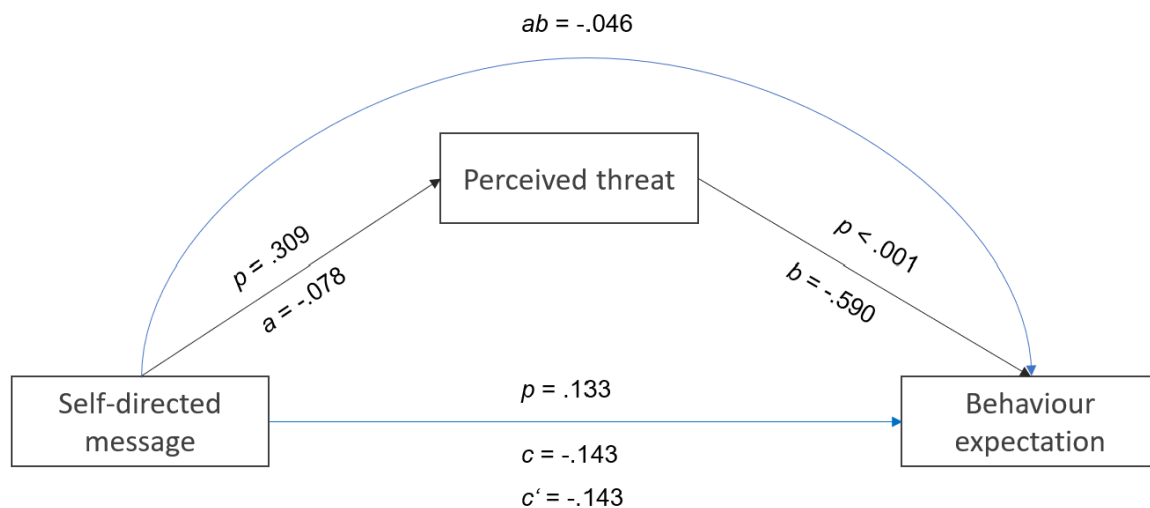


**Figure 22: Mediated Effect of Vivid Image on Behaviour Expectation (H3b)**



The same is true for H5b which stated that self-directed messages will have an effect on behavioural expectation, see figure 23 below. This hypothesis was not supported with indirect effect  $ab = -.046$ , 95%-CI[-.1342, .0429]. Again, the effect of perceived threat was significant for behaviour expectation ( $F(2, 1011) = 114.81$ ,  $p < .001$ ). A strong positive effect was found between perceived threat and behaviour expectation ( $b = .590$ ,  $p < .001$ ).

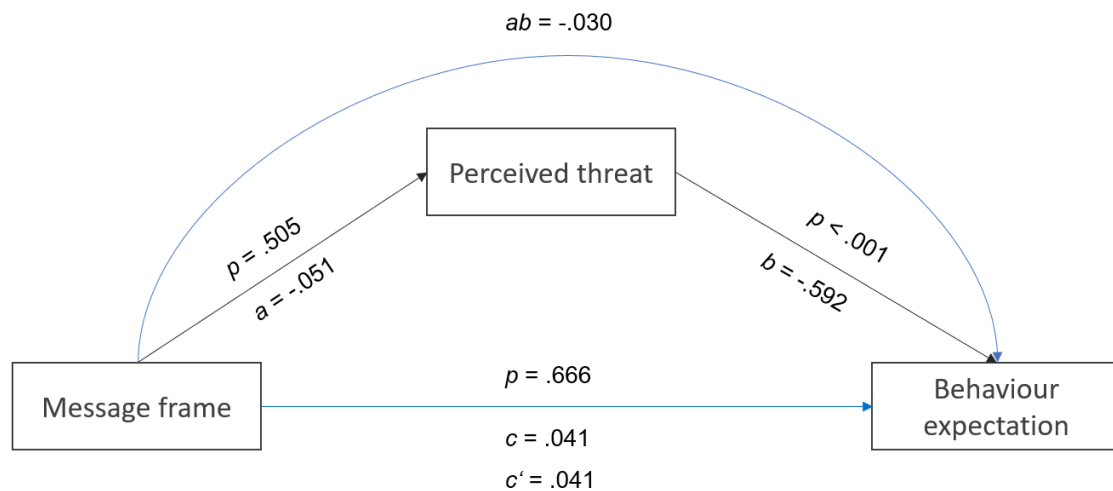
**Figure 23: Mediated Effect of Self-Directed Message on Behaviour Expectation (H5b)**



Again, H8b is also not supported for the effect of message frame on behaviour expectation, mediated by perceived threat. As depicted in figure 24 below the indirect effect was  $ab = .030$ , 95%-CI[-.1139, .0601]. Again, the effect of perceived threat was significant for behaviour expectation with  $F(2, 1011) = 113.54$ ,  $p < .001$ . A strong

positive effect was found between perceived threat and behaviour expectation ( $b = .592, p < .001$ ).

**Figure 24:** Mediated Effect of Message Frame on Behaviour Expectation (H8b)



Similar to behaviour intention, the three message manipulations (image, direction, frame) did not yield any indirect effects on behavioural expectation, when mediated by perceived threat. Also, all models showed the result of a positive effect of perceived threat on behaviour expectation.

Furthermore, it was hypothesised in H9c that interactions of message manipulations will have an effect on behavioural expectation. Unfortunately, none of the variations of message characteristics showed a significant result with  $F(7, 1006) = 1.09; p = .368$ .

Next, individual differences were analysed for the effect on behavioural expectation. It was stated that optimism (H12c) and pessimism (H12d) will have an effect on behavioural expectation. Similar to behaviour intention, this was supported in an ANOVA for optimism with  $F(1, 1012) = 28.34; p < .001$ . A positive effect was found for optimism on behaviour expectation in the regression analysis ( $\beta = .224, p < .001$ ), indicating that optimism increases behavioural expectation. This finding is also not in the expected direction. The ANOVA for pessimism did not yield significant results with  $F(1, 1012) = 3.51; p = .061$ . Furthermore, H16c stated that risk-taking will have an interaction effect with optimism on behavioural expectation. This was supported in

a regression analysis with  $F(1, 1012) = 20.69$ ;  $p < .001$ . A slightly positive effect was found for the interaction of risk-taking and optimism on behaviour expectation in the regression analysis ( $\beta = .024$ ,  $p < .001$ ), indicating that risk-taking with optimism increases behavioural expectation. This finding is not in the expected direction. Lastly, it was stated in H17b that risk-taking will have an effect on behaviour expectation, which was also supported with  $F(1, 1012) = 4.80$ ;  $p = .029$ . A slightly positive effect was found for the effect of risk-taking on behaviour intention in the regression analysis ( $\beta = .081$ ,  $p = .029$ ), indicating that risk-taking increases behavioural expectation.

Again, four hypotheses regarding cognitive appraisal and the effect on behaviour expectation were developed. It was stated that severity (H19a), susceptibility (H19b), response efficacy (H19c) and self-efficacy (H19d) will have an effect on behaviour expectation. All four hypothesis were supported by the ANOVA results with  $F(1, 1012) = 224.98$ ;  $p < .001$  for severity,  $F(1, 1012) = 85.38$ ;  $p < .001$  for susceptibility,  $F(1, 1012) = 225.10$ ;  $p < .001$  for response efficacy, and  $F(1, 1012) = 180.50$ ;  $p < .001$  for self-efficacy. Furthermore, all three hypotheses showed positive effects in the regression analysis with  $\beta = .468$ ,  $p < .001$  for severity,  $\beta = .337$ ,  $p < .001$  for susceptibility,  $\beta = .536$ ,  $p < .001$  for response efficacy, and  $\beta = .537$ ,  $p < .001$  for self-efficacy. The results indicate that cognitive appraisal components increase behavioural expectation, which is also in the expected direction.

Lastly, it was stated in H21b that when the discriminating value is negative, this will lead to fear control processes and thus, defensive avoidance and message derogation will be high, while behaviour expectation will be low. Additionally, it was stated in H22b that for a positive DV defensive avoidance and message derogation will be low, while behaviour expectation will be high. The hypotheses H21b and H22b are partially supported. In fact, the overall ANOVA model showed that the DV had an effect on behaviour expectation with  $F(1, 1006) = 3.01$ ;  $p = .050$ , just below the threshold of .050. But, within the DV categories ( $DV < 0$ ,  $= 0$ ,  $> 0$ ) the regression analysis showed that there was no significant effect of any of the categories with *constant term* = 4.70 for  $DV > 0$ , and in relation to this,  $\beta = -.274$ ,  $p = .063$  for  $DV < 0$ , and  $\beta = .217$ ,  $p = .196$  for  $DV = 0$ . However, a negative DV showed effects on defensive avoidance with  $F(1, 1006) = 9.61$ ;  $p < .001$  and on message derogation

with  $F(1, 1006) = 4.98$ ;  $p = .007$ , which leads to the same result as for behaviour intention. The summary of all hypotheses regarding behaviour intention is depicted in table 40 below.

**Table 40:** *Summary of Hypotheses regarding Behavioural Intention*

<b>Nr.</b>	<b>Hypotheses</b>	<b>Result</b>
<b>H3b</b>	Vivid negative images will have an effect on behavioural expectation (take up mortgage protection insurance), mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).	Not supported
<b>H5b</b>	Self-directed messages will have an effect on behavioural expectation (take up mortgage protection insurance), mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).	Not supported
<b>H8b</b>	Loss framed messages will have an effect on behavioural expectation (take up mortgage protection insurance), mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).	Not supported
<b>H9c</b>	Self-directed messages will interact with loss frames and vivid negative images and will have an effect on behavioural expectation (take up mortgage protection insurance).	Not supported
<b>H12c</b>	Optimism will have an effect on behavioural expectation (take up mortgage protection insurance).	Supported
<b>H12d</b>	Pessimism will have an effect on behavioural expectation (take up mortgage protection insurance).	Not supported
<b>H16c</b>	Risk-taking has an interaction effect with optimism on behavioural expectation (take up mortgage protection insurance).	Supported
<b>H17b</b>	Risk-taking will have an effect on behaviour expectation (take up mortgage protection insurance).	Supported
<b>H19a</b>	Cognitive appraisals, and specifically, severity will influence behavioural expectation (take up mortgage protection insurance).	Supported
<b>H19b</b>	Cognitive appraisals, and specifically, susceptibility will influence behavioural expectation (take up mortgage protection insurance).	Supported

Nr.	Hypotheses	Result
H19c	Cognitive appraisals, and specifically, response efficacy will influence behavioural expectation (take up mortgage protection insurance).	Supported
H19d	Cognitive appraisals, and specifically, self-efficacy will influence behavioural expectation (take up mortgage protection insurance).	Supported
H21b	According to the EPPM, a negative discriminating value will lead to fear control processes. In case of fear control, defensive avoidance and message derogation will be high, while behaviour expectation (take up mortgage protection insurance) will be low.	Partially supported
H22b	According to the EPPM, a positive discriminating value will lead to danger control processes. In case of danger control, defensive avoidance and message derogation will be low, while behaviour expectation (take up mortgage protection insurance) will be high.	Partially supported

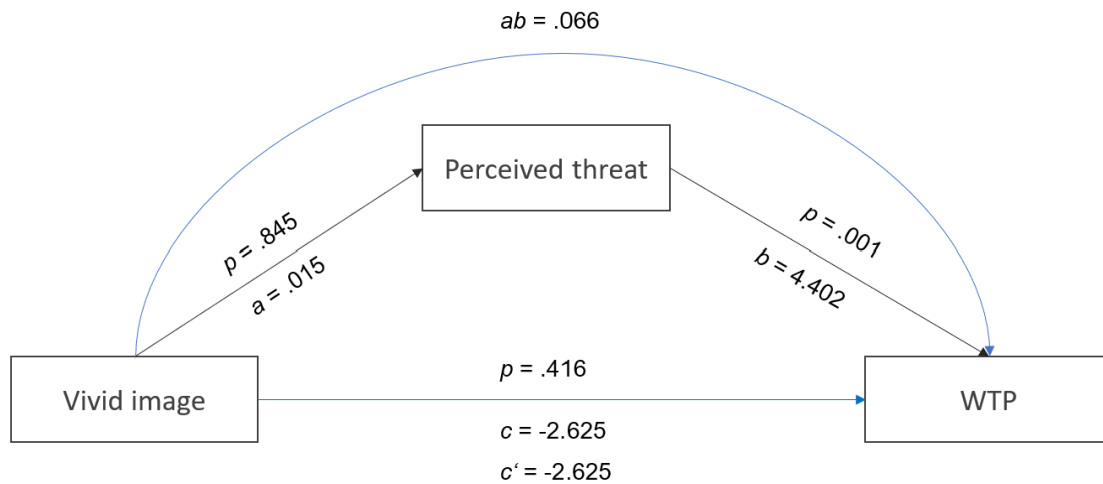
### 6.3.5 Willingness-to-pay

Fourteen hypotheses relating to willingness-to-pay (WTP) were originally developed. Five of these were supported and two were partially supported by the analysis. Hypotheses H3c, H5c, and H8c with mediating variables were calculated using PROCESS v4.2 for SPSS 4.2 by Hayes (2022). The data analysis of WTP showed that out of  $N = 1,014$  there were 38 responses below 10 EUR. As such a low WTP is unrealistic and assumed to derive from unmotivated participants, these 38 respondents were excluded from analysis of WTP, with an adjusted WTP  $\geq 10$  EUR for further analysis.

A PROCESS procedure demonstrated for H3c that the effect of a vivid negative image was not significant for perceived threat ( $F(1, 974) = 0.38, p = .845$ ). No effect was found between vivid negative image and perceived threat ( $a = .015, p = .845$ ). Conversely, the effect of perceived threat was significant for WTP ( $F(2, 973) = 5.68, p = .001$ ). A strong positive effect was found between perceived threat and WTP ( $b = 4.402, p = .001$ ), which indicates that WTP is increased by 4.40 EUR if threat is perceived, an interesting finding for business. No direct effect of vivid image on WTP

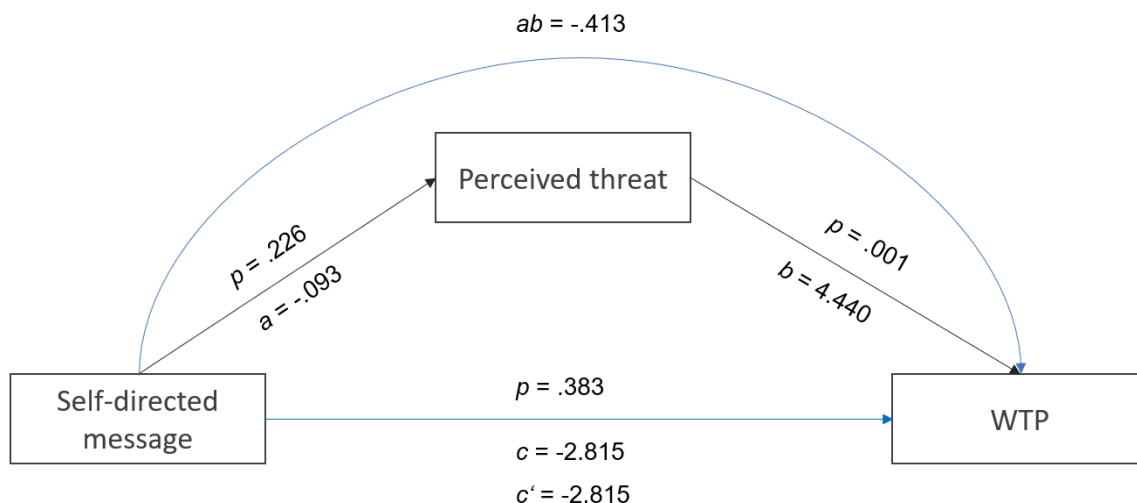
was found ( $c = -2.625$ ,  $p = .416$ ). Consequently as depicted in figure 25 below, it was found that the relationship between vivid image and perceived threat on WTP is not mediated by the support of perceived threat on WTP, indirect effect  $ab = .066$ , 95%-CI $[-.5970, .8447]$ .

**Figure 25:** Mediated Effect of Vivid Image on WTP (H3c)



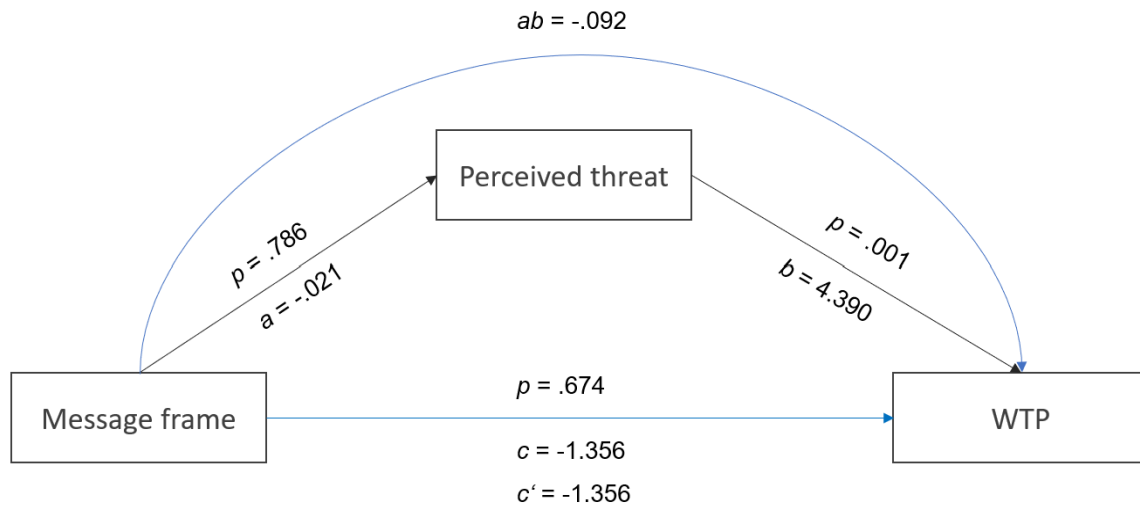
The same is true for H5c which stated that self-directed messages will have an effect on WTP, mediated by perceived threat. As depicted in figure 26 below, it was found that the relationship between self-directed message and perceived threat on WTP is not supported, indirect effect  $ab = .041$ , 95%-CI $[-1.2506, .2446]$ . Again, the effect of perceived threat was significant for WTP ( $F(2, 973) = 5.73$ ,  $p = .001$ ). A strong positive effect was found between perceived threat and WTP ( $b = 4.440$ ,  $p = .001$ ).

**Figure 26:** Mediated Effect of Self-Directed Message on WTP (H5c)



Again, H8c is also not supported for the effect of message frame on WTP, mediated by perceived threat. As depicted in figure 27 below, it was not supported, indirect effect  $ab = .092$ , 95%-CI[-.8358, .6233]. Again, the effect of perceived threat was significant for WTP ( $F(2, 973) = 5.43$ ,  $p < .001$ ). A strong positive effect was found between perceived threat and WTP ( $b = 4.390$ ,  $p = .001$ ).

**Figure 27:** Mediated Effect of Message Frame on WTP (H8c)



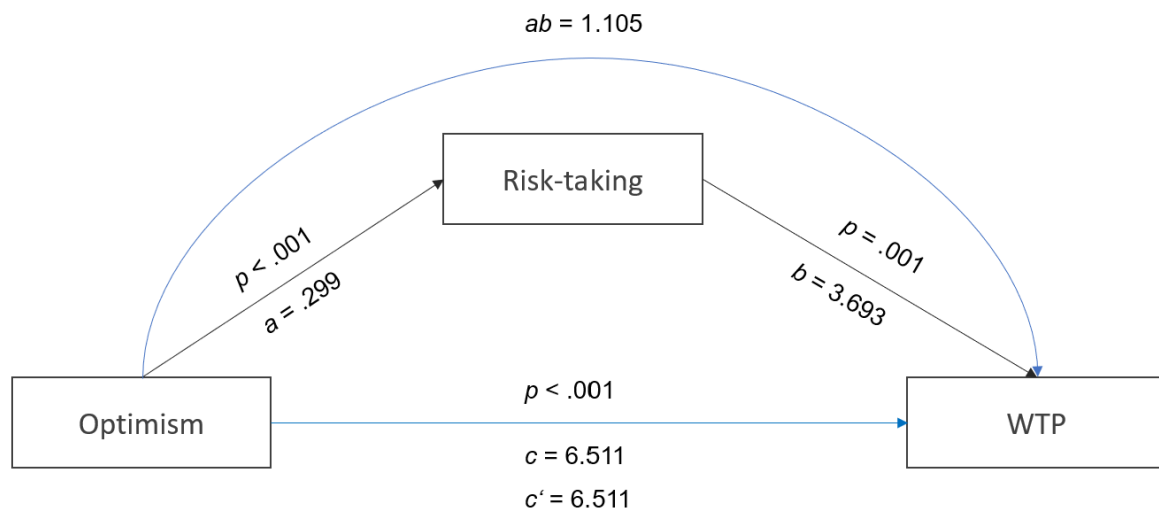
Overall, it can be stated that the three message manipulations (image, direction, frame) did not yield any indirect effects on WTP, when mediated by perceived threat. Again, all models showed the result of a positive effect of perceived threat on WTP, by more than 4 EUR on average.

Furthermore, it was hypothesised in H9d that interactions of message manipulations will have an effect on WTP, which was not supported with  $F(7, 968) = 0.77$ ;  $p = .613$ .

Next, it was stated that optimism (H13a) and pessimism (H13b) will have an effect on WTP. This was supported in an ANOVA for optimism with  $F(1, 974) = 34.11$ ;  $p < .001$ . A positive effect was found for optimism on WTP in the regression analysis ( $\beta = 7.616$ ,  $p < .001$ ), indicating that optimism increases WTP by 7.62 EUR. This finding is relevant for business. The ANOVA for pessimism did not yield significant results with  $F(1, 974) = 0.95$ ;  $p = .331$ . Furthermore, H16d stated that risk-taking will have an interaction effect with optimism on WTP. This was supported in a regression analysis

with  $F(1, 974) = 42.93$ ;  $p < .001$ . A positive effect was found for the interaction of risk-taking and optimism on WTP in the regression analysis ( $\beta = 1.056$ ,  $p < .001$ ), indicating that risk-taking with optimism increases WTP. Furthermore, it was stated that optimism, mediated by risk-taking, has an effect on WTP (H16e), where the analysis also answers H17c about the effect of risk-taking on WTP. As depicted in figure 28 below, H16e was supported, indirect effect  $ab = 1.105$ , 95%-CI [.3922, 1.9406]. In addition, regarding H17c the effect of risk-taking was significant for WTP ( $F(2, 973) = 22.20$ ,  $p = .001$ ). A strong positive effect was found between risk-taking and WTP ( $b = 3.693$ ,  $p = .001$ ). The results also show that there is a direct effect of optimism on WTP with ( $c = 6.511$ ,  $p < .001$ ), indicating that optimism increases WTP by 6.51 EUR when mediated by risk-taking.

**Figure 28:** Mediated Effect of Optimism on WTP (H16e)



Furthermore, it was stated that severity (H20a), susceptibility (H20b), response efficacy (H20c) and self-efficacy (H20d) will have an effect on WTP. The results of the ANOVA only support the effect of susceptibility with  $F(1, 974) = 13.35$ ;  $p < .001$  and showed positive effects in the regression analysis with  $\beta = 4.275$ ,  $p < .001$ . This indicates that feeling susceptible to the threat of mortgage default increases WTP by 4.28 EUR. The analysis did not support the effect for severity with  $F(1, 974) = 3.47$ ;  $p = .063$ , response efficacy with  $F(1, 974) = 3.64$ ;  $p = .057$ , and self-efficacy with  $F(1, 974) = 0.92$ ;  $p = .337$ .



Lastly, it was stated in H23 that the discriminating value will have an effect on willingness-to-pay. This was supported with  $F(1, 968) = 3.42$ ;  $p = .033$ . Furthermore, the results of the regression analysis showed that  $DV = 0$  has a significant effect in comparison to  $DV > 0$  (*constant term* = 68.55) with  $\beta = 11.13$ ,  $p = .034$ , while  $DV < 0$  did not show an effect in comparison to  $DV > 0$ . This indicates that participants with  $DV = 0$  have a higher WTP of 11.13 EUR in comparison to participants with  $DV > 0$ . The summary of all hypotheses regarding willingness-to-pay is depicted in table 41 below.

**Table 41:** *Summary of Hypotheses regarding Willingness-to-Pay*

<b>H3c</b>	Vivid negative images will have an effect on Willingness-to-pay, mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).	Not supported
<b>H5c</b>	Self-directed messages will have an effect on Willingness-to-pay, mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).	Not supported
<b>H8c</b>	Loss framed messages will have an effect on Willingness-to-pay, mediated by cognitive appraisal, and specifically, perceived threat (severity and susceptibility).	Not supported
<b>H9d</b>	Self-directed messages will interact with loss frames and vivid negative images and will have an effect on WTP.	Not supported
<b>H13a</b>	Optimism will have an effect on Willingness-to-pay.	Supported
<b>H13b</b>	Pessimism will have an effect on Willingness-to-pay.	Not supported
<b>H16d</b>	Risk-taking has an interaction effect with optimism on WTP.	Supported
<b>H16e</b>	Optimism, mediated by risk-taking, has an effect on WTP.	Supported
<b>H17c</b>	Risk-taking will have an effect on WTP.	Supported
<b>H20a</b>	Cognitive appraisals, and specifically, severity will influence WTP	Not supported
<b>H20b</b>	Cognitive appraisals, and specifically, susceptibility will influence WTP	Supported
<b>H20c</b>	Cognitive appraisals, and specifically, response efficacy will influence WTP	Not supported
<b>H20d</b>	Cognitive appraisals, and specifically, self-efficacy will influence WTP	Not supported
<b>H23</b>	The discriminating value will have an effect on WTP.	Supported

### 6.3.6 Attitude to mortgage insurance

Two hypotheses were developed regarding the attitude towards mortgage protection insurance. H9e stated that variations of message characteristics will have an effect on attitude towards BaufiSchutz insurance. This was not supported with  $F(1, 1010) = 0.439$ ;  $p = .725$  in the main model and with  $F(1, 1006) = 1.26$ ;  $p = .267$  in the interaction model.

Furthermore, H9f was developed to analyse if information regarding BaufiSchutz, associated risks and a threatening message will have an effect on attitude to mortgage insurance after the stimuli compared to attitude to mortgage insurance before the stimuli. A paired samples t-test was performed to compare attitude to mortgage insurance before and after the presentation of the stimuli treatment. There was a significant difference in attitude to mortgage insurance before treatment ( $M = 3.79$ ,  $SD = 1.64$ ) and attitude to mortgage insurance after treatment ( $M = 5.44$ ,  $SD = 1.14$ ) with  $t(1014) = -.120$ ,  $p = < .001$ . It can clearly be assumed that the information about BaufiSchutz and the associated risks together with the treatment had a significantly positive effect on attitude. The summary of all hypotheses regarding attitude to mortgage insurance is depicted in table 42 below.

**Table 42:** *Summary of Hypotheses regarding Attitude to Mortgage Protection*

<b>H9e</b>	Variations of message characteristics will have an effect on attitude towards BaufiSchutz insurance.	Not supported
<b>H9f</b>	Presenting information regarding BaufiSchutz, associated risks and a threatening message will have an effect on attitude to mortgage insurance after the stimuli compared to attitude to mortgage insurance before the stimuli.	Supported

## 6.4 Summary

The current chapter provided the results of an empirical test of the research model developed in Chapter 3. Overall, the objective of this analysis was to test the hypothesised influences of fear appeal message characteristics on immediate emotions, cognitive evaluations, and on behaviour decisions, as well as examine the influence of cognitions and emotions on behavioural intention and expectation, and

on willingness-to-pay for BaufiSchutz insurance. Furthermore, the influence of individual differences optimism/pessimism and risk-taking were evaluated, as well as the effect on variations of attitude towards BaufiSchutz. To generate the results, a series of ANOVAs, regression analyses and PROCESS calculations were conducted. To ensure the validity of the stimuli a series of manipulations checks were performed and presented in chapter 6.1. Vivid images and message frame were perceived as intended, while message direction was not.

The results of hypothesis testing show that out of 74 hypotheses, 30 were supported, 4 were partially supported, and 40 were not supported. An overview of the supported hypotheses are presented in table 43 below. Noteworthy are especially unexpected results regarding the (not supported) effects of message characteristics on behaviour outcomes or WTP and the effects of optimism on the beforementioned outcomes, which will be examined in more detail in the next chapter.

**Table 43:** *Summary of Supported Hypotheses*

<b>H2a</b>	Vivid negative images will induce fear, i.e. elicit the immediate emotion of fear.	Supported
<b>H2b</b>	Vivid negative images will induce uncomfortable feelings, i.e. elicit the immediate emotion of uncomfortable feelings.	Supported
<b>H9f</b>	Presenting information regarding BaufiSchutz, associated risks and a threatening message will have an effect on attitude to mortgage insurance after the stimuli compared to attitude to mortgage insurance before the stimuli.	Supported
<b>H10a</b>	Optimism will will reduce the immediate emotion of fear.	Supported
<b>H10b</b>	Pessimism will will induce fear, i.e. elicit the immediate emotion of fear.	Supported
<b>H10c</b>	Optimism will reduce the immediate emotion of uncomfortable feelings.	Supported
<b>H10d</b>	Pessimism will induce uncomfortable feelings, i.e. elicit the immediate emotion of uncomfortable feelings.	Supported

**Table 43 continued:** *Summary of Supported Hypotheses*

<b>H11d</b>	Pessimism will have an effect on perceptions of susceptibility.	Supported
<b>H12a</b>	Optimism will have an effect on behavioural intention (take up mortgage protection insurance).	Supported
<b>H12c</b>	Optimism will have an effect on behavioural expectation (take up mortgage protection insurance).	Supported
<b>H13a</b>	Optimism will have an effect on Willingness-to-pay.	Supported
<b>H15a</b>	Risk-taking will have an effect on perceptions of severity.	Supported
<b>H16b</b>	Risk-taking has an interaction effect with optimism on behavioural intention (take up mortgage protection insurance).	Supported
<b>H16c</b>	Risk-taking has an interaction effect with optimism on behavioural expectation (take up mortgage protection insurance).	Supported
<b>H16d</b>	Risk-taking has an interaction effect with optimism on WTP.	Supported
<b>H16e</b>	Optimism, mediated by risk-taking, has an effect on WTP.	Supported
<b>H17a</b>	Risk-taking will have an effect on behaviour intention (take up mortgage protection insurance).	Supported
<b>H17b</b>	Risk-taking will have an effect on behaviour expectation (take up mortgage protection insurance).	Supported
<b>H17c</b>	Risk-taking will have an effect on WTP.	Supported
<b>H18a</b>	Cognitive appraisals, and specifically, severity will influence behavioural intention (take up mortgage protection insurance).	Supported
<b>H18b</b>	Cognitive appraisals, and specifically, susceptibility will influence behavioural intention (take up mortgage protection insurance).	Supported
<b>H18c</b>	Cognitive appraisals, and specifically, response efficacy will influence behavioural intention (take up mortgage protection insurance).	Supported
<b>H18d</b>	Cognitive appraisals, and specifically, self-efficacy will influence behavioural intention (take up mortgage protection insurance).	Supported

**Table 43 continued:** *Summary of Supported Hypotheses*

<b>H19a</b>	Cognitive appraisals, and specifically, severity will influence behavioural expectation (take up mortgage protection insurance).	Supported
<b>H19b</b>	Cognitive appraisals, and specifically, susceptibility will influence behavioural expectation (take up mortgage protection insurance).	Supported
<b>H19c</b>	Cognitive appraisals, and specifically, response efficacy will influence behavioural expectation (take up mortgage protection insurance).	Supported
<b>H19d</b>	Cognitive appraisals, and specifically, self-efficacy will influence behavioural expectation (take up mortgage protection insurance).	Supported
<b>H20b</b>	Cognitive appraisals, and specifically, susceptibility will influence WTP	Supported
<b>H20e</b>	High threat perceptions (severity or susceptibility), combined with high efficacy perceptions (response efficacy and self-efficacy) have the most persuasive impact on behavioural intention (take up mortgage protection insurance).	Supported
<b>H21a</b>	According to the EPPM, a negative discriminating value will lead to fear control processes. In case of fear control, defensive avoidance and message derogation will be high, while behaviour intention (take up mortgage protection insurance) will be low.	Partially supported
<b>H21b</b>	According to the EPPM, a negative discriminating value will lead to fear control processes. In case of fear control, defensive avoidance and message derogation will be high, while behaviour expectation (take up mortgage protection insurance) will be low.	Partially supported
<b>H22a</b>	According to the EPPM, a positive discriminating value will lead to danger control processes. In case of danger control, defensive avoidance and message derogation will be low, while behaviour intention (take up mortgage protection insurance) will be high.	Partially supported

**Table 43 continued:** *Summary of Supported Hypotheses*

<b>H22b</b>	According to the EPPM, a positive discriminating value will lead to danger control processes. In case of danger control, defensive avoidance and message derogation will be low, while behaviour expectation (take up mortgage protection insurance) will be high.	Partially supported
<b>H23</b>	The discriminating value will have an effect on willingness-to-pay.	Supported

The next chapter merges the major findings and contributions of this study, including a discussion of the unexpected results which were found. This is followed by the practical implications, which are an important outcome of this study. Finally, the limitations are highlighted.

## **7 Discussion and conclusion**

In this final chapter the main research findings of this study are discussed and are brought into context with the research questions under examination of this thesis, which are:

*RQ1: To explain the effects of moderate and modest fear appeals on behaviour intention, behaviour expectation, and willingness-to-pay regarding mortgage protection insurance in Germany using constructs of the Extended Parallel Process Model.*

*RQ2: To provide empirical evidence of the impact of individual differences (optimism/pessimism and risk-taking) on behaviour intention, behaviour expectation, and willingness-to-pay concerning MPI in Germany.*

*RQ3: To analyse whether moderate or modest fear appeals are effective to establish the most appropriate 'fear level' of threatening message constructs in order to develop a guiding communication for German mortgage and insurance salespersons.*

The results from the hypothesis tests are considered, and the unexpected results from the empirical work are also taken into account. Section 7.1.1 outlines the contribution to research on fear appeals that has been made in this thesis.

Furthermore, the practical implications for business in the context of distributing mortgage protection insurance are presented and evaluated in section 7.1.2. From this point, several recommendations are proposed, which may be of practical as well as financial use to insurance companies and mortgage brokers.

### **7.1 Theoretical implications of the study**

From a theoretical standpoint the constructs of the EPPM were utilised to measure the emotion of fear, cognitive processes, and behaviour outcomes. Furthermore, individual differences (optimism/pessimism, risk-taking) were added to the research model as described by the EPPM. In order to reach a better understanding of the design of a threatening message, the characteristics of a threat appeal were separated into vivid image, message frame, and message direction. The focus on the

use of these messages and the integration of individual differences in the context of mortgage protection insurance was new to this field of research. Furthermore, willingness-to-pay and change of attitude towards insurance were added to the outcome variables. Hence, the research framework makes an original contribution to knowledge in the threat appeals domain of literature such as:

1. Further analysis of more complex intrinsic message characteristics associated with the core components of threat appeals that have demonstrated to influence emotional and cognitive appraisals, namely vivid negative images, message frame, and message direction.
2. The introduction of optimism/pessimism and risk-taking as individual differences variables to the EPPM which show effects on emotional and cognitive appraisals, as well as on decision and behaviour outcomes.
3. Main cognitive appraisal variables of the EPPM that have been claimed in the literature to be important responses to fear appeals, as well as to influence decision making.
4. Analysis and enlargement of relevant outcome variables in the field of insurance (i.e., behaviour intention and expectation, and WTP), which represent a decision about future behaviour as a result of exposure to a threat appeal.
5. Introduction of threat appeals to the field of mortgage protection insurance and its corresponding sales process.

Next, the discussion will now move to the evaluation of the results from the empirical testing of the research hypotheses that have been presented in chapter 6.

## **7.2 Evaluation of empirical findings**

Several hypotheses were supported in the study (i.e., 34 hypotheses). Firstly, the results show that vivid negative images had an effect on the immediate emotions fear and uncomfortable feelings, which builds the basis for answering **RQ3**. Both hypotheses showed that the effects were in the expected direction, i.e., more negative images increased fear and uncomfortable feelings. This is in general support of prior studies (e.g., Andrews et al., 2014; Chamberlain, 2015; Kees et al., 2010). Important to note is that the general evaluations of these emotional measures



were below four points on a 7-point Likert scale (see section 5.3.1), indicating that the levels of fear and uncomfortable feelings were quite low to moderate. This was intended by the researchers as the use of very frightening images would not be allowed in practice.

Furthermore, prior research has demonstrated that the use of vivid images increases perceptions of threat (e.g., Cauberghe et al., 2009; Sabanne et al., 2009), but this was not supported by this research project. Vivid negative images had no effect on severity and susceptibility, which are the EPPM constructs of perceived threat. Moreover, it was hypothesised that vivid images would have an effect on behaviour outcomes and WTP, but this was also not supported. This is an interesting finding when considering that vivid images increases perceived fear, as it indicates that even when one feels fear, this has no effect on behaviour outcomes, which pays into answering **RQ1**. This contrasts with the EPPM proposition which states that increased fear will either strengthen danger control processes (i.e., adaptive behaviour) or increase fear control, and therefore influence behaviour. It could be assumed that, due to the moderate images selected and the low level of perceived fear created, the fear level did not reach a sufficient 'power' threshold to change behaviour, which also helps answer **RQ3**.

It was also hypothesised that message frame and message direction would have effects on emotions, cognitions, and behaviour outcomes. But none of these hypotheses were supported. This is surprising as e.g., the effect of loss-framed messages on perceptions of severity and susceptibility is widely upheld in prior work (e.g., Bartels et al., 2010) and as direction of message has been demonstrated to influence emotions (e.g., Chamberlain, 2015). This lack of support indicates that the message direction and message frame as message characteristic alone do not influence emotions and cognitions in this context. Overall, it can be stated that the only measured direct effect of intrinsic message characteristics were generated using vivid negative images, which also helps answer **RQ3**.

Further, hypotheses regarding the individual differences optimism/pessimism and risk-taking yielded several supported results, building the basis for answering **RQ2**. This in contrast to Witte and Morrison (2000) who stated that individual differences

do not seem to have much influence on the processing of fear appeals. But it is in line with Schoenbacher and Whittler (1996) who concluded that individual difference variables are important in responses to threat communication. The finding that optimism reduces fear and uncomfortable feelings, while pessimism increases these feelings is in line with prior research (e.g., Andersson, 1996). Conversely and helping to answer **RQ2**, optimism was found to increase behavioural outcomes and WTP which is an interesting finding, but rather unexpected as it was proposed that optimistic beliefs can lead individuals to perceive a threat to be personally irrelevant (Walton & McKeown, 2001) and therefore reduce the take-up of insurance. The same seems true for risk-taking (and answering **RQ2**), which was found to increase behaviour outcomes and WTP. For behaviour this was especially valid because of the interaction effect with optimism, which was found to be very strong. The readiness to take risks was proposed to have a significant influence on the risk behaviour of individuals (Zuckermann, 2007). Accordingly, it was proposed that people who describe themselves as highly ready to take risks also tend to engage in risky behaviour more often. But this was not supported by the results, even though risk-taking did reduce the perceptions of severity, which is in line with the expectation. Overall, it was found that the individual differences optimism/pessimism and risk-taking demonstrated a significant impact on emotions, cognitions, and behaviour outcomes as well as WTP, which provides the answer to **RQ2**. The effects on emotions and cognitions were as expected, while the effects on behaviour outcomes and WTP were not as expected.

Several of the hypothesised relationships regarding cognitive appraisal and behaviour outcomes and WTP were supported, leading to answering **RQ1**. It is noteworthy that the empirical results suggest that the immediate emotions of fear and uncomfortable feelings were influenced by message manipulations in this study. However, none of these message characteristics had an effect on cognitions. Nevertheless, all four cognitive appraisal components (severity, susceptibility, response efficacy, self-efficacy) demonstrated an effect in the expected direction regarding behaviour outcomes and WTP, which is in line with prior research (e.g., I. Lewis et al., 2013; Witte & Allen, 2000) and provides an answer to **RQ1**. However, especially three components showed no effect on WTP, namely severity, response efficacy, and self-efficacy. Only susceptibility perceptions increased WTP, by a

significant amount of 4.28 EUR. This finding seems quite novel to fear appeal research, because so far it was only stated that fear appeals might have a positive relationship with WTP (e.g., Addo et al., 2020), but not which one of the cognitive appraisal components influenced this decision. Regarding behaviour intention and expectation, perceptions of response efficacy and self-efficacy demonstrated stronger positive effects than perceptions of severity and susceptibility. As such, all components showed a positive effect, which is in line with prior research (see above). Furthermore, it was found that high threat perceptions (severity or susceptibility), combined with high efficacy perceptions (response efficacy and self-efficacy) had the most persuasive impact on behavioural intention. This finding is also replicated in the literature (e.g., Roberto & Goodall, 2009; Wong & Cappella, 2009).

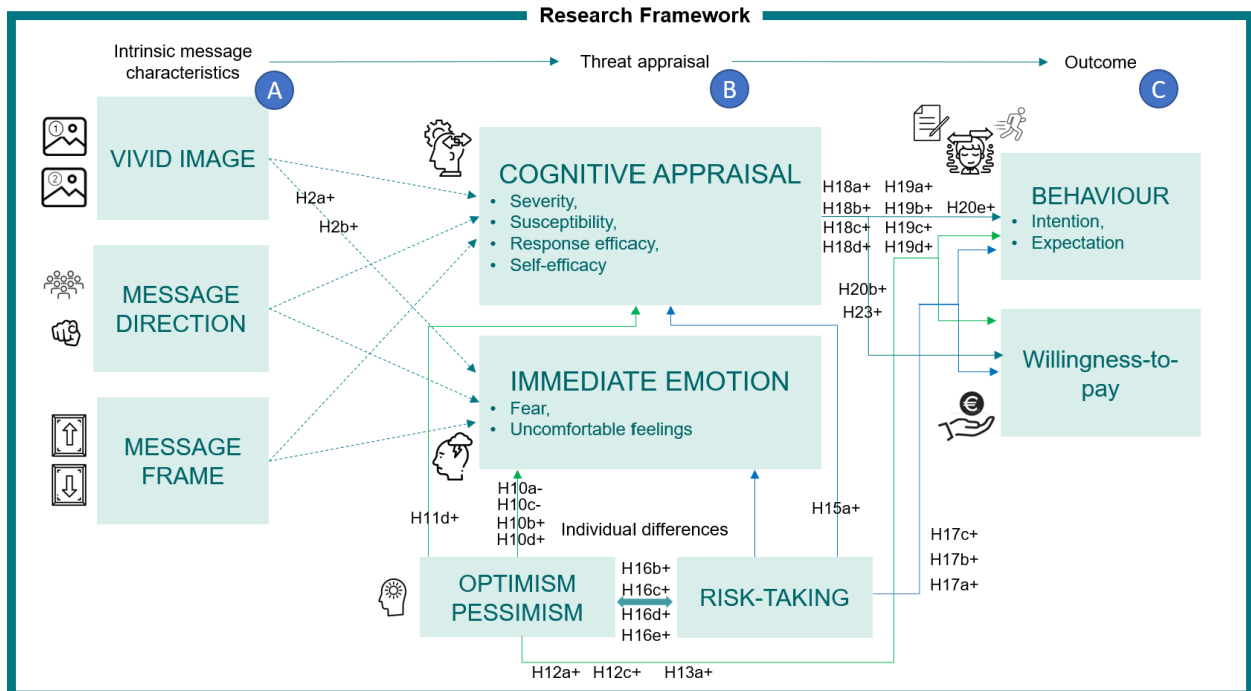
Lastly, the discriminating value did not show the hoped-for effects on behaviour outcomes but received support for the effects on message derogation and defensive avoidance, also adding to the list of answering **RQ1**. Overall, the high mean values of perceived threat ( $M = 4.36$ ) and perceived efficacy ( $M = 5.27$ ) suggest that the threat was perceived as intended and the efficacy information was well designed, which helps answer **RQ3**. The results indicate that the discriminating value does not explain the behaviour outcomes in case of high threat and high efficacy conditions, as opposed to Witte and Allen (2000). A novel finding regarding the discriminating value is the effect on WTP, as it was found that participants with  $DV = 0$  had the highest increase of WTP of 11.13 EUR in comparison to participants with  $DV > 0$ . This leads to the conclusion that the ideal situation for optimising the WTP is the equilibrium of perceived threat and perceived efficacy, adding to the list of answering **RQ3**.

These findings have some implications for future work in the area, especially in the field of insurance. As such, this present study contributes to existing research and adds further components to the field of threat appeals. The results demonstrate that widening the field of research with more complex message manipulations and adding individual differences and willingness-to-pay can lead to unexpected and novel results and give some foundation for further research. In addition, this study finds support for the influence of cognitive response variables on behaviour outcomes as proposed in the EPPM by Witte (1992).

## 7.2.1 Review of the research framework

An overview of the supported hypotheses and further main findings are depicted in the research framework of this thesis below in figure 29. The effect of variables under examination are complemented by a minus or plus sign, signalling if the variable either leads to an increase (+) or reduction (-) of the respective dependent variable as stated in more detail in the data analyses results chapter 6.

**Figure 29: Research Framework and Supported Findings**



The capital letters A, B, and C in figure 29 describe the following further meta-level findings on each column of the framework.

Findings regarding intrinsic message characteristics (A):

1. Overall, the only measured direct effect of intrinsic message characteristics on emotions were generated using vivid negative images.
2. Vivid negative images increase the immediate emotions fear and uncomfortable feelings on a moderate level. Assumably, the fear level of the message did not reach a sufficient 'power' threshold to change behaviour.

Further findings regarding threat appraisal and individual differences (B):

1. All four cognitive appraisal components of the EPPM demonstrated an effect in the expected direction regarding behaviour outcomes. Three out of four

components showed no effect on WTP. Only susceptibility perceptions increased WTP, by a significant amount of 4.28 EUR.

2. The high mean values of perceived threat ( $M = 4.36$ ) and perceived efficacy ( $M = 5.27$ ) suggest that the threat was perceived as intended and the efficacy information was well designed, demonstrating that the information about the BaufiSchutz product and the corresponding risks were well designed as well as signalling a good product solution to the market.
3. Overall, it was found that the individual differences optimism/pessimism and risk-taking demonstrated a significant impact on emotions, cognitions, and behaviour outcomes as well as WTP.

Findings regarding further outcomes (C):

1. The discriminating value did not show the hoped-for effects on behaviour outcomes but received support for the effects on message derogation and defensive avoidance. A novel finding regarding the discriminating value is the effect on WTP, as it was found that participants with  $DV = 0$  had the highest increase of WTP of 11.13 EUR. This leads to the conclusion that the ideal situation for optimising the WTP is the equilibrium of perceived threat and perceived efficacy.
2. It was found that the presentation of information regarding BaufiSchutz, the associated risks and social securities and the presentation of a threatening message had a significantly positive effect on the attitude towards the insurance solution.

In sum, the research framework was well suited to give guidance to the researcher and enable the researcher to evaluate the research questions of this thesis. Each element of the framework could be assessed using the questionnaire with pre-defined scales (as detailed in Appendix 9). Using statistical analysis methods as described in chapter 6 made it possible to calculate the effect of all variables under examination withing this research framework.

### **7.3 Practical implications and directions for future research**

This research project has resulted in several interesting and relevant implications for practitioners, insurance companies and mortgage brokers in the field of mortgage protection insurance. This thesis was conducted to evaluate specific communication

measures in the distribution process of MPI and to enhance the guiding principles around mortgage protection insurance sales. Foremost, it can be stated that this target was achieved, even though some results were unexpected and at the same time very useful.

Whilst there are several other communication strategies that can be utilised to change behaviour, threat appeals are very popular especially in the field of social marketing (e.g., changing public behaviour regarding speeding or smoking). From a business perspective this thesis is positioned somewhere in the marketing sphere, closer to practical business sales than to social topics. The findings of this thesis cannot be applied to public health campaigns, but they can surely be applied to the sales process of insurance products. As such, the implications for practitioners are now presented.

Foremost, it appears that the use of moderate threatening messages, i.e., vivid negative images, create uncomfortable feelings and fear on a moderate level within potential customers. From a theoretical perspective this is the hoped-for result of the experiment. Also, the mean value for message confound was very high ( $M = 5.41$ ,  $SD = 0.03$ ) indicating that the threat message and product information was well formulated and understood as intended, which pays into answering **RQ3**. From a business perspective this would also be a positive result if it leads to increased sales and willingness-to-pay. However, these outcomes were not supported by the data. The general conclusion coming from this finding is that threatening messages in the context of mortgage protection insurance sales are not necessary to change behaviour or influence WTP, answering **RQ1** and **RQ3**. This recommendation follows other scholars that propose the use of alternative strategies of behaviour change (e.g., Hastings et al., 2004; Ruiter et al., 2014).

Secondly, it was found that perceived susceptibility to the threat of mortgage default increases WTP by 4.28 EUR, which helps answer **RQ1**. Considering that the overall mean value for WTP was  $M(SD) = 71.02$  EUR (50.62), the effect of feeling susceptible is equal to a WTP increase of 6%. Coming back to the general business case (section 1.1.3) this equals an additional 120 million EUR annual revenue potential for the whole market if customers feel susceptible to the threat. Hence, it is

important within the sales process to intensify the arguments, why each specific risk is relevant to the respective client, which adds to the list of answering **RQ3**.

Further, the high mean values for response efficacy ( $M = 5.18$ ,  $SD = 1.33$ ) indicate that the information provided regarding the insurance product and how it solves the risks of mortgage default was well formulated. Overall, response efficacy and self-efficacy ( $M = 5.35$ ,  $SD = 1.21$ ) showed high mean values indicating that perceptions of efficacy are high in the current BaufiSchutz product, signalling a good product solution to the market, which helps answer **RQ3**. This is a positive result for the product itself and for the use of this kind of information process in business. Also, one might conclude that the high mean value for severity ( $M = 4.84$ ,  $SD = 1.52$ ) demonstrates that the information about the BaufiSchutz product and the corresponding risks were well designed, which adds to the list of answering **RQ3**. Severity had a significant effect on behaviour intention and behaviour expectation, and therefore increases of take-up rate are most likely to be expected with this kind of information design, helping to answer **RQ1**. Furthermore, the use of threatening messages did not influence any of the cognitive appraisal components and as such the use is not deemed necessary to increase the take-up rate of mortgage protection insurance, also providing answers to **RQ1**. Therefore, the feeling of perceived threat was likely created through the well-designed product information and corresponding risks, independent of threatening messages presented.

Further, it was found that optimism has a significant effect on behaviour intention and behaviour expectation, and increases WTP by 7.62 EUR, while pessimism did not show these effects, helping to answer **RQ2**. Several conclusions which answer **RQ2** can be drawn from this finding. Firstly, optimism seems to be an important personality trait when clients are confronted with insurance decisions. Not only are optimistic people more likely to take-up mortgage protection insurance, but also are they more likely to accept higher insurance premiums. This seems to be the ideal customer from a business perspective. Second, as optimism is measured only with one question on a 7-point Likert scale it is very simple to include this factor into the needs assessment before starting the advisory. Hence, it can be recommended to add a question on optimism to the sales process before showing any insurance solution. The measure of optimism can help to individualise the insurance offer by different

means. For example, if for one client the measure for optimism surpasses the mean value of this study ( $M = 4.91$ ), the advisory system would indicate that the client is willing to accept higher covers (=higher prices) or additional covers. In addition, as the likelihood of take-up is higher for optimistic people, the mortgage advisor would allocate more advisory time as the chances are higher for success. Conversely, clients with lower scores for optimism could be presented reduced insurance covers (=lower price) to increase take-up rates.

Further, even though there are interaction effects with optimism, risk-taking alone accounts for an increase in behaviour intention and behaviour expectation, and increased WTP by 5.04 EUR (3.69 EUR with interaction of optimism), also helping to answer **RQ2**. As such, it is also recommended to add to the needs assessment in the advisory process the one question measure regarding risk-taking presented in this study. The practical implementations are similar to optimism. For example, clients that exceed the mean value of  $M = 3.96$  for risk-taking are willing to accept higher covers and the advisor should invest more time in the advisory meeting as the likelihood of insurance take-up is higher.

Finally, it was found that the presentation of information regarding BaufiSchutz, the associated risks and social securities and the presentation of a threatening message had a significantly positive effect on the attitude towards the insurance solution, which adds to the list of answering **RQ3**. There was a significant difference in attitude to mortgage insurance before treatment ( $M = 3.79$ ,  $SD = 1.64$ ) and attitude to mortgage insurance after treatment ( $M = 5.44$ ,  $SD = 1.14$ ). It can clearly be assumed that the information about BaufiSchutz and the associated risks together with the treatment had a significant effect on attitude. For further testing it can be hypothesised that the actual treatment did not have an effect on the attitude change, as the threatening message did not affect cognitive appraisals or behaviour outcomes. Therefore, for practice the main take-away is that it can always be recommended to integrate an easily digestible presentation of the insurance product and associated risks in order to improve attitude towards the BaufiSchutz product.



To sum up, the key outcomes for business are as follows:

1. Vivid images create fear and uncomfortable feelings in the client but do not influence the take-up or WTP of BaufiSchutz. The recommendation is to not use any threat message in the context of insurance distribution.
2. Intensify the arguments regarding the personal risks for each respective client in order to increase susceptibility, as this will increase WTP.
3. The BaufiSchutz product is well designed, fits to the efficacy expectations of clients and should be presented in an easily understandable depiction in combination with information around the risk probabilities and corresponding social security safety nets. This will ensure a high level of severity and susceptibility, also known as perceived threat.
4. Enlarge the needs assessment with one-question measures each regarding optimism and risk-taking. The results will help the advisor to tailor the allocated time of advisory for each client and to address additional or higher priced insurance covers to the client.
5. Information on BaufiSchutz and associated risks and social security safety nets is crucial to improving the attitude towards this kind of product. In other words, this finding advocates the necessity and benefits of personal advice and information on mortgage protection insurance.

#### **7.4 Review of the research questions**

The theoretical findings and practical implications which were identified in the previous sections lead to answering all three research questions under examination within this thesis. The outcomes of this summary are depicted in tables 44-46 below.

**Table 44:** *Assessment of RQ1 Outcomes*

<b>RQ1</b>	To explain the effects of moderate and modest fear appeals on behaviour intention, behaviour expectation, and willingness-to-pay regarding mortgage protection insurance in Germany using constructs of the Extended Parallel Process Model.
<b>Theoretical findings</b>	<ul style="list-style-type: none"><li>- Vivid negative images as part of a fear appeal construct had no effect on severity and susceptibility, which are the EPPM constructs of perceived threat. Vivid images increase perceived fear but have no effect on behaviour outcomes and WTP.</li><li>- Overall, the only measured direct effect of intrinsic message characteristics on emotions were generated using vivid negative images.</li><li>- All four cognitive appraisal components of the EPPM demonstrated an effect in the expected direction regarding behaviour outcomes. Three out of four components showed no effect on WTP. Only susceptibility perceptions increased WTP, by a significant amount of 4.28 EUR.</li><li>- High threat perceptions (severity or susceptibility) combined with high efficacy perceptions (response efficacy and self-efficacy) had the most persuasive impact on behavioural intention.</li><li>• The discriminating value of the EPPM did not show the hoped-for effects on behaviour outcomes but received support for the effects on message derogation and defensive avoidance.</li></ul>
<b>Practical implications</b>	<ul style="list-style-type: none"><li>- The general conclusion coming from the finding that moderate threatening messages create fear on a moderate level but do not influence behaviour or WTP is as follows: threatening messages in the context of mortgage protection insurance sales are not recommended to change behaviour or influence WTP.</li><li>- It was found that perceived susceptibility to the threat of mortgage default increases WTP by 4.28 EUR. Hence, it is important within the sales process to intensify the arguments, why each specific risk is relevant to the respective client.</li><li>- The use of threatening messages did not influence any of the cognitive appraisal components and as such the use is not deemed necessary to increase the take-up rate of mortgage protection insurance.</li></ul>

**Table 45:** *Assessment of RQ2 Outcomes*

<b>RQ2</b>	To provide empirical evidence of the impact of individual differences (optimism/pessimism and risk-taking) on behaviour intention, behaviour expectation, and willingness-to-pay concerning MPI in Germany.
<b>Theoretical findings</b>	<ul style="list-style-type: none"><li>- Optimism was found to increase behavioural outcomes and WTP. The same seems true for risk-taking, which was found to increase behaviour outcomes and WTP.</li><li>- Overall, it was found that the individual differences optimism/pessimism and risk-taking demonstrated a significant impact on emotions, cognitions, and behaviour outcomes as well as WTP.</li></ul>
<b>Practical implications</b>	<ul style="list-style-type: none"><li>- Optimism has a significant effect on behaviour intention and behaviour expectation and increases WTP by 7.62 EUR. Optimism seems to be an important personality trait when clients are confronted with insurance decisions. Optimistic people more likely to take-up mortgage protection insurance, as well as are they more likely to accepts higher insurance premiums.</li><li>- Hence, it can be recommended to add a question on optimism to the sales process before showing any insurance solution and address the client according to the level of optimism (more or less advisory time, higher or lower priced insurance package).</li><li>- Risk-taking also accounts for an increase in behaviour intention and behaviour expectation, and increased WTP by 5.04 EUR (3.69 EUR with interaction of optimism). The practical implementations are similar to optimism."</li></ul>

**Table 46:** *Assessment of RQ3 Outcomes*

<b>RQ3</b>	To analyse whether moderate or modest fear appeals are effective to establish the most appropriate 'fear level' of threatening message constructs in order to develop a guiding communication for German mortgage and insurance salespersons.
<b>Theoretical findings</b>	<ul style="list-style-type: none"><li>- Vivid negative images increase the immediate emotions fear and uncomfortable feelings on a moderate level. Assumably, the fear level did not reach a sufficient 'power' threshold to change behaviour.</li><li>- Overall, the only measured direct effect of intrinsic message characteristics on emotions were generated using vivid negative images.</li><li>- The high mean values of perceived threat (<math>M = 4.36</math>) and perceived efficacy (<math>M = 5.27</math>) suggest that the threat was perceived as intended and the efficacy information was well designed.</li><li>- A novel finding regarding the discriminating value is the effect on WTP, as it was found that participants with <math>DV = 0</math> had the highest increase of WTP of 11.13 EUR. This leads to the conclusion that the ideal situation for optimising the WTP is the equilibrium of perceived threat and perceived efficacy.</li></ul>
<b>Practical implications</b>	<ul style="list-style-type: none"><li>- Threatening messages in the context of mortgage protection insurance sales are not recommended as a means to increase take-up rates or influence WTP.</li><li>- The mean value for message confound was very high (<math>M = 5.41</math>, <math>SD = 0.03</math>) indicating that the threat message and product information was well formulated and understood as intended.</li><li>- Overall, response efficacy and self-efficacy (<math>M = 5.35</math>, <math>SD = 1.21</math>) showed high mean values indicating that perceptions of efficacy are high in the current BaufiSchutz product, signalling a good product solution to the market.</li><li>- The high mean value for severity (<math>M = 4.84</math>, <math>SD = 1.52</math>) demonstrates that the information about the BaufiSchutz product and the corresponding risks were well designed. Severity had a significant effect on behaviour intention and behaviour expectation, and therefore increases of take-up rate are most likely to be expected with this kind of information design.</li><li>- Finally, it was found that the presentation of information regarding BaufiSchutz, the associated risks and social securities and the presentation of a threatening message had a significantly positive effect on the attitude towards the insurance solution. Therefore, for practice the main take-away is that it can always be recommended to integrate an easily digestible presentation of the insurance product and associated risks in order to improve attitude towards the BaufiSchutz product.</li></ul>

## **7.5 Study limitations and directions for future research**

This thesis has demonstrated that the rationale for widening considerations of responses to threat appeals by adding individual differences and willingness-to-pay has significant merit. Moreover, constructing the threat message into three message characteristics has a significant impact on emotional responses. Furthermore, evaluating fear appeals in the context of mortgage protection insurance yielded interesting results for theory and for practice. However, there are limitations to the study associated with the methods employed. First, the results are based on self-report measures which are especially difficult to examine in the context of emotions. Greater objectivity in this sense might be possible by using methods of neuroscience. On the other hand, these alternative methods of measuring emotions are difficult to implement for social science studies. It is important to acknowledge this issue as a limitation, even though it is not new. Self-report measures have many advantages, like ease of use for researchers and for participants, large sample sizes and comparability with existing work, and are therefore very popular within fear appeals research and social science. For this DBA study self-report measures were considered as the best possible solution.

Further, an important advantage of the sample selected for this study is that it does not rely on student subjects, as a large number of research in the area does. Even more, the sample size was selected to be representative of the relevant target group of mortgage customers, which is very specific. As such, the sample might not represent the whole population and therefore results of data analysis also are most likely not representative of the overall population. From a business perspective this is as wished-for, but from a theoretical perspective this can be seen as a limitation of this study.

Another limitation is the so-called 'intention-behaviour gap' (Peters et al., 2013) which states that the intention to perform a behaviour does not necessarily result in actual behaviour. Typically, intention predicts approximately one-third of actual behaviour change (Peters et al., 2013). This limitation can be assessed when the identified measures will be implemented in the sales process of mortgage advisors. From a

business perspective, even in case only one-third of intention is transferred to actual behaviour, this would already be a successful sales process adaption.

This study has implemented three message characteristics to comprise a threat appeal in the context of mortgage protection insurance. Two of these variables were understood by the participants as intended, but one was not, namely message direction. As such, the findings regarding message direction are limited to the fact, that the direction was not understood as intended. As described in chapter 6.1.3 the reason can be found in the general information about the product and risks which were presented to all participants before the stimuli. This type of information has proven to have positive effects (e.g., on attitude) and as such, it can be argued that message direction cannot be measured correctly even though it might have an effect.

Future research could widen the consideration of several factors. First, the current study only presented one mortgage protection product, while there is actually some flexibility in the insurance packages, depending on the insurance company. As such, future research could, for example employ conjoint analysis of product packages in combination with threat appeals and assess the various WTPs.

Furthermore, future research in the context of insurance could put more emphasis on vivid images, i.e., the size of the images presented and reduce the text elements, as they showed less effects. Moreover, the results of this study could be evaluated by employing qualitative studies with real customers of mortgage brokers. This could be a next step in the practical implementation of the study results.

Finally, studies which highlight individual differences in the context of insurance are likely to offer interesting insights. More specifically, this study has investigated two personality traits which showed significant results on behaviour and WTP and as such, there lies great business potential in the evaluation of more individual differences that can be assessed with a limited amount of survey questions. In summary, mortgage protection insurance is a very specific niche market in Germany but conclusions from this study can be drawn to the insurance market covering the risks of life in general. It is hoped that the findings of the present study will motivate other researchers to examine the ideas and concepts and conduct further research in the field of insurance distribution.

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## 9 Appendices

### Appendix 9.1 – Eight stimuli designs as independent variables

Experimental Condition	Between-subjects factors		
	Image	Message Direction	Message Frame
1	Moderately negative	Other / General	Loss
2	Moderately negative	Other / General	Loss Avoidance
3	Moderately negative	Self	Loss
4	Moderately negative	Self	Loss Avoidance
5	Modestly negative	Other / General	Loss
6	Modestly negative	Other / General	Loss Avoidance
7	Modestly negative	Self	Loss
8	Modestly negative	Self	Loss Avoidance

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## Experimental condition 1:

### BaufiSchutz – die Risiken im Überblick

**Arbeitslosigkeit, Arbeitsunfähigkeit, oder auch ein Todesfall** sind relevante Risiken während einer Baufinanzierung, gegen die sich jeder absichern sollte.



Arbeitslosigkeit



Arbeitsunfähigkeit



Todesfall

- ! Ohne den BauFiSchutz ist bei unerwarteten Schicksalsschlägen eine weitere problemlose Bezahlung der Finanzierungsraten nicht möglich und eine finanzielle Schieflage kann somit nicht abgefangen werden.
- ! Folglich kann eine fehlende Absicherung einer größeren Kreditverpflichtung zu schwerwiegenden Problemen führen, wie beispielsweise die Aufgabe der Wohnung, eine Zwangsversteigerung, oder dadurch verursachte psychische Belastung.
- ! Wenn man keinen BauFiSchutz abschließt, ist man somit nicht gegen die wichtigsten Risiken abgesichert und kann unangenehme Gedanken wie „Was wäre wenn ...“ nicht beiseite schieben.

---

**Wer sich nicht absichert, lebt mit Sorgen.**

## Experimental condition 2:

### BaufiSchutz – die Risiken im Überblick

Ohne Absicherung stellen **Arbeitslosigkeit**, **Arbeitsunfähigkeit**, oder auch ein **Todesfall** relevante Risiken während einer Baufinanzierung dar.



Arbeitslosigkeit



Arbeitsunfähigkeit



Todesfall

- ! Der BauFiSchutz ermöglicht bei unerwarteten Schicksalsschlägen die problemlose Bezahlung der Finanzierungsraten und verhindert eine finanzielle Schieflage.
- ! Folglich kann die Absicherung einer größeren Kreditverpflichtung schwerwiegende Probleme, wie beispielsweise die Aufgabe der Wohnung, eine Zwangsversteigerung, oder dadurch verursachte psychische Belastung, vermeiden.
- ! Ein abgeschlossener BauFiSchutz sichert somit die wichtigsten Risiken ab und unangenehme Gedanken wie „Was wäre wenn ...“ können beiseite geschoben werden.

---

**Wer sich absichert, lebt sorgenfrei.**

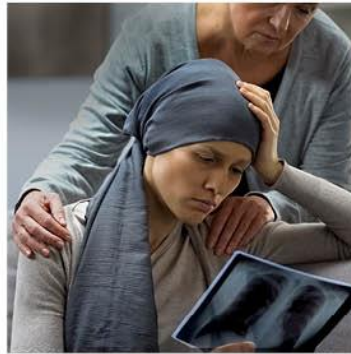
### Experimental condition 3:

## BaufiSchutz – die Risiken im Überblick

**Arbeitslosigkeit, Arbeitsunfähigkeit, oder auch ein Todesfall** sind relevante Risiken während einer Baufinanzierung, gegen die Sie sich absichern sollten.



Arbeitslosigkeit



Arbeitsunfähigkeit



Todesfall

- ! Ohne den BauFiSchutz sind Sie nicht in der Lage, bei unerwarteten Schicksalsschlägen, die Finanzierungsraten problemlos weiter bezahlen zu können und geraten in finanzielle Schieflage.
- ! Folglich kann eine fehlende Absicherung einer größeren Kreditverpflichtung für Sie zu schwerwiegenden Problemen führen, wie beispielsweise die Aufgabe der Wohnung, eine Zwangsversteigerung, oder dadurch verursachte psychische Belastung.
- ! Wenn Sie keinen BauFiSchutz abschließen, sind Sie somit nicht gegen die wichtigsten Risiken abgesichert und können unangenehme Gedanken wie „Was wäre wenn ...“ nicht beiseite schieben.

---

**Ohne Absicherung leben Sie nicht sorgenfrei.**



#### Experimental condition 4:

### BaufiSchutz – die Risiken im Überblick

Ohne Absicherung stellen **Arbeitslosigkeit**, **Arbeitsunfähigkeit**, oder auch ein **Todesfall** relevante Risiken während einer Baufinanzierung für Sie dar.



Arbeitslosigkeit



Arbeitsunfähigkeit



Todesfall

- ! Der BauFiSchutz ermöglicht Ihnen bei unerwarteten Schicksalsschlägen die problemlose Bezahlung der Finanzierungsraten und verhindert Ihre finanzielle Schieflage.
- ! Folglich können Sie mit der Absicherung einer größeren Kreditverpflichtung schwerwiegende Probleme, wie beispielsweise die Aufgabe der eigenen Wohnung, eine Zwangsversteigerung, oder dadurch verursachte psychische Belastung, vermeiden.
- ! Wenn Sie einen BauFiSchutz abschließen, sind Sie somit gegen die wichtigsten Risiken abgesichert und können unangenehme Gedanken wie „Was wäre wenn ...“ beiseite schieben.

---

**Leben Sie abgesichert und sorgenfrei.**

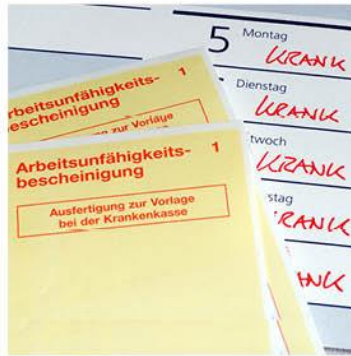
## Experimental condition 5:

### BaufiSchutz – die Risiken im Überblick

**Arbeitslosigkeit, Arbeitsunfähigkeit**, oder auch ein **Todesfall** sind relevante Risiken während einer Baufinanzierung, gegen die sich jeder absichern sollte.



Arbeitslosigkeit



Arbeitsunfähigkeit



Todesfall

- ! Ohne den BauFiSchutz ist bei unerwarteten Schicksalsschlägen eine weitere problemlose Bezahlung der Finanzierungsraten nicht möglich und eine finanzielle Schieflage kann somit nicht abgefangen werden.
- ! Folglich kann eine fehlende Absicherung einer größeren Kreditverpflichtung zu schwerwiegenden Problemen führen, wie beispielsweise die Aufgabe der Wohnung, eine Zwangsversteigerung, oder dadurch verursachte psychische Belastung.
- ! Wenn man keinen BauFiSchutz abschließt, ist man somit nicht gegen die wichtigsten Risiken abgesichert und kann unangenehme Gedanken wie „Was wäre wenn ...“ nicht beiseite schieben.

**Wer sich nicht absichert, lebt mit Sorgen.**

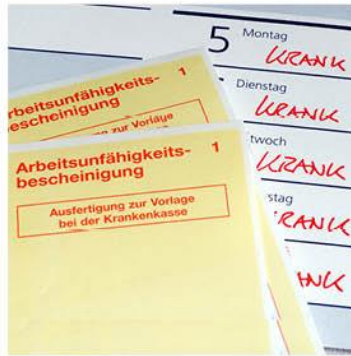
## Experimental condition 6:

### BaufiSchutz – die Risiken im Überblick

Ohne Absicherung stellen **Arbeitslosigkeit**, **Arbeitsunfähigkeit**, oder auch ein **Todesfall** relevante Risiken während einer Baufinanzierung dar.



Arbeitslosigkeit



Arbeitsunfähigkeit



Todesfall

- ! Der BauFiSchutz ermöglicht bei unerwarteten Schicksalsschlägen die problemlose Bezahlung der Finanzierungsraten und verhindert eine finanzielle Schieflage.
- ! Folglich kann die Absicherung einer größeren Kreditverpflichtung schwerwiegende Probleme, wie beispielsweise die Aufgabe der Wohnung, eine Zwangsversteigerung, oder dadurch verursachte psychische Belastung, vermeiden.
- ! Ein abgeschlossener BauFiSchutz sichert somit die wichtigsten Risiken ab und unangenehme Gedanken wie „Was wäre wenn ...“ können beiseite geschoben werden.

---

**Wer sich absichert, lebt sorgenfrei.**



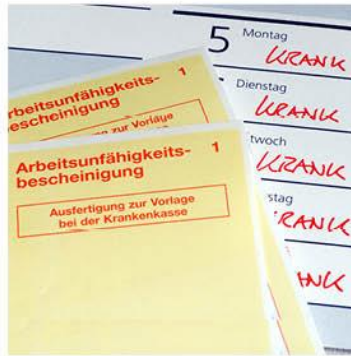
## Experimental condition 7:

### BaufiSchutz – die Risiken im Überblick

**Arbeitslosigkeit, Arbeitsunfähigkeit**, oder auch ein **Todesfall** sind relevante Risiken während einer Baufinanzierung, gegen die Sie sich absichern sollten.



Arbeitslosigkeit



Arbeitsunfähigkeit



Todesfall

- ! Ohne den BauFiSchutz sind Sie nicht in der Lage, bei unerwarteten Schicksalsschlägen, die Finanzierungsraten problemlos weiter bezahlen zu können und geraten in finanzielle Schieflage.
- ! Folglich kann eine fehlende Absicherung einer größeren Kreditverpflichtung für Sie zu schwerwiegenden Problemen führen, wie beispielsweise die Aufgabe der Wohnung, eine Zwangsversteigerung, oder dadurch verursachte psychische Belastung.
- ! Wenn Sie keinen BauFiSchutz abschließen, sind Sie somit nicht gegen die wichtigsten Risiken abgesichert und können unangenehme Gedanken wie „Was wäre wenn...“ nicht beiseite schieben.

---

**Ohne Absicherung leben Sie nicht sorgenfrei.**

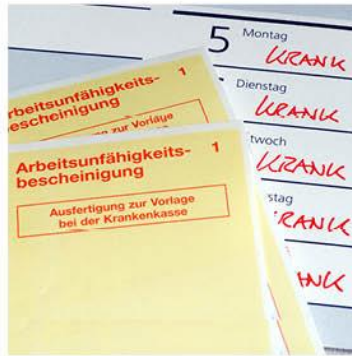
## Experimental condition 8:

### BaufiSchutz – die Risiken im Überblick

Ohne Absicherung stellen **Arbeitslosigkeit**, **Arbeitsunfähigkeit**, oder auch ein **Todesfall** relevante Risiken während einer Baufinanzierung für Sie dar.



Arbeitslosigkeit



Arbeitsunfähigkeit



Todesfall

- ! Der BauFiSchutz ermöglicht Ihnen bei unerwarteten Schicksalsschlägen die problemlose Bezahlung der Finanzierungsraten und verhindert Ihre finanzielle Schieflage.
- ! Folglich können Sie mit der Absicherung einer größeren Kreditverpflichtung schwerwiegende Probleme, wie beispielsweise die Aufgabe der eigenen Wohnung, eine Zwangsversteigerung, oder dadurch verursachte psychische Belastung, vermeiden.
- ! Wenn Sie einen BauFiSchutz abschließen, sind Sie somit gegen die wichtigsten Risiken abgesichert und können unangenehme Gedanken wie „Was wäre wenn ...“ beiseite schieben.

---

**Leben Sie abgesichert und sorgenfrei.**



## Appendix 9.2: Overview of the measures utilised in this study, and item lists

The constructs, scales, and items are displayed in the tables below. Each construct is presented in German and followed by the English translation.

### Mediating variables

Construct	Scale	Items (GER)
Immediate Emotions	Fear	Verängstigt
		Besorgt
		Panisch
		Ängstlich
	Uncomfortable	Unbehaglich

Construct	Scale	Item (ENG)
Immediate Emotions	Fear	Scared
		Afraid
		Panicky
		Fearful
	Uncomfortable	Uncomfortable

Construct	Scale	Items (GER)
Cognitive Processes	Defensive Avoidance	Als ich soeben von den gesundheitlichen und persönlichen Risiken im Rahmen einer Baufinanzierung hörte, war mein erster Instinkt, dass ich an die Risiken denke und eine Versicherung in Betracht ziehen wollte, um mich davor zu schützen.
		Als ich soeben von den gesundheitlichen und persönlichen Risiken im Rahmen einer Baufinanzierung hörte, wollte ich nicht an die Risiken denken und auch nichts tun, um sie zu vermeiden.
	Susceptibility	Es ist wahrscheinlich, dass ich während der Laufzeit der Baufinanzierung arbeitsunfähig oder arbeitslos werde, oder sogar sterben könnte.
		Ich bin gefährdet, dass ich während der Laufzeit der Baufinanzierung arbeitsunfähig oder arbeitslos werde, oder sogar sterben könnte.
		Es ist möglich, dass ich während der Laufzeit der Baufinanzierung arbeitsunfähig oder arbeitslos werde, oder sogar sterben könnte.
	Severity	Ich glaube, dass es ein schwerwiegendes Problem für die Rückzahlung des Immobilienkredits darstellt, wenn ich während der Laufzeit der Baufinanzierung arbeitsunfähig oder arbeitslos werde, oder sogar sterben würde.

		Ich glaube, dass es sehr negative Konsequenzen hätte, wenn ich (bzw. meine Familie) im Rahmen einer Baufinanzierung in Zahlungsprobleme aufgrund eines Todesfalls, einer Arbeitsunfähigkeit oder Arbeitslosigkeit komme.
		Ich glaube, dass es ein ernstes Problem für die Rückzahlung des Immobilienkredits darstellt, wenn ich während der Laufzeit der Baufinanzierung arbeitsunfähig oder arbeitslos werde, oder sogar sterben würde.
	Response efficacy	Der Abschluss einer BauFiSchutz Versicherung ist ein wirksames Mittel zur Vermeidung von Rückzahlungsproblemen von Immobilienkrediten im Todesfall, bei Arbeitsunfähigkeit oder Arbeitslosigkeit.
		Der Abschluss einer BauFiSchutz Versicherung hilft im Todesfall, bei Arbeitsunfähigkeit oder Arbeitslosigkeit, Probleme bei der Rückzahlung eines Immobilienkredits zu vermindern.
		Wenn ich eine BauFiSchutz Versicherung abschließe, ist die Wahrscheinlichkeit geringer, dass ich Probleme mit der Rückzahlung eines Immobilienkredits bei einem Todesfall, bei Arbeitsunfähigkeit und Arbeitslosigkeit haben werde.
	Self-efficacy	Ich bin grundsätzlich fähig dazu, eine BauFiSchutz Versicherung abzuschließen.
		Der Abschluss einer BauFiSchutz Versicherung erscheint einfach.
		Der Abschluss einer BauFiSchutz Versicherung, um Zahlungsschwierigkeiten im Laufe einer Baufinanzierung entgegenzuwirken, ist praktisch.

Construct	Scale	Item (ENG)
Cognitive Processes	Defensive Avoidance	When I heard just now about the health and personal risks involved in mortgage financing, my first instinct was to think about the risks and consider insurance to protect against them.
		When I heard just now about the health and personal risks involved in mortgage financing, my first instinct was not to think about the risks or do anything to avoid them.
	Susceptibility	It is likely that I will become incapacitated or unemployed, or even die, during the term of the mortgage financing.
		I am at risk of becoming disabled or unemployed, or even dying, during the term of the mortgage financing.
		It is possible that I could become incapacitated or unemployed, or even die, during the term of the mortgage financing.

	Severity	I believe that if I become incapacitated or unemployed, or even die during the term of the mortgage financing, it would pose a serious problem for the repayment of the real estate loan.
		I believe that it would have very negative consequences if I (or my family) were to run into payment problems due to death, disability, or unemployment as part of a mortgage loan.
		I believe that if I were to become incapacitated or unemployed, or even die, during the term of the construction financing, it would pose a serious problem for the repayment of the mortgage loan.
	Response efficacy	Taking out mortgage insurance is an effective way to avoid loan repayment problems in the event of death, disability or unemployment.
		Taking out mortgage insurance helps to reduce problems with the repayment of a mortgage loan in the event of death, disability or unemployment.
		If I take a mortgage insurance, I am less likely to have problems repaying a mortgage loan in the event of death, disability and unemployment.
	Self-efficacy	I am able take a mortgage insurance to prevent getting into repayment problems during my mortgage loan.
		Taking a mortgage insurance is easy to do to prevent getting into repayment problems during my mortgage loan.
		Taking a mortgage insurance to prevent me from repayment problem in the course of a mortgage financing is convenient.

Construct	Scale	Items (GER)
Individual Differences	Risk-taking	Wie schätzen Sie sich persönlich ein: Wie risikobereit sind Sie im Allgemeinen?
	Optimism/ Pessimism	Optimisten sind Menschen, die mit Zuversicht in die Zukunft blicken und meistens Gutes erwarten. Bitte schätzen Sie sich selbst ein: Wie optimistisch sind Sie im Allgemeinen?
		Pessimisten sind Menschen, die voller Zweifel in die Zukunft blicken und meistens Schlechtes erwarten. Bitte schätzen Sie sich selbst ein: Wie pessimistisch sind Sie im Allgemeinen?

Construct	Scale	Item (ENG)
Individual Differences	Risk-taking	How do you see yourself - how willing are you in general to take risk?
	Optimism/ Pessimism	Optimists are people who look to the future with confidence and who mostly expect good things to happen. How would you describe yourself? How optimistic are you in general?
		Pessimists are people who are full of doubt when they look to the future and who mostly expect bad things to happen. How would you describe yourself? How pessimistic are you in general?

### Control variables

Construct	Scale	Items (GER)
Attitude	Attitude to mortgage	Wenn Sie an das Thema Baufinanzierung und Eigenheim denken: Wie bewerten Sie grundsätzlich den Abschluss einer Baufinanzierung mit dem Zweck, ein Eigenheim zu finanzieren?
	Attitude to mortgage insurance	Wenn Sie an das Thema Baufinanzierung und Eigenheim denken: Wie bewerten Sie grundsätzlich, eine Baufinanzierung ohne Absicherung durch Versicherungen abzuschließen? Unter Versicherungen wird hierbei verstanden: Lebensversicherung, Arbeitsunfähigkeitsversicherung, Arbeitslosigkeitsversicherung
Social desirability	Social desirability	Ich bin immer höflich, auch zu Personen, die unangenehm sind.
		Es gab Gelegenheiten, bei denen ich jemanden ausgenutzt habe.
		Manchmal versuche ich mich zu rächen, anstatt zu vergeben und zu vergessen.
		Ich bin manchmal nachtragend, wenn ich meinen Willen nicht durchsetzen kann.
		Egal, mit wem ich spreche, ich bin immer ein guter Zuhörer.
Perceived manipulation	Perceived manipulation	Die Bilder und der Text waren manipulativ
		Die Bilder und der Text waren irreführend
		Die Bilder und der Text stellten die Tatsachen verzerrt dar.
Message derogation	Message derogation	Die Bilder und die Texte wurden übertrieben dargestellt
Confound	Confound	Die Informationen waren klar und deutlich geschrieben.
		Ich habe die Informationen gut verstanden
		Ich habe durch diese Informationen viel über den BauFiSchutz gelernt.
		Die Qualität der Argumente war gut.

Construct	Scale	Item (ENG)
Attitude	Attitude to mortgage	When you think about Mortgage and privately owned home: please indicate what you think about taking a mortgage to finance your privately owned home.
	Attitude to mortgage insurance	How would you rate the idea of taking out mortgage financing without insurance coverage?
Social desirability	Social desirability	I am always courteous, even to people who are disagreeable
		There have been occasions when I took advantage of someone.
		I sometimes try to get even rather than forgive and forget
		I sometimes feel resentful when I don't get my own way.
		No matter who I'm talking to, I'm always a good listener.
Perceived manipulation	Perceived manipulation	The Images and the text were manipulative
		The Images and text were misleading
		The images and the text distorted the facts.
Message derogation	Message derogation	The images and the text were exaggerated
Confound	Confound	The message was clearly written.
		I clearly understood this message.
		I learned a lot about BaufiSchutz from this message.
		The quality of the arguments in the message were good.

## Dependent variables

Construct	Scale	Items (GER)
Willingness-to-pay	Willingness-to-pay	Wie hoch wäre Ihr angemessener Preis pro Monat für den BauFiSchutz (300.000 EUR Kredit, 1.350 EUR monatliche Rate) mit den Risikobausteinen Todesfall, Arbeitsunfähigkeit und Arbeitslosigkeit im geschilderten Beispiel?
Behaviour intention	Behaviour intention	Inwieweit <u>beabsichtigen</u> Sie, im Falle einer zukünftigen Baufinanzierung auch eine Absicherung abzuschließen?
Behaviour expectation	Behaviour expectation	Wie <u>wahrscheinlich</u> ist es, dass Sie im Falle einer zukünftigen Baufinanzierung auch eine Absicherung abschließen werden?
Attitude to mortgage insurance	Attitude to mortgage insurance	Inakzeptabel:Akzeptabel (1)
		Unklug:Vernünftig (2)
		Falsch:Richtig (3)
		Unvorteilhaft:Vorteilhaft (4)
		Schlecht:Gut (5)
		Riskant:Sicher (6)

Construct	Scale	Item (ENG)
Willingness-to-pay	Willingness-to-pay	What would be your reasonable price per month for the BauFiSchutz (300,000 EUR loan, 1,350 EUR monthly instalment) with the risk components of death, disability and unemployment in the example described?
Behaviour intention	Behaviour intention	To what extent do you also intend to take out insurance cover in the event of future mortgage financing
Behaviour expectation	Behaviour expectation	How likely is it that you will also take out insurance coverage in the event of future mortgage financing?
Attitude to mortgage insurance	Attitude to mortgage insurance	Unacceptable:Acceptable (1)
		Foolish:Wise (2)
		Wrong:Right (3)
		Unfavourable:Favourable (4)
		Bad:Good (5)
		Risky:Safe (6)

Construct	Scale	Items (GER)
Manipulation check	Message frame	<p>...mit dem BaufiSchutz die gesundheitlichen und persönlichen Risiken im Rahmen einer Baufinanzierung zu vermeiden : ohne den BaufiSchutz die gesundheitlichen und persönlichen Risiken im Rahmen einer Baufinanzierung zu riskieren.</p> <p>...ernsthafte Konsequenzen, die entstehen können, wenn man nicht mit dem BaufiSchutz versichert ist : ernsthafte Konsequenzen, die vermieden werden können, wenn man mit dem BaufiSchutz versichert ist.</p>
	Severity of picture	weniger negative Gefühle : sehr negative Gefühle
	Message direction	Mich : Allgemeinheit (alle)

Construct	Scale	Items (GER)
Manipulation check	Message frame	<p>with the BaufiSchutz to avoid the health and personal risks in the context of a mortgage financing : without the BaufiSchutz to risk the health and personal risks in the context of a mortgage financing.</p> <p>serious consequences that can occur if you are not insured with BaufiSchutz : serious consequences that can be avoided if you are insured with BaufiSchutz.</p>
	Severity of picture	less negative feelings : very negative feelings
	Message direction	myself : other (general public)

### Appendix 9.3: Complete survey in German and English

English translation of the survey:

#### Introduction text:

Thank you very much for agreeing to participate in this study. The questionnaire will take approximately 15 minutes to complete. Please note that participation in this research is voluntary and you are free to withdraw at any time. The research is conducted as part of a doctoral thesis. Please use a computer or laptop to fill out this questionnaire and not a mobile device. Please read the information below.

**Terms and conditions:**

The following information outlines the procedure for this study. Participation is voluntary and everyone is free to withdraw from the study at any time. Please read the following information and if you agree to participate in this study, please tick the box below. Please note that some of the images used in the stimuli may be graphic and you may find them shocking (for example, showing pictures of individuals with severe injuries). In addition, you will be asked to provide some personal information about experiences you may or may not have had in your lifetime. These answers will not involve detailed description and will not be linked to your identity in any way, if you feel uncomfortable at any point or do not wish to complete the task, please stop what you are doing and close your internet browser window. If any of the following images or questions cause you upset or distress, you are free to withdraw at any time.

**The study is structured as follows:**

1. At the first stage you will be asked to demonstrate your understanding of: the instructions, your right to withdraw from the study and your consent to partake in the study by ticking the box provided on the computer screen. You will then be asked some questions about yourself. Answers to these questions will be recorded by ticking the relevant box displayed on the computer screen using the mouse.
2. At the next stage you will be introduced to a financial topic and asked to view an insurance offer which will be displayed on your computer screen.
3. After you have viewed the insurance offer, we would like you to answer some questions about the offer you have seen which will be displayed on the computer screen. Answers to these questions will be recorded by ticking the relevant box displayed on the computer screen using the mouse.

**Confidentiality of information:**

This research study is conducted as part of a doctoral thesis. It is important to note that the data generated by this study may, if applicable, be used for publications. The confidentiality of personal information and the anonymity of all persons involved in this investigation will be preserved in the following ways:

We will not ask for your contact details, and there is no personal data involved in this survey. The research information will be kept in a secure location which can only be accessed by the researcher. It will not be possible to identify you from any information generated by the research study.

**Participant's statement:**

I have read and understand the above explanation. I agree to take part in the study outlined above and I have been informed that I am free to withdraw my participation from this study at any time. My questions about the study have been answered to my satisfaction and I understand that I may ask further questions at any point. I agree to provide information to the researchers under the conditions of confidentiality set out in this information text and I consent to the anonymised information collected for the purposes of this research study, to be used for any other research purposes. Please tick the box at the bottom of this page to demonstrate you have read and understand this statement and you agree to continue with this study.

Q1:

- ☐ I have read the information and agree to continue with this study
- ☐ I do not want to participate in this study



**Pre-Screener Questions:**

Q2: What is your current age?

If "age <25 or >50" is selected, then skip to "Unfortunately you are not eligible to participate in this study."

Q3: What is your net household income?

If "income <2500 EUR" is selected, then skip to "Unfortunately you are not eligible to participate in this study."

Q4: Which of the following sentences best applies to you:

- ☐ I have already taken out mortgage financing.
- ☐ I do not have a mortgage, but I am currently applying for a mortgage.
- ☐ I do not have a mortgage, but I could imagine taking out a mortgage within the next 5 years.
- ☐ I do not have mortgage financing, but I am interested in mortgage financing in the future.
- ☐ I do not have a mortgage and I am not interested in it in principle.

If "I do not have a mortgage and I am not interested..." is selected, then skip to "Unfortunately you are not eligible to participate in this study."

Q5: Have you experienced the death of a loved one in the last years or have you or anyone you are close to been in a traumatic accident?

- ☐ Yes
- ☐ No

If Yes is selected, then skip to "Unfortunately you are not eligible to participate in this study."

**Information text 2:**

We would like to know a little more information about you, your lifestyle, and the experiences you have had in your life. All answers you provide to these questions are confidential. Please read the questions and use your mouse to click on your answer. You must answer all questions in this section. If any of the following questions cause you upset or distress, you can withdraw at any time.

Q6: What is your gender?

- ☐ Female
- ☐ Male
- ☐ Diverse

Q7: What is the highest qualification you have achieved?

- ☐ CSE/GCSE (1)
- ☐ A Level or equivalent (2)
- ☐ BA/BSc (3)
- ☐ MA/MSc (4)
- ☐ PhD (5)
- ☐ Other (6)

Q8: What is your current relationship status?

- ☐ Single (1)
- ☐ In a relationship but not living together (2)
- ☐ Living with partner (3)
- ☐ Civil partnership (4)
- ☐ Married (5)
- ☐ Separated (6)
- ☐ Divorced (7)
- ☐ Widowed (8)

Q9: How many people live in your household?

- ☐ Only me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ More than 5

Q10: How many children do you have?

- ☐ None
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ More than 3

Q11: Who is the main earner of your household income?

- ☐ Only myself
- ☐ Somebody else
- ☐ Me and somebody else

Q12: Which of the following insurance policies have you already taken out?

- ☐ Car
- ☐ Life
- ☐ Legal protection
- ☐ Disability
- ☐ Household
- ☐ Accident
- ☐ None of them

**Information text 3:**

The aim of this next section is to find out more about you. Please answer the following questions openly, as there is no right or wrong answer. We ask that you provide honest and accurate answers.

Q13: Please indicate the extent to which you agree with the following statements.

	Definitely true (1)	Mostly true (2)	Don't know (3)	Mostly false (4)	Definitely false (5)
I am always courteous, even to people who are disagreeable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There have been occasions when I took advantage of someone.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I sometimes try to get even rather than forgive and forget	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I sometimes feel resentful when I don't get my own way.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
No matter who I'm talking to, I'm always a good listener.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q14: How do you see yourself - how willing are you in general to take risk?

	Not at all willing to take risks						very willing to take risks
How do you see yourself - how willing are you in general to take risk?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q15: Optimists are people who look to the future with confidence and who mostly expect good things to happen. How would you describe yourself? How optimistic are you in general?

	Not at all optimistic						Very optimistic
How optimistic are you in general?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q16: Pessimists are people who are full of doubt when they look to the future and who mostly expect bad things to happen. How would you describe yourself? How pessimistic are you in general?

	Not at all pessimistic						Very pessimistic
How pessimistic are you in general?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q17: When you think about mortgages and privately owned home: please indicate what you think about taking a mortgage to finance your privately owned home.

	1	2	3	4	5	6	7
Unacceptable:Acceptable (1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Foolish:Wise (2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wrong:Right (3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unfavourable:Favourable (4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bad:Good (5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Risky:Safe (6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q18: How would you rate the idea of taking out mortgage financing without insurance coverage? Insurance coverage is understood as: life insurance, temporary disability insurance, unemployment insurance.

	1	2	3	4	5	6	7
Unacceptable:Acceptable (1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Foolish:Wise (2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wrong:Right (3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unfavourable:Favourable (4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bad:Good (5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Risky:Safe (6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### Information text 5:

You will now see information about a fictitious mortgage financing and corresponding insurance displayed on your computer screen. This is simply a draft sales communication that could be used in a consultation by mortgage or insurance professionals. After viewing the information, you will be asked to complete a questionnaire asking for your reactions to the information. Please view the presentation and text at your own pace. The rest of the questionnaire should take about 5 minutes. Then click on the arrow below the display to continue with the questionnaire. You cannot go back to look at the display again. It may take a few seconds for the display to load. Please do not click on the screen until you see the image.

Please remember: If at any time you feel uncomfortable and want to stop the survey, exit the questionnaire by closing your internet browser.

### Introduction to mortgage protection insurance product and risks

This section deals with the topics of mortgage financing and insurance.

Mortgage financing is a real estate loan that is used to finance a property. Insurance as part of mortgage financing is presented below.

To answer the other questions, please put yourself in the following situation: You would like to buy an apartment for your own use. You have already found a suitable apartment and have had some discussions with a mortgage advisor to work out an appropriate financing solution. You apply for a loan of 300,000 EUR for the purchase of the apartment. The financing proposal is attractive and results in a monthly loan instalment of EUR 1,350 with a fixed interest rate of 10 years.

## BaufiSchutz – Risiken und soziale Absicherungen

	Risiken während einer Baufinanzierung		Finanzielle Absicherung durch Sozialversicherungen
1	Das Risiko für Arbeitslosigkeit wird in der aktuellen Wirtschaftslage stark unterschätzt und wird in Zukunft wahrscheinlich ansteigen. Laut Ifo Institut werden vermehrte Entlassungen eine Folge der anstehenden Rezession sein. <sup>1</sup>	→	Bei <b>Arbeitslosigkeit</b> beträgt die soziale Absicherung zumeist nur 60% des bisherigen Netto-Einkommens. (begrenzt auf 2.680 € monatlich), im Regelfall lediglich für 12 Monate. <sup>3</sup> Im Durchschnitt fehlen somit über 1.200 € pro Monat. <sup>4</sup>
2	Jeder vierte Bundesbürger wird im Laufe seines Arbeitslebens mindestens einmal berufsunfähig. Verletzungen am Bewegungsapparat und psychische Probleme verursachen über 50% der Arbeitsunfähigkeiten. <sup>2</sup>	→	Bei <b>Arbeitsunfähigkeit</b> erhält ein Angestellter ab der 7. Woche im Regelfall lediglich 79% seines bisherigen Netto-Einkommens für 78 Wochen (begrenzt auf 2.980 € monatlich). Im Durchschnitt fehlen somit über 600 € pro Monat. <sup>4</sup>
3	Das Risiko zu sterben steigt bereits ab 40 Jahren stark an. Circa 218.000 Deutsche sind im Jahr 2022 bereits vor ihrem 65. Geburtstag gestorben. <sup>2</sup> Tausende Zwangsversteigerungen sind die Folge.	→	Im <b>Todesfall</b> erhält der/die Hinterbliebene im Regelfall lediglich die kleine Witwenrente ausgezahlt (25% des Rentenanspruchs für 2 Jahre). <sup>5</sup> Im Durchschnitt beträgt diese Rente nur 250 € pro Monat.

1 Ifo Institut 2022

2 Deutsche Aktuarvereinigung 2022

3 Bundesagentur für Arbeit 2022

4 Beispielrechnung für 5.000 € Brutto-Gehalt pro Monat

5 Deutsche Rentenversicherung 2022

ENGLISH TRANSLATION:

## BaufiSchutz – risks and social security

	Risks during mortgage financing		Financial security through social insurance
1	The risk of unemployment is greatly underestimated in the current economic situation and is likely to increase in the future. According to the Ifo Institute, increased layoffs will be a consequence of the upcoming recession. <sup>1</sup>	→	In the case of <b>unemployment</b> , social security is usually only 60% of the previous net income. (capped at EUR 2,680 per month), usually for only 12 months. <sup>4</sup> On average, this leaves more than EUR 1,200 missing per month. <sup>5</sup>
2	One in four Germans will become unable to work at least once in the course of their working lives. Injuries to the musculoskeletal system and psychological problems cause more than 50% of work incapacities. <sup>2</sup>	→	In the event of <b>incapacity for work</b> , an employee from the 7th week onwards generally receives only 79% of his or her previous net income for 78 weeks (limited to EUR 2,980 per month). Thus, on average, more than EUR 600 per month is missing. <sup>5</sup>
3	The risk of dying increases sharply from the age of 40. Approximately 218,000 Germans will have died before their 65th birthday in 2022. <sup>3</sup> Thousands of foreclosures are the result.	→	In the event of <b>death</b> , the survivor usually receives only the small widow's pension (25% of the pension entitlement for 2 years). <sup>3</sup> On average, this pension amounts to only EUR 250 per month.

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## BaufiSchutz – 3 Bausteine in einem Versicherungspaket



Damit sind alle relevanten Risiken in einem Paket abgesichert.



### Schnell und einfach abschließbar.

Der BaufiSchutz kann einfach digital mit einigen Klicks abgeschlossen werden. Für die Beantragung müssen lediglich wenige Gesundheitsfragen digital beantwortet werden.



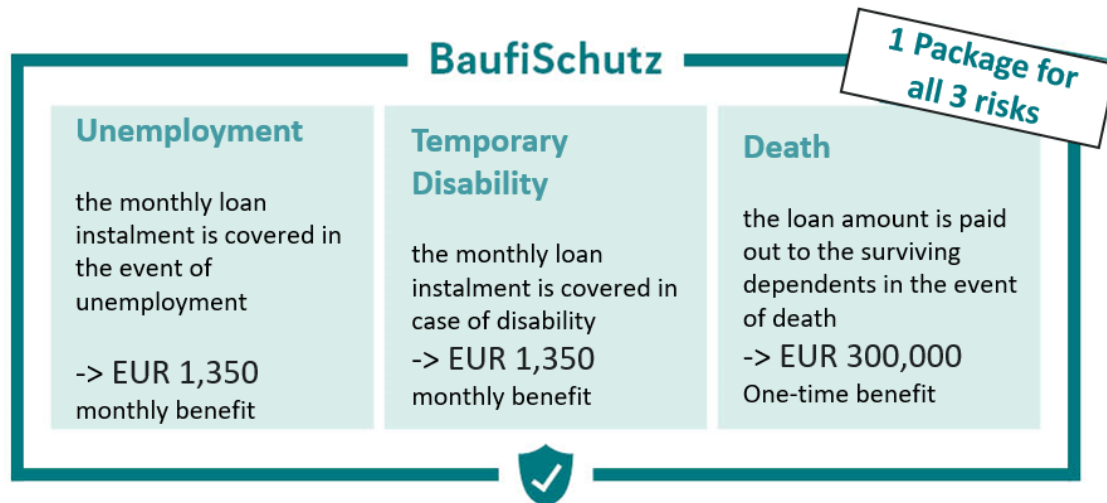
### Im Leistungsfall einfach zu beantragen.

Für die Beantragung von Leistungen sind je nach Baustein lediglich folgende Nachweise erforderlich:

1. Arbeitslosigkeit: Kündigungsschreiben des Arbeitgebers / Bestätigung der Beendigung der Selbstständigkeit
2. Arbeitsunfähigkeit: ärztliches Attest
3. Todesfall: Sterbeurkunde

ENGLISH TRANSLATION:

## BaufiSchutz – 3 modules in one insurance package:



**This means that all relevant risks are covered in one package.**

☒ **Quick and easy to take out.**

BaufiSchutz can be taken out digitally with just a few clicks. Only a few health questions need to be answered digitally for the application.

☒ **Easy to apply for benefits.**

Depending on the module, only the following evidence is required to apply for benefits:

1. unemployment: letter of termination from employer / confirmation of termination of self-employment.
2. incapacity for work: medical certificate
3. death: death certificate

**TREATMENT STIMULI example (8 groups = 8 different messages)**



## BaufiSchutz – die Risiken im Überblick

**Arbeitslosigkeit, Arbeitsunfähigkeit, oder auch ein Todesfall** sind relevante Risiken während einer Baufinanzierung, gegen die Sie sich absichern sollten.



Arbeitslosigkeit



Arbeitsunfähigkeit



Todesfall

- ! Ohne den BauFiSchutz sind Sie nicht in der Lage, bei unerwarteten Schicksalsschlägen, die Finanzierungsraten problemlos weiter bezahlen zu können und geraten in finanzielle Schieflage.
- ! Folglich kann eine fehlende Absicherung einer größeren Kreditverpflichtung für Sie zu schwerwiegenden Problemen führen, wie beispielsweise die Aufgabe der Wohnung, eine Zwangsversteigerung, oder dadurch verursachte psychische Belastung.
- ! Wenn Sie keinen BauFiSchutz abschließen, sind Sie somit nicht gegen die wichtigsten Risiken abgesichert und können unangenehme Gedanken wie „Was wäre wenn...“ nicht beiseite schieben.

---

**Ohne Absicherung leben Sie nicht sorgenfrei.**

ENGLISH TRANSLATION:

## BaufiSchutz – overview of risks

**Unemployment, incapacity to work, or even death** are relevant risks during construction financing against which you should insure yourself



**Unemployment**



**Incapacity to work**



**Death**

- ! Without BaufiSchutz, you will not be able to continue paying the financing installments without any problems in the event of unexpected strokes of fate, and you will find yourself in financial difficulties.
- ! Consequently, failure to secure a major loan obligation can lead to serious problems for you, such as abandonment of the home, foreclosure, or psychological distress caused by it.
- ! If you do not take out BaufiSchutz, you are not covered against the most important risks and cannot put aside unpleasant thoughts such as "What if...".

**Without coverage, you won't live worry-free.**

### Information text 6:

This section is about finding out your reactions to the insurance you have just seen. Please answer the following questions openly, as there is no right or wrong answer. We ask that you give honest and accurate answers. Please answer each question by clicking on one of the possible answers associated with that statement that best reflects your thoughts or feelings.

Q19: How did this presentation of risks make you feel?

	Not at all 1	2	3	4	5	6	Very much so 7
Scared	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Afraid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Panicky	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fearful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Uncomfortable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q20: Please indicate on a scale of 1-7 whether the wording in the texts indicated that.....

	1	2	3	4	5	6	7
with the BaufiSchutz to avoid the health and personal risks in the context of a mortgage financing : without the BaufiSchutz to risk the health and personal risks in the context of a mortgage financing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q21: On a scale of 1-7, the information in the images and text displayed focus on.....

	1	2	3	4	5	6	7
serious consequences that can occur if you are not insured with BaufiSchutz : serious consequences that can be avoided if you are insured with BaufiSchutz	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q22: Thinking about the above risks during mortgage financing: please rate the information presented in the three pictures in terms of your negative feelings, from "less negative feelings" to "very negative feelings".

	1	2	3	4	5	6	7
less negative feelings : very negative feelings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q23: The information in the text focuses on...

	1	2	3	4	5	6	7
myself : other (general public)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please answer the following questions, taking into account the pictorial representation and texts you have just seen.

Q24: Please rate the advert you have just seen according to the following statements

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
The presentation and the text were manipulative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The presentation and text were misleading	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The presentation and the text distorted the facts.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q24: Please rate the advert you have just seen according to the following statements

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
The presentation and the text were exaggerated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q25: Please indicate the extent to which you agree or disagree with the following statements

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
When I first heard about the health and personal risks involved in mortgage financing, my first instinct was to think of the risks and consider insurance to protect against them.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
When I first heard about the health and personal risks involved in mortgage financing, I didn't want to think about the risks or do anything to avoid them.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q25: Please indicate the extent to which you agree or disagree with each of the following statements

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
It is likely that I will become incapacitated or unemployed, or even die, during the term of the mortgage financing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am at risk of becoming disabled or unemployed, or even dying, during the term of the mortgage financing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It is possible that I could become incapacitated or unemployed, or even die, during the term of the mortgage financing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q25: Please indicate the extent to which you agree or disagree with each of the following statements

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
I believe that if I become incapacitated or unemployed, or even die during the term of the mortgage financing, it would pose a serious problem for the repayment of the real estate loan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I believe that it would have very negative consequences if I (or my family) were to run into payment problems due to death, disability, or unemployment as part of a mortgage loan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I believe that if I were to become incapacitated or unemployed, or even die, during the term of the mortgage financing, it would pose a serious problem for the repayment of the mortgage loan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q26: Please indicate the extent to which you agree or disagree with each of the following statements

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
Taking out mortgage insurance is an effective way to avoid loan repayment problems in the event of death, disability or unemployment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Taking out mortgage insurance helps to reduce problems with the repayment of a mortgage loan in the event of death, disability or unemployment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If I take a mortgage insurance, I am less likely to have problems repaying a mortgage loan in the event of death, disability and unemployment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q26: Please indicate the extent to which you agree or disagree with each of the following statements

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
I am able take a mortgage insurance to prevent getting into repayment problems during my mortgage loan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Taking a mortgage insurance is easy to do to prevent getting into repayment problems during my mortgage loan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Taking a mortgage insurance to prevent me from repayment problem in the course of a mortgage financing is convenient.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q27: Please rate the information you have just seen according to the following statements

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
The message was clearly written.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I clearly understood this message.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I learned a lot about BauFiSchutz from this message.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The quality of the arguments in the message were good.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q29: In the above example, the mortgage loan for the purchase of a home is EUR 300,000 with a monthly instalment of EUR 1,350 and a fixed interest rate of 10 years. You now want to insure this loan against death, disability and unemployment.

What would be your reasonable price per month for mortgage financing insurance (300,000 EUR loan, 1,500 EUR monthly instalment) with the risk components of death, disability and unemployment in the example described?

INSERT TEXTFIELD (integer)

Q30: To what extent do you intend to take out insurance cover in the event of future mortgage financing

	Not at all 1	2	3	4	5	6	Very much so 7
To what extent do you <u>intend</u> to take out insurance cover in the event of future mortgage financing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q31: Please indicate your answer to the following question.

How likely is it that you will also take out insurance coverage in the event of future mortgage financing?

	Not at all	1	2	3	4	5	6	Very much so
								7
How <u>likely</u> is it that you will also take out insurance coverage in the event of future mortgage financing?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q32: Securing a mortgage loan with mortgage insurance is:

	1	2	3	4	5	6	7
Unacceptable:Acceptable (1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Foolish:Wise (2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wrong:Right (3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unfavourable:Favourable (4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bad:Good (5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Risky:Safe (6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### Information text 7 (Debrief):

Thank you for your participation. All information which you have seen in the text and pictures is not a representation of reality. Please consider this procedure as an experiment, which has no effect on your attitude towards health risks or risks related to your mortgage payment plan.

#### Screenshots of the original survey in German:

Vielen Dank, dass Sie sich bereit erklärt haben, an dieser Umfrage teilzunehmen. Das Ausfüllen des Fragebogens wird etwa 15 Minuten in Anspruch nehmen. Bitte beachten Sie, dass die Teilnahme an dieser Studie freiwillig ist und Sie jederzeit abbrechen können. Die Untersuchung wird im Rahmen einer wissenschaftlichen Doktorarbeit durchgeführt. Bitte verwenden Sie zum Ausfüllen des Fragebogens einen Computer oder Laptop und **kein mobiles Gerät**.

Bitte lesen Sie die folgenden Informationen.

#### Teilnahmebedingungen:

Die folgenden Informationen beschreiben das Verfahren für diese Umfrage. Die Teilnahme ist freiwillig und es steht jedem frei, die Umfrage jederzeit zu beenden. Bitte lesen Sie die folgenden Informationen und kreuzen Sie das nachstehende Kästchen an, wenn Sie mit der Teilnahme an dieser Studie einverstanden sind. Bitte beachten Sie, dass einige der Bilder, die im Rahmen der Untersuchung verwendet werden, unangenehme Gefühle hervorrufen könnten. Darüber hinaus werden Sie gebeten, einige persönliche Angaben zu Erfahrungen zu machen, die Sie in Ihrem Leben gemacht haben oder auch nicht. Sollten Sie sich an irgendeiner Stelle unwohl fühlen, oder die Aufgabe nicht lösen wollen, beenden Sie bitte Ihre Tätigkeit und schließen Sie das Fenster Ihres Internetbrowsers. Sollte Sie eines der folgenden Bilder oder eine der Fragen beunruhigen, können Sie jederzeit abbrechen.

#### Die Studie ist wie folgt aufgebaut:

- In der ersten Phase werden Sie gebeten zu zeigen, dass Sie Folgendes verstanden haben: die Teilnahmebedingungen, Ihr Recht, von der Studie zurückzutreten, und Ihre Zustimmung zur Teilnahme an der Studie, indem Sie das entsprechende Kästchen im Folgenden ankreuzen.
- Dann werden Ihnen einige Fragen zu Ihrer Person gestellt. Die



Antworten auf diese Fragen werden durch Ankreuzen des entsprechenden Kästchens auf dem Computerbildschirm mit der Maus erfasst.

- Im nächsten Schritt werden Sie in ein Finanzthema eingeführt und gebeten, sich ein Versicherungsangebot anzusehen, das auf Ihrem Computerbildschirm angezeigt wird.

- Nachdem Sie sich das Versicherungsangebot angesehen haben, möchten wir, dass Sie einige Fragen zu dem gezeigten Angebot beantworten. Die Antworten auf diese Fragen werden gespeichert, indem Sie das entsprechende Kästchen auf dem Computerbildschirm mit der Maus ankreuzen.

#### **Vertraulichkeit der Informationen:**

Diese Forschungsstudie wird im Rahmen einer universitären Doktorarbeit durchgeführt. Es ist zu beachten, dass die im Rahmen dieser Studie gewonnenen Daten gegebenenfalls für Veröffentlichungen verwendet werden können. Die Vertraulichkeit persönlicher Informationen und die Anonymität aller an dieser Untersuchung beteiligten Personen werden auf folgende Weise gewahrt:

Wir werden Sie nicht nach Ihren Kontaktdaten fragen und es sind keine persönlichen Daten in dieser Umfrage enthalten. Die Forschungsdaten werden an einem sicheren Ort aufbewahrt, zu dem nur der Forscher Zugang hat. Es wird nicht möglich sein, Sie anhand der im Rahmen der Studie gewonnenen Informationen zu identifizieren.

#### **Erklärung des Teilnehmers**

Ich habe die obige Erklärung gelesen und verstanden. Ich erkläre mich bereit, an der oben beschriebenen Studie teilzunehmen, und bin darüber informiert worden, dass ich meine Teilnahme an dieser Studie jederzeit widerrufen kann. Meine Fragen zur Studie wurden zu meiner Zufriedenheit beantwortet, und ich bin mir bewusst, dass ich jederzeit weitere Fragen stellen kann. Ich erkläre mich damit einverstanden, den Forschern unter

den in diesem Informationstext dargelegten Vertraulichkeitsbedingungen Informationen zur Verfügung zu stellen, und ich bin damit einverstanden, dass die für die Zwecke dieser Studie gesammelten anonymisierten Informationen für andere Forschungszwecke verwendet werden. Bitte kreuzen Sie das Kästchen am Ende dieser Seite an, um zu bestätigen, dass Sie diese Erklärung gelesen und verstanden haben und mit der Teilnahme an dieser Studie einverstanden sind. Vielen Dank!

☐ Ich habe den Informationstext gelesen und möchte mit der Beantwortung der Umfrage beginnen.

☐ Ich möchte an dieser Umfrage nicht teilnehmen.

>>

1.

Wie alt sind Sie?

Jahre

>>



2.

Wie hoch ist Ihr monatliches Netto-Haushaltseinkommen?

- ☐ <2500€
- ☐ 2500€ - 3500€
- ☐ 3501€ - 5000€
- ☐ 5001€ - 7000€
- ☐ >7000€
- ☐ Keine Angabe

>>

3.

Welcher der folgenden Sätze trifft am besten auf Sie zu?

- ☐ Ich habe schon eine Baufinanzierung abgeschlossen.
- ☐ Ich habe keine Baufinanzierung, aber ich bewerbe mich aktuell für eine Baufinanzierung.
- ☐ Ich habe keine Baufinanzierung, aber ich könnte mir vorstellen eine Baufinanzierung innerhalb der nächsten 5 Jahre abzuschließen.
- ☐ Ich habe keine Baufinanzierung, aber ich habe grundsätzlich Interesse an einer Baufinanzierung in der weiteren Zukunft.
- ☐ Ich habe keine Baufinanzierung und grundsätzlich kein Interesse daran.

>>

4.

Gab es in den letzten Jahren einen traumatischen Todesfall oder schlimmen Unfall im engeren Familienkreis?

- ☐ Ja
- ☐ Nein
- ☐ Keine Angabe

>>

Wir möchten gerne noch etwas mehr über Sie und Ihre Erfahrungen wissen. Alle Ihre Antworten zu den folgenden Fragen sind selbstverständlich vertraulich und anonym. Bitte lesen Sie die Fragen sorgfältig durch. Sie müssen alle Fragen vollständig beantworten. Sie können natürlich zu jeder Zeit abbrechen.

>>

5.

Welches Geschlecht haben Sie?

- ☐ weiblich
- ☐ männlich
- ☐ divers

>>

6.

Was ist Ihr höchster Bildungsabschluss?

- ☐ Kein Abschluss
- ☐ Hauptschule
- ☐ Realschule
- ☐ Fachhochschulreife
- ☐ Abitur
- ☐ Bachelor
- ☐ Master (oder Diplom)
- ☐ Dr.
- ☐ Prof.

>>

7.

Wie ist Ihr aktueller Beziehungsstatus?

- ☐ Ledig
- ☐ In einer Partnerschaft
- ☐ Verheiratet
- ☐ Getrennt
- ☐ Geschieden
- ☐ Verwitwet

>>

8.

Wie viele Personen leben in Ihrem Haushalt?

- ☐ Ich allein
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ Mehr als 5

>>

9.

Wie viele Kinder haben Sie?

- ☐ Keine
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ Mehr als 3

>>

10.

Wer ist der Hauptverdiener in Ihrem Haushalt?

- ☐ Ich allein
- ☐ Jemand anderes
- ☐ Ich mit jemand anderem

>>

11.

Welche der folgenden Versicherungen haben Sie bereits abgeschlossen?

- ☐ Kfz-Versicherung
- ☐ Lebensversicherung
- ☐ Rechtsschutzversicherung
- ☐ Berufsunfähigkeitsversicherung
- ☐ Hausratsversicherung
- ☐ Unfallversicherung
- ☐ Keine davon

>>

In diesem Abschnitt geht es darum, mehr über Sie herauszufinden. Bitte beantworten Sie die folgenden Fragen offen, da es keine richtige oder falsche Antwort gibt. Wir bitten Sie, ehrliche und genaue Antworten zu geben.

>>

12.

Bitte geben Sie an, inwieweit Sie den folgenden Aussagen zustimmen.



Ich bin immer höflich, auch zu Personen, die unangenehm sind.



1  
Trifft eindeutig zu

2  
Trifft meistens zu

3  
Weiß nicht

4  
Trifft meistens nicht zu

5  
Trifft eindeutig nicht zu

>>

13.

Bitte geben Sie an, inwieweit Sie den folgenden Aussagen zustimmen.



Es gab Gelegenheiten, bei denen ich jemanden ausgenutzt habe.



1

Trifft eindeutig zu

2

Trifft meistens zu

3

Weiß nicht

4

Trifft meistens nicht zu

5

Trifft eindeutig nicht zu

>>

Bitte geben Sie an, inwieweit Sie den folgenden Aussagen zustimmen.



Manchmal versuche ich mich zu rächen, anstatt zu vergeben und zu vergessen.



1

Trifft eindeutig zu

2

Trifft meistens zu

3

Weiß nicht

4

Trifft meistens nicht zu

5

Trifft eindeutig nicht zu

>>

Bitte geben Sie an, inwieweit Sie den folgenden Aussagen zustimmen.



Ich bin manchmal nachtragend, wenn ich meinen Willen nicht durchsetzen kann.



1

Trifft eindeutig zu

2

Trifft meistens zu

3

Weiß nicht

4

Trifft meistens nicht zu

5

Trifft eindeutig nicht zu

>>

Bitte geben Sie an, inwieweit Sie den folgenden Aussagen zustimmen.



Egal, mit wem ich spreche, ich bin immer ein guter Zuhörer.



1  
Trifft eindeutig zu

2  
Trifft meistens zu

3  
Weiß nicht

4  
Trifft meistens nicht zu

5  
Trifft eindeutig nicht zu

>>

14.

Wie schätzen Sie sich persönlich ein: Wie risikobereit sind Sie im Allgemeinen?



1  
gar nicht  
risikobereit

2

3

4

5

6

7  
sehr  
risikobereit

>>

15.

Optimisten sind Menschen, die mit Zuversicht in die Zukunft blicken und meistens Gutes erwarten. Bitte schätzen Sie sich selbst ein: Wie optimistisch sind Sie im Allgemeinen?



1  
gar nicht  
optimistisch

2

3

4

5

6

7  
sehr  
optimistisch

>>

16.

Pessimisten sind Menschen, die voller Zweifel in die Zukunft blicken und meistens Schlechtes erwarten. Bitte schätzen Sie sich selbst ein: Wie pessimistisch sind Sie im Allgemeinen?

➔ 1 2 3 4 5 6 7  
gar nicht pessimistisch sehr pessimistisch

>>

17.

Wenn Sie an das Thema Baufinanzierung und Eigenheim denken: Wie bewerten Sie grundsätzlich den Abschluss einer Baufinanzierung mit dem Zweck, ein Eigenheim zu finanzieren?

➔ 1 2 3 4 5 6 7  
inakzeptabel akzeptabel

➔ 1 2 3 4 5 6 7  
unklug vernünftig

➔ 1 2 3 4 5 6 7  
falsch richtig

➔ 1 2 3 4 5 6 7  
unvorteilhaft vorteilhaft

➔ 1 2 3 4 5 6 7  
schlecht gut

➔ 1 2 3 4 5 6 7  
riskant sicher

>>



18.

Wenn Sie an das Thema Baufinanzierung und Eigenheim denken: Wie bewerten Sie grundsätzlich, eine Baufinanzierung ohne Absicherung durch Versicherungen abzuschließen? Unter Versicherungen wird hierbei verstanden: Lebensversicherung, Arbeitsunfähigkeitsversicherung, Arbeitslosigkeitsversicherung.

→ 1 2 3 4 5 6 7  
inakzeptabel akzeptabel

→ 1 2 3 4 5 6 7  
unklug vernünftig

→ 1 2 3 4 5 6 7  
falsch richtig

→ 1 2 3 4 5 6 7  
unvorteilhaft vorteilhaft

→ 1 2 3 4 5 6 7  
schlecht gut

→ 1 2 3 4 5 6 7  
riskant sicher

>>

Sie werden nun eine Information zu einer fiktiven Baufinanzierung und entsprechenden Versicherung sehen, die auf Ihrem Computerbildschirm angezeigt wird. Hierbei handelt es sich lediglich um einen Entwurf für eine Marketingkommunikation, die im Beratungsgespräch von Versicherungsexperten verwendet werden könnte. Nachdem Sie die Informationen gesehen haben, werden Sie gebeten, einen Fragebogen zu beantworten, in dem Sie nach Ihren Reaktionen auf die Informationen gefragt werden. Bitte sehen Sie sich die Darstellung und Texte in Ihrem eigenen Tempo an. Der Rest des Fragebogens sollte etwa 5 Minuten dauern.

Klicken Sie anschließend auf den Pfeil unter der Anzeige, um mit dem Fragebogen fortzufahren. Es kann ein paar Sekunden dauern, bis die Anzeige geladen ist. Bitte denken Sie daran: Wenn Sie sich zu irgendeinem Zeitpunkt unwohl fühlen und die Umfrage abbrechen möchten, beenden Sie den Fragebogen.

---

>>

In diesem Abschnitt geht es um die Themenfelder Baufinanzierung und Versicherung.

Eine Baufinanzierung ist ein Immobilienkredit, der für die Finanzierung einer Immobilie verwendet wird. Eine Versicherung im Rahmen der Baufinanzierung wird Ihnen im Anschluss vorgestellt.

Für die Beantwortung der weiteren Fragen versetzen Sie sich bitte in die folgende Situation:

Sie möchten eine Wohnung zur Eigennutzung kaufen. Sie haben bereits eine passende Wohnung gefunden und einige Gespräche mit einem Baufinanzierungsexperten geführt, um eine entsprechende Finanzierungslösung zu erarbeiten.

Sie beantragen für den Wohnungskauf einen Kredit über 300.000 EUR. Der Finanzierungsvorschlag ist attraktiv und ergibt bei einer Zinsbindung von 10 Jahren eine monatliche Kreditrate in Höhe von 1.350 EUR.

---

>>

Im Rahmen eines Beratungsgespräch wird bereits im Vorfeld auf das Thema "Absicherung der Baufinanzierung" hingewiesen. Für die Absicherung des Kredits wird das Versicherungsangebot "BaufiSchutz" vorgestellt, welches eine Kredit-Absicherung für die häufigsten Unwägbarkeiten des Lebens ermöglicht.

Für die genannte, beispielhafte Baufinanzierung besteht der BaufiSchutz aus den folgenden Versicherungsbausteinen:



**Damit sind alle relevanten Risiken in einem Paket abgesichert.**

- ☒ **Schnell und einfach abschließbar.**  
Der BaufiSchutz kann einfach digital mit einigen Klicks abgeschlossen werden. Für die Beantragung müssen lediglich wenige Gesundheitsfragen digital beantwortet werden.
- ☒ **Im Leistungsfall einfach zu beantragen.**  
Für die Beantragung von Leistungen sind je nach Baustein lediglich folgende Nachweise erforderlich:
  1. Arbeitslosigkeit: Kündigungsschreiben des Arbeitgebers / Bestätigung der Beendigung der Selbstständigkeit
  2. Arbeitsunfähigkeit: ärztliches Attest
  3. Todesfall: Sterbeurkunde

Warum der BaufiSchutz wichtig ist, zeigen die nachfolgenden Fakten. Bitte lesen Sie sich die im Anschluss dargestellten Informationen aufmerksam durch.

>>

## BaufiSchutz – Risiken und soziale Absicherungen

	Risiken während einer Baufinanzierung		Finanzielle Absicherung durch Sozialversicherungen
1	Das Risiko für Arbeitslosigkeit wird in der aktuellen Wirtschaftslage stark unterschätzt und wird in Zukunft wahrscheinlich ansteigen. Laut Ifo Institut werden vermehrte Entlassungen eine Folge der anstehenden Rezession sein. <sup>1</sup>	→	Bei <b>Arbeitslosigkeit</b> beträgt die soziale Absicherung zumeist nur 60% des bisherigen Netto-Einkommens. (begrenzt auf 2.680 € monatlich), im Regelfall lediglich für 12 Monate. <sup>3</sup> Im Durchschnitt fehlen somit über 1.200 € pro Monat. <sup>4</sup>
2	Jeder vierte Bundesbürger wird im Laufe seines Arbeitslebens mindestens einmal berufsunfähig. Verletzungen am Bewegungsapparat und psychische Probleme verursachen über 50% der Arbeitsunfähigkeiten. <sup>2</sup>	→	Bei <b>Arbeitsunfähigkeit</b> erhält ein Angestellter ab der 7. Woche im Regelfall lediglich 79% seines bisherigen Netto-Einkommens für 78 Wochen (begrenzt auf 2.980 € monatlich). Im Durchschnitt fehlen somit über 600 € pro Monat. <sup>4</sup>
3	Das Risiko zu sterben steigt bereits ab 40 Jahren stark an. Circa 218.000 Deutsche sind im Jahr 2022 bereits vor ihrem 65. Geburtstag gestorben. <sup>2</sup> Tausende Zwangsversteigerungen sind die Folge.	→	Im <b>Todesfall</b> erhält der/die Hinterbliebene im Regelfall lediglich die kleine Witwenrente ausgezahlt (25% des Rentenanspruchs für 2 Jahre). <sup>5</sup> Im Durchschnitt beträgt diese Rente nur 250 € pro Monat.

1 Ifo Institut 2022

2 Deutsche Aktuarvereinigung 2022

3 Bundesagentur für Arbeit 2022

4 Beispielrechnung für 5.000 € Brutto-Gehalt pro Monat

5 Deutsche Rentenversicherung 2022

Es werden nun weitere Argumente für den BauFiSchutz angezeigt:

>>



## BaufiSchutz – die Risiken im Überblick

Ohne Absicherung stellen **Arbeitslosigkeit**, **Arbeitsunfähigkeit**, oder auch ein **Todesfall** relevante Risiken während einer Baufinanzierung für Sie dar.



Arbeitslosigkeit



Arbeitsunfähigkeit



Todesfall

- ! Der BauFiSchutz ermöglicht Ihnen bei unerwarteten Schicksalsschlägen die problemlose Bezahlung der Finanzierungsraten und verhindert Ihre finanzielle Schieflage.
- ! Folglich können Sie mit der Absicherung einer größeren Kreditverpflichtung schwerwiegende Probleme, wie beispielsweise die Aufgabe der eigenen Wohnung, eine Zwangsversteigerung, oder dadurch verursachte psychische Belastung, vermeiden.
- ! Wenn Sie einen BauFiSchutz abschließen, sind Sie somit gegen die wichtigsten Risiken abgesichert und können unangenehme Gedanken wie „Was wäre wenn ...“ beiseite schieben.

### Leben Sie abgesichert und sorgenfrei.

Auf den folgenden Seiten bewerten Sie die Wirkung der angezeigten Bilder und Texte. Bitte beantworten Sie die folgenden Fragen genau und ehrlich, da es keine richtige oder falsche Antwort gibt.

19.

Wie haben Sie sich bei der Darstellung der Risiken gefühlt?

	Überhaupt nicht 1	2	3	4	5	6	Trifft voll zu 7
Verängstigt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Besorgt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Panisch	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ängstlich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unbehaglich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

>>

20.

Bitte geben Sie auf einer Skala von 1-7 an, ob die Formulierungen in den Texten darauf hingewiesen haben,...

☐ 1 = mit dem BauFiSchutz die gesundheitlichen und persönlichen Risiken im Rahmen einer Baufinanzierung zu vermeiden

☐ 2

☐ 3

☐ 4

☐ 5

☐ 6

☐ 7 = ohne den BauFiSchutz die gesundheitlichen und persönlichen Risiken im Rahmen einer Baufinanzierung zu riskieren

>>

21.

Auf einer Skala von 1-7, die Informationen in den angezeigten Bildern und Texten konzentrieren sich auf...

- ☐ 1 = ernsthafte Konsequenzen, die entstehen können, wenn man nicht mit dem BauFiSchutz versichert ist
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 = ernsthafte Konsequenzen, die vermieden werden können, wenn man mit dem BauFiSchutz versichert ist

>>

22.

Wie schwerwiegend sind die auf den Bildern dargestellten Verletzungen oder Probleme?



>>

23.

Die Informationen in den angezeigten Texten konzentrieren sich auf...



>>

24.

Bitte bewerten Sie die bildliche Darstellung und Texte, die Sie gerade gesehen haben, anhand der folgenden Aussagen.



Die Bilder und der Text waren manipulativ



1 = Stimme nicht  
zu

2

3

4

5

6

7 = Stimme voll zu

>>

Bitte bewerten Sie die bildliche Darstellung und Texte, die Sie gerade gesehen haben, anhand der folgenden Aussagen.



Die Bilder und der Text waren irreführend



1 = Stimme nicht  
zu

2

3

4

5

6

7 = Stimme voll zu

>>

Bitte bewerten Sie die bildliche Darstellung und Texte, die Sie gerade gesehen haben, anhand der folgenden Aussagen.



Die Bilder und der Text stellten die Tatsachen verzerrt dar



1 = Stimme nicht  
zu

2

3

4

5

6

7 = Stimme voll zu

>>



Bitte bewerten Sie die bildliche Darstellung und Texte, die Sie gerade gesehen haben, anhand der folgenden Aussagen.



Die Bilder und der Text wurden übertrieben dargestellt



1 = Stimme nicht zu

2

3

4

5

6

7 = Stimme voll zu



25.

Bitte geben Sie an, inwieweit Sie den folgenden Aussagen zustimmen oder nicht zustimmen.

Als ich soeben von den gesundheitlichen und persönlichen Risiken im Rahmen einer Baufinanzierung hörte, war mein erster Instinkt, dass ich an die Risiken denke und eine Versicherung in Betracht ziehen wollte, um mich davor zu schützen.

1 = Stimme nicht zu

2

3

4

5

6

7 = Stimme voll zu



Bitte geben Sie an, inwieweit Sie den folgenden Aussagen zustimmen oder nicht zustimmen.

Als ich soeben von den gesundheitlichen und persönlichen Risiken im Rahmen einer Baufinanzierung hörte, wollte ich nicht an die Risiken denken und auch nichts tun, um sie zu vermeiden.

1 = Stimme nicht zu

2

3

4

5

6

7 = Stimme voll zu



Bitte geben Sie an, inwieweit Sie den folgenden Aussagen zustimmen oder nicht zustimmen.

Es ist wahrscheinlich, dass ich während der Laufzeit der Baufinanzierung arbeitsunfähig oder arbeitslos werde, oder sogar sterben könnte.

1 = Stimme nicht zu

2

3

4

5

6

7 = Stimme voll zu



Bitte geben Sie an, inwieweit Sie den folgenden Aussagen zustimmen oder nicht zustimmen.

Ich bin gefährdet, dass ich während der Laufzeit der Baufinanzierung arbeitsunfähig oder arbeitslos werde, oder sogar sterben könnte.

1 = Stimme nicht zu

2

3

4

5

6

7 = Stimme voll zu



Bitte geben Sie an, inwieweit Sie den folgenden Aussagen zustimmen oder nicht zustimmen.

< Es ist möglich, dass ich während der Laufzeit der Baufinanzierung arbeitsunfähig oder arbeitslos werde, oder sogar sterben könnte. >

1 = Stimme nicht zu 2 3 4 5 6 7 = Stimme voll zu

>>

26.

Bitte geben Sie an, inwieweit Sie jeder der folgenden Aussagen zustimmen oder nicht zustimmen.

< Ich glaube, dass es ein schwerwiegendes Problem für die Rückzahlung des Immobilienkredits darstellt, wenn ich während der Laufzeit der Baufinanzierung arbeitsunfähig oder arbeitslos werde, oder sogar sterben würde. >

1 = Stimme nicht zu 2 3 4 5 6 7 = Stimme voll zu

>>

Bitte geben Sie an, inwieweit Sie jeder der folgenden Aussagen zustimmen oder nicht zustimmen.

< Ich glaube, dass es sehr negative Konsequenzen hätte, wenn ich (bzw. meine Familie) im Rahmen einer Baufinanzierung in Zahlungsprobleme aufgrund eines Todesfalls, einer Arbeitsunfähigkeit oder Arbeitslosigkeit komme. >

1 = Stimme nicht zu 2 3 4 5 6 7 = Stimme voll zu

>>

Bitte geben Sie an, inwieweit Sie jeder der folgenden Aussagen zustimmen oder nicht zustimmen.

< Ich glaube, dass es ein ernstes Problem für die Rückzahlung des Immobilienkredits darstellt, wenn ich während der Laufzeit der Baufinanzierung arbeitsunfähig oder arbeitslos werde, oder sogar sterben würde. >

1 = Stimme nicht zu 2 3 4 5 6 7 = Stimme voll zu

>>

Bitte geben Sie an, inwieweit Sie jeder der folgenden Aussagen zustimmen oder nicht zustimmen.

< Der Abschluss einer BauFiSchutz Versicherung ist ein wirksames Mittel zur Vermeidung von Rückzahlungsproblemen von Immobilienkrediten im Todesfall, bei Arbeitsunfähigkeit oder Arbeitslosigkeit. >

1 = Stimme nicht zu 2 3 4 5 6 7 = Stimme voll zu

>>

Bitte geben Sie an, inwieweit Sie jeder der folgenden Aussagen zustimmen oder nicht zustimmen.

< Der Abschluss einer BauFiSchutz Versicherung hilft im Todesfall, bei Arbeitsunfähigkeit oder Arbeitslosigkeit, Probleme bei der Rückzahlung eines Immobilienkredits zu vermindern. >

1 = Stimme nicht zu 2 3 4 5 6 7 = Stimme voll zu

>>

Bitte geben Sie an, inwieweit Sie jeder der folgenden Aussagen zustimmen oder nicht zustimmen.

Wenn ich eine BauftSchutz Versicherung abschlieÙe, ist die Wahrscheinlichkeit geringer, dass ich Probleme mit der Rückzahlung eines Immobilienkredits bei einem Todesfall, bei Arbeitsunfähigkeit und Arbeitslosigkeit haben werde.

1 = Stimme nicht zu 2 3 4 5 6 7 = Stimme voll zu

>>

Bitte geben Sie an, inwieweit Sie jeder der folgenden Aussagen zustimmen oder nicht zustimmen.

Ich bin grundsätzlich fähig dazu, eine BauftSchutz Versicherung abzuschließen.

1 = Stimme nicht zu 2 3 4 5 6 7 = Stimme voll zu

>>

Bitte geben Sie an, inwieweit Sie jeder der folgenden Aussagen zustimmen oder nicht zustimmen.

Der Abschluss einer BauftSchutz Versicherung erscheint einfach.

1 = Stimme nicht zu 2 3 4 5 6 7 = Stimme voll zu

>>

Bitte geben Sie an, inwieweit Sie jeder der folgenden Aussagen zustimmen oder nicht zustimmen.

Der Abschluss einer BauftSchutz Versicherung, um Zahlungsschwierigkeiten im Laufe einer Baufinanzierung entgegen zu wirken, ist praktisch.

1 = Stimme nicht zu 2 3 4 5 6 7 = Stimme voll zu

>>

27.

Bitte bewerten Sie die Informationen, die Sie gerade gesehen haben, anhand der folgenden Aussagen.

Die Informationen waren klar und deutlich geschrieben.

1 = Stimme nicht zu 2 3 4 5 6 7 = Stimme voll zu

>>

Bitte bewerten Sie die Informationen, die Sie gerade gesehen haben, anhand der folgenden Aussagen.

< Ich habe die Informationen gut verstanden. >

1 = Stimme nicht zu 2 3 4 5 6 7 = Stimme voll zu

>>

Bitte bewerten Sie die Informationen, die Sie gerade gesehen haben, anhand der folgenden Aussagen.

< Ich habe durch diese Informationen viel über den BauFiSchutz gelernt. >

1 = Stimme nicht zu 2 3 4 5 6 7 = Stimme voll zu

>>

Bitte bewerten Sie die Informationen, die Sie gerade gesehen haben, anhand der folgenden Aussagen.

< Die Qualität der Argumente war gut. >

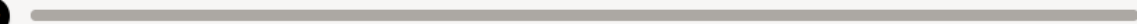
1 = Stimme nicht zu 2 3 4 5 6 7 = Stimme voll zu

>>

29.

Im genannten Beispiel beträgt der Baufinanzierungskredit für den Kauf eines Eigenheims 300.000 EUR mit einer monatlichen Rate von 1.350 EUR und einer Zinsbindung von 10 Jahren. Sie möchten diesen Kredit nun gegen den Todesfall, Arbeitsunfähigkeit und Arbeitslosigkeit mit dem **BaufiSchutz** versichern.

Wie hoch wäre Ihr angemessener Preis pro Monat für den **BaufiSchutz** (300.000 EUR Kredit, 1.350 EUR monatliche Rate) mit den Risikobausteinen Todesfall, Arbeitsunfähigkeit und Arbeitslosigkeit im geschilderten Beispiel?

 €

&gt;&gt;

30.

Bitte beantworten Sie die folgenden Fragen unter Berücksichtigung der soeben gesehenen bildlichen Darstellung und Texte.

Inwieweit beabsichtigen Sie, im Falle einer zukünftigen Baufinanzierung auch eine Absicherung abzuschließen?



&gt;&gt;

31.

Bitte geben Sie Ihre Antwort auf die folgende Frage an.

Wie wahrscheinlich ist es, dass Sie im Falle einer zukünftigen Baufinanzierung auch eine Absicherung abschließen werden?



&gt;&gt;

32.

Eine Baufinanzierung mit einer BauFiSchutz Versicherung abzusichern ist:

→ 1 2 3 4 5 6 7  
inakzeptabel akzeptabel

→ 1 2 3 4 5 6 7  
unklug vernünftig

→ 1 2 3 4 5 6 7  
falsch richtig

→ 1 2 3 4 5 6 7  
unvorteilhaft vorteilhaft

→ 1 2 3 4 5 6 7  
schlecht gut

→ 1 2 3 4 5 6 7  
riskant sicher

>>

Vielen Dank für Ihre Teilnahme an dieser Forschungsumfrage. Alle Informationen, die Sie im Text und in den Bildern gesehen haben, sind keine Darstellung der Realität. Bitte betrachten Sie dieses Verfahren als ein Experiment, das keine Auswirkungen auf Ihre Einstellung zu Gesundheitsrisiken oder Risiken im Zusammenhang mit Ihrem Hypothekenzahlungsplan hat.

>>