



Network for Studies on Pensions, Aging and Retirement

Exploring the persuasive effects of narratives and framing on the intention to acquire pension information

Ann-Kristin Braun

NETSPAR ACADEMIC SERIES

MSc 08/2018-034



Maastricht University

Master Thesis

Exploring the persuasive effects of narratives and framing on the intention to acquire pension information

Maastricht University
School of Business and Economics

August 20th, 2018

Study: M.Sc. International Business
Specialization: Marketing-Finance
Supervisor: Prof. Dr. Elisabeth Brügger
Co-supervisor: Dr. Fraukje Mevissen
Name: Ann-Kristin Braun
Student ID: I6069000

Abstract

The importance of pension planning has been increasing in the past years. Pension funds and marketers need to find pension communication tools to encourage people to take responsibility and inform themselves about their pension at an individual level. Two risk prevention techniques, namely narratives such as a personal story by a person and framing where the content stays the same, but the wording differs, have shown to be successful interventions in the healthcare sector. The study at hand builds upon those findings and applies this knowledge to another risk-related context – pension funds. Therefore, this study contributes to a better understanding of the usage of narratives and framing in the retirement context by looking at their effect on the core beliefs of the Retirement Belief Model. The research at hand is a randomized controlled trial with a factorial design including 5 conditions (narrative vs. non-narrative, gain frame vs. loss frame and a control group). The study made use of whiteboard animation videos for the manipulation. A non-probabilistic online panel in the Netherlands was conducted (N = 402) in order to test the effects of the five conditions on the different core beliefs. Several mediators including transportation, identification and emotion were tested to ensure that the narrative has the intended persuasive effect. The results reveal only a partly significant effect of narratives on the core beliefs compared to the non-narrative condition, but especially show in most cases to be superior to not having any intervention in place. Furthermore, the loss frame is, contrary to what was expected, not more effective than the gain frame in changing the core beliefs and the behavioral intention. Rather the opposite tendency was observed. No mediation effect of transportation, identification and emotion is found between the narrative condition and the core beliefs. Additionally, no difference is found between the narrative condition and the non-narrative condition and each of the different mediators. However, higher transportation, higher identification and higher emotional effects show to increase behavioral intention and lead to several hypothesized effects. Yet, higher levels of transportation, identification and emotion are not caused by the manipulation at hand. Pension funds and marketers should prefer a narrative to not having any intervention in place when triggering Dutch people to get informed about their pension. Overall, the study gives a first indication of the effects of narratives in the retirement context and further insights into the usage of framing and thus, builds a good foundation for further research.

Keywords: narratives, framing, retirement communication, transportation, identification, emotion, Retirement Belief Model, gain frame, loss frame, Extended Elaboration Likelihood Model

Table of Contents

1. Introduction	1
2. Literature Review	6
2.1 Behavioral Change Models	7
2.1.1. The Health Belief Model	7
2.1.2 The Retirement Belief Model	7
2.2 Gain and loss framing and behavioral change	9
2.3 Narrative Communication – a tool for behavior change	11
2.3.1 General Overview of Narratives	11
2.3.2 Information Processing of Narratives	12
2.3.3 Psychological Mechanisms	14
2.4 Narratives and Framing in Healthcare Context	17
3. Hypothesis Development	17
3.1 Narratives and the RBM core beliefs	18
3.2 Framing and the RBM core beliefs	19
3.3 Interaction of narratives and framing on RBM core beliefs	20
3.4 Mediation effect of transportation, identification and emotion	21
4. Methodology	23
4.1 Study Overview and Design	23
4.2 Manipulations	24
4.3 Sample and Experimental Procedure	26
4.4 Measurement and Assessment	27
4.5 Data Analysis	32
5. Results	33
5.1 Manipulation Check	34
5.2 Main Effects	34
5.2.1 Narrative and non-narrative main effects	34
5.2.2 Gain frame and loss frame main effects	37
5.3 Interaction Effect	39
5.4 Mediation Effect	40
5.5 Control Variables	43
6. General Discussion	44
7. Conclusion	49
7.1 Managerial Contributions	49
7.2 Theoretical Contributions	51
7.3 Limitations and Future Research	53
References	IV
Appendices	IX

List of Figures

Figure 1. Conceptual Framework.....	25
--	----

List of Tables

Table 1. Scale reliability.....	32
Table 2. Overview of narratives on core beliefs and behavioral intention.....	37
Table 3. Overview of framing on core beliefs and behavioral intention.....	39
Table 4. Overview high and low transportation on dependent variables.....	41
Table 5. Overview high and low identification on dependent variables.....	42
Table 6. Overview high and low emotion on dependent variables.....	42
Table 7. Demographic profile of 402 respondents.....	XXVI
Table 8. Exploratory factor analysis: factor loadings ^a	XXVIII

1. Introduction

In the past, many retirees received their pension according to a defined benefit plan that ensured a specific income during their retirement. However, a shift can be observed from defined benefit plans to defined contributions plans, transferring responsibility from institutions to the individual itself (Brown, 2004). The importance of pension planning has been increasing in the past years due to better healthcare provisions and lower mortality rates, leading to an increase in the number of older people (Gavrilov & Heuveline, 2003) and a decrease in the number of workers (Bonoli, 2000). This demographic change increases social and political pressure on social support systems (Gavrilov & Heuveline, 2003). Next to the longevity risk, pension plan members also face inflation risk, income risk and asset market risk. These challenges show to result in underfunded pension funds (Van Binsbergen, Broeders, De Jong, & Koijen, 2014). Therefore, individuals need to plan and take on responsibility for their retirement income instead of relying on institutional support.

Many people do not take on responsibility and plan for their retirement despite their rising concerns about retirement income. Even worse, attention of, for example, the Dutch population to this issue has fallen in the past years (GfK Pensioenmonitor, 2013). Contrary to the assumption of the life-cycle model, that people are planning and saving in advance for their retirement, many people do not have adequate retirement knowledge and do not plan for their retirement even if it is only 5-10 years away (Lusardi & Mitchell, 2011). Explanations why these people do not search for retirement information are not only limited resources such as income (Kim & Kim, 2010), but also the unrealistic belief that they will receive a sufficient amount of retirement income, e.g. 70% of their last earned income (GfK Pensioenmonitor, 2013). Some people are actually aware that underfunded pension funds exist and experience financial stress as they worry about their financial situation. However,

often these people do not seek out the necessary information for their retirement planning (Wijzer in Geldzaken, 2017). This behavior can also be a result of inertia, such as procrastination or lack of self-control (Ariely, 2009). The lack of self-control is due to a preference of immediate pleasure and outcomes over distant ones. Future events are not discounted exponentially as described by economic models but by a hyperbolic discounting function. Thus, immediate gains are weighted higher than long-term ones (Hershfield et al., 2011). Furthermore, planning for retirement is a complex task (Lusardi & Mitchell, 2009) and individuals often lack the financial knowledge to make retirement decisions (Bovenberg & Gradus, 2015). However, being informed about the expected retirement income can help to detect incorrect beliefs and point out necessary steps to close retirement income shortfalls.

A large issue in the field of information dissemination that can be observed is the avoidance of available information. Information avoidance is often the case if the information provided is not seen as valuable or not regarded as leading to better decisions (Golman, Hagmann, & Loewenstein, 2017). Therefore, pension providers need to find a way to ensure that their communication tool is efficient in increasing an individual's interest in searching for pension information.

In order to address this problem, one needs to know what factors determine the intention to search for further retirement information. Therefore, Eberhardt, Brüggem, Post, and Hoet (2017b) introduce the Retirement Belief Model (RBM) with five core beliefs as one way to explain the intention to search for retirement information. The model is an extended version of the Theory of Planned Behavior and is inspired by research on preventive health behaviors such as the Health Belief Model (HBM). The Health Belief Model provides an understanding of the motivation to take health actions (Rosenstock, 1974). The Health Belief Model and the Retirement Belief Model consider several core beliefs including perceived self-efficacy, perceived benefits, perceived severity, perceived susceptibility and perceived

barriers and show that these have an influence on the intention to perform a health-related or retirement-related behavior. However, it is still unclear what specific cues to action can trigger these intentions to increase the information search in the retirement context. Thus, there is a gap and need for more knowledge on intervention techniques to address the core beliefs that increase the intention to search for retirement information.

Two possible methods that could influence perceived self-efficacy, perceived benefits, perceived severity, perceived susceptibility and perceived barriers are narratives and framing (Dillard, Fagerlin, Dal Cin, Zikmund-Fisher & Ubel, 2010; Eberhardt, Brügger, Post & Hoet, 2017a). Both methods showed to be effective ways to persuade people to engage in a healthier behavior such as starting to conduct self-breast examination or prevention of personal drug use (Banerjee & Greene, 2012; Meyerowitz & Chaiken, 1987). In a narrative a character can tell a personal story or experience that has taken place (Kreuter et al., 2007). These stories have served as successful intervention techniques in healthcare contexts where they have led to changes in attitudes, beliefs and behavioral intention related to smoking, cancer screening and Pap testing (Dillard et al., 2010; Green, 2006; Kim, Bigman, Leader, Lerman & Cappella, 2012; Murphy, Frank, Chatterjee & Baezconde – Garbanati, 2013; Sheeran et al., 2016) and also in changes of risk perceptions towards sexually transmitted infections and cancer (Greene & Brinn, 2003; Mevissen, Ruiters, Meertens, & Schaalma, 2010).

Furthermore, different framing of narratives showed to have an influence on beliefs, attitudes and intentions (De Graaf, Sanders & Hoeken, 2016). Thus, another way to trigger cues to action is by using different frames. Framing is “adapting the wording but not the content of communication” (Eberhardt et al., 2017a, p. 2). This can be interesting for pension providers and policymakers since small changes in the wording can significantly change a person’s perception and behavior (Eberhardt et al., 2017a). One approach to adapt the

wording but not the content is through using gain framing, which is a positively framed text that stresses what behavior can lead to a gain or loss framing, which is a negatively framed text that stresses what specific behavior can prevent a loss (Levin, Schneider, & Gaeth, 1998). While gain frames were shown to increase preventive behavior, loss frames were shown to be better for encouraging detective behavior (Rothman & Salovey, 1997).

Of great interest is the combined usage of narratives and framings as they might not only individually affect attitudes, beliefs and behavioral intentions but also facilitate persuasive effects when combined. Several researchers studied the usage of narratives combined with framing in the healthcare context and found mixed results for different frames when considering intentions, attitudes and beliefs (Gray & Harrington, 2011; Wirtz & Kulpavaropas, 2014).

While studies have focused on narratives and framing in the healthcare context one issue remains unaddressed. Research has not considered the effects of narratives and framing on the five core beliefs of the Retirement Belief Model. Therefore, the aim of this study is to close the gap in the current literature, and explore the usability of narratives and framing on influencing the core beliefs in a financial context such as pension planning and further build on explaining the three mechanisms – transportation, identification and emotion – by which narrative persuasion is effective.

The paper tests how narrative compared to non-narrative information and gain compared to loss framing, influence perceived self-efficacy, perceived benefits, perceived severity, perceived susceptibility and perceived barriers towards becoming better informed about one's pension. Furthermore, participants' intention to search for pension-related information and also their actual behavior is tracked by checking whether the respondents actively look for information. After the respondents filled out the questionnaire they were asked to indicate whether they would like to be redirected to the website

‘*www.mijnpensioenoverzicht.nl*’, that provides personal information on accumulated and expected retirement income. Additionally, it is examined whether transportation, identification and emotion operate as a mediator for the effect of narratives on the core beliefs of the Retirement Belief Model.

Consequently, this study makes three contributions to the existing literature. Firstly, this paper is the first to examine the effects of narratives combined with framing on retirement-related behavior and the intention to search for information. Eberhardt et al. (2017a) used framing to show that it is a powerful nudge that can change perceptions and evaluations on acquiring retirement-related information. Additionally, narratives are used already in retirement communication, for example Pensioenfonds DSM Nederland (Pensioenfond DSM Nederland, 2017) makes use of videos of people telling their own pension story. However, the effectiveness of narratives in the retirement context has never been explored and evaluated. Therefore, it is of interest to see whether narratives and varying frames actually affect the beliefs and intention to search for information. An increase of knowledge in this field can be of substantial benefit for pension providers and policy makers as pension communication can be improved, but also for the targeted people as they get more certainty about their retirement income.

Secondly, this research further expands the Retirement Belief Model as it looks not only at the core beliefs that influence the behavioral intention to search for retirement information, but also at the factors that trigger these core beliefs (Eberhardt et al., 2017b). Many authors suggest that behavioral intention, self-efficacy and attitude can be affected by narratives and framing in the healthcare context (De Graaf et al., 2016; Green, 2006; Kim et al., 2012). As Eberhardt et al. (2017b) show, beliefs have an influence on the intention to search for information, but there is little knowledge so far as to if and how they can be activated. Therefore, this paper is of importance as it gives further insights into how the core

beliefs found by Eberhardt et al. (2017b) can be affected through narratives and framing. This knowledge can enhance the usage of the Retirement Belief Model in practice.

Thirdly, this paper tests and considers a range of psychological mechanisms – transportation, identification and emotion – to get an understanding of how and why narratives influence perceived self-efficacy, perceived benefits, perceived severity, perceived susceptibility and perceived barriers and with it the intention to search for retirement information and furthermore, explores which has the strongest effect. Previous literature mostly focused on transportation and identification, while Murphy et al. (2013) suggest to also include emotion as a separate mechanism. This mechanism has received little attention so far and can thus extend the knowledge for behavioral changes, beliefs and attitudes. Furthermore, it can help managers and policy makers to effectively draft personal stories.

The remainder of the paper is structured as follows: Firstly, a general overview of narratives and framing and their underlying mechanisms is given. The next chapter focuses on the development of the hypotheses and the reasoning for the expected observations. Thirdly, explanations are given on the methodology chosen for this study, the sample and the different measures. Fourthly, the data is analyzed and the results are reported. Fifthly, the results are discussed and lastly, theoretical and managerial contributions are summarized and limitations and future research are addressed.

2. Literature Review

As the responsibility for retirement income lies more and more with the individual, the following section explores how the information search on retirement can be facilitated. Therefore, several literature streams are considered that explain the usage of narratives and framing and their effects on behavior, especially in the healthcare context.

2.1 Behavioral Change Models

2.1.1. The Health Belief Model

In the healthcare context extensive research has been conducted to explain what factors influence behavioral intention and predict preventive health behavior such as prevention of skin cancer (Jeihooni & Rakhshani, 2018; Rosenstock, 1974). Rosenstock (1974) developed the Health Belief Model that helps to understand what motivates people to engage in health conscious behavior. The model was formulated for preventive behavior (Rosenstock, 1974) and aimed at improving public health situations (Carpenter, 2010). It considers several determinants, which are perceived self-efficacy, perceived benefits, perceived severity, perceived susceptibility and perceived barriers. These core beliefs are the underlying motives that explain health-related behavior. Next to the beliefs, a stimulus is necessary called “cue to action” in order to create awareness of a health threat and to activate people to engage in a recommended behavior (Janz & Becker, 1984; Rosenstock, 1974). These cues can be either internal such as experiencing symptoms or external such as being confronted with mass media communication, engaging in interpersonal relationships (e.g. teachers, friends, etc.) or other available intervention methods (Janz & Becker, 1984; Walker, Steinfors, & Keyler, 2015). In the study of Jeihooni and Rakhshani (2018) about the adoption of skin cancer preventive behavior, educational interventions (e.g. training sessions) show to be an effective intervention method based on the Health Belief Model. Also in other areas of risk-prevention programs such as sexual risk taking interventions, the Health Belief Model shows to serve as a reliable tool to understand the engagement in specific behaviors (Downing-Matibag, 2009).

2.1.2 The Retirement Belief Model

The Health Belief Model can be transferred to other risk taking contexts such as retirement planning. Based on the Health Belief Model, Eberhardt et al. (2017b) introduce the Retirement Belief Model that helps to get a better understanding of the factors that influence

retirement-related information search behavior. The framework incorporates similar factors to the Health Belief Model that determine the information search intention on retirement and is built on the Theory of Planned Behavior. Both the Health Belief Model and the Theory of Planned Behavior proved to be a useful tool in explaining human social behavior and are therefore a good basis to use for the Retirement Belief Model (Eberhardt et al., 2017b). The Retirement Belief Model also introduces the five core beliefs to explain that an individual engages in a certain behavior if “(1) they feel they are able to perform the recommended behavior (self-efficacy), (2) think that benefits of taking action weigh heavier than the costs (benefits vs. barriers), (3) believe that the consequences of (not) engaging in a behavior are severe (severity) and (4) that they are at risk of experiencing an undesirable outcome if not performing the behavior (susceptibility)” (Eberhardt et al., 2017b, p. 5). The predicted power of the model had an R^2 of 0.18. In the case of the study this showed to be a more powerful model than using demographics alone. An explanation for the low R^2 is that human behavior can never be predicted accurately (Eberhardt et al., 2017b).

The Retirement Belief Model is of significant importance as due to demographical, economical and political changes, pension funds provided by institutions show increasing pension uncertainty (Van Binsbergen et al., 2014). Thus, understanding the underlying mechanisms that cause the intention to search for retirement information and that affect attitudes and beliefs toward retirement planning are necessary to counteract the rising uncertainty and activate individuals to get informed. The Health Belief Model suggests that a cue to action is needed to activate the core beliefs and with it change the behavior.

Research shows that framing is one option to use in motivational cues that successfully influenced behavior in the healthcare context as well as in the retirement context (Block & Keller, 1995; Eberhardt et al., 2017a; Homer & Yoon, 1992; Kahneman & Tversky, 1979).

2.2 Gain and loss framing and behavioral change

Framing showed to influence people's decision making and behavior in various fields such as health communication to avoid sexually transmitted disease or skin cancer (Block & Keller, 1995), marketing such as advertisements for mouthwash which can change attitudes towards a brand (Homer & Yoon, 1992) or retirement communication (Eberhardt et al., 2017a). There are three types of framing, namely standard risky choice framing, attribute framing and goal framing (Levin et al., 1998). Standard risky choice framing was introduced by the Prospect Theory in 1979 by Kahneman and Tversky and shows that different frames can lead to different decisions. The proposed gain-loss utility function of the Prospect Theory suggests that people in the gain frame are rather risk averse, while people in the loss frame are more risk seeking when making financial decisions (Kahneman & Tversky, 1979). Attribute framing is about evaluating objects or event characteristics. The effect is measured by comparing attractiveness ratings for a single item. Lastly, goal framing affects the persuasiveness of a message by "adapting the wording but not the content of communication" (Eberhardt et al., 2017a, p. 2; Levin et al., 1998). In goal framing the issue is framed in two ways providing on the one hand, a positively framed text that shows benefits or gains of engaging in a specific behavior and on the other hand, a negatively framed text that shows the potential to prevent or avoid a loss by not failing to engage in a specific action (Levin et al., 1998). Thus, both framing conditions include the same content and promote the same behavior, while the wording differs.

Early literature streams suggest that the effectiveness of the frame depends on the level of issue involvement related to the Elaboration Likelihood Model (Maheswaran & Meyers-Levy, 1990). This model helps to explain why people reject or accept message claims (Van Laer, De Ruyter, Visconti, & Wetzels, 2013). While, gain frames showed to be more suitable and effective when issue involvement is low, loss frames showed to be more suitable

when the issue involvement is high (Maheswaran & Meyers-Levy, 1990). However, research on framing in the healthcare context in later years relies more on the outcome, whether it is detective or preventive, of the proposed behavior when discussing the effectiveness of each frame (Eberhardt et al., 2017a; Rothman & Salovey, 1997). If the persuasive message addresses a preventive behavior or the action is of certainty, then gain frames are more suitable than loss frames, while loss frames are more effective if the outcome of an action is uncertain and detective (Rothman & Salovey, 1997). The effectiveness of goal framing has not only been shown to be successful in the healthcare context, but also in a retirement-related context. Here different frames have been shown to affect the intention to search for retirement information when confronted with gain vs. loss frames or other frames such as assurance vs. investment frames (Eberhardt et al., 2017a). Considering the reviewed literature, framing is one way to strengthen a cue to action.

The research on cues to action focuses to a large extent on mass media messages in earlier years (Mattson, 1999). However, using goal framing in large media coverage alone is not enough anymore to promote preventive behavior as people show defensive reactions to mass media messages. These cues to action have been presented in a non-involving objective form that the reader can easily avoid or consider as irrelevant to themselves (Marlier, 1993). Active information avoidance is an issue occurring when the information provided is not seen as valuable or not regarded as leading to better decisions (Golman et al., 2017). Resistance to a persuasive message can come in several forms such as “counter-arguing the message claims, ignoring the message or denying the validity of the message” (Kreuter et al., 2007, p. 223). One successful approach to prevent counter-arguing of a proposed behavior is using narratives (Kreuter et al., 2007). Therefore, framing can be incorporated in a story to facilitate persuasion, reduce counter-arguing and make the cue to action more effective. The following paragraph introduces the usage of narratives.

2.3 Narrative Communication – a tool for behavior change

2.3.1 General Overview of Narratives

The first step to change the behavior of an individual is by making them recognize that a risk exists for them (Dunlop, Wakefield, & Kashima, 2008). Next to framing, narratives are an additional way to approach the Health Belief Model's and Retirement Belief Model's need to call for action in order to trigger the core beliefs of perceived self-efficacy, perceived benefits, perceived severity, perceived susceptibility and perceived barriers. Narratives are “a representation of connected events and characters that have an identifiable structure, are bound in space and time, and contain implicit or explicit messages about the topic being addressed” (Kreuter et al., 2007, p. 222). They can be told in first or third person and can be delivered via various media such as video, audio or printed texts (De Graaf et al., 2016). Narratives can take on various forms (e.g. drama, conversation or short stories) depending on their purpose (Hinyard & Kreuter, 2007). They were shown to be used for five different reasons in the existing literature: (1) providing information, (2) making materials more engaging, (3) modeling a specific behavior, (4) persuading or (5) comforting the reader. In particular, modeling behavior and persuading narratives alter behavioral intentions and increase the uptake of a targeted behavior (Shaffer & Zikmund-Fisher, 2013). Modeling behavior can be a step-by-step demonstration of a specific behavior that the person watching should adopt (Kok et al., 2016). When modeling behavior is used successfully, it reinforces an appropriate behavior and can be an effective tool to change attitudes such as perceived benefits or perceived severity. Furthermore, it shows to be effective for developing skills such as self-efficacy (Kok et al., 2016). When the reader can identify with the role model, that shows a specific behavior, and if the model is a coping model, meaning it first struggles but then is effective in changing the behavior to the behavior intended, role model stories can reinforce the right behavior and lead to a positive intention to avoid risky behavior (Kok et

al., 2016). A personal story is a “textual discourse that describes a specific series of causally related events in the past, spanning a period of time of minutes, hours, or days, where the author or a close associate is among the participants” (Gordon & Swanson, 2009, p. 16). This definition is closely related to narratives and thus this paper uses narratives and stories interchangeably. Having a narrative compared to a non-narrative and a person in the narrative, that shows a specific behavior, leads to overcoming avoidance behavior in situations feared or avoided (Bandura, Grusec, & Menlove, 1967). Therefore, modeling behavior can reduce or overcome avoidance behavior of the message.

Stories show to be an effective tool in changing beliefs and motivate action when it comes to healthcare intervention and persuasion (Green, 2006; Kim et al., 2012; Murphy et al., 2013). They are used for educational purposes in healthcare communication to influence attitudes, beliefs and behavioral intention (Van Laer et al., 2013). Narratives are not only a successful way to persuade the reader, but also to educate them. Especially, in the case when narratives are entertaining, they achieve positive outcomes and are more successful in persuading than non-narrative message forms that are less entertaining (Moyer - Gusé, 2008; Slater & Rouner, 2002).

A reason for the effectiveness of narratives often mentioned in the existing literature is that less counter-arguing and disbelieving occurs due to reduced cognitive responding compared to traditional, non-narrative messages (Green & Brock, 2000). Therefore, more insights on the message processing of an individual are explored in the following paragraph to explain why people reject or accept message claims and why narratives are more effective than non-narrative messages.

2.3.2 Information Processing of Narratives

The Elaboration Likelihood Model (hereafter ELM) introduced by Petty and Cacioppo (1986) helps to explain why people accept or reject a message claim. The ELM provides a theory

that aims at understanding attitude change for traditional persuasive messages (Petty & Cacioppo, 1986). The explanation of persuasive effects depends, according to the ELM, on the level of elaboration of the message. Elaboration in a persuasive context, “is the extent to which a person thinks about the issue-relevant arguments contained in the message” (Petty & Cacioppo, 1986, p. 128). The elaboration process underlies two routes; on the one hand the central route showing high elaboration of the message and on the other hand the peripheral route showing low elaboration of the message. The central route is taken when there is a need for cognition and the information at hand is highly relevant for the receiver, while the peripheral route is used when the information has low relevance (Petty & Cacioppo, 1986). Thus, when information is of great importance, more elaboration on the message occurs resulting in higher information processing and changed behavior. However, next to the level of elaboration the model also depends on people’s motivation and ability to engage in issue-relevant thinking (Petty & Cacioppo, 1986). Thus, people need to be open and ready for adopting a new behavior or correcting their behavior (Statman, 2017).

Applying the concept of information processing to the research at hand a new model is needed to fully explain the persuasive effects of narratives. The ELM shows to be not fully applicable as the reader is absorbed into the story which leads to less counter-arguing and less careful evaluation of the arguments (Van Laer et al., 2013). Contrary to that, the traditional ELM suggests that more elaboration leads to higher persuasive effects. Therefore, Slater and Rouner (2002) introduce the Extended Elaboration Likelihood Model. In the Extended Elaboration Likelihood Model elaboration and engagement of the reader of the narrative do not depend solely on the content, but also on the plot, the story line, absorption into the story, identification with the character and emotions that arise (Murphy et al., 2013; Slater & Rouner, 2002). While for non-narrative texts one needs to be addressed by personally relevant consequences, the persuasive effects of narratives occur without careful evaluation

and should therefore be applicable to a wider range of people. Higher involvement takes place due to transportation into the story and persuasive effects are rather unintentionally (Van Laer et al., 2013). Therefore, the reader of a narrative is more receptive to the persuasive message, while he processes the persuasive information less analytically, which leads to less counter-arguing. Compared to analytical persuasion or a non-narrative text, the reader also makes cognitive efforts but is less thoughtful and critical about the message received (Slater & Rouner, 2002). With regard to modeling behavior, the unintentional processing of the persuasive message leads not necessarily to accepting the arguments and behavior consciously, but rather to just adopting the modeled behavior as no counter-arguments evolve. Furthermore, the unintentional processing leads to a theory of Appel and Richter (2007) called the sleeper effect, making the claim that fictional narratives, which “do not claim to provide the reader with detailed knowledge about the world”, are more persuading than non-narrative messages (Appel & Richter, 2007, p. 113). The sleeper effect describes a paradoxical property where the persuasive effect is persistent, more internalized and remembered and even increases over time (Appel & Richter, 2007).

The literature on narratives advises that in order for a narrative to be effective and processed as explained by the Extended Elaboration Likelihood Model, it needs to trigger several psychological mechanisms (De Graaf et al., 2016; Slater & Rouner, 2002; Van Laer et al., 2013).

2.3.3 Psychological Mechanisms

Three psychological mechanisms are introduced by Murphy et al. (2013), namely transportation, identification and emotion. This is in line with the proposed framework of Slater and Rouner (2002) who argue that several factors need to be in place in order for the Extended Elaboration Likelihood Model to be effective.

Transportation. In order for a narrative to lead to engagement and processing explained by the Extended Elaboration Likelihood Model, a person needs to be transported into the story (Murphy et al., 2013). Many researchers focus on this aspect when evaluating the effectiveness of narratives (Green & Brock, 2000; Kim et al., 2012; Murphy et al., 2013; Van Laer et al., 2013). Transportation is “a convergent process, where all mental systems and capacities become focused on events occurring in the narrative” (Green & Brock, 2000, p. 701). Transportation theory suggests that transportation leads to the fact that the reader is absorbed by the story and that original beliefs become inaccessible, yielding to accepting and adapting to the behavior suggested by the story. It has been shown to be successful in the healthcare context by increasing cancer screening or reducing drug use (Banerjee & Greene, 2012; Green & Brock, 2000; Murphy et al., 2013). Traditional, non-narrative messages are based on cognitive elaboration and logical consideration and evaluation of the situation described, while transporting messages reduce cognitive responding and lead to less counter-arguing and disbelieving as explained by the Extended Elaboration Likelihood Model (Green & Brock, 2000; Slater & Rouner, 2002). Thus, transportation is a prerequisite for people’s self-management and the intention to change their behavior.

Identification. Along with transportation comes the identification with the character and the story. Identification is a mechanism through which “audience members experience reception and interpretation of the text from the inside, as if the events were happening to them” (Cohen, 2001, p. 245). It can be even further separated into two different aspects, which are similarity (cognitive) and empathy (emotional) responses towards the character. Specifically, narratives can increase imaginability (Janssen, Osch, Vries, & Lechner, 2013; Mevissen, Meertens, Ruiters, & Schaalma, 2012) and the reader can better imagine how the person in the story feels (Murphy et al., 2013). If a reader can identify well with the character of the story,

he takes on the perspective of the character and deeply engages with the story (Coplan, 2004). Furthermore, the reader can template possible selves (Green, 2006).

Identification can also be explained by feeling empathy for the protagonist (Mar, Oatley, Djikic, & Mullin, 2011). Empathy yields to emotional consequences – one does not see his or her self as the character, but feels similar and understands the characters goals (Cohen, 2001). There are two components of empathy – the affective empathy component and the cognitive empathy component. These involve feeling empathy and affinity toward the character (affective empathy) and adopting the character’s goals and point of view (cognitive empathy) (Shen, 2010). Moreover, identification has also shown to be an explanation for the effectiveness of celebrity endorsers. A spokesperson, with whom an audience can identify, increases the likelihood of achieving lasting attitude or behavior changes (Basil, 1996). A person in the story is comparable to the effects of celebrity endorsements due to identification.

Emotion. Lastly, emotion affects the choices and decisions one makes under risk. Research on emotion as a mediator of narratives is still scarce as it has not been considered as a separate mediator for long, but recently has been shown to be an additional explanation for the effectiveness of persuasive narratives (De Graaf et al., 2016; Murphy et al., 2013). As explained in the transportation theory, emotional response to a story needs to be heightened, as it is a necessary condition for transportation (Green & Brock, 2000). However, emotional response is a distinct component as it has been shown to influence behavior apart from transportation and identification (Murphy et al., 2013). If people can imagine themselves taking action or changing their behavior in the future, it intensifies the emotions that are linked to that scenario and that can help to predict behavioral change (Loewenstein, 1996).

2.4 Narratives and Framing in Healthcare Context

As suggested in the reviewed literature, framing can be used as a cue to activate a reader to engage in a modelled behavior. Incorporating framing into narratives has been studied in the healthcare context already, while the retirement context is still unexplored. Narratives are regarded as a form of persuasive strategy when used to educate the reader about engaging in a specific behavior, and other persuasive strategies such as framing can be incorporated (Brusse, Fransen, & Smit, 2017).

Processing of the narratives and framing differs markedly. While processing non-narrative persuasive messages including different frames is based on the Elaboration Likelihood Model and depends on the involvement with the message, narratives are processed by transportation and absorption into the story as explained by the Extended Elaboration Likelihood Model. Therefore, it is of high interest whether this combination effectively changes the behavior in the retirement context.

While research on narratives and framing in the healthcare context is extensive, the effects of persuasiveness in the retirement context are still unexplored. The literature review has shown that in the healthcare context narratives and framing affect behavior and attitude. With the introduction of the Retirement Belief Model, there is an option to measure the effects also for the retirement information search behavior. Therefore, the following section introduces several hypotheses to determine their persuasive effectiveness on the intention to search for retirement information based on the literature of the healthcare sector.

3. Hypothesis Development

The following section develops the hypotheses to study the effects of narratives and framing on the core beliefs of the Retirement Belief Model, especially since no research has been conducted on the combined effect of narratives and framing on the core beliefs. Lastly,

possible mediators are hypothesized in order to get more insights into the reasons that affect the core beliefs.

Existing literature in the domain of narratives in health communication has been shown to influence the core beliefs of the Health Belief Model positively and promote preventive health behavior (Greene & Brinn, 2003; Mevissen et al., 2012). As the Retirement Belief Model was developed for the retirement context and is based on the Health Belief Model, similar effects of narratives and framing are expected in the retirement context. The Retirement Belief Model specifies that an increase in perceived self-efficacy, perceived benefits, perceived severity, perceived susceptibility and a decrease in perceived barriers are related to an increase in retirement information search behavior (Eberhardt et al., 2017b).

3.1 Narratives and the RBM core beliefs

As narratives have shown to positively influence behavior and attitude in the healthcare sector compared to non-narratives, the effective influence of narratives is expected to be in line with the suggestions made by Eberhardt et al. (2017b). Narratives have been shown to change attitudes, beliefs and behavioral intention positively (Murphy et al., 2013). A narrative can show a behavior of a person that the audience feels can be successfully imitated, as no counter-arguments or excuses are developed (Kreuter et al., 2007). Therefore, a story can lead to higher self-efficacy, especially when a story supports the behavior to search for retirement-related information as less counter-arguments are made. Additionally, perceived barriers are decreased, because one does not search for reasons why not to engage in this behavior. Perceived benefits are increased as the narrative suggests and explains the advantages of engaging in a specific behavior and disadvantages of not doing so. The perspective of the protagonist is taken for granted and adopted by the reader. Green (2006) and McGregor et al. (2015) explain that modeling behavior in narratives increases self-efficacy, while other authors studied narratives compared to non-narratives and found effects

on other factors of the Health Belief Model such as increases in perceived severity or susceptibility (Frank, Murphy, Chatterjee, Moran, & Baezconde-Garbanati, 2015). As the Retirement Belief Model is closely related to the Health Belief Model similar effects are hypothesized.

H1: Narratives compared to non-narratives increase (a) perceived self-efficacy, (b) perceived benefit, (c) perceived severity, (d) perceived susceptibility and decrease (e) perceived barriers.

3.2 Framing and the RBM core beliefs

Furthermore, the study at hand tests the effects of framing on the core beliefs of the Retirement Belief Model. Gain and loss frames were used in motivational cues in the healthcare sector (Block & Keller, 1995; Homer & Yoon, 1992; Kahneman & Tversky, 1979). As changed behavior in information search is explained by the core beliefs of the Retirement Belief Model, it is hypothesized that framing influences these core beliefs that then change the behavior of the targeted person. Gain and loss frames were already tested in the retirement context in the study of Eberhardt et al. (2017a). As the search for accumulated retirement income is a detective behavior, empirical evidence suggests that loss framing is more effective than gain framing when it comes to the intention to search for retirement-related information (Eberhardt et al., 2017a). The Retirement Belief Model goes one step further and proposes that core beliefs that are activated lead to the changed behavior. Therefore, as loss framing is shown to increase the search for retirement-related information, it can be expected that the core beliefs are addressed by the loss frame in a way that perceived self-efficacy, perceived benefits, perceived severity and perceived susceptibility increase and perceived barriers decrease, and therefore the intention to search for retirement-related information increases. According to Meyerowitz and Chaiken (1987) loss frames lead to higher perceived self-efficacy than gain frames. The authors argue that this is due to a

protection mechanism of the respondents. Loss frames can threaten and debilitate the reader, which can lead them to believe in their own abilities to prevent a loss. Furthermore, research supports that behavioral intentions are facilitated by perceived benefits, perceived susceptibility and perceived self-efficacy (Gerend, Shepherd, & Monday, 2008; Gray & Harrington, 2011; Meyerowitz & Chaiken, 1987). The authors show that loss frames compared to gain frames facilitate and increase perceived benefits, perceived susceptibility and perceived self-efficacy. Furthermore, loss frames indicate what can be lost and stresses the severity of not engaging in the proposed behavior, therefore perceived severity is expected to increase due to the loss frame. As the core beliefs facilitate the intention to search for retirement-related information and the loss frame is expected to be more effective than the gain frame, it can be hypothesized that the loss frame decreases perceived barriers as this has shown to increase the information search. Thus, the following hypothesis is introduced.

H2: Loss framing compared to gain framing increases (a) perceived self-efficacy, (b) perceived benefits, (c) perceived severity, (d) perceived susceptibility and decreases (e) perceived barriers.

3.3 Interaction of narratives and framing on RBM core beliefs

Besides the individual influences of narratives and framing, their interaction effect is of interest, particularly as the research in the healthcare communication at this point is contradictory (De Graaf et al., 2016). As suggested and established in the research of Cox and Cox (2001), narratives together with loss frames lead to significant attitudinal effects in detection behavior such as screening. This finding is in line with Block and Keller (1995) who also show that loss frames combined with narratives are more persuasive in changing the intention to perform health-related behavior and the hypothesized effects so far. Gray and Harrington (2011) studied health intervention of narratives and framing that encourage exercising. While this is a preventive behavior also in line with the previously discussed

literature, the gain frame within the narrative was shown to be more effective than the loss frame. Also Wirtz and Kulpavaropas (2014) studied behavior involving exercising and physical activity. However, in their study loss-framed messages produced higher persuasive effects, contrary to the study of Gray and Harrington (2011). These differing effects can be due to ethnicity reasons or effectiveness of the created treatment texts as suggested by the authors (Wirtz & Kulpavaropas, 2014). Furthermore, many authors in this field show significant effects of gain and loss frames, while on the other hand narrative persuasion is often not superior in these cases (Cox & Cox, 2001; Gray & Harrington, 2011; Wirtz & Kulpavaropas, 2014). As imaginability is increased due to the narrative, it is still expected in the case at hand that the hypothesized main effects will lead to an interaction effect, as the imaginability will strengthen the loss frame further and affect the different core beliefs even more. Therefore, an interaction effect of narratives and loss framing is expected to significantly affect the core beliefs and increase information search. In order to test this the following hypothesis is developed.

H3: Narratives, versus non-narratives, increase (a) perceived self-efficacy, (b) perceived benefits, (c) perceived severity, (d) perceived susceptibility and decrease (e) perceived barriers when the narrative has a loss frame rather than a gain frame.

3.4 Mediation effect of transportation, identification and emotion

Several psychological mechanisms underlie the effect of narratives that help to explain why the core beliefs are affected. The three psychological mechanisms – transportation, identification and emotion – have been already introduced. However, now a closer look is taken as to how they mediated narratives in previous studies. Green (2006) argues with the transportation theory that the reader's self-efficacy increases when the reader is transported into the story and can identify himself with the protagonist. Furthermore, identification has

also been shown to successfully increase self-efficacy in breast self-examinations (Green, 2006) or increase perceived severity and susceptibility (Frank et al., 2015). The study of Hershfield et al. (2011) researched the effects of connection with a future self on retirement savings behavior and found out that when a person can imagine and feels connected to their future self, money dedicated towards retirement increases. From this it can also be expected that people do not only allocate more money towards retirement, but are also interested about the financial situation of their future self and search for more information, when they can relate to their own future self. The literature review suggests that possible selves can evolve due to identification with the character and the message.

The study by Brusse et al. (2017) found that loss frames are as enjoyable as gain frames and the reader equally enjoys the exposure to the narrative. The result indicates that transportation and identification are not affected by framing when incorporated into a narrative. Thus, it is assumed that when exposed to a story, transportation is higher than when exposed to a non-narrative message, but different frames do not affect these mediators. It is also assumed that identification is a significant mediator between narratives and behavioral intention. To test this assumption the following hypotheses are developed.

H4: Transportation mediates the relationship between the narrative and (a) perceived self-efficacy, (b) perceived benefits, (c) perceived severity, (d) perceived susceptibility and (e) perceived barriers.

H5: Identification mediates the relationship between the narrative and (a) perceived self-efficacy, (b) perceived benefits, (c) perceived severity, (d) perceived susceptibility and (e) perceived barriers.

Lastly, higher emotional reaction of the reader shows to be more effective in persuading him (De Graaf et al., 2016). While many health communicators favor gain-framed messages over loss-framed messages, as they believe gain framed messages lead to more

positive emotional responses, including happiness and hopefulness (Brusse et al., 2017; Cox & Cox, 2001), Cox and Cox (2001) further discuss that pleasant stimuli can also lead to the reader feeling less vulnerable and therefore not willing to engage in a suggested behavior. However, research on narratives suggests that narratives can increase emotions and lead to a mediating effect of narratives and attitudes or behavior. To test whether emotion mediate the relationship between narratives and the core beliefs of the Retirement Belief Model the following hypothesis is introduced.

H6: Emotion mediate the relationship between the narrative and (a) perceived self-efficacy, (b) perceived benefits, (c) perceived severity, (d) perceived susceptibility and (e) perceived barriers.

4. Methodology

4.1 Study Overview and Design

The purpose of this study is to examine the effect of narratives and framing on retirement-related behavior and the intention to search for information. Therefore, a closer look is taken at the core beliefs – perceived self-efficacy, perceived benefits, perceived severity, perceived susceptibility and perceived barriers – of the Retirement Belief Model (Eberhardt et al., 2017b) and how they are influenced by narratives and framing (H1, H2 & H3). Further, the paper studies the mediating effects of transportation, identification and emotion (H4, H5 & H6). The experiment is based on a factorial design with the retirement information being either non-narrative or narrative and the wording being either a gain or a loss frame. Furthermore, a control group was included that has not received any manipulation before starting with the questionnaire. The questionnaire and manipulations were created in English and afterwards translated into Dutch and checked by several Dutch native speakers to ensure that the texts and all questions are correctly translated and understood (Appendix C and D).

Research has shown that various media are effective in distributing narratives. The research by De Graaf et al. (2016) suggest that text, video and audio have an equally likely persuasive effect in the healthcare context. The study at hand makes use of videos that participants had to watch at the beginning of the study. The videos were created with VideoScribe, which is a software program that creates whiteboard animations, and have an average length of around 2.34 minutes. The narrative was told in first-person as studies have shown that persuasive effects of using a first-person narrative compared to using a third-person narrative are greater (De Graaf et al., 2016). The gender of the protagonist in the narrative corresponds to the gender of the respondent in order to increase identification with the protagonist. Even though gender has shown to have no influence in the healthcare context, no experience has been made for this in the retirement context and is therefore included (De Graaf et al., 2016). Additionally, the texts displayed in the video were written by a hand to make them seem more like someone is writing down and telling his or her story. In the non-narrative videos, no person was shown and no hand was displayed when the texts appeared on the screen.

4.2 Manipulations

All videos started with talking about a TV commercials recommendation to start early with retirement planning by visiting the 'www.mijnpensioenoverzicht.nl' website. It was explained that this website helps to determine what one can expect to receive upon retirement. However, people (non-narrative condition) or the protagonist (narrative condition), do not inform themselves about their retirement income, as they do not put a lot of importance on this topic. They are busy with other things or the topic seems boring and complicated. This information was taken from previous research that looked at reasons as to why people are not informed about their retirement (GfK Pensioenmonitor, 2013). In the videos it was explained that people/the protagonist expect to receive enough money upon retirement and that they believe that this is a topic for later. The gain frame then focused on how certainty can be

gained by visiting the website and calculating the expected retirement income. Therefore, peace and security could be reached, while on the other hand, the loss frame pointed out that no certainty was reached when the website was not visited and the retirement income was not calculated. This led to insecurity and reduced the time to make up for lower retirement income than expected. The narrative and non-narrative texts differed slightly in content. The narrative manipulation includes a protagonist, who introduces him or herself at the beginning by stating his/her name and age. Furthermore, the manipulation was told from his/her own perspective, while the non-narrative condition gave more general information about the population, but not about a personal experience. Additionally, the narrative included parts where the protagonist explained how he started to wonder whether he has saved enough and told his/her feelings about having taken action or not, while the non-narrative text did not incorporate any feelings. The gain and loss frame differed in wording, but not in content. The gain frame talked about security that can be reached, while the loss frame pointed out uncertainty about the retirement income. Appendix A and B summarize the manipulation texts in Dutch and English.

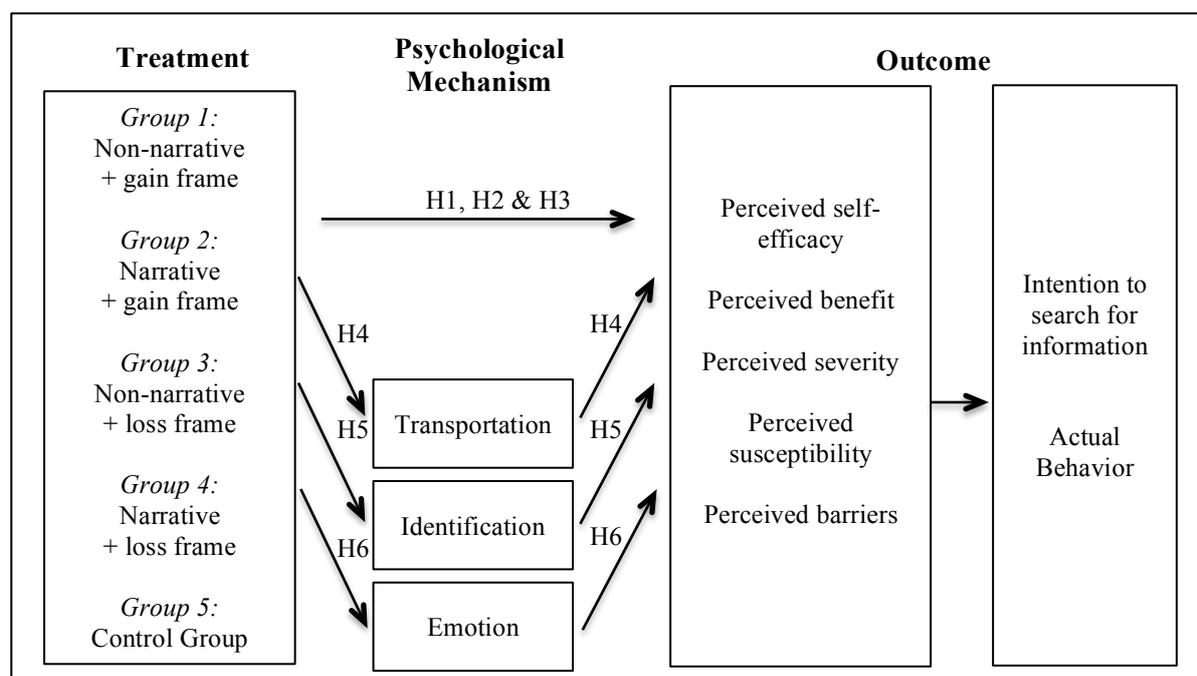


Figure 1. *Conceptual Framework*

Figure 1 shows the conceptual framework with the hypothesized effects to get a better overview of what is tested in this study.

4.3 Sample and Experimental Procedure

The data were collected in the Netherlands with the help of a non-probabilistic online panel called Flycatcher. Therefore, the questionnaire and the manipulation texts were translated from English into Dutch. The questionnaire was distributed via e-mail and set up on Qualtrics. However, respondents needed to return to a questionnaire of Flycatcher, where they had to confirm their demographics and their active behavior of clicking on the ‘*www.mijnpensioenoverzicht.nl*’ link was measured. It is expected that selection bias does not matter as the respondents were randomly contacted according to the sample specifications and assigned to one of the five conditions (see Figure 1). A small pre-test was conducted among several native speakers that work at Flycatcher and students of Maastricht University to make sure that the Dutch translation and questions, the speed of the video and technical issues did not cause any major problems.

The questionnaire was distributed in June 2018 and the data were collected within one week. The questionnaire was sent to a total of 877 people. The study was anonymous and voluntary and respondents could collect points as a reward from the panel. The people contacted were between 30 and 60 years old, were either full-time or part-time employed and lived in the Netherlands. The final questionnaire on Qualtrics and Flycatcher was answered by 418 people (response rate: 48%). The final dataset consists of 402 respondents of which 54,7% are male. They are equally distributed among the different conditions. 80 people are in Group 1, 84 people are in Group 2, 78 people are in Group 3, 81 people are in Group 4 and 79 people are in the Group 5. The mean age of the respondents is 44 years ($SD_{age} = 8.85$). No significant socio-demographic differences are found between the different groups (p 's $\geq .453$). The demographic profile of the respondents can be found in Appendix E.

4.4 Measurement and Assessment

Firstly, respondents were given a short introduction and were told that the aim of the study was to improve information about pension. Then, they were assigned to either one of the five conditions where they had to watch a video or to the control group that directly started with the questionnaire. The order of the questions was chosen in such a way that questions at the beginning of the study were related to the video the respondent had just watched. Thus, after a short manipulation check, the mediators were assessed after which the dependent variables were measured. Lastly, control variables and demographics were asked. The control group did not receive questions concerning the manipulation check and the mediators and did not receive the control variable question concerning credibility and exaggeration of the video, as they did not receive a video at all. All scales are validated scales and have been used successfully in previous research, therefore only the Cronbach's alpha was tested and reported to check for internal validity.

Dependent Variables. The primary dependent variables of this study are the core beliefs of the Retirement Belief Model, as well as behavioral intention and actual behavior of the participants. To measure the core beliefs of the Retirement Belief Model respondents were asked about their *perceived self-efficacy*, *perceived benefits*, *perceived severity*, *perceived susceptibility* and *perceived barriers*. Measurements were taken from Eberhardt et al. (2017b), who adapted the scale of Grispen, Ronda, Dinant, de Vries and van der Weijden (2011) to make them suitable for the retirement context. Six items were used for *perceived benefits* (e.g. "Seeking information about your pension is important"; $\alpha = .91$) based on a 7-point scale (1 = *Strongly disagree* – 7 = *Strongly agree*). Next *perceived barriers* was measured with five items (e.g. "Just thinking about seeking information about my pension scares me"; $\alpha = .84$) based on a 7-point scale (1 = *Strongly disagree* – 7 = *Strongly agree*).

Perceived self-efficacy was measured with three items (e.g. “Seeking information about my pension is difficult”; $\alpha = .84$) also based on a 7-point scale (1 = *Strongly disagree* – 7 = *Strongly agree*). To make the reporting of the results more clear, the items of the self-efficacy scale were reversed. Thus, the overall self-efficacy scale can be interpreted in such a way, that higher numbers indicate higher perceived self-efficacy. *Perceived susceptibility* was measured with two items (e.g. “In your opinion, what are the chances that you discover that you are not saving enough for retirement?”; $\alpha = .81$) using 7-point scales (e.g. 1 = *Very low* – 7 = *Very high*) and lastly, *perceived severity* was measured with one item (“In your opinion, how severe is it to not save enough for your pension?”) based on a 7-point scale (1 = *Not severe at all* – 7 = *Very severe*).

In order to assess whether these factors in the end also affected and changed the behavior of the respondent, behavioral intention and actual behavior were measured. To measure *behavioral intentions* in the pension context, a six item scale was developed based on the research by Ajzen and Fishbein (1969) and Triandis (1964) ($\alpha = .84$) with a 7-point scale ranging from (1) *Strongly disagree* to (7) *Strongly agree*. The scale captures whether respondents intend to check and get informed about their pension (e.g. “I plan on checking my pension in the upcoming month”). This scale was used in other retirement-related research before (Eberhardt et al., 2017a). At the very end of the questionnaire *actual behavior* was assessed. The respondents were debriefed and thanked and then provided with a link to the website ‘www.mijnpensioenoverzicht.nl’ on which they could click. Here it was measured whether the respondent actually clicked on the link to go to the website or not.

Mediators. To investigate whether the narrative is successful three mediators were measured – transportation, identification and emotion. Green and Brock (2000) developed the transportation scale to measure whether or not the reader was absorbed by the story. The

scale consists originally of eleven items that take into account absorption, imagery, emotion and other aspects. For the study at hand the scale was shortened to avoid overlap with the measurement of identification and emotion and adapted to fit with the manipulation of the video. Furthermore, one item was added to further measure the imaginability of the situation (Mevisen et al., 2010). Thus, *transportation* was measured with eight items (e.g. “While I was watching the video I could easily picture the events in it taking place”; $\alpha = .77$) on a 7-point scale (1 = *Strongly disagree* – 7 = *Strongly agree*).

Identification was measured based on two sub parts that are: similarity the respondent felt towards the story that was told and empathetic feelings that occurred (Kim et al., 2012). Three similarity items were adapted from Rimal and Morrison (2006) and an additional item (Mevisen et al., 2012) was added that asked and measured how similar the respondent feels to the message in the video (e.g. “When I looked at the story I thought ‘that could also happen to me’”). Empathetic responses were measured with two items taken from Davis (1980) that are components of the Interpersonal Reactivity Index, which is a measurement that assesses several aspects of empathy (e.g. “I found the message in the video interesting”). All items were taken together ($\alpha = .82$) and are based on a 7-point scale (1 = *Strongly disagree* – 7 = *Strongly agree*).

Lastly, as suggested by Murphy et al. (2013) *emotion* are a separate way to measure the effectiveness of narratives. In order to assess the emotional impact of the manipulation, the respondents were firstly asked whether the message they had read affected them emotionally. This was done by using statements based on the research of De Graaf, Hoeken, Sanders and Beentjes (2012) (e.g. “The video stirred emotions in me”; $\alpha = .72$). Furthermore, to understand what specific emotions arose due to the manipulation four positive emotions (happy, inspired, active and strong) and four negative emotions (sad, nervous, scared and distressed) were measured. The emotion scale used was derived from the PANAS scale

developed by Watson, Clark, and Tellegen (1988). The scale is a self-report measure of positive and negative affect. All emotions were measured on a 7-point scale (1 = *Not at all* – 7 = *Extremely*). A principal axis factoring was conducted using Promax rotation to see how many factors could be used (Appendix F). *Happy, strong, active* and *inspired* loaded on one factor ($\alpha = .90$), which represents positive emotions, while *sad, nervous, scared* and *distressed* loaded on another factor ($\alpha = .92$), which represents negative emotions.

Manipulation Check. During the manipulation check, participants were asked whether they experienced any technical issues while watching the video (1 = Yes, 2 = No). Furthermore, for checking whether the framing manipulation was successful, respondents were asked whether the video mostly focused on what could be gained or lost by informing themselves early or late. This manipulation check is also used in other research of gain and loss framing (White, MacDonnell, & Dahl, 2011). The manipulation check of the narrative and non-narrative conditions asked the participants whether they perceived the video to show factual information or personal information (Van Laer & De Ruyter, 2010). However, the different mediators also show whether narrative persuasion occurred, as they have shown to be a prerequisite of a successful narrative (Green & Brock, 2000; Murphy et al., 2013). All answers were measured based on a 7-point scale (1 = Strongly disagree – 7 = Strongly agree).

Control Variables. Besides the described variables, additional control variables were included in the questionnaire. *Credibility* (Mevissen et al., 2012) was measured with one item based on a 7-point scale (1 = Very incredible – 7 = Very credible) to see whether the respondent finds the video credible. Next, *exaggeration* (Mevissen et al., 2012) was also measured with one item based on a 7-point scale (1 = Strongly disagree – 7 Strongly agree) to assess whether the video was perceived as exaggerated. Credibility and exaggeration were

included as control variables as it was not clear whether these factors influence the effect of the video on the different core beliefs. It can be expected that when a video is credible and not exaggerating that this strengthens the hypothesized effect. Furthermore, financial literacy, risk taking and already being informed about one's pension were included in the analyses, as they have been shown to influence retirement information search behavior (Dohmen et al., 2011; Lusardi & Mitchell, 2011). *Financial literacy* (Lusardi & Mitchell, 2011) was based on three items that were measured with a nominal scale to assess the financial knowledge of the respondent (e.g. 1 = True, 2 = False 3 = Do not know; 1 = More than today, 2 = Exactly the same, 3 = Less than today, 4 = Do not know). *Risk taking* (Dohmen et al., 2011) was measured with one item and a 7-point scale (1 = Not willing to take risk – 7 Fully prepared to take risk). Next, whether or not someone was *already informed* about their pension or the website 'www.mijnpensioenoverzicht.nl' was measured with three self-developed items based on 7-point scale or ordinal scale (e.g. 1 = No clue at all – 7 = Completely informed). Lastly, *demographics* such as age, education and working status were assessed. As the member ID was tracked during the data collection, some of the demographic information was received from the panel after the survey was conducted.

Respondents having higher financial literacy, scoring lower on risk taking and who were not yet informed about their retirement income are expected to show higher intentions to search for retirement information. Additionally, older respondents are expected to be more inclined to search for retirement information, as their retirement period is closer. Furthermore, women have been shown to have lower financial literacy and therefore feel less capable and less secure about making financial decisions compared to men (Bucher-Koenen & Lusardi, 2011). Gender differences are also observed by Green and Brock (2000), when measuring emotional involvement.

Table 1. *Scale reliability*

Scale Label	M	SD	Number of Items	Cronbach's Alpha
Transportation	4.43	0.95	8	0.77
Identification	4.17	1.09	6	0.82
Emotion	3.00	1.15	3	0.72
Behavioral Intention	2.99	1.17	6	0.84
Perceived Benefits	5.08	1.10	6	0.91
Perceived Barriers	3.05	1.25	5	0.84
Perceived Self-efficacy	3.33	1.40	3	0.84
Perceived Susceptibility	3.69	1.41	2	0.81
Perceived Severity	4.74	1.31	1	-

4.5 Data Analysis

Firstly, the dataset was cleaned, taking out respondents that did have problems with watching the video, and who indicated that they were unemployed, unable to work, self-employed or retired. Also those who stayed on the page of the video for more than 35 minutes were removed, as it can be assumed that they let the video run and returned to the screen afterwards. One respondent was deleted, as the answers of household income, employment status and contribution to household income did not match.

Financial literacy was recoded into people having low financial literacy if they have none or one of the three questions correct and high financial literacy if they have two or three questions correct. Already informed was recoded into a dummy variable of being either informed or not informed. A dummy was also created for exaggeration, to understand whether the respondents perceived the video as exaggerated or not.

A one-way ANOVA was used to verify the manipulation check and examine differences between the narrative and non-narrative condition or the gain and loss frame condition. Dependent variables were analyzed in a one-way ANOVA with experimental conditions being narrative, non-narrative or the control group for H1 and gain frame, loss frame or control group for H2. In the case of active clicking an independent samples t-test

was used, as the dependent variable is dichotomous. Next, a two-way ANOVA was conducted to examine potential interaction effects of framing and narratives. Mediation effects were individually measured using the Sobel-test that was developed by Hayes (2012) with a specific PROCESS add-on to see whether transportation, identification and emotion mediate the effect of narratives on the core beliefs. The narrative and non-narrative conditions were used as independent variables and the different core beliefs one after the other as dependent variables. Transportation, identification and emotion were taken as mediators to test for H4, H5 and H6, respectively. Lastly, all results were verified with a one-way analysis of covariance (ANCOVA) or hierarchical regression to ensure that the relationships found are not explained by other variables. The data analysis was conducted using IBM SPSS 25 and a significance level of $p \leq .05$ was chosen for all tests.

5. Results

Firstly, normality tests were run for the introduced scales using Kolmogorov-Smirnov and Shapiro-Wilk tests, as normality is a preliminary assumption for many tests. The results report that the normality assumption is not fulfilled for all scales. As argued by Pallant (2013), this is quite common in larger samples. The Central Limit Theorem suggests that for sample sizes larger than 30, normality is not an issue. Furthermore, equal variances were assumed in all cases due to the large and similar sample size. The results are quite robust and therefore Levene's test for homogeneity was neglected in all cases (Pallant, 2013). As mentioned earlier, no problem should occur due to collecting the data with a non-probabilistic panel as the respondents were selected randomly according to the sample requirements and were randomly assigned to the experimental groups.

5.1 Manipulation Check

Two questions were asked at the beginning of the questionnaire in order to assess whether the framing manipulation was successful. As expected, the results are significant ($F(1, 321) = 10.054, p = .002, \eta^2 = .030$) and show that people found the gain-framed video focused more on what could be gained ($M = 5.16, SD = 1.35$) compared to those who received the loss frame ($M = 4.63, SD = 1.64$). However, the observed difference is not large. Also the controversy question was asked and results are significant ($F(1, 321) = 54.912, p = .000, \eta^2 = .146$), showing that the loss frame ($M = 5.26, SD = 1.32$) is perceived as stressing more what can be lost than the gain frame ($M = 4.09, SD = 1.50$).

Additionally, manipulation checks were conducted concerning the narrative and non-narrative conditions. Respondents significantly ($F(1, 321) = 17.425, p = .000, \eta^2 = .051$) perceive the non-narrative videos ($M = 5.04, SD = 1.23$) to be more factual than the narrative videos ($M = 4.36, SD = 1.66$). They also perceive the narrative videos to show significantly more personal experiences ($M = 4.95, SD = 1.44$) than the non-narrative videos ($M = 3.32, SD = 1.59$) ($F(1, 321) = 94.136, p = .000, \eta^2 = .227$). Thus, overall the framing and narrative manipulations were successful.

5.2 Main Effects

5.2.1 Narrative and non-narrative main effects

For H1a, the dependent variable *perceived self-efficacy* was considered. Results reveal that respondents who have seen a narrative ($M = 4.81, SD = 1.38$), non-narrative ($M = 4.70, SD = 1.39$) or no manipulation ($M = 4.32, SD = 1.44$) have a self-efficacy score slightly above the scale middle of 4. This indicates that people are relatively confident that they will manage to search for retirement-related information. Furthermore, the results are significant, thus the means of self-efficacy differ among the different groups ($F(2, 399) = 3.356, p = .036, \eta^2 = .017$). A post-hoc test was conducted by means of a Tukey HSD to gain more insights into

the differences. A significant difference is found between the narrative and the control group ($p = .029$). Thus, H1a is rejected and not supported, as the narrative and non-narrative condition do not significantly differ. However, it is still observed that the narrative condition is superior to the control group.

The same procedure was used to test for H1b to understand the effects of narratives and non-narratives on *perceived benefits*. The statistical test reveals that the means across the three categories, namely narrative, non-narrative and control group, are significantly different ($F(2, 399) = 4.207, p = .016, \eta^2 = .021$). Perceived benefits are highest for the narrative condition ($M = 5.25, SD = 1.17$), followed by the non-narrative condition ($M = 5.02, SD = 1.09$) and lastly by the control group ($M = 4.83, SD = .93$). A Tukey HSD post-test was conducted and reveals that the difference of the means lies between the control group and the narrative condition ($p = .016$). The results lead to a rejection of H1b as narratives and non-narratives are not significantly different in increasing perceived benefits.

Next, H1c was tested using *perceived severity* as a dependent variable. A significant effect is reported, indicating that the means across the three conditions differ ($F(2, 399) = 3.589, p = .029, \eta^2 = .018$). Perceived severity is highest in the narrative condition ($M = 4.92, SD = 1.23$), followed by the control group ($M = 4.78, SD = 1.33$) and lastly by the non-narrative condition ($M = 4.53, SD = 1.35$). The Tukey HSD post-hoc test gives further insights and shows that the mean of the narrative and non-narrative condition differ significantly ($p = .022$), while the other conditions do not significantly differ ($p \geq .33$). Therefore, H1c cannot be rejected and is supported.

To test H1d the dependent variable *perceived susceptibility* was used. The means of the narrative ($M = 3.57, SD = 1.43$), non-narrative ($M = 3.80, SD = 1.38$) and control group ($M = 3.72, SD = 1.41$) are all below 4, showing low perceived susceptibility and are not statistically significant ($F(2, 399) = 1.076, p = .342$). Therefore H1d is not supported.

Lastly, the dependent variable *perceived barriers* was tested across the three different groups to assess H1e. The means across the narrative ($M = 2.93$, $SD = 1.23$), non-narrative ($M = 3.01$, $SD = 1.20$) and control group ($M = 3.39$, $SD = 1.34$) are statistically significant ($F(2, 399) = 3.892$, $p = .021$, $\eta^2 = .019$). The Tukey HSD post-hoc test reports the control group differs significantly from the narrative condition ($p = .018$). Therefore, no support is found for H1e. Overall, it can be concluded that H1 is only partly supported, but that for most cases the narrative condition is superior to the control group.

Additional analyses were conducted to see whether the three different conditions significantly differ when considering *behavioral intention*. Behavioral intention is an outcome of the core beliefs as suggested by Eberhardt et al. (2017b). The results show that the differences between the means of behavioral intention across the narrative ($M = 3.14$, $SD = 1.21$), non-narrative ($M = 2.97$, $SD = 1.07$) and control condition ($M = 2.74$, $SD = 1.26$) are statistically significant ($F(2, 399) = 3.175$, $p = .043$, $\eta^2 = .016$). The means show however that overall behavioral intention is rather low for the respondents. The post-hoc test reports that only the narrative and the control group differ significantly ($p = .035$), but the other groups do not. An overview of all results can be found in Table 2.

The results are not significant for the *active clicking* on the website 'www.mijnpensioenoverzicht.nl' even though the narrative condition is shown to have activated 13 people to go to the website compared to the non-narrative condition with only 6 people and the control group with only 3 people ($\chi^2(2, N = 402) = 3.13$, $p = .209$). These numbers are still very low when considering the total sample size of 402 people. Overall, the results indicate, that the narrative condition is superior to the control group in most cases.

Table 2. Overview of narratives on core beliefs and behavioral intention

Variables	Manipulation						P-value
	Control Group		Narrative		Non-narrative		
	M	SD	M	SD	M	SD	
Self-efficacy	4.32 ^a	1.44	4.81 ^b	1.38	4.70	1.39	.036
Benefits	4.83 ^a	0.93	5.25 ^b	1.17	5.02	1.09	.016
Severity	4.78	1.33	4.92 ^a	1.23	4.53 ^b	1.35	.029
Susceptibility	3.72	1.41	3.57	1.43	3.80	1.38	.342
Barriers	3.39 ^a	1.34	2.92 ^b	1.23	3.01	1.20	.021
Behavioral Intention	2.74 ^a	1.26	3.14 ^b	1.21	2.97	1.07	.043

Note: Mean scores in a row with different superscripts differing significantly at $p < 0.05$.

5.2.2 Gain frame and loss frame main effects

The following paragraph reports the results for H2, which are the main effects of framing on the different core beliefs. Firstly, the dependent variable *perceived self-efficacy* was tested. According to H2a, the loss frame condition is expected to increase self-efficacy more than the gain frame condition. However, people in the gain frame condition are shown to have the highest perceived self-efficacy ($M = 4.89$, $SD = 1.38$), followed by the loss frame condition ($M = 4.62$, $SD = 1.38$) and the control group ($M = 4.32$, $SD = 1.44$). The results are statistically significant, indicating that the means across the three groups differ ($F(2, 399) = 4.687$, $p = .010$, $\eta^2 = .023$). For more detailed information a Tukey HSD post-hoc test was used to understand where the differences between the means lie. The difference between the gain frame and control group is significant ($p = .008$). Therefore, H2a is rejected and not supported, as no difference is observed between the gain and loss frame.

Next, to test for H2b the dependent variable *perceived benefits* was taken for the different framing conditions. No significant difference is found between the gain frame ($M =$

5.12, $SD = 1.18$), loss frame ($M = 5.15$, $SD = 1.09$) and control group ($M = 4.83$, $SD = .93$) ($F(2, 399) = 2.447$, $p = .088$). Thus, it can be concluded that H2b is rejected and not supported.

Considering the effect of framing on *perceived severity* no significant differences across the gain frame ($M = 4.79$, $SD = 1.23$), loss frame ($M = 4.66$, $SD = 1.38$) and control group ($M = 4.78$, $SD = 1.33$) are found ($F(2, 399) = .474$, $p = .623$). Therefore, H2c is rejected and not supported.

H2d hypothesizes an effect of framing on *perceived susceptibility*. No statistical support is found for a difference between gain frame ($M = 3.64$, $SD = 1.44$), loss frame ($M = 3.72$, $SD = 1.38$) and control group ($M = 3.72$, $SD = 1.41$) ($F(2, 399) = .158$, $p = .854$) and therefore H2d is not supported.

Lastly, the effect of framing on *perceived barriers* was examined and statistically tested. Perceived barriers are rather low across the gain frame ($M = 2.81$, $SD = 1.19$), loss frame ($M = 3.14$, $SD = 1.21$) and control group ($M = 3.39$, $SD = 1.34$) and show to be significantly different ($F(2, 399) = 6.666$, $p = .001$, $\eta^2 = .032$). The Tukey HSD post-hoc test reveals that the differences between the gain frame and the control group ($p = .002$), as well as between the gain frame and the loss frame ($p = .043$) are statistically significant. However, the results oppose the hypothesis made, as perceived barriers are lower for the gain frame than for the loss frame condition. Therefore, H2e is not supported. Overall, no support is found for H2 and the results even show an indication that opposes what was hypothesized, as the gain frame is more effective compared to the control group.

Additionally, the effect of framing on *behavioral intention* was tested and no statistically significant effect is found between the gain frame ($M = 3.12$, $SD = 1.15$), loss frame ($M = 2.99$, $SD = 1.13$) and control group ($M = 2.74$, $SD = 1.26$) ($F(2, 399) = 2.793$, $p = .062$). Also the *active clicks* on the website 'www.mijnpensioenoverzicht.nl' show no significant difference for the gain frame group with 9 clicks, loss frame group with 10 clicks

and control group with 3 clicks ($X^2(2, N= 402) = .634, p = .728$). Table 3 provides an overview of the relationship of the different framing conditions and the core beliefs and behavioral intention. Overall, the loss frame is counter to what had been expected and not superior to the gain frame.

Table 3. *Overview of framing on core beliefs and behavioral intention*

Variables	Manipulation						P-value
	Control Group		Gain frame		Loss frame		
	M	SD	M	SD	M	SD	
Self-efficacy	4.32 ^a	1.44	4.89 ^b	1.38	4.62	1.38	.010
Benefits	4.83	.93	5.12	1.18	5.15	1.09	.088
Severity	4.78	1.33	4.79	1.23	4.66	1.38	.623
Susceptibility	3.72	1.41	3.64	1.44	3.72	1.38	.854
Barriers	3.39 ^a	1.34	2.81 ^b	1.19	3.14 ^a	1.21	.001
Behavioral Intention	2.74	1.26	3.12	1.15	2.99	1.13	.062

Note: Mean scores in a row with different superscripts differing significantly at $p < 0.05$.

5.3 Interaction Effect

The interaction effect of narratives and framing was tested on all core beliefs and behavioral intention. No significant interaction effect of narrative and framing is found for *perceived self-efficacy* ($F(1, 319) = 2.666, p = .104, \eta_p^2 = 0.008$), *perceived benefits* ($F(1, 319) = .237, p = .627, \eta_p^2 = 0.001$), *perceived severity* ($F(1, 319) = 1.177, p = .279, \eta_p^2 = 0.004$), *perceived susceptibility* ($F(1, 319) = 1.390, p = .239, \eta_p^2 = 0.004$) and *perceived barriers* ($F(1, 319) = .790, p = .375, \eta_p^2 = 0.002$). Therefore H3 cannot be supported and is rejected.

Lastly, no statistically significant interaction effects are found on *behavioral intention* ($F(1, 319) = .112, p = .738$) and *active clicks* ($F(1, 319) = 1.474, p = .266$).

5.4 Mediation Effect

The mediation effect of *transportation* is not significant between the narrative condition and *perceived self-efficacy* ($z = -1.17, p = 0.242$), *perceived benefits* ($z = 1.78, p = .075$), *perceived severity* ($z = 1.44, p = 0.150$), *perceived susceptibility* ($z = 1.11, p = .268$) and *perceived barriers* ($z = -.31, p = .760$). The same observation is made for the mediator *identification* between the narrative condition and *perceived self-efficacy* ($z = .92, p = .358$), *perceived benefits* ($z = -.93, p = .354$), *perceived severity* ($z = -.88, p = .377$), *perceived susceptibility* ($z = -.91, p = .365$) and *perceived barriers* ($z = -.91, p = .364$) and the mediator *emotion* between the narrative condition and *perceived self-efficacy* ($z = 1.03, p = .303$), *perceived benefits* ($z = -.97, p = .331$), *perceived severity* ($z = -.93, p = .352$), *perceived susceptibility* ($z = -1.03, p = .305$) and *perceived barriers* ($z = -1.03, p = .302$). Therefore, transportation, identification and emotion do not mediate the effect of narratives on the different core beliefs and thus, H4, H5 and H6 are not supported. These results are not surprising given that no main effects, except for perceived severity, were found in earlier analyses.

To get a better understanding of the reasons behind these results the difference in means of transportation, identification and emotion for the narrative condition were measured. The transportation scale was compared between the narrative ($M = 4.53, SD = .90$) and non-narrative ($M = 4.33, SD = .99$) condition and shows no significant difference ($F(1, 321) = 3.45, p = .064$). Similar results are observed for identification and the narrative ($M = 4.22, SD = .95$) and non-narrative ($M = 4.11, SD = 1.20$) condition ($F(1, 321) = .914, p = .340$) and emotion for the narrative ($M = 2.93, SD = 1.18$) and non-narrative ($M = 3.07, SD = 1.12$) condition ($F(1, 321) = 1.125, p = .290$). Specifically for transportation no difference is found for the individual questions 10, 11, 12 and 14 that asked for imaginability and outcome of the story between the narrative and non-narrative condition.

To still get a better understanding of the different transportation, identification and emotional levels on the core beliefs, the sample was separated for each mediator according to the median of the transportation, identification and emotion scale, respectively. Thus, the sample was separated into high and low transportation, high and low identification and high and low emotional effect. One-way ANOVA tests were run to compare the means of the core beliefs for the different conditions. However, higher or lower transportation, identification and emotion levels were not caused by the manipulation at hand, but by personal differences. All results are reported in Table 4, Table 5 and Table 6. While higher transportation only shows statistically significant effects for perceived benefits and behavioral intention, higher or lower identification and emotion showed significant differences for all dependent variables. In most cases higher identification and higher emotion led to the effects hypothesized by narratives.

Table 4. *Overview high and low transportation on dependent variables*

Variables	Manipulation				P-value
	High Transportation		Low Transportation		
	M	SD	M	SD	
Self-efficacy	4.76	1.46	4.75	1.32	.915
Benefits	5.55	.87	4.76	1.21	.000
Severity	4.83	1.30	4.64	1.10	.187
Susceptibility	3.65	1.54	3.71	1.29	.721
Barriers	2.86	1.28	3.06	1.14	.141
Behavioral Intention	3.40	1.14	2.75	1.06	.000

Table 5. *Overview high and low identification on dependent variables*

Variables	Manipulation				P-value
	High Identification		Low Identification		
	M	SD	M	SD	
Self-efficacy	4.54	1.42	5.02	1.29	.002
Benefits	5.44	.92	4.77	1.26	.000
Severity	4.97	1.34	4.44	1.19	.000
Susceptibility	3.90	1.45	3.41	1.32	.002
Barriers	3.12	1.28	2.78	1.10	.013
Behavioral Intention	3.39	1.11	2.65	1.05	.000

Table 6. *Overview high and low emotion on dependent variables*

Variables	Manipulation				P-value
	High Emotion		Low Emotion		
	M	SD	M	SD	
Self-efficacy	4.46	1.34	5.12	1.36	.000
Benefits	5.27	.96	4.97	1.30	.019
Severity	4.86	1.26	4.56	1.34	.037
Susceptibility	3.90	1.40	3.41	1.38	.002
Barriers	3.21	1.17	2.67	1.19	.000
Behavioral Intention	3.52	1.04	2.50	1.00	.037

As emotion was also measured using the PANAS approach, more information is available on whether the respondents felt positive or negative emotions and how this affects the different core beliefs. Overall, positive emotions do not significantly differ between the narrative and non-narrative condition ($F(1, 321) = .416, p = .519$). The same is the case for negative emotions ($F(1, 321) = 5.19, p = .022$). This finding holds when considering the different emotions individually for the narrative and non-narrative condition. However, when considering the different framing conditions a significant difference is found between

negative emotions and gain ($M = 2.08, SD = 1.12$) and loss frame ($M = 2.42, SD = 1.36$) ($F(1, 321) = 6.236, p = .013, \eta^2 = .019$). The two emotions: distressed and sad, show to be significantly higher for the loss frame (p 's $\leq .03$). However, for gain ($M = 3.10, SD = 1.36$) and loss frame ($M = 3.02, SD = 1.37$) no significant difference is found when considering positive emotions ($F(1, 321) = .278, p = .598$). These results indicate that while different emotions do not vary across the narrative and non-narrative condition, they do so for the gain and loss frame. It is especially noted that more negative emotions evolved when people received the loss frame manipulation.

5.5 Control Variables

Several control variables were considered in order to ensure that no other variable explains the relationships observed in the previous sections. The following control variables *gender, age, income, education, credibility, exaggeration, financial literacy, risk-taking* and *already informed* were tested. The following paragraph lists only those control variables that had a significant effect.

Firstly, a significant effect is found for the control variable *exaggeration*, when considering the relationship of narratives and non-narratives on perceived severity. When only considering the respondents who perceived the video as exaggerating ($N = 39$), then the difference between the narrative ($M = 4.19, SD = 1.21$) and non-narrative ($M = 4.39, SD = 1.14$) condition and perceived severity is no longer observed ($F(1, 37) = .274, p = .604$).

Next, a significant effect of the control variables *already informed* and *financial literacy* is found for the relationship of gain and loss frame on perceived self-efficacy. Only people who had not informed themselves beforehand were considered, as these were the people who want to be reached by the marketers and pension funds. A significant difference remains between the gain frame ($M = 4.70, SD = 1.36$) and the control variable ($M = 4.06, SD = 1.32$) on perceived self-efficacy ($F(1, 175) = 9.227, p = .003, \eta^2 = .050$). Thus, even if

people had not informed themselves beforehand, the gain frame showed to significantly increase perceived self-efficacy. The control effect of financial literacy also reports a significant effect on the relationships between gain frame and the control group and perceived self-efficacy. Only people with low financial literacy were considered ($N = 59$), as this group especially needs to be addressed by the intervention method. No significant difference was observed anymore for perceived self-efficacy and the different framing conditions ($F(2, 56) = 2.153, p = .126$). Lastly, a significant effect of the control variable already informed for the relationship between the different framing conditions and perceived barriers is found. When only considering the different framing effects on perceived barriers for those people who had not informed themselves beforehand, a significant effect of the gain frame ($M = 2.99, SD = 1.15$) compared to the loss frame ($M = 3.30, SD = 1.17$) is still found ($F(1, 239) = 4.184, p = .042, \eta^2 = .017$). The control effects need to be considered, particularly when interpreting the results in the following section.

6. General Discussion

The present study investigated the effects of narratives and non-narratives, as well as gain frames and loss frames and their interaction effect on the different core beliefs of the Retirement Belief Model, to get a better understanding of what type of communication facilitates retirement-related information search behavior. It was anticipated that narratives compared to non-narratives and loss frames compared to gain frames lead to higher perceived self-efficacy, perceived benefits, perceived severity and perceived susceptibility and lower perceived barriers, and thus to higher behavioral intention to search for retirement information and active clicks on the website 'www.mijnpensioenoverzicht.nl'. Additionally, the combined usage of narratives and loss framing was expected to be most effective in changing the core beliefs. Furthermore, it was hypothesized that narratives are effective

through the mediators of transportation, identification and emotion, which can influence the different core beliefs. Even though only one hypothesis is partly supported, the results and additional analyses are still providing further insights into the topic and lead to a better understanding of narratives and non-narratives as well as framing in the retirement context.

The results partly support H1. A higher increase of perceived severity is found in the narrative condition compared to the non-narrative condition. However, after considering the control variables, this effect is not only explained by the narrative condition, but also by perceived exaggeration of the video. When considering only people who thought the video was not exaggerated, the effect is still observable, while this effect is no longer in place when people thought the video was exaggerated.

Even though the narrative does not significantly affect the core beliefs compared to the non-narrative condition for all other core beliefs, one interesting finding is the comparison of the narrative condition and the control group. The narrative condition is significantly more effective in increasing perceived self-efficacy, perceived benefits and decreasing perceived barriers compared to the control group. This effect is not observed for the non-narrative condition and thus it can be concluded that narratives rather than the videos as such lead to higher perceived self-efficacy, perceived benefits and lower perceived barriers. These are also the factors that are predicted by Eberhardt et al. (2017b) to increase behavioral intention for the Dutch sample. Overall, behavioral intention is low for the sample at hand as the means are all below 4, but also here the effect of narratives compared to the control group differs significantly and people are shown to have higher intentions to search for retirement-related information in the narrative condition.

There are several potential reasons why the narrative and non-narrative condition do not differ in most cases. It can be due to the transportation level, identification with the message or emotional response to the message. If these factors do not significantly differ

between the narrative and the non-narrative condition, then the narrative persuasion is not effective. Therefore, H4-6 tested the mediators transportation, identification and emotion. No statistically significant effects are found and the hypotheses are not supported. One-way ANOVAs show that for transportation, identification and emotion the means do not differ in the narrative and non-narrative condition. This could be one explanation why the narrative condition is not more effective than the non-narrative condition for most of the core beliefs. Respondents were analyzed based on high and low transportation, identification and emotion. However, the narrative did not cause higher transportation, identification and emotion as also people in the non-narrative condition showed high levels of these three underlying mechanisms. Therefore, it can be expected that these differences are due to personal characteristics or personal differences. When considering high vs. low transportation significant results are found that show a positive influence of high transportation on behavioral intention and an increase of perceived benefits. Thus, if a narrative is created that leads to higher transportation then this can potentially influence behavioral intention and perceived benefits. Similar results are found when separating the sample into high and low identification. As initially expected by the narrative, perceived benefits, perceived severity, perceived susceptibility and behavioral intention are significantly higher in the high identification condition than in the low identification condition. The same results are found when splitting emotion into high and low. Higher emotions significantly increase perceived benefits, perceived severity, perceived susceptibility and perceived behavioral intention compared to lower emotions. Overall, higher identification and higher emotion have the strongest influence on the core beliefs. The difference in high and low transportation, identification and emotion is not caused by the narrative and non-narrative condition.

One reason why transportation does not significantly differ in the sample is that both videos were entertaining due to the images and therefore the differing texts only had a minor

impact. The opposite could also be true and people felt bored by the videos, as the text stayed on the screen for longer than usual to ensure that also slow readers were able to follow the story. This could have led to the narrative not being entertaining or fast readers losing interest and being distracted by their surroundings. The low transportation level could be explained by looking at the individual subscales, especially for questions 10, 11, 12 and 14 where no difference is found between the narrative and non-narrative condition. These questions focused on the imaginability of the situation as well as the outcome of the story and whether people would be interested in finding out how the story ends. Thus, the outcome of the story could be more open, so people need to make more efforts in thinking about how it could end. Furthermore, people can differ in their transportation abilities and personal characteristics (Van Laer et al., 2013). Due to the pictures and the given ending of the story, that the person either reached certainty or did not, imaginability could have been reduced, as people were not free to develop their own thoughts about the story. This is also suggested by Green and Brock (2000) who argue that if fewer senses are triggered, more imaginative effort is needed and that leads to higher transportation. This finding is also confirmed by the study of Mevissen et al. (2012) that explains that self-fabricated scenarios lead to higher imaginability than getting a prefabricated scenario. Furthermore, identification with the message does not differ between the narrative and non-narrative condition in the sample at hand. Only gender was adapted to fit to the respondent, however, age and other personal factors such as the number of children were not included. Even though past research has shown that fictional characters in narratives like the manipulation for this research are effective (Green & Brock, 2000; Mevissen et al., 2012), a real person could increase the empathy and identification by also having facial expressions. Similar results are found in the research by Gray and Harrington (2011) who do not find a differing effect of narratives compared to statistical representation when combined with framing. Even though people perceived the narrative to be credible,

respondents perceived the character to be presented superficially (Gray & Harrington, 2011), which could also be the case at hand. Lastly, emotion also did not differ between the narrative and non-narrative condition. This could be due to the set up of the videos and the pictures that were used as the character did not have any changing facial expression and the pictures were static.

The effects found for framing on the different core beliefs and behavioral intention are not as hypothesized by H2. Even though the means between control group, gain frame and loss frame show to statistically differ for perceived self-efficacy and perceived barriers, the gain frame is more effective than the loss frame or control group contrary to what was expected during the literature review and hypotheses development. This contradicts the literature that states that framing that emphasizes prevention of losses tends to trigger a desired behavior (Eberhardt et al., 2017a). Furthermore, the framing manipulation shows no effect on perceived benefits, perceived severity, perceived susceptibility and behavioral intention. This can be due to the negative feelings that arose due to the loss frame and that were measured by the PANAS scale. Eberhardt et al. (2017a) explain that loss framing can lead to refraining from taking action if negative associations are made with the message and retirement planning. Including the control variables, already informed and financial literacy, an effect on the relationship of framing on perceived self-efficacy was observed. People who have not been informed still showed to be affected by the gain frame significantly more than the loss frame. However, no difference was found when considering people with low financial literacy, which are often those people who want to be reached by marketers and pension funds. Also of note is that the sample at hand had rather high financial literacy and only a small portion had low financial literacy, while other studies suggest that the Dutch population has a rather low financial literacy (Van Rooij, Lusardi, & Alessie, 2012). The effect of the control variable already informed on perceived barriers can be dismissed as the

main effect of framing is still valid even when only people who have not informed themselves before are considered. It is particularly these people that need to be reached by the intervention message, as they have put little or no effort into getting informed. Marketers need to keep in mind that framing might not be effective if people have informed themselves already before.

Overall, the actual clicking on the website '*www.mijnpensioenoverzicht.nl*' was very low and shows that people will most likely not go on the website to search for relevant information.

7. Conclusion

7.1 Managerial Contributions

The study provides three implications for marketers and pension funds that are looking for intervention methods to increase retirement-related search behavior. Firstly, the narrative showed to effectively increase perceived self-efficacy, perceived benefits, perceived severity and perceived behavioral intention and reduce perceived barriers compared to the control group. The significant effect of perceived severity only holds for those people who do not perceive the video as too exaggerated and was no longer observed if the video was perceived as exaggerated. However, the results show that the non-narrative condition does not significantly differ from having no marketing in place, while the narrative condition effectively facilitates the intended behavior in most cases compared to having no intervention method. Thus, narratives should always be preferred over non-narratives when introducing and promoting retirement-related search behavior. Marketers and pension fund providers need to ensure that the video is not perceived as too exaggerated, as in this case a main effect of narratives compared to non-narratives on perceived severity was no longer observed.

However, they also need to keep in mind that actual behavior did not significantly differ in the sample at hand and only showed a small increase.

Secondly, marketers and pension fund providers need to make sure that different mediators such as transportation, identification and emotion are in place to ensure that the narrative has the intended effects. It was observed that especially for identification and emotion, higher levels can lead to positive changes of the core beliefs and increased behavioral intention, however, this was caused by personal differences and not the manipulation itself. Thus, enough research and effort needs to be made in order to target the narrative to the target group to increase identification and affect the reader emotionally with the narrative before implementing this communication tool. One option to do this would be using celebrity endorses as these have successfully shown to increase identification (Basil, 1996). Marketers and pension funds need to make sure that transportation, identification and emotion are facilitated by the manipulation and not by personal differences. Additionally, pension funds should test for transportation, identification and emotion when introducing new pension communication tools, as these have been shown to influence attitude and behavior.

Thirdly, contradicting the findings of previous studies, the loss frame does not show to be more effective than the gain frame. Even an opposite tendency was observed. Therefore, negative perceptions about pension funds and pension providers can arise due to the loss frame that can eventually lead to a person refraining from engaging in the proposed behavior (Eberhardt et al., 2017a). Thus, pension providers and marketers need to be careful in using gain and loss frames in their communication and should consider alternatives. One approach could be the usage of assurance and investment frames instead of gain and loss frames (Eberhardt et al., 2017a). However, as this has not been tested together with narratives so far, further research is needed before implementing this approach Overall, marketers and

pension funds need to be aware of the feelings that might arise due to the communication tool. Additionally, target group characteristics need to be considered when implementing the different frames such as whether the person is already informed or financially literate. Differences in gain and loss framing were only observed for perceived self-efficacy when people were not already informed or had high financial literacy, specifically the gain frame increased perceived self-efficacy when compared with the control group. This implies for marketers and pension funds that gain frames are especially useful in increasing self-efficacy for target groups that have not informed themselves before, but have financial knowledge. Yet, marketers and pension funds often want to also target those people who do not have high financial knowledge and need therefore to find ways to increase financial knowledge to ensure that the gain frame still leads to higher self-efficacy. However, as overall the framing hypothesis was not supported, additional research is needed before marketers and pension funds implement this intervention technique as it might not pay off or might have opposing effects.

Overall, the narrative manipulation has shown to be more successful than the framing manipulation in the study at hand. Therefore, marketers and pension funds should prefer intervention techniques of narratives to that of framing.

7.2 Theoretical Contributions

The contributions mentioned before can be accompanied by three theoretical contributions. Firstly, the narrative condition has shown to be more effective than the control condition in the retirement context. However, no difference was observed when considering the core beliefs of perceived self-efficacy, perceived benefits, perceived susceptibility, perceived barriers and behavioral intention compared to the non-narrative condition. This is not in line with the reviewed literature that suggests that also a difference can be observed between the narrative and non-narrative condition (Dillard et al., 2010). One explanation is that the factors

that are needed for a narrative to be effective were not distinguishable between the narrative and non-narrative condition. However, the findings expand the current research as they show that narratives are also effective in the retirement context when compared to a control group and therefore, new insights are reached for narratives in retirement planning.

Secondly, it was hypothesized that narratives are effective through transportation, identification and emotion. No difference was found between the narrative and non-narrative condition. However, the results show that especially higher identification and higher emotion lead to the hypothesized effects and thus, this is further support for past research. Higher transportation also showed to have a positive effect on some of the core beliefs, while the effect of identification and emotion was even stronger and affected more of the tested core beliefs. As mentioned earlier, the effect of emotion was of interest as not a lot of research has been conducted on this separate factor so far. Only a few researchers, for example Murphy et al. (2013), have separated and distinguished emotion from transportation. As higher emotion have been shown to influence the core beliefs and behavioral intention in this study, while transportation did so for fewer beliefs, further support was found that research in the field of narratives should include emotion as a separate factor and not only focus on transportation and identification.

Lastly, loss frames showed to be not effective, which runs counter to what had been expected based on the reviewed literature (Eberhardt et al., 2017a). The results give support to what Eberhardt et al. (2017a) suggest in their study, that loss frames have been shown to be effective in their study for retirement planning, but that this might not be generally the case for the retirement context, as loss frames can lead to negative emotions and a negative attitude towards retirement planning. This assumption has found support in the research at hand by measuring specific emotions for gain and loss frames. Therefore, the research gives further insights and actual results as to what emotions evolve due to different frames.

Furthermore, this research supports the mixed results of narratives and framings found in past research. Thus, narratives and framing need to be implemented carefully as they might not have the effects expected when combined. Additionally, it can be seen that further measurements or theories are needed to make a reliable hypothesis for the combined effects of narratives and framing.

7.3 Limitations and Future Research

Even though first insights are reached with this study, further research is needed in the field of narratives and framing in the retirement context. The following paragraph suggests additional research and summarizes the limitations of this study.

Firstly, further research needs to identify what additional elements (e.g. vividness, personal characteristics, perceived relevance) in a narrative are needed in order for the audience to lead to higher transportation, higher identification and higher emotional involvement. Another measure that was not considered in this study, but is suggested by the Extended Elaboration Likelihood Model is counter-argumentation. By measuring counter-arguing, additional reasons why someone is either transported or not can be reached. Furthermore, the video was rather short and thus it is not certain that the video led to transportation and absorption.

Secondly, future research should measure the issue involvement to understand why the gain frame is more effective than the loss frame. Early research in this field suggests that effective framing depends on the involvement of the respondent and only later research distinguished between detective and preventive behavior to explain the influence of gain and loss frames. A limitation of the paper at hand is that retirement information search is seen as a detective behavior, namely whether someone has saved enough or not, but could be perceived by the target group as a preventive behavior of inhibiting a shortfall of retirement income.

Thirdly, further research could be conducted on the medium chosen, type of video and narrative used. Other ways of presenting the story and the character in a video might be more effective, such as using a real person instead of whiteboard animations and a fictional character. This would also overcome the limitation of the software used, because it does not allow the showing of facial expressions and emotions, but only pictures. Additionally, a celebrity endorser could be used as these have been shown to heighten identification (Basil, 1996). People might have not been familiar with whiteboard animations and might have been irritated by factors such as the pen or the hand. It could further be studied to what extent a video, compared to another medium, affects imaginability, as triggering fewer senses can lead to higher imaginative efforts and more transportation (Green & Brock, 2000). Furthermore, a different type of story could be picked such as a drama or conversation.

Fourthly, the video was only limited to gain and loss framing and did not consider other types of framing such as assurance and investment frames (Eberhardt et al., 2017a). Also the outcome could differ in future research by using progressive and regressive endings to show a more drastic outcome (Banerjee & Greene, 2012). However, initially more research is needed on the reasoning why the loss frame has not been successful. By using a different frame more insights can be reached; whether the effectiveness of loss frames is due to refraining from the proposed behavior because of negative wording and emotions, and whether a frame that is only related to what can be lost (e.g. investment frame) is still effective.

Fifthly, the scales used are self-reported measures and are subjective to the perceptions and thoughts of the person filling them in. Future research could use more objective assessments especially for scales such as perceived self-efficacy or behavioral intention. This is suggested as for some cases behavioral intention was significantly increased, but this could not be observed for the actual behavior. Additionally, more research

could be done on what factors explain the difference between behavioral intention and actually performing the behavior as well as the underlying reasons for having only a low increase of behavioral intention.

Sixthly, the data at hand is cross-sectional data and collected at one point in time. Narratives can also have a long-term effect and change behavior later on as suggested by the research of Appel and Richter (2007) that has found that narratives increase their effect over time. Thus, conducting a longitudinal study is suggested for future research as the effect of narratives might only be observed after a larger time period.

References

- Ajzen, I., & Fishbein, M. (1969). The prediction of behavioral intentions in a choice situation. *Journal of experimental social psychology*, 5(4), 400-416.
- Appel, M., & Richter, T. (2007). Persuasive effects of fictional narratives increase over time. *Media Psychology*, 10(1), 113-134.
- Ariely, D. (2009). *Predictably irrational*: Harper Collins New York.
- Bandura, A., Grusec, J. E., & Menlove, F. L. (1967). Vicarious extinction of avoidance behavior. *Journal of personality and social psychology*, 5(1), 16.
- Banerjee, S. C., & Greene, K. (2012). 'I quit' versus 'I'm sorry I used': A preliminary investigation of variations in narrative ending and transportation. *Psychology & health*, 27(11), 1308-1322.
- Basil, M. D. (1996). Identification as a mediator of celebrity effects. *Journal of Broadcasting & Electronic Media*, 40(4), 478-495.
- Block, L. G., & Keller, P. A. (1995). When to accentuate the negative: The effects of perceived efficacy and message framing on intentions to perform a health-related behavior. *Journal of Marketing Research*, 32, 192-203.
- Bonoli, G. (2000). *The politics of pension reform: institutions and policy change in Western Europe*: Cambridge University Press.
- Bovenberg, L., & Gradus, R. (2015). Reforming occupational pension schemes: the case of the Netherlands. *Journal of Economic Policy Reform*, 18(3), 244-257.
- Brown, J. R. (2004). *The new retirement challenge*: Americans for Secure Retirement. Retrieved from: www.paycheckforlife.org.
- Brusse, E. D. A., Fransen, M. L., & Smit, E. G. (2017). Framing in entertainment-education: Effects on processes of narrative persuasion. *Health communication*, 32(12), 1501-1509.
- Bucher-Koenen, T., & Lusardi, A. (2011). Financial literacy and retirement planning in Germany. *Journal of Pension Economics & Finance*, 10(4), 565-584.
- Carpenter, C. J. (2010). A meta-analysis of the effectiveness of health belief model variables in predicting behavior. *Health communication*, 25(8), 661-669.
- Cohen, J. (2001). Defining identification: A theoretical look at the identification of audiences with media characters. *Mass communication & society*, 4(3), 245-264.
- Coplan, A. (2004). Empathic engagement with narrative fictions. *The Journal of aesthetics and art criticism*, 62(2), 141-152.
- Cox, D., & Cox, A. D. (2001). Communicating the consequences of early detection: The role of evidence and framing. *Journal of Marketing*, 65(3), 91-103.
- Davis, M. H. (1980). A multidimensional approach to individual differences in empathy. *Catalog of Selected Documents in Psychology*, 10, 85.
- De Graaf, A., Hoeken, H., Sanders, J., & Beentjes, J. W. (2012). Identification as a mechanism of narrative persuasion. *Communication Research*, 39(6), 802-823.

- De Graaf, A., Sanders, J., & Hoeken, H. (2016). Characteristics of narrative interventions and health effects: A review of the content, form, and context of narratives in health-related narrative persuasion research. *Review of Communication Research, 4*, 88-131.
- Dillard, A. J., Fagerlin, A., Dal Cin, S., Zikmund-Fisher, B. J., & Ubel, P. A. (2010). Narratives that address affective forecasting errors reduce perceived barriers to colorectal cancer screening. *Social Science & Medicine, 71*(1), 45-52.
- Dohmen, T., Falk, A., Huffman, D., Sunde, U., Schupp, J., & Wagner, G. G. (2011). Individual risk attitudes: Measurement, determinants, and behavioral consequences. *Journal of the European Economic Association, 9*(3), 522-550.
- Dunlop, S., Wakefield, M., & Kashima, Y. (2008). Can you feel it? Negative emotion, risk, and narrative in health communication. *Media Psychology, 11*(1), 52-75.
- Eberhardt, W., Brüggem, E., Post, T., & Hoet, C. (2017a). *Framing the Future: Using Investment and Assurance Frames to Encourage Retirement Information Search*. Finance. Maastricht University, School of Business and Economics.
- Eberhardt, W., Brüggem, E., Post, T., & Hoet, C. (2017b). *The Retirement Belief Model: Understanding Retirement Information Search*. Finance. Maastricht University, School of Business and Economics.
- Frank, L. B., Murphy, S. T., Chatterjee, J. S., Moran, M. B., & Baezconde-Garbanati, L. (2015). Telling stories, saving lives: creating narrative health messages. *Health communication, 30*(2), 154-163.
- Gavrilov, L. A., & Heuveline, P. (2003). Aging of population. *The encyclopedia of population, 1*, 32-37.
- Gerend, M. A., Shepherd, J. E., & Monday, K. A. (2008). Behavioral frequency moderates the effects of message framing on HPV vaccine acceptability. *Annals of behavioral medicine, 35*(2), 221-229.
- Gfk Pensioenmonitor (2013). Pensioenmonitor Werknemers 2013: Jaarlijks multiclient pensioenattitude-onderzoek onder werknemers. January 2014
- Golman, R., Hagmann, D., & Loewenstein, G. (2017). Information Avoidance. *Journal of Economic Literature, 55*(1), 96-135.
- Gordon, A., & Swanson, R. (2009). *Identifying personal stories in millions of weblog entries*. Paper presented at the Third International Conference on Weblogs and Social Media, Data Challenge Workshop, San Jose, CA.
- Gray, J. B., & Harrington, N. G. (2011). Narrative and framing: A test of an integrated message strategy in the exercise context. *Journal of Health Communication, 16*(3), 264-281.
- Green, M. C. (2006). Narratives and cancer communication. *Journal of Communication, 56*, 163-183.
- Green, M. C., & Brock, T. C. (2000). The role of transportation in the persuasiveness of public narratives. *Journal of personality and social psychology, 79*(5), 701-721.
- Greene, K., & Brinn, L. S. (2003). Messages influencing college women's tanning bed use: Statistical versus narrative evidence format and a self-assessment to increase perceived susceptibility. *Journal of Health Communication, 8*(5), 443-461.

- Grispen, J. E., Ronda, G., Dinant, G.-J., de Vries, N. K., & van der Weijden, T. (2011). To test or not to test: a cross-sectional survey of the psychosocial determinants of self-testing for cholesterol, glucose, and HIV. *BMC public health*, *11*(1), 112.
- Hayes, A. F. (2012). PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling: University of Kansas, KS.
- Hershfield, H. E., Goldstein, D. G., Sharpe, W. F., Fox, J., Yeykelis, L., Carstensen, L. L., & Bailenson, J. N. (2011). Increasing saving behavior through age-progressed renderings of the future self. *Journal of Marketing Research*, *48*(SPL), 23-37.
- Hinyard, L. J., & Kreuter, M. W. (2007). Using narrative communication as a tool for health behavior change: a conceptual, theoretical, and empirical overview. *Health education & behavior*, *34*(5), 777-792.
- Homer, P. M., & Yoon, S.-G. (1992). Message framing and the interrelationships among ad-based feelings, affect, and cognition. *Journal of Advertising*, *21*(1), 19-33.
- Janssen, E., Osch, L., Vries, H., & Lechner, L. (2013). The influence of narrative risk communication on feelings of cancer risk. *British journal of health psychology*, *18*(2), 407-419.
- Janz, N. K., & Becker, M. H. (1984). The health belief model: A decade later. *Health education quarterly*, *11*(1), 1-47.
- Jeihooni, A. K., & Rakhshani, T. (2018). The Effect of Educational Intervention Based on Health Belief Model and Social Support on Promoting Skin Cancer Preventive Behaviors in a Sample of Iranian Farmers. *Journal of Cancer Education*, 1-10.
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decisions under risk. *Econometrica*, *47*, 263-292.
- Kim, H., & Kim, J. (2010). Information search for retirement plans among financially distressed consumers. *Journal of Family and Economic Issues*, *31*(1), 51-62.
- Kim, H. S., Bigman, C. A., Leader, A. E., Lerman, C., & Cappella, J. N. (2012). Narrative health communication and behavior change: The influence of exemplars in the news on intention to quit smoking. *Journal of Communication*, *62*(3), 473-492.
- Kok, G., Gottlieb, N. H., Peters, G.-J. Y., Mullen, P. D., Parcel, G. S., Ruiter, R. A., . . . Bartholomew, L. K. (2016). A taxonomy of behaviour change methods: an Intervention Mapping approach. *Health Psychology Review*, *10*(3), 297-312.
- Kreuter, M. W., Green, M. C., Cappella, J. N., Slater, M. D., Wise, M. E., Storey, D., . . . Holmes, K. (2007). Narrative communication in cancer prevention and control: a framework to guide research and application. *Annals of behavioral medicine*, *33*(3), 221-235.
- Levin, I. P., Schneider, S. L., & Gaeth, G. J. (1998). All frames are not created equal: A typology and critical analysis of framing effects. *Organizational behavior and human decision processes*, *76*(2), 149-188.
- Loewenstein, G. (1996). Out of control: Visceral influences on behavior. *Organizational behavior and human decision processes*, *65*(3), 272-292.
- Lusardi, A., & Mitchell, O. S. (2009). *How ordinary consumers make complex economic decisions: Financial literacy and retirement readiness*. Retrieved from <http://nbn-resolving.de/urn:nbn:de:hebis:30-78630>

- Lusardi, A., & Mitchell, O. S. (2011). Financial literacy around the world: an overview. *PEF*, *10*(4), 497-508.
- Maheswaran, D., & Meyers-Levy, J. (1990). The influence of message framing and issue involvement. *Journal of Marketing Research*, *27*, 361-367.
- Mar, R. A., Oatley, K., Djikic, M., & Mullin, J. (2011). Emotion and narrative fiction: Interactive influences before, during, and after reading. *Cognition & emotion*, *25*(5), 818-833.
- Marlier, J. (1993). Freedom of the press to cover HIV/AIDS: A clear and present danger. In S. C. Ratzan (Ed.), *AIDS: Effective health communication for the 90s* (pp. 175-188). Washington, DC: Taylor & Francis.
- McGregor, L. M., von Wagner, C., Vart, G., Yuen, W. C., Raine, R., Wardle, J., & Robb, K. A. (2015). The impact of supplementary narrative-based information on colorectal cancer screening beliefs and intention. *BMC cancer*, *15*(1), 162-170.
- Mevissen, F. E. F., Meertens, R. M., Ruiter, R. A. C., & Schaalma, H. P. (2012). Bedtime stories: The effects of self-constructed risk scenarios on imaginability and perceived susceptibility to sexually transmitted infections. *Psychology and Health*, 1-12.
- Mevissen, F. E. F., Ruiter, R. A. C., Meertens, R. M., & Schaalma, H. P. (2010). The effects of scenario-based risk information on perceptions of susceptibility to Chlamydia and HIV. *Psychology and Health*, *25*(10), 1161-1174.
- Meyerowitz, B. E., & Chaiken, S. (1987). The effect of message framing on breast self-examination attitudes, intentions, and behavior. *Journal of personality and social psychology*, *52*(3), 500-510.
- Moyer-Gusé, E. (2008). Toward a theory of entertainment persuasion: Explaining the persuasive effects of entertainment-education messages. *Communication Theory*, *18*(3), 407-425.
- Murphy, S. T., Frank, L. B., Chatterjee, J. S., & Baezconde-Garbanati, L. (2013). Narrative versus nonnarrative: The role of identification, transportation, and emotion in reducing health disparities. *Journal of Communication*, *63*(1), 116-137.
- Pallant, J. (2013). *SPSS survival manual*: McGraw-Hill Education (UK).
- Pensioenfond DSM Nederland. (2017). The pension story of Mieke van Wagenberg. Retrieved from <https://www.youtube.com/watch?v=SXOwPQeM5gQ>
- Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. *Communication and persuasion* (pp. 1-24): Springer.
- Rimal, R. N., & Morrison, D. (2006). A uniqueness to personal threat (UPT) hypothesis: How similarity affects perceptions of susceptibility and severity in risk assessment. *Health communication*, *20*(3), 209-219.
- Rosenstock, I. M. (1974). The health belief model and preventive health behavior. *Health education monographs*, *2*(4), 354-386.
- Rothman, A. J., & Salovey, P. (1997). Shaping perceptions to motivate healthy behavior: the role of message framing. *Psychological bulletin*, *121*(1), 3-19.
- Shaffer, V. A., & Zikmund-Fisher, B. J. (2013). All stories are not alike: a purpose-, content-, and valence-based taxonomy of patient narratives in decision aids. *Medical Decision Making*, *33*(1), 4-13.

- Sheeran, P., Maki, A., Montanaro, E., Avishai-Yitshak, A., Bryan, A., Klein, W. M., . . . Rothman, A. J. (2016). The impact of changing attitudes, norms, and self-efficacy on health-related intentions and behavior: A meta-analysis. *Health psychology, 35*(11), 1178-1188.
- Shen, L. (2010). Mitigating psychological reactance: The role of message-induced empathy in persuasion. *Human Communication Research, 36*(3), 397-422.
- Slater, M. D., & Rouner, D. (2002). Entertainment—education and elaboration likelihood: Understanding the processing of narrative persuasion. *Communication Theory, 12*(2), 173-191.
- Statman, M. (2017). *Finance for Normal People: How Investors and Markets Behave*: Oxford University Press.
- Triandis, H. C. (1964). Exploratory factor analyses of the behavioral component of social attitudes. *The Journal of Abnormal and Social Psychology, 68*(4), 420.
- Van Binsbergen, J. H., Broeders, D., De Jong, M., & Koijen, R. S. (2014). Collective pension schemes and individual choice. *Journal of Pension Economics & Finance, 13*(2), 210-225.
- Van Laer, T., & De Ruyter, K. (2010). In stories we trust: How narrative apologies provide cover for competitive vulnerability after integrity-violating blog posts. *International Journal of Research in Marketing, 27*(2), 164-174.
- Van Laer, T., De Ruyter, K., Visconti, L. M., & Wetzels, M. (2013). The extended transportation-imagery model: A meta-analysis of the antecedents and consequences of consumers' narrative transportation. *Journal of Consumer research, 40*(5), 797-817.
- Van Rooij, M. C., Lusardi, A., & Alessie, R. J. (2012). Financial literacy, retirement planning and household wealth. *The Economic Journal, 122*(560), 449-478.
- Walker, K. K., Steinfors, E. L., & Keyler, M. J. (2015). Cues to action as motivators for children's brushing. *Health communication, 30*(9), 911-921.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of personality and social psychology, 54*(6), 1063.
- White, K., MacDonnell, R., & Dahl, D. W. (2011). It's the mind-set that matters: The role of construal level and message framing in influencing consumer efficacy and conservation behaviors. *Journal of Marketing Research, 48*(3), 472-485.
- Wijzer in Geldzaken (2017). Monitor financieel gedrag 2017. Retrieved from https://www.wijzeringeldzaken.nl/platform-wijzeringeldzaken/publicaties/Monitor_financieel_gedrag_2017_wijzer_in_geldzaken.pdf
- Wirtz, J. G., & Kulpavaropas, S. (2014). The effects of narrative and message framing on engagement and eating intention among a sample of adult Hispanics. *Journal of nutrition education and behavior, 46*(5), 396-400.

Appendices

Appendix A | Dutch Manipulation

The Appendix only shows the texts that were displayed in the manipulation. The different videos can be found under the following link:

https://www.youtube.com/channel/UCqLcS2rTdfQ5e_R6-EieeBA

Control Group

No text received

Geen verhaal (Start)

In een onlangs verschenen tv-reclame over pensioenplanning wordt geadviseerd om vroeg te starten met het plannen van je pensioen. Je pensioensituatie kun je uitzoeken door in te loggen op de website www.mijnpensioenoverzicht.nl. Deze website geeft informatie over hoeveel pensioen je hebt opgebouwd. Het blijkt dat mensen nooit veel aandacht besteden aan hun pensioen omdat ze zeggen geen tijd te hebben, of denken dat het saai of ingewikkeld is. Men denkt wel genoeg geld te zullen ontvangen en zien het als iets dat later nog kan worden uitgezocht.

Groep 1: Geen verhaal / Winst

Echter, je kan meer zekerheid krijgen over je pensioensituatie door nu actie te ondernemen. Het is een kleine moeite om de website te bezoeken en om je pensioeninkomen te berekenen. Het is eenvoudig en het geeft duidelijkheid over je pensioensituatie. Dan weet je waar je aan toe bent en wat je eventueel nog moet regelen. Dat geeft rust en zekerheid.

Groep 3: Geen verhaal/ Verlies

Echter, als je nu geen actie onderneemt, krijg je te laat zekerheid over je pensioensituatie, omdat je denkt dat het een gedoe is om de website te bezoeken en je pensioen te berekenen. Wanneer je dit blijft uitstellen, blijf je in onzekerheid over je pensioensituatie. Je weet dan niet waar je aan toe bent en wat je nog moet regelen. Dit zorgt voor onrust en onzekerheid.

Verhaal (Start)

Hallo, ik ben Chris / Christina en ik ben 39 jaar. Onlangs zag ik een tv-reclame over pensioenplanning. Hierin adviseerde ze om vroeg te starten met het plannen van je pensioen en ze zeiden dat je je pensioensituatie kan uitzoeken door in te loggen op de website

www.mijnpensioenoverzicht.nl. Deze website geeft informatie over hoeveel pensioen je hebt opgebouwd. Ik had eigenlijk nog nooit veel aandacht besteed aan mijn pensioen. Tja, je weet hoe dat gaat. Je bent eerst druk met je studie, en daarna met je baan. Je pensioen uitzoeken, daar had ik geen tijd voor en het leek me saai en ingewikkeld. Ook ging ik er vanuit genoeg geld te ontvangen. Het ligt nog zo ver in de toekomst, dus ik dacht altijd ik zoek dat later nog weleens uit.

Groep 2: Verhaal / Winst

En toch... na die reclame begon ik me af te vragen... Wat als ik meer zekerheid kan krijgen over mijn pensioen door nu actie te ondernemen? Wellicht een kleine moeite. Dus besloot ik de website te bezoeken om mijn pensioeninkomen te berekenen.

Ik ben echt heel blij dat ik deze stap gezet heb. Het was eenvoudig en ik heb nu duidelijkheid over mijn pensioensituatie. Ik weet nu waar ik aan toe ben en wat ik eventueel nog moet regelen. Dat geeft rust en zekerheid. Ben ik even blij dat ik de tijd heb genomen om mijn pensioensituatie te controleren!

Groep 4: Verhaal / Verlies

Na die reclame begon ik me af te vragen... Wat als ik te laat zekerheid krijg over mijn pensioen als ik nu geen actie onderneem? Maar ja... Het leek me op dat moment even te veel gedoe. Dus besloot ik de website niet te bezoeken en mijn pensioeninkomen niet te berekenen.

Toch twijfel ik nog steeds over dat ik deze stap niet gezet heb, want ik weet eigenlijk nog steeds niet waar ik aan toe ben en wat ik eventueel nog moet regelen. Het maakt me onrustig en onzeker. Ik baal nu toch echt dat ik niet de tijd heb genomen om mijn pensioensituatie te controleren!

Appendix B | English Manipulation

Control Group

No text received

Non-narrative (Start)

In a recently broadcasted TV commercial regarding pension planning it is advised to start early with planning your pension. You can find out your pension situation by logging on to the website ‘www.mijnpensioenoverzicht.nl’. This website provides information on how much pension you have built up. It seems that people never pay a lot of attention to their pension because they say they don’t have time or think it is boring or complicated. People think they will receive sufficient money and perceive it as something they can sort out later in their life.

Group 1: Non-narrative / Gain-frame

However, you can get more certainty regarding your pension situation by taking action now. It is a small effort to visit the website and calculate your pension income.

It is easy and provides you with clarity on your pension situation. Then you know where you stand and know what you may still need to organize. This gives you peace and security.

Group 3: Non-narrative / Loss-frame

However, you delay getting certainty regarding your pension situation if you don’t take action now because you think it is bothersome to visit the website and calculate your pension. If you keep postponing this, you stay insecure about your pension situation. You are not prepared and do not know what you may need to organize. This will make you restless and gives you insecurity.

Narrative (Start)

Hello, I’m Chris / Christina and I’m 39 years old. Recently, I saw a TV commercial about pension planning. Here they advised to start early with planning your pension and they said you can figure out your pension situation by logging on to the website ‘www.mijnpensioenoverzicht.nl’. This website provides information on how much pension you have built up. I had actually never paid too much attention to my pension. Well, you know how that goes. First you are busy with your study and then with your job. Figuring out my pension, I did not have time for that and it seemed boring and complicated. Also, I assumed I would receive sufficient money. It is so far ahead, so I always thought I would figure it out later.

Group 2: Narrative / Gain-frame

But still... after that commercial I started to wonder... What if I can get more certainty regarding my pension by taking action now? Probably only a small effort. So I decided to visit the website to calculate my retirement income.

I am really very happy that I have taken this step. It was easy and I now have clarity regarding my pension situation. Now I know my situation and know what I still need to organize. This gives peace and security. I am happy that I took the time to check my pension situation!

Group 4: Narrative / Loss-frame

After that commercial I started to wonder... What if I get security regarding my pension too late because I am not taking action now? But well...At that moment it seemed too bothersome to me, so I decided to not visit the website and not calculate my pension.

However I still have doubts that I have not taken this step, because I now still don't know my situation and what I may need to organize. This makes me restless and insecure. I'm now really sad that I didn't take the time to check my pension situation.

Appendix C | Dutch Questionnaire

Beste deelnemer,

Bedankt dat u aan dit onderzoek wilt meedoen. Deelname zal ongeveer 15 minuten van uw tijd in beslag nemen. Lees de instructies zorgvuldig door en beantwoord de vragen zo goed als mogelijk.

Met dit onderzoek hopen we de voorlichting over pensioen te kunnen verbeteren. Uw antwoorden zullen puur en alleen voor de doeleinden van dit onderzoek gebruikt worden. De gegeven informatie zal zorgvuldig worden behandeld en uw deelname is altijd anoniem.

Als u vragen heeft over dit onderzoek kunt u contact opnemen met Ann-Kristin Braun (a.braun@student.maastrichtuniversity.nl).

Alvast bedankt voor uw tijd en medewerking!

1. Om met de studie te beginnen, moeten we uw geslacht kennen:
→ **Measure:** (1) Man; (2) Vrouw

Manipulatie

Group 1: Control groep

Klik op Volgende om de vragenlijst te starten.

Of

U krijgt eerst een video te zien over pensioen.

Wij vragen u eerst deze video te bekijken voordat u de vragen beantwoordt.

De video start automatisch.

Group 2: Geen verhaal – Winst

Group 3: Verhaal – Winst

Group 4: Geen verhaal – Verlies

Group 5: Verhaal – Verlies

Manipulatie Check *(not shown to Control Group)*

Technisch

2. Heeft u technische problemen ondervonden tijdens het bekijken van de video?
→ **Measure:** (1) Ja, namelijk:... ; (2) Nee

Framing

Geef aan in hoeverre u het eens of oneens bent met de volgende stellingen over de video die u zojuist heeft bekeken.

3. De video benadrukte de voordelen die u kunt behalen als u zich op tijd informeert over uw pensioen.

4. De video benadrukte de nadelen die u kunt ervaren als u zich niet op tijd informeert over uw pensioen.

→ **Measure:** (1) Helemaal oneens; (2) oneens; (3) gedeeltelijk oneens; (4) noch mee oneens, noch mee eens; (5) gedeeltelijk eens; (6) eens; (7) helemaal eens

Verhaal vs. geen verhaal

5. De video gaf voornamelijk feitelijk informatie.

6. De video liet voornamelijk persoonlijke ervaring zien.

→ **Measure:** (1) Helemaal oneens; (2) oneens; (3) gedeeltelijk oneens; (4) noch mee oneens, noch mee eens; (5) gedeeltelijk eens; (6) eens; (7) helemaal eens

Vervoer (not shown to Control Group)

In hoeverre bent u het eens of oneens met de volgende uitspraken over de video die u heeft gezien:

7. Tijdens het bekijken van de video kon ik me de situatie in het verhaal goed voorstellen.

8. Tijdens het bekijken van de video was ik afgeleid door gebeurtenissen die om mij heen plaatsvonden. (R)

9. Ik was betrokken bij de video tijdens het bekijken van de beelden.

10. Na het bekijken van de video vond ik het makkelijk om er niet meer aan te denken. (R)

11. Ik was benieuwd hoe het verhaal in de video zou eindigen.

12. Ik merkte dat ik nadacht over hoe de boodschap in de video anders had kunnen uitpakken.

13. Ik was snel afgeleid tijdens het kijken naar de video. (R)

→ **Measure:** (1) Helemaal oneens; (2) oneens; (3) gedeeltelijk oneens; (4) noch mee oneens, noch mee eens; (5) gedeeltelijk eens; (6) eens; (7) helemaal eens

14. Kon u de situatie in het verhaal goed voorstellen?

→ **Measure:** (1) Helemaal niet – (7) Helemaal wel

Identificatie (not shown to Control Group)

In hoeverre bent u het eens of oneens met de volgende stellingen?

15. Mijn manier van denken komt overeen met de boodschap in de video.

16. Mijn levenservaring komt overeen met de boodschap in de video.

17. Mijn algemene kijk op het leven komt overeen met de boodschap in de video.

18. Toen ik het verhaal bekeek dacht ik “dat zou mij ook zo kunnen gebeuren”.

19. Ik maakte me zorgen over de boodschap in de video.

20. Ik vond de boodschap in de video interessant.

→ **Measure:** (1) Helemaal oneens; (2) oneens; (3) gedeeltelijk oneens; (4) noch mee oneens, noch mee eens; (5) gedeeltelijk eens; (6) eens; (7) helemaal eens

Emotie (not shown to Control Group)

In hoeverre bent u het eens of oneens met de volgende stellingen?

21. De video had een effect op mij (bijv. u bent er over gaan nadenken).
 22. De video maakte emoties in mij los.
 23. Ik vond de video aangrijpend.
- **Measure:** (1) Helemaal oneens; (2) oneens; (3) gedeeltelijk oneens; (4) noch mee oneens, noch mee eens; (5) gedeeltelijk eens; (6) eens; (7) helemaal eens

In hoeverre maakte de video u...

24. Blij
 25. Geïnspireerd
 26. Actief
 27. Sterk
 28. Droevig
 29. Nerveus
 30. Bang
 31. Benauwd
- **Measure:** (1) Helemaal niet – (7) Helemaal wel

Gedragsintentie

Mensen hebben verschillende voornemens wanneer het gaat om het plannen van hun pensioen. In hoeverre bent u het eens of oneens met deze stellingen?

32. Ik ben van plan om mijn pensioensituatie in de komende maanden uit te zoeken.

Mijnpensioenoverzicht.nl is een website die informatie geeft over het opgebouwde pensioen van al uw werkgevers. Ook ontvangt u informatie over uw verwachte pensioeninkomen.

33. Ik ben van plan om naar een informatiebijeenkomst van mijn werkgever te gaan om meer informatie te krijgen over mijn pensioensituatie.
 34. Ik ben van plan om met vrienden en familieleden over mijn pensioen te praten om advies te krijgen.
 35. Ik ben van plan om in de komende maanden een afspraak te maken met een financieel adviseur om mijn pensioen situatie te bespreken.
 36. Ik zal financiële of pensioen gerelateerde literatuur raadplegen om meer inzichten en kennis over dit onderwerp te krijgen.
 37. Ik ben van plan om naar mijnpensioenoverzicht.nl te gaan om mijn persoonlijke situatie te bekijken.
- **Measure:** (1) Helemaal oneens; (2) oneens; (3) gedeeltelijk oneens; (4) noch mee oneens, noch mee eens; (5) gedeeltelijk eens; (6) eens; (7) helemaal eens

Waargenomen voordelen

Mensen hebben verschillende visies over pensioenplanning. In hoeverre bent u het eens of oneens met deze stellingen?

38. Informatie zoeken over je pensioen is belangrijk.

- 39. Informatie zoeken over je pensioen betekent verantwoordelijkheid nemen voor je eigen financiële situatie.
- 40. Informatie zoeken over je pensioen geeft een gevoel van zekerheid over je eigen financiële situatie.
- 41. Door informatie te verzamelen over mijn pensioen stel ik mezelf gerust.
- 42. Door informatie te verzamelen over mijn pensioen kan ik voor mijn eigen financiële situatie zorgen.
- 43. Het voelt goed om verantwoordelijkheid te nemen voor mijn eigen financiële situatie.
→ **Measure:** (1) Helemaal oneens; (2) oneens; (3) gedeeltelijk oneens; (4) noch mee oneens, noch mee eens; (5) gedeeltelijk eens; (6) eens; (7) helemaal eens

Waargenomen belemmeringen

In hoeverre bent u het eens of oneens met deze stellingen?

- 44. De financiële kosten van het zoeken naar informatie over mijn pensioen vormen een barrière voor mij.
- 45. De tijd die het kost om informatie te zoeken over mijn pensioen is voor mij een barrière.
- 46. De moeite die het kost om informatie te zoeken over mijn pensioen is voor mij een barrière.
- 47. Het zoeken naar informatie zou me te veel zorgen geven over mijn financiële situatie na mijn pensioen.
- 48. Enkel de gedachte aan het zoeken van informatie over mijn pensioen maakt me bang.
→ **Measure:** (1) Helemaal oneens; (2) oneens; (3) gedeeltelijk oneens; (4) noch mee oneens, noch mee eens; (5) gedeeltelijk eens; (6) eens; (7) helemaal eens

Waargenomen zelfeffectiviteit

In hoeverre bent u het eens of oneens met deze stellingen?

- 49. Informatie zoeken over mijn pensioen is moeilijk.
- 50. Bij het zoeken naar informatie over mijn pensioen mis ik professionele hulp.
- 51. Als ik op basis van informatie over mijn pensioen actie zou willen ondernemen, heb ik professionele hulp nodig.
→ **Measure:** (1) Helemaal oneens; (2) oneens; (3) gedeeltelijk oneens; (4) noch mee oneens, noch mee eens; (5) gedeeltelijk eens; (6) eens; (7) helemaal eens

Waargenomen gevoeligheid

- 52. Hoe groot is volgens u de kans dat u niet genoeg spaart voor uw pensioen?
→ **Measure:** (1) Heel klein – (7) Heel groot
- 53. Hoe groot is volgens u de kans dat u niet genoeg spaart voor uw pensioen, als u dit vergelijkt met anderen van uw leeftijd en geslacht?
→ **Measure:** (1) Veel kleiner – (7) Veel groter

Waargenomen ernst

- 54. Hoe ernstig is het volgens u om niet genoeg te sparen voor uw pensioen?
→ **Measure:** (1) Helemaal niet ernstig – (7) Zeer ernstig

Control Variable

Geloofwaardigheid van de bron *(not shown to Control Group)*

55. De boodschap in deze video was...

→ **Measure:** (1) Heel erg ongeloofwaardig; (2) erg ongeloofwaardig; (3) beetje ongeloofwaardig; (4) niet ongeloofwaardig, maar ook niet geloofwaardig; (5) beetje geloofwaardig; (6) erg geloofwaardig; (7) heel erg geloofwaardig

Overdrijving

56. De boodschap over pensioen lijkt me overdreven. (R)

→ **Measure:** (1) Helemaal oneens; (2) oneens; (3) gedeeltelijk oneens; (4) noch mee oneens, noch mee eens; (5) gedeeltelijk eens; (6) eens; (7) helemaal eens

Financiële literatuur

Nu volgen er enkele financiële vragen. Beantwoord de volgende stellingen alstublieft zo goed mogelijk.

57. Stel u heeft 100€ op uw spaarrekening en de rente bedraagt 2% per jaar. Welke bedrag denkt u na 5 jaar in totaal te hebben als u niets met dit geld doet?

→ **Measure:** (1) Meer dan €102, (2) Precies €102, (3) Minder dan €102, (4) Ik weet het niet

58. Stel dat de rente op uw spaarrekening 1% per jaar en de inflatie 2% per jaar is. Hoeveel zou u na 1 jaar kunnen kopen met het geld op deze rekening?

→ **Measure:** (1) Meer dan nu; (2) Hetzelfde als nu; (3) Minder dan nu; (4) Ik weet het niet

59. Denkt u dat de volgende stelling waar of niet waar is?

“Het kopen van aandelen van een bedrijf zorgt meestal voor een veiliger rendement dan het kopen van aandelen in een beleggingsfonds.”

→ **Measure:** (1) Waar; (2) Niet waar; (3) Ik weet het niet

Risico nemen

60. Wanneer het gaat om uw financiën, bent u iemand die bereid is om risico's te nemen of probeert u het nemen van risico's te vermijden?

→ **Measure:** (1) Volledig bereid om risico's vermijden – (7) Volledig bereid om risico's te nemen

Al op de hoogte

61. Hoe goed bent u op de hoogte van de huidige status van uw pensioenopbouw?

→ **Measure:** (1) Totaal niet op de hoogte – (7) Helemaal op de hoogte

62. Hoe vaak heeft u in de afgelopen 12 maanden informatie over uw pensioen opgezocht.

→ **Measure:** (1) Nooit; (2) 1 of meerdere keren per jaar; (3) maandelijks; (4) wekelijks; (5) dagelijks

63. Hoe vaak heeft in de afgelopen 12 maanden op ‘mijnpensioenoverzicht.nl’ gekeken?
→ **Measure:** (1) Ik heb nog nooit op mijnpensioenoverzicht.nl gekeken; (2) Minder dan 1x; (3) 1x; (4) 2x; (5) 3x; (6) meer dan 3x

Demografie

Tenslotte willen wij u nog enkele achtergrondvragen stellen.

(Q64 – Q66 not asked in Qualtrics but received from Flycatcher afterwards)

64. Wat is uw leeftijd?

→ **Measure:** Open antwoord

65. Wat is uw hoogst genoten opleiding?

→ **Measure:** (1) Geen basisonderwijs; (2) LBO / VMBO (kader- of beroepsgericht) / MBO1 / VBO; (3) MAVO / HAVO of VWO (overgegaan naar 4e klas) / VMBO (theoretisch of gemengd) / (M)ULO; (4) MBO2, 3, 4 of MBO voor 1998; (5) HAVO of VWO (met diploma afgerond) / HBS / MMS; (6) HBO propedeuse; (7) HBO bachelor (of HBO voor 2002); (8) HBO master; (9) universitair propedeuse; (10) universitair bachelor/kandidaats; (11) universitair master/doctoraal/postdoctoraal

66. Wat is het maandelijks bruto inkomen van uw huishouden? (dit is het bruto maandelijks salaris van alle leden van het huishouden, inclusief vakantiegeld en 13e maand). Als u het niet precies weet, probeer dan een zo goed mogelijke schatting te maken.

→ **Measure:** (1) minder dan €1000; (2) €1.000 – 1.999; (3) €2.000 – 2.999; (4) €3.000 – 3.999; (5) €4.000 – 4.999; (6) €5.000 – 5.999; (6) €6.000 of meer; (16) ik geef liever geen antwoord

67. Kunt u aangeven welk percentage van uw inkomen bijdraagt aan het gezinsinkomen? Voer hieronder een geschat percentage in.

Bijvoorbeeld: Als u zelf €2.000 per maand verdient en het totale inkomen van uw huishouden €4.000 bedraagt, dan draagt uw inkomen voor 50% bij aan het gezinsinkomen.

→ **Measure:** *Text entry*

68. Welke situatie is het best op u van toepassing?

→ **Measure:** (1) Werkzaam in loondienst; (2) Werkzaam als zelfstandige; (3) Werkloos; (4) Arbeidsongeschiktheid; (5) Gepensioneerd; (6) Anders, namelijk:... ; (7) Hier wil ik geen antwoord op geven

69. Hoeveel jaren werkervaring heeft u tot nu toe?

→ **Measure:** (1) minder dan 2 jaar; (2) 2-4 jaar; (3) 5-7 jaar; (4) 8-10 jaar; (5) 11-13 jaar; (6) 14-16 jaar; (7) 17-19 jaar; (8) 20 of meer

Heel erg bedankt voor uw medewerking! Uw antwoorden zijn door ons ontvangen. Klik op hier om terug te gaan naar Flycatcher om uw punten te ontvangen.

70. U heeft zojuist een vragenlijst ingevuld over uw pensioen. Als u graag meer informatie wilt ontvangen over uw opgebouwde en voorspelde pensioeninkomen, dan kunt u op onderstaande link klikken. De website van mijnpensioenoverzicht opent dan in een nieuw venster.

→ **Measure:** [Klik hier](#) om naar mijnpensioenoverzicht.nl te gaan.

Appendix D | English Questionnaire

Dear participant,

Thank you for taking part in this research. The research will take about 15 minutes of your time. Please read the instructions carefully and answer the questions to the best of your knowledge.

With this research we hope to be able to improve information about pensions. Your answers will be used purely for the purpose of this study. The information given will be treated confidentially and your participation is always anonymous.

If you have any further questions please contact Ann-Kristin Braun (a.braun@student.maastrichtuniversity.nl).

Thank you for your time and participation!

1. To start with the survey, we would need to know your gender:
→ **Measure:** (1) Male; (2) Female

Manipulation

Control group

Please click on Next to start with the questionnaire!

Or

You will first see a video about pension.

We ask you to watch this video before you answer the questions.

The video starts automatically.

Group 1: Non-narrative – gain frame

Group 2: Narrative – gain frame

Group 3: Non-narrative – loss frame

Group 4: Narrative – loss frame

Manipulation Check *(not shown to Control Group)*

Technical

2. Did you have technical problems while watching the video?
Measure: (1) Yes, please indicate:... ; (2) No

Framing

Please indicate to what extent you agree or disagree with the following statement regarding the video you just watched.

3. The video mostly focused on what you can gain if you inform yourself in time about your retirement.

4. The video mostly focused on what you can lose if you do not inform yourself in time about your retirement.

→ **Measure:** (1) Strongly disagree; (2) Disagree; (3) Somewhat disagree; (4) Neither agree nor disagree; (5) Somewhat agree; (6) Agree; (7) Strongly agree

Narrative vs. Non-narrative

5. The video mainly provided factual information.

6. The video mainly showed personal experience.

→ **Measure:** (1) Strongly disagree; (2) Disagree; (3) Somewhat disagree; (4) Neither agree nor disagree; (5) Somewhat agree; (6) Agree; (7) Strongly agree

Transportation *(not shown to Control Group)*

Please indicate to what extent you agree or disagree with the following statements about the video you have seen:

7. While I was watching the video I could easily picture the events in it taking place.

8. I was distracted by the events taking place around me. (R)

9. I was involved in the video while watching it.

10. After finishing the video I found it easy to put it out of my mind. (R)

11. I wanted to learn how the video ends.

12. I found myself thinking of ways the video could have turned out differently.

13. I found my mind wandering while watching the video. (R)

→ **Measure:** (1) Strongly disagree; (2) Disagree; (3) Somewhat disagree; (4) Neither agree nor disagree; (5) Somewhat agree; (6) Agree; (7) Strongly agree

14. Could you imagine the situation in the story?

→ **Measure:** (1) Not at all – (7) Very much

Identification *(not shown to Control Group)*

Please indicate to what extent you agree or disagree with the following statements.

15. My way of thinking is similar to the message in the video.

16. My life experience corresponds to the message in the video.

17. My general view of life corresponds to the message in the video.

18. When I looked at the story I thought “that could also happen to me”.

19. I was worried about the message in the video.

20. I found the message in the video interesting.

→ **Measure:** (1) Strongly disagree; (2) Disagree; (3) Somewhat disagree; (4) Neither agree nor disagree; (5) Somewhat agree; (6) Agree; (7) Strongly agree

Emotion *(not shown to Control Group)*

To what extent do you agree or disagree with the following statements:

21. Due to the video, feelings arose in me.

22. The video stirred emotions in me.

23. I found the video moving.

→ **Measure:** (1) Strongly disagree; (2) Disagree; (3) Somewhat disagree; (4) Neither agree nor disagree; (5) Somewhat agree; (6) Agree; (7) Strongly agree

To what extent did the video make you feel:

24. Happy

25. Strong

26. Active

27. Inspired

28. Sad

29. Nervous

30. Scared

31. Distressed

→ **Measure:** (1) Not at all – (7) Very large extent

Behavioral Intention

People have different intentions regarding the planning of their retirement. To what extent are the following statements on retirement planning applicable to you?

32. I plan on checking my pension in the upcoming months.

Mijnpensioenoverzicht.nl is a website that provides information about the accumulated pension of all your employers and you receive information on your projected retirement income.

33. I plan to go to an information session of my employer to acquire more information on my pension situation.

34. I plan to talk to friends and family members about my pension to get advice.

35. I plan to make an appointment with a financial advisor in the next months to discuss my pension situation.

36. I will consult financial or pension related literature to gain more insights and knowledge about the topics.

37. I will go to mijnpensioenoverzicht.nl to check my personal situation.

→ **Measure:** (1) Strongly disagree; (2) Disagree; (3) Somewhat disagree; (4) Neither agree, nor disagree (5) Somewhat agree; (6) Agree; (7) Strongly agree

Perceived benefits

People have different views on pension planning. Please indicate to what extent you agree or disagree with the following statements.

38. Seeking information about your pension is important.

39. Seeking information about your pension means taking on responsibility for your own financial situation.

40. Seeking information about your pension gives a feeling of certainty about your own financial situation.

41. By seeking information about my pension, I can reassure myself.

42. By seeking information about my pension, I can take care of my own financial situation.
43. It feels good to take responsibility for my own financial situation.
→ **Measure:** (1) Strongly disagree; (2) Disagree; (3) Somewhat disagree; (4) Neither agree nor disagree (5) Somewhat agree; (6) Agree; (7) Strongly agree

Perceived barriers

Please indicate how much you agree with the following statements.

44. The financial cost of seeking information about my pension is a barrier to me.
45. The time it costs to seek information about my pension is a barrier to me.
46. The efforts it costs to seek information about my pension are a barrier to me.
47. Seeking information would make me too concerned with my financial situation during retirement.
48. Just thinking about seeking information about my pension scares me.
→ **Measure:** (1) Strongly disagree; (2) Disagree; (3) Somewhat disagree; (4) Neither agree nor disagree (5) Somewhat agree; (6) Agree; (7) Strongly agree

Perceived self-efficacy

Please indicate how much you agree or disagree with the following statements.

49. Seeking information about my pension is difficult.
50. When seeking information about my pension, I would miss professional assistance.
51. If I would like to do something with the received information about my pension, I would need professional assistance.
→ **Measure:** (1) Strongly disagree; (2) Disagree; (3) Somewhat disagree; (4) Neither agree nor disagree (5) Somewhat agree; (6) Agree; (7) Strongly agree

Perceived susceptibility

52. In your opinion, what are the chances that you are not saving enough for retirement?
→ **Measure:** (1) Very low – (7) Very high
53. In your opinion, what are the chances that you are not saving enough for retirement compared to others of your age and gender?
→ **Measure:** (1) Much smaller – (7) Much larger

Perceived severity

54. In your opinion, how severe is it to not have sufficient financial means for your pension?
→ **Measure:** (1) Not severe at all – (7) Very severe

Control Variable

Credibility (*not shown to Control Group*)

55. The message in the video was...
→ **Measure:** (1) Very incredible; (2) Incredible; (3) Somewhat incredible; (4) Neither incredible nor credible; (5) Somewhat credible; (6) Credible; (7) Very credible

Exaggeration (not shown to Control Group)

56. The message about retirement seems to me exaggerated. (R)

→ **Measure:** (1) Strongly disagree; (2) Disagree; (3) Somewhat disagree; (4) Neither agree nor disagree; (5) Somewhat agree; (6) Agree; (7) Strongly agree

Financial Literacy

Now we have some financial questions. Please answer the following statements to your best knowledge.

57. Suppose you had 100€ in a savings account and the interest rate was 2% per year.

After 5 years, how much do you think you would have in the account if you left the money to grow?

→ **Measure:** (1) More than €102; (2) Exactly €102; (3) Less than €102; (4) Do not know

58. Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?

→ **Measure:** (1) More than today; (2) Exactly the same; (3) Less than today; (4) Do not know

59. Please tell me whether this statement is true or false: “Buying a single company’s stock usually provides a safer return than a stock mutual fund.”

→ **Measure:** (1) True; (2) False; (3) Do not know

Risk taking

60. Are you in financial matters a person who is fully prepared to take risks or do you try to avoid risk taking?

→ **Measure:** (1) Not willing to take risk – (7) Fully prepared to take risk

Already informed

61. How well informed are you about the status of your retirement plan?

→ **Measure:** (1) No clue at all – (7) Completely informed

62. How often did you already search for information related to your pension in the past 12 months?

→ **Measure:** (1) Never; (2) Once or several times per year; (3) Monthly (4) Weekly; (5) Daily

63. Please answer the following question. How often do you check ‘mijnpensioenoverzicht.nl’ in the past 12 months?

→ **Measure:** (1) Never; (2) Less than 1x; (3) 1x; (4) 2x; (5) 3x; (6) More than 3x

Demographics

Finally, we would like to ask you some personal questions.

(Q64 – Q66 not asked in Qualtrics but received from Flycatcher afterwards)

64. What is your age?

→ **Measure:** Open answer

65. What is the highest level of education you have completed or received?

→ **Measure:** (1) No primary education; (2) LBO/VMBO / MBO1 / VBO; (3) MAVO/HAVO of VWO / VMBO (theoretisch of gemengd) / (M)ULO; (4) MBO 2, 3, 4 of MBO voor 1998; (5) HAVO of VWO (met diploma afgerond) / HBS / MMS; (6) HBO propedeuse; (7) HBO bachelor (of HBO voor 2002); (8) HBO master; (9) universitair propedeuse; (10) universitair bachelor/kandidaats; (11) universitair master/doctoraal/postdoctoraal

Would you please give your best guess?

66. What is the monthly gross income of your household? (This is the gross monthly salary of all members of the household, including holiday allowance and 13th month). If you do not know exactly, try to make the best possible estimate.

→ **Measure:** (1) Less than €1.000, (2) €1.000 – 1.999 (3) €2.000 – 2.999, (4) €3.000 – 3.999, (5) €4.000 – 4.999, (6) €5.000 – 5.999, (6) €6.000 or more, (7) I do not want to answer

67. How much (by percentage) does your income contribute to your entire household's income? Please enter an approximate percentage below.

Example: If you contribute €2,000 per month and the monthly income of your household is €4,000, then your contribution is 50%.

→ **Measure:** Text entry

68. Which statement best describes your current employment status?

→ **Measure:** (1) Working (paid employee), (2) Working (self-employed), (3) Not working, (4) Unable to work, (5) Retired; (6) Other, namely:...; (7) Prefer not to answer

69. How many years have you been working in total?

→ **Measure:** (1) Less than 2 years, (2) 2-4 years, (3) 5-7 years, (4) 8-10 years, (5) 11-13 years, (6) 14-16 years, (7) 17-19 years, (8) 20 or more

Thank you very much for participating in this survey! Please proceed to the last page for your response to be sent and recorded.

70. You have just completed a questionnaire about your pension. If you would like to receive more information about your accrued and predicted retirement income, you can click on the link below. The mijnpensioenoverzicht website opens then in a new window.

→ **Measure:** [Click here](#) to go to mijnpensioenoverzicht.nl.

Appendix E | Demographic Profile

Table 7. Demographic profile of 402 respondents

	Frequency	Percent (%)
Gender		
Male	220	54.8
Female	182	45.2
Age		
<35	67	16.7
35-39	87	21.6
40-44	56	13.9
45-49	61	15.2
50-54	61	15.2
>54	70	17.4
Education		
LBO / VMBO / MBO1 /VBO	20	5.0
MAVO / HAVO of VWO / VMBO / (M)ULO	65	16.2
MBO 2, 3, 4 of MBO voor 1998	116	28.9
HAVO of VWO (met diploma) / HBS / MMS	33	8.2
HBO propedeuse	1	0.2
HBO bachelor	67	16.7
HBO master	1	0.2
universitair propedeuse	1	0.2
universitair bachelor / kandidaats	1	0.2
universitair master / doctoraal / postdoctoraal	97	24.1
Income		
< 1,000€	6	1.5
1,000€ – 1,999€	23	5.7
2,000€ – 2,999€	67	16.7
3,000€ – 3,999€	57	14.2
4,000€ – 4,999€	77	19.2
5,000€ – 5,999€	43	10.7
> 6,000€	65	16.2
I do not want to answer	64	15.9

Table 7. Continued

Working experience		
Less than 2 years	2	0.5
2 – 4 years	7	1.7
5 – 7 years	14	3.5
8 – 10 years	42	10.4
11 – 13 years	50	12.4
14 – 16 years	43	10.7
17 – 19 years	27	6.7
20 years or more	217	54.0

Province		
Drenthe	13	3.2
Flevoland	30	7.5
Friesland	14	3.5
Gelderland	59	14.7
Groningen	18	4.5
Limburg	93	23.1
Noord-Brabant	32	8.0
Noord-Holland	29	7.2
Overijssel	20	5.0
Utrecht	30	7.5
Zeeland	19	4.7
Zuid-Holland	45	11.2

Working hours per week		
36 hours or more	252	62.7
20 – 35 hours	116	28.9
12 – 19 hours	29	7.2
Less than 12 hours	5	1.2

Appendix F | Exploratory Factor Analysis

Table 8. *Exploratory factor analysis: factor loadings^a*

Scale	Scale Item	Question	PosEmo	NegEmo
		To what extent did the video make you feel:		
Positive Emotions	PosEmo1	Happy	.746	
	PosEmo2	Strong	.844	
	PosEmo3	Active	.867	
	PosEmo4	Inspired	.873	
Negative Emotions	NegEmo1	Sad		.755
	NegEmo2	Nervous		.849
	NegEmo3	Scared		.929
	NegEmo4	Distressed		.922

Extraction Method: Principal Axis Factoring with Promax Rotation

Official Statement of Original Thesis

By signing this statement, I hereby acknowledge the submitted thesis, titled:

“Exploring the persuasive effects of

narratives and framing

on the intention to acquire pension information”

to be produced independently by me, without external help.

Wherever I paraphrase or cite literally, a reference to the original source (journal, book, report, internet, etc.) is given.

By signing this statement, I explicitly declare that I am aware of the fraud sanctions as stated in the Education and Examination Regulations (EERs) of the SBE.

Place: Maastricht

Date: 20th of August, 2018

First and last name: Ann-Kristin Braun

Course / Skill: 2017-300 EBS4016

ID number: I6069000

Signature: *Ann-Kristin Braun*