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The relationship between life events and pension intentions, attitudes, and behaviour

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Abstract
In order to enhance low levels of pension engagement, it is relevant to analyse individual's behaviour with respect to retirement planning. An increased relevance of retirement planning accompanying life events can potentially create an opportunity to improve pension engagement. However, the relationship between life events and pension engagement has not been empirically tested yet. After reviewing existing literature on potential influential life events key life events which will form the basis of this study are identified: marriage, divorce, childbirth, the loss of a spouse, unemployment, and disability. In order to explore the effects of these life events on participants' pension intentions, attitudes, and behaviour, a unique data set (n=2155) provided by the National Employment Savings Trust (NEST), a UK based DC pension scheme, is used for analysis. This analysis reveals promising results for the existence of a link between life events and participants' pension intentions, attitudes, and behaviour. Suggesting that besides having an impact on one's subjective well-being, job satisfaction, and health, life events are relevant for retirement planning as well. All life events have a positive influence on at least one of the employed pension measures. The current study contributes to the line of research attempting to enhance the pension involvement of pension plan participants, by adding life events as another potential solution. The findings of this study have important implications for developing an effective communication strategy for pension providers, which should be based on life events. When life events are identified, pension providers can deliver a personalized message to the participants adapted to life events. Additionally, they should aim to encourage participants to pre-commit to receive additional information or take action and react quickly to a life event. All this together should amplify the positive effect life events have on pension involvement.

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1. Introduction

Life expectancy worldwide has increased by more than 25 years over the last century (Brown, 2014). As pension beneficiaries are expected to live longer, the period of their lives they spend in retirement is also expected to grow, resulting in a longer period of reliance on retirement savings for financial income. In the developed world, the challenges that these increases in life expectancy pose to the pension system are almost always exacerbated by aging demographics. In addition to these relatively recent demographic trends, pension fund participants have traditionally started to plan for retirement late in their lifetimes. In the US, two third of individuals between 55-64 years old accumulate less than one time their annual income in retirement savings by the time they retire (Rhee, 2013). For an increasing number of retirees, their social security benefits combined with their retirement savings are insufficient to maintain their current living standards (Laibson, Repetto, & Tobacman, 1998; Prast & van Soest, 2014).

The aforementioned challenges highlight the relevance to public policy-makers of analysing individual's behaviour with respect to retirement planning to increase pension engagement and involvement, widely reported as unsatisfactorily low (Adams & Rau, 2011). For most of the population, financial illiteracy renders information regarding pension arrangements difficult to understand, leading individuals to postpone devising a retirement plan benefits (van Rooij, Kool, & Prast, 2007; Lusardi & Mitchell, 2007). This failure to plan ahead is related to several behavioural biases. Among these biases are present bias (Frederick, Loewenstein, & O'Donoghue, 2002), resource slack theory (Zauberman & Lynch, 2005), and construal level theory (Trope & Liberman, 2003), all of which also result in procrastination. A present bias is a preference for receiving a certain utility today over the same utility in the future (Frederick et al., 2002; O'Donoghue & Rabin, 1999). Costs often need to be paid in the present, to eventually receive a certain utility later in life. The future, however, is difficult for individuals to project themselves into (Samuelson, 1937). This inability to appropriately discount future utility leads individuals to forgo on allocating time and money towards their retirement planning. The resource slack theory posits that

retirees tend to procrastinate saving for retirement as they believe they will have more money to save into their pension funds in the future, even if that is not the case (Zauberman & Lynch, 2005). The construal-level theory proposes that focusing on constraints in the near future leads individuals to underestimate the benefits of preparing for long-term issues, which results in procrastination (Trope & Liberman, 2003). Another influential factor in pension participants' failure to accumulate sufficient retirement savings is default pension enrolment settings. Default enrolment settings are often formulated as an opt-in system, which allows individuals to procrastinate enrolling in a pension fund plan. Furthermore, the default savings rate can be different from the optimal savings rate, in which case opting in relatively late, along with a non-optimal savings rate, will result in insufficient savings when one reaches retirement age.

Scholars have both proposed and investigated several solutions for the aforementioned issues causing procrastination in retirement planning. Unfortunately, the suggested solutions were unable to resolve the issue, or did so only partly. One suggested solutions has been improving financial literacy through financial education, in order to make pensions easier to understand. This, however, does not provide desirable results in the long term (Fernandes, Lynch, & Netemeyer, 2014). Alternatively, active decision enrolment policies result in increased enrolment rates and savings rates, immediately set at the optimal level for each participant. Although this is a favourable starting point, pension engagement remains low after enrolment (Carroll, Choi, Laibson, Medrian, & Metrick, 2005). This is problematic, as the pension situation of a participant could change in the course of life. Contrary, the use of virtual reality to counter undesirable effects of present biases seems a promising line of research. Hersfield et al. (2011) showed that vivid representations of one's future-self decreases the tendency to ineffectively discount future rewards and increases the money allocated towards retirement. Another often suggested solution to improve pension engagement is to customize pension communication towards life events. As life events bring a significant change to one's life, they consequently impact pension conditions (BMC pensioen communicatie, 2014; Ministerie van Sociale Zaken en Werkgelegenheid, 2012). Furthermore, life events

often provide a natural moment at which people consider their pension arrangements. For example, when individuals marry, their pension composition is automatically altered, as their partner enters their pension arrangement. After a divorce, the opposite happens. Furthermore, widows are reminded of pensions when receiving their late spouse's retirement income. Losing employer contributions due to unemployment or disability urges people to manage their current retirement assets more carefully. As planning for retirement becomes increasingly relevant with the occurrence of life events, there should be an opportunity to improve pension involvement. However, no study has empirically tested the relationship between life events and pension involvement. Therefore, the research question of this thesis is as follows:

How do marriage, divorce, childbirth, the loss of a spouse, unemployment, and disability influence pension fund participants' intentions, attitudes, and behaviour?

This research paper contributes to the literature by testing the relationship between life events and pension intentions, attitudes, and behaviour. In the literature review, six life events are identified; marriage, divorce, childbirth, loss of a spouse, unemployment, and disability, which are expected to provide an opportunity for enhancing pension engagement. This expectation is established by the high impact these life events have on various aspects of life. Specifically, these life events are capable of altering one's subjective well-being (Lucas, 2007b; Luhmann & Eid, 2009), health (Lantz, House, Mero, & Williams, 2005), perceptions of quality of life (Plagnol & Scott, 2011), and job satisfaction (Georgellis, Lange, & Tabvuma, 2012). Because of the high impact life events have on a persons' life and the increased relevance of pensions they create, the author predicts that life events will affect pension intentions, attitudes, and behaviour positively. To empirically test the predictions, a unique data set is employed, containing the life events experienced in the last three years by pension participants of a UK-based pension fund, as well as participants' pension intentions, attitudes, and behaviour. It should be noted that no communications adapted to life events have been sent to the participants in the database, allowing this study to investigate whether there is a fundamental link between life events and pension intentions, attitudes, and behaviour.

The current study contributes to the line of research, which attempts to enhance the pension involvement of pension plan participants by adding life events as a potential solution. Additionally, the findings of this study have important implications for developing an effective communication strategy for pension providers, which should be based on life events.

The remaining part of the paper proceeds as follows: chapter one contains the literature review and the hypotheses, chapter two elaborates on the data and methodology, results are shown in chapter four and discussed in chapter five, including limitations, implications, and suggestions for future research.

2. Literature review

Retirement and the accompanying benefits of a pension scheme will only materialize in the distant future. As a result, individuals' engagement with their pension fund plans is low (Adams & Rau, 2011; Alessie, van Rooij, & Lusardi, 2012; Diamond & Koszegi, 2003; O'Donoghue & Rabin, 1999). Together, with the fact that participants often cannot interpret the effects of the type of pension scheme, economic circumstances, and personal factors will have on their pension benefits (van Rooij, Kool, & Prast, 2007; Lusardi & Mitchell, 2007), has led to the emergence, in the Netherlands, of an expectations gap (AFM, 2010). The first part of the literature review attempts to create a better understanding of the consequences of viewing retirement in the distant future and the difficult nature of pensions in terms of pension engagement. Existing literature on pension engagement and how to improve it will be explored. The second part of the literature review will focus on the alternative approach of increasing pension engagement through adapting pension communication to life events, which has often been suggested but seldom researched. The main purpose of this section is to present the information that is essential to an investigation of the effects of life events on participants' engagement, defining life events, the context in which they take place, their influence on an individual's lifetime, and their relationship to retirement planning.

2.1 Retirement in the distant future

For most people, retirement will constitute a fundamental and significant part of their lives. With retirement progressively increasing in line with longer life expectancy, retirees must save more if they wish to sustain their current living standards for a longer period through their savings alone. Considering these facts, failing to act early in terms of pension planning appears to be remarkably irrational. One of the proposed underlying issues resulting in low pension engagement is that retirement takes place in the distant future (Diamond & Koszegi, 2003; O'Donoghue & Rabin, 1999). Economic and psychological literatures can offer insights into how individuals view events that occur in the future: present bias, resource slack theory, and construal level theory all relate to the difficulties individuals present in

appropriately discounting future costs and benefits (Frederick et al., 2002; Trope & Liberman, 2003; Zauberman & Lynch, 2005).

People exposed to present bias prefer to receive a certain utility today over the same utility in the future (Frederick et al., 2002; O'Donoghue & Rabin, 1999). This is due to failures when weighting the costs and benefits of events to come, placing different weights on events in the present and in the future and heavily discounting future costs. Perhaps erroneously assuming to have more time than they do or expecting to earn more in the future than they actually will. Additionally, as they underestimate their needs in the distant future, they subsequently fail to appreciate future payoffs (Lynch & Zauberman, 2006). In the case of retirement planning, the situation gets even more complicated. The costs need to be paid in the present, to eventually receive a certain utility in the future, which is so far away that it is impossible for individuals to project themselves into (Samuelson, 1937). Therefore, people forgo on allocating time towards their retirement planning, despite the consequences.

Related to the present bias, Zauberman & Lynch's (2005) resource slack theory is another possible explanation for individuals' irrational failure to invest early in their retirement. They argue that people expect to have more resources at their disposal in the future to complete a certain task, even if in most cases people end up with the same amount of resources when arriving in the future. Retirees thus tend to procrastinate saving for retirement believing they will have more money to save for retirement in the future, which in reality is not the case.

Finally, within the construal-level theory, individuals view events in the distant future at the 'high' level, which is more abstract and focused on desirability of sufficient retirement funds (Trope & Liberman, 2003). In contrast, events occurring in the near future at the 'low' level, e.g. signing up for a pension plan or making additional contributions, are viewed in terms of feasibility and constrains. Focusing on constraints in the near future leads individuals to under appreciate the long-term benefits of acting in the short-term, which results in procrastination (Trope & Liberman, 2003).

The biases described above provide a theoretical overview of the irrationality of procrastinating pension-related activities. Furthermore, Brown (2014) showed that those who have a tendency to procrastinate are less likely to enrol in a savings plan, take longer to sign up when enrolment is by default, contribute less to their defined contribution plans, have 'stickier' default investment options (take longer to move from default to optimal investment options), and are less likely to annuitize their pensions. Unfortunately, making decisions which require self-control in order to prevent procrastination leads individuals to experience an interpersonal conflict which often hinders maximising utility. Thaler and Shefrin (1981), suggest that this conflict occurs between two personal selves, the farsighted planner and the myopic doer. The planner decides what to do today, to be better off in the future, whereas the short-sighted doer is in search of immediate rewards. Therefore, a decent level of self-control is required from the planner to prevent the doer from consuming resources meant for long term projects, such as retirement planning.

2.2 Pension engagement

Procrastinating retirement planning results in low levels of pension involvement (Adams & Rau, 2011; Alessie et al., 2011; Diamond & Koszegi, 2003; O'Donoghue & Rabin, 1999). This low involvement is reflected in a poor openness towards pension information. A majority of 71% in the Netherlands is found not to be open to pension information (Ministerie van Sociale Zaken en Werkgelegenheid, 2012). These low levels of pension involvement and openness pose a threat to retirement planning: individuals with low involvement tend to start saving relatively late, are not aware of their future needs, and eventually fail to secure enough pension assets to retire comfortable (Laibson, Repetto, & Tobacman, 1998; Prast & van Soest, 2014), highlighting the importance of working towards more effectively engaging participants.

The research community has also acknowledged the importance of engagement, resulting in many attempts to increase or enhance it. A first line of research focuses on the relationship between financial literacy and pension involvement. Lusardi and Mitchell (2011) conclude that worldwide there is

widespread financial illiteracy. Many individuals do not possess the desirable knowledge to cope with the financial decisions regarding retirement planning (Van Rooij et al., 2012). This is especially relevant for the young and the old, compared to their middle aged peers, women, and less educated people (Lusardi & Mitchell, 2011). Financial illiteracy constitutes a significant barrier to undertake action (Hershey & Jacobs-Lawson, 2012; Visser et al., 2012). Having a good understanding of financial subjects increases the likelihood to plan for retirement. Additionally, more wealth is accumulated by people who plan for their retirement in advance (Lusardi 1999; Lusardi & Mitchell, 2011).

Assuming financial illiteracy to be the key barrier to action in regards to pension planning, the solution for increasing engagement should be obvious and straightforward: financial education would provide individuals with the necessary tools to adequately prepare for retirement. Unsurprisingly, this answer is often suggested in the literature (Hilgert et al., 2003; Lusardi and Mitchell, 2007; Morton, 2005; Mishkin, 2008). However, the long-term effect of financial education in positively affecting financial behaviour is not as evident as it would be expected. Fernandes et al. (2014) performed a meta-analysis of the effects of financial education on financial behaviour. In line with research on other areas of education, the effects of financial education appear to decay over time; a result which holds both for one-time only and long and intensive interventions. After 20 months, the effect of education is negligible, even for very elaborate interventions. Educational programs only explain 0.1% of the variance in financial behaviour. Just-in-time interventions could provide a potential solution, in combination with a highly-customized decision support system to aid financial decisions (Fernandes et al., 2014).

Researching heuristics and biases in retirement saving behaviour, Benartzi & Thaler (2007), concluded that participants were very slow in signing up for a pension plan, embrace naive diversification strategies, and make infrequent changes. They show that changing the default option to participation, in other words, making use of automatic enrolment, increases the amount of employees who utilize the pension option. However, changing the default to participation could result in an inefficient default in

terms of the savings rate. Carroll et al. (2005), show that default saving rates are often not aligned with an individuals' optimal saving rate. In this scenario, requiring employees to make an active decision between 'yes' or 'no', is often an effective tool for increasing participation rates as well as setting the savings rate at the optimal level (Carroll et al., 2005). Active decisions are especially effective when pension fund participants are very heterogeneous in their investment preferences and tend to procrastinate. Thaler & Benartzi (2004) argue that due to a mechanism equivalent to an endowment effect and loss-aversion (Kahneman, Knetsch, and Thaler, 1990) individuals are unwilling to save in the present, but willing to commit to save in the future. Unfortunately, these insight are only helpful in solving the initial problem of low participation, failing to increase pension involvement afterwards. Personalization of pension fund communication could provide a solution. Research into consumer goods marketing indicates that personalization provides an opportunity to increase response rates, customer satisfaction and subsequently engagement (Malthouse & Elsner, 2006). Alternatively, Hersfield et al. (2011) focus on countering the present bias in order to increase pension involvement. Suggesting that due to a lack of imagination and a lack of belief, people are unable to identify themselves with their future selves, the authors used age-progressed renderings of participants to aid in this identification. Participants interacted with their future selves in several experiments. In all cases, results showed a decrease in the tendency to choose immediate rewards over long-term benefits. They conclude that vivid representations of the future-self result in decreased discounting of future rewards and a higher allocation of resources towards retirement. Building upon the work of Hersfield et al. (2011), Brüggen, Rohde, & Van Den Broeke (2013) applied visual priming to a mass pension communication context, showing that using a hoped-for future self significantly increases participants' intention to consume less today and allocate more towards their pensions.

2.3 Life events: definition, overview and characteristics

So far, it has become evident from the literature that due to the complex, unattractive nature of retirement

planning and the short-term focus of participants caused by the issues described within the present bias, resource slack, and construal theories, accompanied by a lack of self-control, the level of pension engagement is troublingly low. Research into efforts to increase pension engagement through financial literacy and financial education failed to deliver the anticipated results (Fernandes et al., 2014; Mandell & Klein, 2009). In contrast, initially changing the default option to an automatic enrolment variant, compelling participants to make an active choice, and requiring individuals to pre-commit to saving for retirement, showed promising results. However, their effects on pension engagement do not appear to be long lasting (Thaler & Benartzi, 2004; Kahneman et al., 1990). The literature that investigates the effect of visual priming on individuals, making use of their future selves so as to prompts them to focus more on retirement, also appears to be particularly promising (Hersfield et al., 2011; Brüggen et al., 2013). Finally, an often suggested, but less investigated research path encompasses life events.

2.3.1 Life events: a working definition

Life events are frequently proposed as unique opportunities to communicate with (potential) pension fund participants, as individuals might be more receptive of pension communication due to an increased relevance of the topic at different points in life (BMC Pensioen Communicatie, 2014). Before looking further into life events, the working definition for this paper is provided by combining several definitions proposed throughout the literature. In the literature, life events have been analysed in two major contexts: a stress context and a developmental context (Filipp & Aymanns, 2009). According to Park (2010), in the stress context life events are proposed as types of stressors, encompassing all events that significantly disrupt people's daily routine (Turner & Wheaton, 1995). In this definition, positive life events such as marriage are included, while daily hassles and uplifts, which only induce minor stress levels, are excluded (Kanner, Coyne, Schaefer, & Lazarus, 1981).

In the developmental context, life events are approached as specific transitions, which can be seen as a "discontinuity in a person's life space of which he is aware and which requires new behavioural

responses" (Hopson & Adams, 1976, p. 24). This definition suggests that life events provide an opportunity for an individual to change its behaviour; in line with the research of Wood, Tam, and Witt (2005), who state that changes in one's environment can change one's habits and behaviour.

Building upon the former definitions, Luhmann, Hofmann, Eid, and Lucas (2012) propose the following: ''life events are time-discrete transitions that mark the beginning or the end of a specific status'' (p. 594). A status change is the transition from single to married, or unemployed to reemployed and can be reversed; a definition which excludes minor events that cannot induce a status change. Furthermore, by incorporating time discretion, slow transitions such as puberty are excluded as well (Luhmann et al., 2012). As the goal of the current research is to clarify how life events influence pension fund participants' pension intentions, attitudes, and behaviour, it is essential that the definition of life events be clearly stated. Therefore, the working definition which will be used throughout the paper will be an extended version of Luhmann et al.'s (2012): life events are time-discrete transitions that mark the beginning or the end of a specific status and initiate an opportunity for behavioural change. The next step is to identify, within the literature and working definition, which events can be considered life events.

2.3.2 Life events: an overview and their characteristics

The current literature unfortunately does not extensively cover the relationship between life events and retirement planning. To the knowledge of the author, the link between life events and pension engagement has not been empirically tested so far. To gain a better understanding of the mechanisms at work around a life, event other research areas are consulted. Research on the topic of life events is very diverse and encompasses various fields. Specifically, psychology, economics, health, quality of life research, demography, vocational behaviour, sociology and although limited also retirement research, all contribute towards a better understanding of life events. Within the existing literature it is evident that there are several events which dominate the life event research: marriage, divorce, childbirth, the loss of a spouse, unemployment, and disability. Intuitively, these events correspond to the working definition of

life events. Along with various research areas, several variables and their relationships with life events were explored. Some of the most commonly found variables are subjective well-being, job and life satisfaction, stress, and retirement intentions. For a detailed list of the relationships between all variables and life events examined for this study, see appendix A. Table 1 shows an overview of appendix A.

Table 1: Overview of the literature regarding life events

Life event	Context of the event	Subjective well-being/ life satisfaction	Stress and health	Accompanying emotions and quality of life	Importance to retirement
Marriage	Transition from single to married.	Positive boost of subjective well-being and job satisfaction after the event. Adaption back to original satisfaction levels after 3 years.	Marriage has a score of 50 out of 100 on the Stress Scale. Thereby, it is the seventh most impactful event on the list.	Family, home comfort and happiness factors become more important to one's perception of quality of life.	Increases relevance of retirement planning and positively influences intentions and behaviour.
Divorce	The marital status transition from married to divorced.	Decrease in SWB after the event. Due to anticipation of the event the initial effect is small. Only partial adaption of satisfaction levels after the divorce. Those enduring a bad marriage might actually benefit from a divorce in terms of SWB.	Stress provoked by a divorce does not lead directly to distress, but it creates several minor stressors which result in distress. Stress scale: 73 (second highest)	Individuals report feeling stressed and depressed.	A divorce has a high impact one's life and the implications for one's retirement savings.
Childbirth	The birth of the first child.	Initially increases SWB, followed by a decrease in the long term. This loss is partially compensated by daily affection gained from their child. . Job satisfaction decreases in the long run, without any adaptation.	Raising the child after the event probably induces stress. This is possibly reflected in the decline in subjective well-being in the long run.	Those who had a child in the last five years view family as more important and financial, employment, friend aspects as less relevant.	Women who gave birth to a child intend to retire later, compared to childless women but no proof is found for actual behaviour. It is suggested that childbirth makes individuals more future oriented thereby increasing pension relevance.

Table 1 continued: Overview of the literature regarding life events

Life event	Context of the event	Subjective well-being/ life satisfaction	Stress and health	Accompanying emotions and quality of life	Importance to retirement
Loss of a spouse	The remorseful event of losing one's partner.	Severe and long lasting decline in SWB. It takes widows very long to adapt to the event.	Bereavement causes distress, which is amplified by minor stressors that are consequences of the main event. Stress Scale: 100 (highest score). Widows also have an increase chance of dying prematurely.	Grief and sadness.	Severe impact on one's life and Because following the loss of a spouse, the widow receives their spouse's retirement income, the relevance of pension could be increased.
Unemployment	The transition from employed to unemployed.	Decline in subjective well-being due to various stressors such as financial stress and loss of self-esteem. The adaption period is long.	Probability of dying in the next 5 years is increased by 34%. This increase is caused by stress induced diseases. Stress Scale: 47.	Individuals report feeling stressed and depressed.	The loss of additional contributions by the employer threatens future retirement income. Thereby, increasing the relevance of retirement planning.
Disability	Being unable to continue one's living and working habits due to physical causes.	Severe decline in SWB. Individuals do not adapt. SWB remains below original levels.	Causes distress, but individuals partially adapt. Stress Scale: 53.	Depression and stress are the most reported emotional responses.	Causes a serious disadvantage. Since they are unable to collect employer contributions.

Marriage

Marriage is a prominent life event, extensively researched within the literature. It is considered a life event because it engenders a substantial disturbance in one's life and is likely to have a positive effect. Marriage is supposed to influence a person's subjective well-being (SWB), which is a measure of how one assesses their own life, more specifically their life satisfaction (Diener, 1984). Interlinked with the literature in changes in SWB are adaption-level theory and set-point theory, which posit that individuals respond momentarily to positive and negative events, returning to neutrality shortly after (Brickman & Campbell, 1971; Diener, Lucas, & Scollon, 2006). In other words, individuals adapt to changes in levels of SWB so that over time SWB reverses back to pre-event levels, or to a set-point. In general, the literature agrees on the

effects of marriage on SWB. Marriage induces a short positive boost of life satisfaction, but quickly after the event individuals adapt back to pre-marriage satisfaction levels, sometimes even below that (Anusic, Yap, & Lucas, 2014; Lucas, Clark, Georgellis, & Diener 2003; Luhmann et al., 2012; Luhmann & Eid, 2009). Lucas et al. (2003), however, note that there are wide variations among individuals. Those who reacted strongly to the initial event did not adapt, instead developing a new baseline for SWB. Additionally, Luhmann & Eid (2009) show that people who marry once are more satisfied than people who marry at least twice. Furthermore, repeated marriages do not show different levels of life satisfaction between marriages.

Job satisfaction is also affected by marriage. Individuals experience an increase in job satisfaction prior to the first marriage, which reverses back to its original level in the three years following the event (Georgellis et al., 2012). Marriage also alters individuals' perceptions of quality of life in that family, home comfort, and happiness become more important relative to friends and employment (Plagnol & Scott, 2011).

In a retirement context, marriage is ought to increase the importance of retirement as a savings goal among young adults, and they are more likely to have an individual retirement account and to sign up to a defined contribution plan (Knoll, Tamborini, & Whitman, 2012). This could be a result of partners becoming involved and leading individuals to alter their investment decisions, according to e.g. social influences, shared responsibility, and a more long-term focus (Hoffman & Broekhuizen, 2009). Rickwood and White (2009) show that, regarding retirement planning, marriage causes individuals to consider or change their saving behaviour. Additionally, married people are better prepared for retirement and accumulate more savings when compared to those who are single or divorced (Adams & Rau, 2011).

Marriage, according to the literature, is capable of significantly altering lives through the changes it incurs on SWB, job satisfaction, and quality of life. Concerning retirement planning, there is substantial evidence that marriage has an important positive influence on retirement intentions, attitudes, and

behaviour. This positive effect is likely caused by a more long-term focus and increased responsibility towards the spouse, which increases pension relevance.

Divorce

The opposite of marriage is the transition to a divorced status, which is considered a negative life event, associated with a decline in happiness and life satisfaction around it (Lucas, 2005). The effect around the event itself is rather small but individual's anticipation of the divorce decreases life satisfaction prior to the event (Lucas, 2007b). After the decline in happiness and life satisfaction, individuals tend to recover from the negative effects of divorce and return to pre-event satisfaction levels. Furthermore, Luhmann et al. (2012) argue that those enduring a bad marriage can actually benefit from a divorce in terms of SWB. Williams (2003), attributes this beneficial effect to the relief of stress factors associated with a bad marriage. As the former has shown, people adapt back to previous levels of life satisfaction. Remarkably, individuals also adapt to the event itself: repeated divorces result in lower drops in life satisfaction compared to the initial event (Luhmann & Eid, 2009). Along with the effect of a divorce on SWB, the event also initiates distress for the persons involved. However, the stress provoked by the event does not lead to distress directly, instead it creates numerous minor stressors which eventually result in distress (Pillow, Zautra, & Sandler, 1996). Although up to the publishing of this study there was no empirical evidence tying divorce to pension engagement, the substantial change divorce brings about in one's life, environment, and subsequently habits and behaviour (Wood et al., 2005), is likely to cause individuals to be more sensitive to retirement planning as it induces a change in one's retirement outlook and responsibilities, creating a moment of increased relevance.

Childbirth

In addition to transitions in marital status, the birth of a child also evokes considerable changes to individuals' lives and environment. Although childbirth is mostly viewed as a positive life event, the nature of the relationship between childbirth and SWB is not necessarily as straightforward as it seems. Parents

experience an increase in life satisfaction around the birth of their first child but in the long-term they report a decline in terms of well-being. These long-term negative effects, however, are compensated by daily affection they gain from their child (Anusic et al., 2014; Luhmann et al., 2012). Plagnol and Scott (2011) show that childbirth changes individuals' perceptions of what is important for their quality of life: those who had had a child in the previous five years viewed family as more important while financial, employment, friend aspects lost some relevance. Regarding job satisfaction, in the long-term the birth of a child causes a permanent decline, in contrast to adaption theory (Georgellis et al., 2012). As with divorce, there is only limited evidence concerning a relationship between childbirth and retirement planning. Women who gave birth to a child intend to retire later when compared to childless women, but no evidence is found in terms of actual behaviour (Damman, Henkens, & Kalmijn, 2015). The very traumatic counterpart of childbirth is the loss of a child, which is found to decrease the propensity of individuals to invest in stocks by 7.8%, and decrease financial risk taking in the long term (Buccil & Zarri, 2015). Despite this limited evidence in retirement research, studies concerning e.g. subjective well-being indicate that childbirth is a highly influential event in parents' lives. Therefore, this study predicts that childbirth prompts parents to become more future orientated, consequently aligning saving preferences with more long-term goals such as retirement savings.

Loss of a spouse

Another negative life event extensively covered in the literature is the loss of a spouse. As can be expected, in the year of their spouse's death, widows experience a substantial decline in happiness and life satisfaction (Anusic et al., 2014; Lucas et al., 2003; Luhmann et al., 2012). The initial decline as a result of the event is steeper compared to that of a divorce. Due to the severity of the event, widows only partially adapt to their loss over time, indicating a long-lasting impact on SWB. Widows seem to establish a new and lower baseline for their subjective well-being (Lucas et al., 2003). Pillow et al. (1996), show that major life events can directly and indirectly induce stress. In the case of bereavement, the event on its own is

severe enough to cause distress. Subsequently, the direct effect is amplified by minor stressors that are consequences of the main event. Research in the field of health argues that there is a relationship between the loss of a spouse and probability of mortality of the widow. Martikainen and Valkonen (1996) conclude that the bereaved have a highly increased chance of dying due to diseases, violence and accidental causes (excluding self-inflicted causes). Additionally, shortly after the event (<6 months), mortality rates were higher, with the effects being more pronounced on younger people. When relating the loss of a spouse to retirement planning, it should be acknowledged that many individuals become widows when retired or close to retirement age. Changing pension engagement for this group is evidently highly unlikely. However, for other age groups the event remains very influential for their life satisfaction and even the length of their lives. Besides the sad nature of the event, it does evoke an occasion at which people are likely to (re)consider their retirement planning. For example, widows receive (a part of) the retirement savings of their late partner, creating an automatically reminder for retirement planning.

Unemployment

While marriage, divorce, childbirth and the loss of a spouse are all family-related life events, a work-related event, unemployment, also classifies as a life event. Those who become unemployed suffer from a decrease in SWB that is only partially offset after a long adaption period (Anusic et al., 2014; Luhmann et al., 2012). Lucas et al. (2012) even argue that after reemployment, satisfaction levels do not reverse to the original value. Furthermore, repeated events of unemployment decrease life satisfaction after each additional event of unemployment, due to the accumulation of stressors such as financial stress and loss of self-esteem (Luhmann & Eid, 2009). Unemployment has even been tied to mortality probability by Bloemen, Hochguertel, and Zweerink (2015). The authors posit that individuals who become unemployed, through no fault of their own, have a 34% increased chance of dying in the following five years as a consequence of stress-induced diseases. Overall, unemployment evokes severe changes in one's life.

Moreover, it can be assumed that the event raises the relevance of retirement planning, as a substantial proportion of retirement savings is often contributed by the employer and is therefore threatened.

Disability

The last major life events covered by the literature is a disability. Those who become disabled during their life experience a long-lasting decline in life satisfaction (Anusic et al., 2014) and endure distress (Lucas, 2007a). Although individuals tend to partially adapt to the induced distress, SWB remains far below initial levels (Lucas, 2007a). Furthermore, those unable to keep working due to their disability are at a serious disadvantage regarding retirement income, as they do not build up a second pillar pension due to forced unemployment (Kelly et al., 2012). Due to the consequential effects of disability on one's life and retirement income, this study argues that disability could increase the importance of retirement planning.

2.3.3 Life events in general

To get a more comprehensive understanding of what individuals go through prior, during, and after life events, it is relevant to consider which emotions are evoked by different events. Parker, Paterson, and Hadzi-Pavlovic (2015) determined the dominant emotions surrounding negative life events: depression and stress are the most reported emotional responses to disability, while the death of a spouse evokes grief and sadness. Divorce and unemployment are reported to induce depression and stress.

A few researchers have investigated the effects of negative life events in general, rather than evaluating the effect of each event separately. Faravelli, Catena, Scarpato, and Ricca (2007), find that through stress, the loss of a spouse, divorce, and unemployment increase one's susceptibility to psychiatric disorders. Ho, Cheung, and Cheung (2008) argue that negative life events partially mediate the positive relation between personality traits (emotional stability, family orientation, and harmony) and life satisfaction. In other words, when negative life events are included, they weaken the positive effect of personality traits on SWB. Lastly, Lantz et al. (2005) posit that individuals at a socioeconomic advantage endure more negative life events related to increased financial stress, consequently experiencing poorer

health and an increased risk of mortality.

Reviewing the existing literature reveals that life events are capable of evoking fundamental changes in individuals' lives. Marriage, divorce, childbirth, the loss of a spouse, unemployment, and disability influence subjective well-being, perceptions of quality of life, job satisfaction health, distress, and retirement planning in different ways and magnitudes. Richard E. Lucas has extensively researched various life events, their effect on subjective well-being, and adaption theory. Summarizing his work, he states: ''happiness [SWB] levels do change, adaptation is not inevitable, and life events do matter'' (Lucas, 2007b, p. 78), stressing the important role life events play in our lives. Although there is so far limited evidence of life events' ability to influence pension involvement or retirement planning (with the exception of marriage), this study predicts that life events are able to change pension involvement or retirement planning, due to their high impact and influential nature on other relevant variables.

To further substantiate life event's ability to induce behavioural change, additional literature is explored. First, studies in the fields of health and psychology have been researching so-called 'teachable moments', which present unique opportunities to effectively change behaviour (Phelan, 2010; McBride, Emmons, & Lipkus, 2003). McBride et al. (2003) present a framework to determine whether an event qualifies as a teachable moment. According to the framework, an event has to meet three requirements to be qualified as a teachable moment: it should enhance perceptions of outcome expectancies and risk, increase emotional responses and induce a redefinition of one's social role. The six life events identified in the literature meet all conditions, suggesting that the life events can act as teachable moments. Second, Wood et al. (2005) suggest that once a persons' environment changes, an opportunity occurs to change their habits. Life events are often accompanied by a change in external environment (e.g. moving to a new home after a divorce), suggesting the ability to change habits and behaviour. Lastly, unexpected life events can disturb the cognitive system. During this disturbance individuals unconsciously redesign the cognitive system to their advantage. Life events, thereby, provide opportunities to beneficial life changes (Turner,

Goodin, & Lokey, 2012). Based on the presented literature, the study hypothesizes that life events can effect pension fund participants' intentions, attitudes, and behaviour.

2.4 Hypotheses

In order to extract the potential relationships between life events and pension intentions, attitudes, and behaviour from the dataset, several hypotheses are formulated. The first set of hypotheses is focused on the effects of life events in general: do life events impact pension intentions, attitudes, and behaviour? The second set of hypotheses delves deeper into the effects of individual life events on pension intentions, attitudes, and behaviour. In both sets of hypotheses the investigation of life events' influence is divided into different levels. Firstly, the impact on pension intentions is examined. Secondly, the effect on participants' attitudes is investigated. Lastly, it is examined whether life events are even capable of changing individuals' behaviours.

2.4.1 Life events in general

As mentioned in the literature review, in the pension industry life events are often proposed as unique opportunities to communicate with pension fund participants, as it is suggested that at around these life events individuals are more receptive to pension communication due to increased relevance of the topic (BMC Pensioen Communicatie, 2014). Therefore a life event can function as a teachable moment. Furthermore, based on previous research, this study includes only life events that match the working definition: time-discrete transitions that mark the beginning or the end of a specific status and initiate an opportunity for behavioural change. There is a small amount of evidence linking life events to retirement planning. Retirement intentions, retirement income, and financial risk taking have all been associated with life events in previous literature. However, to the knowledge of the author, no attempt to empirically link life events and pension involvement and behaviour has been made. However, evidence in other areas of research demonstrates the high influence of life events on one's life. Research by Lucas (2007b) shows that life events can induce change in subjective well-being. Furthermore, job and life satisfaction, stress

induced health complications and even the probability of dying are all tied to life events (Georgellis et al., 2012; Luhmann & Eid, 2009; Lantz et al., 2005; Martikainen & Valkonen, 1996). Due to their strong impact life events seem to have on a persons' life, they constitute moments in which the person's pension situation is altered, thereby becoming more relevant. As such, this study predicts that life events will positively affect pension intentions, attitudes, and stimulate pension behaviour.

H1A: Participants who have experienced at least one life event have more positive intentions towards their pension than participants who did not.

H1B: The more life events participants experience, the more positive their intentions towards their pension.

H2A: Participants who have experienced at least one life event have more positive attitudes towards their pension than participants who did not.

H2B: The more life events participants experience, the more positive their attitudes towards their pension.

H3A: Participants who have experienced at least one life event display more desirable behaviour regarding their pension than participants who did not.

H3B: The more life events participants experience, the more desirable their pension behaviour.

2.4.2 Individual life events

So far, the effects of life events at the aggregate level have been examined. As different life events impact pension intentions, attitudes, and behaviour differently, additional hypotheses are proposed.

The first major life event identified by the literature is marriage. Marriage is an influential life event that is capable of changing peoples' subjective well-being (Lucas et al., 2003; Luhmann et al., 2012; Luhmann & Eid, 2009), job satisfaction (Georgellis et al., 2012), and quality of life perceptions (Plagnol &

Scott, 2011). Subjective well-being experiences a short positive boost after marriage. Additionally, marriage increases peoples' job satisfaction after the event. However, both subjective well-being and job satisfaction reverse back to initial levels after three years, indicating that the effects of marriage in terms of these variables are limited to a relatively short time period. This suggests that the effects of marriage are especially prominent in the time period that surrounds it. Any kind of initiative to increase pension intentions, attitudes, and behaviour would then be most effective shortly after the event. Furthermore, marriage has been linked to retirement-relevant topics, as it is expected to increase the importance of retirement as a savings goal among young adults, which if married show more desirable behaviour toward retirement planning than those who remain single (Knoll et al., 2012). At its least, marriage prompts individuals to consider or alter their saving behaviour (Rickwood & White, 2009). Those that are married are also better prepared for retirement and accumulate more overall savings if compared to their single or divorced counterparts (Adams & Rau, 2011). Apparently, marriage triggers people to become more long term focused as they also become responsible for the future of their spouse. Subsequently, making retirement a more relevant topic. Based on the literature, this study hypothesises that marriage is capable of influencing individual's pension intentions, attitudes, and even behaviour.

H4A: Participants who got married in the previous three years have more positive intentions towards their pension than participants who did not.

H4B: Participants got married in the previous three years have more positive attitudes and are more engaged with their pension than participants who did not.

H4C: Participants who got married in the previous three years display more desirable behaviour regarding their pension than participants who did not.

The opposite of marriage is the event of a divorce. Generally, a divorce is viewed as a negative life event which decreases life satisfaction (Lucas, 2005), although Luhmann et al. (2012) argue that those enduring

a bad marriage can actually benefit from a divorce in terms of SWB. Williams (2003), attributes this beneficial effect to the relief of stress factors associated with a bad marriage. Next to divorce's effect on life satisfaction, the event also initiates distress for the persons involved through numerous minor stressors (Pillow et al., 1996). Although up to the publishing of this study there was no empirical evidence tying divorce to pension engagement, the impact a divorce has on one's life, environment, and subsequently habits and behaviour (Wood et al., 2005), is likely to cause the divorcee to be more perceptive towards retirement planning. Furthermore, divorce is likely to alter pension arrangements, thereby making individuals more aware of their pensions. Consequently, it is hypothesised that divorce has a positive impact on pension intentions, attitudes, and behaviour.

> H5A: Participants who got divorced in the previous three years have more positive intentions towards their pension than participants who did not.
>
> H5B: Participants got divorced in the previous three years have more positive attitudes and are more engaged with their pension than participants who did not.
>
> H5C: Participants who got divorced in the previous three years display more desirable behaviour regarding their pension than participants who did not.

Marriage and divorce encompass changes in marital status, but as it is clear from the literature, other types of life events can also have a significant impact on a persons' life, such as the birth of a child. According to the literature, childbirth is initially associated with a positive impact on life satisfaction, which in the long run reverses into a decline in life satisfaction. However, this negative impact on life satisfaction is partially compensated by the daily affection they gain from their child (Anusic et al., 2014; Luhmann et al., 2012). Along with influencing one's life satisfaction, childbirth also alters individual's perceptions of what is important for their quality of life (Plagnol & Scott, 2011). In relation to pensions, a link to childbirth is suggested by Damman et al. (2015), who show that women who gave birth to a child intend to retire later

compared to childless women - although there is no evidence of actual behavioural changes. In light of this evidence, it is expected that the costs and financial responsibilities involved in raising a child a prompt a change to one's financial attitude, which could eventually alter one's attitude towards pensions. Therefore it is hypothesised that childbirth is capable of changing pension intentions, attitudes, and eventually pension behaviour.

H6A: Participants who became parents in the previous three years have more positive intentions towards their pension than participants who did not.

H6B: Participants who became parents in the previous three years have more positive attitudes and are more engaged with their pension than participants who did not.

H6C: Participants who became a parents in the previous three years display more desirable behaviour regarding their pension than participants who did not.

Losing a spouse is a life event with very negative and long-lasting consequences for the widows, who experience a steep decline in SWB after the event. Unlike other events such as divorce, after the loss of a spouse people do not return to their original SWB levels over time (Anusic et al., 2014; Lucas et al., 2003; Luhmann et al., 2012). Furthermore, bereavement can cause distress (Pillow et al., 1996) and increases the probability of dying due to diseases, violence and accidental causes (Martikainen & Valkonen, 1996). Understandably, the lives of widows are heavily disrupted in terms of SWB and their health status. Although up to the time of publishing of this paper no research explicitly linking the impact of bereavement on retirement planning was available, it is posited that this link exists due to increased relevance of the topic. After the regretful event of losing a spouse, the widow often receives the pension of their deceased spouse, thereby raising the topic of pensions. Furthermore, the widow is now solely responsible for further retirement planning and decision-making. Due to the strong impact in other domains, the shift of

responsibility and receiving their spouse's pension, it is hypothesised in this paper that the loss of a spouse is capable of increasing intentions, attitudes, and pension-related behaviour.

H7A: Participants who lost their spouse in the previous three years have more positive intentions towards their pension than participants who did not.

H7B: Participants who lost their spouse in the previous three years have more positive attitudes and are more engaged with their pension than participants who did not.

H7C: Participants who lost their spouse in the previous three years display more desirable behaviour regarding their pension than participants who did not.

When individuals become unemployed, their available income is naturally affected. However, the life event of unemployment is not only related to income, but also causes a decline in SWB to which individuals only partially adapt (Anusic et al., 2014; Luhmann et al., 2012). Additionally, those who become unemployed, through no fault of their own, have a 34% increased chance of dying in the following five years due to stress-induced diseases (Bloemen et al., 2015). Although the literature review does not reveal a link between unemployment and retirement planning, it is suggested in this paper that such a link exists. The expectation is that unemployment raises the relevance of pensions by threatening their future retirement income, as individuals lose the contributions made by their employer. Furthermore, it is expected that recently unemployed participants are less likely to make additional contributions as a result of less spendable income.

H8A: Participants who became unemployed in the previous three years have more positive intentions towards their pension than participants who did not.

H8B: Participants who became unemployed in the previous three years have more positive attitudes and are more engaged with their pension than participants who did not.

H8C: Participants who became unemployed in the previous three years display more desirable behaviour regarding their pension than participants who did not.

The last major life event considered in the literature review is disability. Individuals who become disabled during their life experience a long-lasting decline in life satisfaction (Anusic et al., 2014) and have a higher probability of enduring distress (Lucas, 2007a). Furthermore, those who become disabled are at a serious disadvantage regarding retirement income, as they do not build up a second pillar pension due to forced unemployment (Kelly et al., 2012). It is predicted in this paper that the disability increases the relevance of retirement planning, as it decreases one's available resources and therefore more careful retirement planning is required. Due to the consequential effects of disability on one's life and retirement income, it is argued that disability increases a participants' pension intentions, attitudes, and behaviour. Using additional contributions as a proxy for pension behaviour, a negative relationship to disability is expected due to a decrease in spendable income.

H9A: Participants who became disabled in the previous three years have more positive intentions towards their pension than participants who did not.

H9B: Participants who became disabled in the previous three years have more positive attitudes and are more engaged with their pension than participants who did not.

H9C: Participants who became disabled in the previous three years display more desirable behaviour regarding their pension than participants who did not.

3. NEST Data & Hypotheses

In order to explore the effects of the life events covered in the literature review on participants' pension intentions, attitudes, and behaviour, a unique data set is used. The dataset is provided by the National Employment Savings Trust (NEST), a UK-based DC pension scheme managed by a Trustee, the NEST Corporation. The Trustee is accountable to the UK government but regarding its operational decisions, it operates independently. NEST is appealing to both employers and employees as it is a non-profit initiative, charging employees only a minimum amount to cover operational costs and offering a free service as far as employers are concerned (no set up and administrational charges).

A key feature of NEST is its use of automatic enrolment. As of March 2016, 86.000 employers had chosen NEST as their pension partner, tying approximately 3 million employees to the pension fund and summing up to £827 (€ 988) million assets under management. Of these assets, 99% are invested in the default fund (NEST, 2015). This is consistent with the findings of Benartzi & Thaler (2007), who acknowledge that automatic enrolment improves enrolment rates, but does not affect pension engagement as participants will stick to their defaults. The extremely high percentage of participants sticking with the default displays, according to NEST, ''a concerning lack of interest or appetite among members to engage proactively and make more personal, informed investment choices'' (2015, p 11). In order to explore the underlying causes of this low engagement, NEST conducted a survey among its participants. Besides variables encompassing demographics, pension intentions, attitudes, and behaviour, NEST included variables measuring life events as potential explanatory variables.

The survey was conducted online among NEST participants in February and March, 2016. A total of 4882 surveys were returned (the number of surveys initially sent out is not publicly known), more than half of which were incomplete and are therefore excluded from the data set, leaving 2350 participants. Due to inconsistency with NEST's internal data and responses to the survey (e.g. respondents say they made additional contribution, but in fact they did not), another 195 respondents are excluded from the

data set. Of the final 2155 respondents, 52.1% is male and the mean (median) age is 42.7 (43). Descriptive statistics of the sample can be found in table 2. A majority of 76.8% has registered themselves after signing up to be able to access their online pension environment, however, out of these, 28.1% did not take any further actions after signing up. Additional contributions were made by 830 (38.5%) respondents and 218 (10.1%) decided to switch their assets away from the default fund option. Although the difference is marginal, males are more likely to switch funds than females. The percentage of fund switchers in this sample is in contradiction with the fact that 99% of NEST assets are invested in the default fund option and indicates a misrepresentation of the population, likely to be due to a self-selection bias (more engaged participants are more inclined to respond to the survey). Of all participants, 949 had experienced at least one life event in the last three years. Within the sample there is no significant difference in the amount of reported life events between males and females. Although, men have reported unemployment marginally more often than women.

Table 2: Descriptive statistics

	Sample	Male	Female	p-value
Gender	2055	1122 (52.1%)	1033 (47.9%)	.055
Age				
Mean	42.7	42.48	43.00	.331
Median	43	42	44	
Range	54 (17-71)	50 (19-69)	54 (17-71)	
Groups				
Unregistered	501 (23.2%)	281 (56.1%)	220 (43.9%)	.599
Registered only	461 (28.1%)	239 (51.8%)	222 (48.2%)	.915
Made additional contributions	830 (38.5%)	414 (49.9%)	416 (50.1%)	.108
Switched funds	218 (10.1%)	127 (58.3%)	91 (41.7%)	.054
Life events	Sample	Male	Female	
Total	2155	512 (23.8%)	437 (20.3%)	.120
Marriage	2155	88 (4.2%)	74 (3.4%)	.550
Divorce	2155	28 (1.3%)	30 (1.4%)	.558
Childbirth	2155	71 (3.3%)	49 (2.3%)	.109
Loss of a spouse	2155	256 (11.9%)	220 (10.2%)	.396
Unemployment	2155	164 (7.6%)	124 (5.6%)	.075
Disability	2155	81 (3.8%)	71 (3.3%)	.754

Examining the dataset several important constructs can be discovered. First of all, several variables measure pension intentions, attitudes, and behaviour. Furthermore, participants' exposure to life events

is explicitly measured. For pension behaviour, the following three proxies are used: login behaviour, additional contributions, and switching behaviour. 'Login behaviour' measures if participants logged into their online pension environment after signing up for the pension fund. 'Additional contributions' measures whether participants made additional contribution into their pension fund. 'Switching behaviour' keeps track of participants altering their investment approach within the pension fund. Additionally, 'pension intentions' measures the possibility that a person will display the former three pension behaviour proxies in the future, in case they had not exhibited the behaviour yet. In order to measure pension attitudes, three proxies are employed. First, NEST attitude measures participants' attitude toward the pension provider. Second, 'pension attitude' measures attitudes towards pensions in general. Lastly, participants' financial attitude is measured.

Life events are measured in several ways. Firstly, as part of the survey, participants provide information on which life events they experienced in the previous three years. Secondly, after participants answer the proxies related to pension behaviour, they indicate what prompted them to act (unaided inquiry). Lastly, participants are asked if any life events guided their actions (aided inquiry). These different measures provide a unique opportunity to directly measure the impact of life events on retirement planning directly. Furthermore, it enables the researcher to assess if participants acknowledge that life events prompted their actions or that any potential effect occur unconsciously. The literature review identified marriage, divorce, childbirth, loss of a spouse, unemployment, and disability as key life events - all of which are present in the NEST data set, providing a unique opportunity to measure the effects of these life events on pension intentions, attitudes, and behaviour.

Methodology

In order to test the hypothesized relationship between life events and pension intentions, attitudes, and behaviour, several statistical methods will be applied. The main statistical method of analysis is regression; depending on the measurement level of the dependent variable, either a linear regression or a logistic

regression will be used. Several control variables will be added to the regressions in order to observe their effects on the dependent variable. When the regressions prove to be inadequate in detecting any relationships, non-parametric tests will be examined to explore any other potential relationships. As these non-parametric are less strict, they could detect a potential important relationship overseen by the regressions. Therefore, these results could guide future research.

4. Results

The results are presented in two sections, as there are two main sets of hypotheses. The first section presents the results of the difference in pension intentions, attitudes, and behaviour depending on the occurrence of at least one life event. The second part will elaborate on the influence of individual life events on pension intentions, attitudes, and behaviour. It should be noted that all the regressions used in this study produced an adjusted $R^2 < .050$, which indicates that there is still considerable unexplained variance in the dependent variables. Table 3 contains the summary statistics for the results regarding life events in general. Age appears to be an influential factor, as there are differences between age groups for all variables. The summary statistics suggest that life events are influential regarding participants' pension intentions.

Table 3: Summary statistics life events in general: mean (standard deviation)

	Sample	Gender		Age		At least one life event experienced		# of life events		
		Male	Female	Young	Old	Yes	No	1	2	3
Pension intentions										
Login	3.05	3.08	3.01	3.10**	2.95	3.15**	2.97	3.17**	3.02	3.44
	(.725)	(.680)	(.770)	(.720)	(.722)	(.692)	(.740)	(.688)	(.721)	(.527)
Additional contribution	2.60	2.61	2.59	2.70***	2.48	2.63	2.57	2.61	2.64	2.94
	(.830)	(.805)	(.857)	(.787)	(.863)	(.824)	(.834)	(.820)	(.838)	(.830)
Fund switch	2.23	2.25	2.22	2.35***	2.13	2.26*	2.21	2.26	2.28	2.27
	(.584)	(.588)	(.580)	(.594)	(.555)	(.583)	(.584)	(.593)	(.545)	(.604)
Pension attitudes:										
NEST	56.886	57.638	56.119	55.585	58.299**	57.621	56.351	57.394	58.330	56.326
	(22.971)	(22.576)	(23.387)	(23.663)	(22.159)	(22.330)	(23.465)	(23.465)	(22.746)	(22.651)
Pension	67.407	67.295	67.522	65.205	69.709***	67.033	67.695	67.402	66.419	63.579
	(21.543)	(21.557)	(21.573)	(21.885)	(20.978)	(21.209)	(21.836)	(20.919)	(21.869)	(21.871)
Finance	73.105	73.202	72.966	74.272**	71.845	72.958	73.191	72.498	74.339	74.469
	(18.229)	(18.213)	(18.240)	(19.87)	(18.853)	(17.619)	(18.689)	(17.470)	(17.690)	(20.392)
Pension behaviour										
Login	.767	.763	.773	.711	.827***	.767	.768	.774	.751	.706
	(.423)	(.425)	(.419)	(.454)	(.378)	(.423)	(.422)	(.418)	(.433)	(.463)
Additional contribution	.445	.431	.460	.402	.490***	.428	.458	.423	.442	.441
	(.497)	(.495)	(.499)	(.490)	(.500)	(.495)	(.498)	(.494)	(.498)	(.504)
Fund switch	.161	.177**	.143	.208***	.112	.167	.157	.153	.212	.147
	(.368)	(.382)	(.351)	(.406)	(.316)	(.373)	(.364)	(.361)	(.410)	(.360)

Notes: *p<0.1, **p<0.05, ***p<0.001. The dependent variables are pension intentions, pension attitudes, and pension behaviour. Pension intentions are measured on an interval scale (1-4). Pension attitudes are measured on a ratio scale (0-100). The proxies for pension behaviour are dichotomous (0-1). Age is divided by employing a median split: young (<43) and old (≥43). The number of life event variables are compared to the 'no life events experienced' condition in order to test for a significant difference.

4.1 Hypothesis 1: Life events in general and pension intentions

Table 4 shows the results of the influence of life events in general on participants' pension intentions, as measured by login intentions, additional contribution intentions, and fund switching intentions. Regarding login intentions, experiencing at least one life event has a significant (p: .009) and positive impact (B: .178), which is not affected by the inclusion of the control variables age and gender. Although, the magnitude of

Table 4: Life events in general and pension intentions

Panel A: Login intentions				
	At least one life event Coefficient (SE)		# of life events Coefficient (SE)	
	1	2	3	4
Life events	.178 **	.182**	.094**	.099**
	(.067)	(.067)	(.043)	(.043)
Age		-.006**		-.006**
		(.003)		(.003)
Gender		-.062		-.066
		(.067)		(.067)
Adjusted R^2	.013	.019	.008	.015
Panel B: Additional contribution intentions				
	At least one life event Coefficient (SE)		# of life events Coefficient (SE)	
	1	2	3	4
Life events	.058	.055	.044	.045
	(.044)	(.043)	(.028)	(.025)
Age		-.009***		-.009***
		(.002)		(.002)
Gender		-.011		-.010
		(.043)		(.043)
Adjusted R^2	.001	.019	.001	.020
Panel C: Fund switch intentions				
	At least one life event Coefficient (SE)		# of life events Coefficient (SE)	
	1	2	3	4
Life events	.055*	.048*	.029	.026
	(.030)	(.029)	(.019)	(.019)
Age		-.010***		-.010***
		(.001)		(.001)
Gender		-.022		-.022
		(.029)		(.029)
Adjusted R^2	.002	.047	.001	.046

Notes: *p<0.1, **p<0.05, ***p<0.001. The dependent variable pension intentions is measured by three proxies; login intentions, additional contribution intentions, and fund switch intentions. Linear regression is used for the analysis. The first two columns employ a dichotomous variable to measure the presence of life events. In the last two columns, a scale variable is used to measure the amount of life events. Column 2 and 4 account for age (continuous) and gender.

the effect is small (B: -.006 through -.010), age has a significant negative effect on all three measures of intentions. Similar results are found when evaluating the number of life events. Although the coefficient for life events is smaller (.099), it is still significant (p: .023).

When additional contribution intentions are used as the dependent variable, life events do not have a significant impact. Age, however, displays a significant (p< .001) and negative (B: -.009) relationship with participants' intentions regarding additional contributions.

A marginally significant (p: .064) positive (B: .055) relationship is found between fund switch intentions and the occurrence of at least one life event. This relationship is attenuated when control variables for age and gender are included (B: .048; p: .098).

Overall, there is partial support for hypothesis 1, suggesting that participants who have experienced at least one life event have more positive intentions towards their pension than participants who did not. Regarding participants' intentions to login into their online pension environment, hypothesis 1 is supported. However, no support is found for additional contribution intentions. Concerning fund switch intentions, the evidence supportive of the hypothesis is minimal.

4.2 Hypothesis 2: Life events in general and pension attitudes

The results regarding the relationship between life events and pension attitudes are depicted in table 5. Attitudes are divided in three kinds: attitude towards the pension provider (NEST), attitude towards pensions in general, and financial attitude. Neither measure of life events ('at least one life event' and 'number of life events') has a significant influence on any of the three measures of attitude. The only influential variable is age, which significantly and positively affects NEST and pension attitudes (B: .167; p< .001 and B: .263; p< .001). Financial attitudes, in contrast, appear to deteriorate with increases in age (B: -.069; p: .032).

Overall, we fail to reject the null hypothesis for each measure of attitudes, indicating no evidence

of hypothesis 2, which proposes that participants who have experienced at least one life event have more positive attitudes towards their pension than participants who did not.

Table 5: Life events in general and attitudes

Panel A: NEST attitude				
	At least one life event Coefficient (SE)		# of life events Coefficient (SE)	
	1	2	1	2
Life events	1.270	1.263	.897	.874
	(.997)	(.993)	(.649)	(.647)
Age		.167***		.167***
		(.040)		(.040)
Gender		-1.563		-1.550
		(.987)		(.988)
Adjusted R^2	.000	.008	.000	.008
Panel B: Pension attitude				
	At least one life event Coefficient (SE)		# of life events Coefficient (SE)	
	1	2	1	2
Life events	-.662	-.589	-.665	-.634
	(.936)	(.926)	(.609)	(.603)
Age		.263***		.263***
		(.037)		(.037)
Gender		.072		.051
		(.920)		(.921)
Adjusted R^2	.000	.021	.000	.022
Panel C: Finance attitude				
	At least one life event Coefficient (SE)		# of life events Coefficient (SE)	
	1	2	1	2
Life events	-.234	-.260	.089	.076
	(.791)	(.791)	(.515)	(.515)
Age		-.069**		-.069**
		(.032)		(.032)
Gender		-.209		-.196
		(.786)		(.786)
Adjusted R^2	.000	.001	.000	.001

Notes: *p<0.1, **p<0.05, ***p<0.001. The dependent variable attitudes is measured by three proxies; NEST attitude, pension attitude, and finance attitude. The results are produced using a linear regression. The first two columns employ a dichotomous variable to measure the presence of life events. In the last two columns, a scale variable is used to measure the amount of life events. Column 3 and 4 account for age (continuous) and gender.

4.3 Hypothesis 3: Life events in general and pension behaviour

Table 6 shows that no relationship between pension behaviour and life events can be inferred. Due to the small proportion of the sample that experienced life events, logistic regressions generated inferior results.

Therefore, chi-square tests have been conducted instead. The chi-square statistics for the life event variable are non-significant for every one of the three behaviour proxies, while age influences all three types of behaviour.

A comparison of column proportions reveals that older (above the media age of the sample; 43) respondents are more likely to have logged into their pension environment compared to younger respondents (below the median age of the sample; 43) (χ^2: 41.005; df: 2; p<.001). Moreover, younger participants make less additional contributions when compared to older participants (χ^2: 16.853; df: 1; p<.001). Younger participants are also more likely to opt out of the default investment fund (χ^2: 54.321; df: 2; p< .001). Furthermore, males are more likely to switch funds than females (χ^2: 10.775; df: 2; p: .005).

As an additional test (untabulated), a linear regression is conducted with the gross contributions of all participants as the dependent variable. In terms of gross contributions, participants who experienced one or more life events do not differ from participants who did not (B: .025; SE: .063; p: .694). However, age appears to have a positive and significant effect on gross contributions (B: .025; SE: .003; p< .001).

Open ended questions, designed to gauge the degree to which participants ascribe their behaviour to certain life events, were also analysed to evaluate participants' behaviour. As to login behaviour, using an unaided inquiry only 16 (1.7% of participants who experienced at least one life event) participants declare that they logged in because they experienced a life event. Through an aided inquiry, the number of participants increases to 88 (9.4%). Life events only prompted 23 (2.5%) and 31 (3.3%) participants to make additional contributions (unaided and aided inquiry). Furthermore, through an aided inquiry only three (0.3%) participants listed life events as the motives for fund switching. The results of the open-ended questions are in line with the non-significant effects of life events on pension behaviour reported in table 6.

Table 6: Life events and pension behaviour

Panel A: Login behaviour			
	χ^2	df	p-value
Life event	.300	2	.861
Age	41.005***	2	.000
Gender	.340	2	.844
Panel B: Additional contribution behaviour			
	χ^2	df	p-value
Life event	1.922	1	.166
Age	16.853***	1	.000
Gender	1.876	1	.171
Panel C: Fund switching behaviour			
	χ^2	df	p-value
Life event	1.699	2	.428
Age	54.321***	2	.000
Gender	10.775**	2	.005

Notes: *p<0.1, **p<0.05, ***p<0.001. The dependent variable pension behaviour is measured by three proxies; login behaviour, additional contribution behaviour, and fund switch behaviour. A Chi-square test was conducted to analyse the data. The first column shows the Chi-square statistic. The second column entails the degrees of freedom used for the Chi-square test. The third column displays the p-value for each independent variable, indicating a significant difference between groups of the independent variable. Life events are measured as a dichotomous variable. Age is split in two group; below median (<43) and above median (≥43).

Overall, the data is not supportive of hypothesis 3. Thereby, it cannot be inferred that participants who have experienced at least one life event display more desirable behaviour regarding their pension than participants who did not.

4.4 Hypotheses 4-9A: Individual life events and pension intentions

This section reports the second part of the results. Rather than investigating life events in general, this section takes into account the individual life events - marriage, divorce, childbirth, the loss of a spouse, unemployment, and disability.

First, the effects of individual life events on participants' intentions were analysed. Second, pension attitudes were used as the dependent variable. Lastly, the influence of the individual life events on pension behaviour was explored. The summary statistics regarding the analyses with the individual life events are shown in table 7. For several life events there are differences in the pension variables between participants who did experience the life event and those who did not.

Table 7: Summary statistics individual life events: mean (standard deviation)

	Sample	Marriage		Divorce		Childbirth		Loss of a spouse		Unemployment		disability	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Pension intentions													
Login	3.05	3.04	3.05	3.36	3.04	3.14	3.04	3.19**	3.01	2.98	3.06	3.25**	3.03
	(.725)	(.916)	(.712)	(.842)	(.719)	(.762)	(.721)	(.624)	(.746)	(.656)	(.733)	(.554)	(.734)
Additional	2.60	2.76**	2.58	2.65	2.60	2.81**	2.58	2.61	2.59	2.58	2.60	2.56	2.60
contribution	(.830)	(.822)	(.829)	(.802)	(.831)	(.759)	(.833)	(.841)	(.827)	(.816)	(.832)	(.844)	(.829)
Fund switch	2.23	2.38**	2.22	2.23	2.23	2.28	2.23	2.24	2.23	2.25	2.23	2.25	2.23
	(.584)	(.577)	(.583)	(.620)	(.583)	(.532)	(.587)	(.558)	(.592)	(.603)	(.581)	(.612)	(.582)
Pension attitudes													
NEST	56.886	57.421	56.869	60.943	56.786	55.531	56.991	58.299	56.516	57.328	56.846	58.157	56.814
	(22.971)	(22.492)	(23.019)	(23.727)	(22.950)	(23.501)	(22.947)	(22.379)	(23.133)	(21.344)	(23.222)	(23.297)	(22.954)
Pension	67.407	68.859	67.285	68.960	67.360	66.242	67.472	67.023	67.510	57.742	67.814**	66.906	67.441
	(21.543)	(20.869)	(21.616)	(18.617)	(21.638)	(23.108)	(21.469)	(21.408)	(21.608)	(21.900)	(21.484)	(20.854)	(21.617)
Finance	73.105	73.820	73.029	78.176**	72.948	74.213	73.022	72.682	73.204	71.725	73.299	74.076	73.014
	(18.229)	(17.625)	(18.273)	(16.412)	(18.253)	(16.284)	(18.331)	(18.071)	(18.268)	(17.255)	(18.362)	(19.213)	(18.147)
Pension behaviour													
Login	.767	.821*	.763	.741	.768	.692	.772*	.765	.768	.767	.768	.750	.789
	(.423)	(.385)	(.425)	(.442)	(.422)	(.464)	(.420)	(.425)	(.422)	(.423)	(.423)	(.434)	(.422)
Additional	.445	.432	.446	.448	.444	.392	.448	.448	.444	.413	.449	.434	.445
contribution	(.497)	(.497)	(.497)	(.502)	(.497)	(.490)	(.497)	(.498)	(.497)	(.493)	(.498)	(.497)	(.497)
Fund switch	.161	.216*	.157	.207	.160	.242**	.156	.151	.164	.167	.160	.138	.163
	(.368)	(.413)	(.363)	(.409)	(.366)	(.430)	(.363)	(.359)	(.370)	(.373)	(.367)	(.346)	(.369)

Notes: *p<0.1, **p<0.05, ***p<0.001. The dependent variables are pension intentions, pension attitudes, and pension behaviour. Pension intentions are measured on an interval scale (1-4). Pension attitudes are measured on a ratio scale (0-100). The proxies for pension behaviour are dichotomous (0-1).

When the six life events were regressed on login intentions (table 8), the loss of a spouse is the only event with a significant (p: .020) coefficient (B: .172), suggesting that losing one's spouse increases the intentions to log into the online pension platform. The entry of age and gender as control variables strengthens the relationship as the coefficient increases to .187 and the p-value becomes .012. After adding the control variables, a marginal positive effect also appears for divorce (B: .324; p: .091).

Separate inspection of life events confirms the effect of losing a spouse and a divorce on login intentions. Furthermore, the event of disability alone has a marginal positive relation to login intentions (B: .229; p: .067), and for all regressions ran with login intentions as the dependent variable, 'age' has a significant negative impact on login intentions, although in some cases that impact is minor.

Regarding login intentions, hypotheses 4-9A, which proposed that experiencing one of the six investigated life events in the previous three years would have a positive influence on pension intentions, are only partially supported. Support for this positive relationship is found for the events of divorce (H5A), the loss of a spouse (H7A), and disability (H9A). Although the effects of divorce and disability are only marginally significant, strong evidence is found for the loss of a spouse.

Table 8: Individual life events and login intentions

	All life events Coefficient (SE)		Individual life events Coefficient (SE)					
	1	2	3	4	5	6	7	8
Marriage	-.041	-.050	-.019					
	(.147)	(.148)	(.147)					
Divorce	.309	.324*		.331*				
	(.196)	(.195)		(.196)				
Childbirth	.111	.080			.071			
	(.126)	(.127)			(.126)			
Loss of a spouse	.172**	.187**				.203**		
	(.082)	(.083)				(.080)		
Unemployment	-.087	-.072					-.060	
	(.101)	(.101)					(.101)	
Disability	.175	.178						.229*
	(.128)	(.128)						(.125)
Age		-.006**	-.005*	-.005*	-.005*	-.006**	-.005*	-.005*
		(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)
Gender		-.064	-.067	-.066	-.068	-.066	-.070	-.068
		(.067)	(.068)	(.067)	(.067)	(.067)	(.068)	(.067)
Adjusted R^2	.012	.019	.004	.010	.004	.017	.004	.011

Notes: *p<0.1, **p<0.05, ***p<0.001. The data were analysed using a linear regression with login intentions as the dependent variable. Login intentions were measured on an interval scale. The first model regresses all individual life events on the dependent variable simultaneously. Model two additionally controls for age and gender. Models 3-8 inserts each life event separately into the regression together with the control variables. Marriage, divorce, childbirth, loss of a spouse, unemployment, disability, and gender are measured as a dichotomous variable. Age is a continuous variable.

The results of the analyses with additional contribution intentions as the dependent variable are shown in table 9. The effect on additional contribution intentions is marginal in the case of marriage (B: .147; p: .080) and significant in the case of childbirth (B: .207; p: .022). However, after controlling for age and gender, the effect of marriage becomes non-significant and the effect of childbirth (B: .151; p: .097) diminishes. Looking at childbirth in particular, the effect on additional contribution intentions is marginally significant as well (B: .166; p: .065). Life events as divorce, the loss of a spouse, unemployment, and disability do not significantly influence additional contribution intentions. Age affects additional contribution intentions negatively and significantly in all cases.

Table 9: Individual life events and additional contribution intentions

	All life events Coefficient (SE)		Individual life events Coefficient (SE)					
	1	2	3	4	5	6	7	8
Marriage	.147*	.110	.127					
	(.084)	(.084)	(.083)					
Divorce	.050	.073		.081				
	(.133)	(.132)		(.132)				
Childbirth	.207**	.151*			.166*			
	(.091)	(.091)			(.090)			
Loss of a spouse	.026	.035				.034		
	(.053)	(.052)				(.052)		
Unemployment	-.009	.010					.010	
	(.061)	(.061)					(.061)	
Disability	-.037	-.018						-.013
	(.083)	(.083)						(.082)
Age		-.009***	-.009***	-.009***	-.009***	-.009***	-.009***	-.009***
		(.002)	(.002)	(.002)	(.002)	(.002)	(.002)	(.002)
Gender		-.008	-.012	-.013	-.009	-.012	-.012	-.012
		(.043)	(.043)	(.043)	(.043)	(0.043)	(.043)	(.043)
Adjusted R^2	.003	.019	.020	.018	.020	.018	.018	.018

Notes: *p<0.1, **p<0.05, ***p<0.001. The data were analysed using a linear regression with additional contribution intentions as the dependent variable. Additional contribution intentions were measured on an interval scale. The first model regresses all individual life events on the dependent variable simultaneously. Models two additionally controls for age and gender. Model 3-8 inserts each life event separately into the regression together with the control variables. Marriage, divorce, childbirth, loss of a spouse, unemployment, disability, and gender are measured as a dichotomous variable. Age is a continuous variable.

Concerning additional contribution intentions, the data only provides partial support for the hypotheses 4-9A with respect to additional contribution intentions. Marriage (H4A) is positively although marginally related to additional contribution intentions. Furthermore, the event of childbirth (H6A) has a positive impact on participants' tendency to make additional contributions into their pension fund. For the remaining life events, the null hypotheses cannot be rejected.

The effect of the different life events on fund switch intentions are reported in table 10. Marriage is the only life event which significantly affects fund switch intentions (B: .159; p: .007), regardless of controlling for both age and gender (B: .108; p: .062). When looking at marriage in particular, the effect on fund switch intentions is marginally significant as well (B: .105; p: .068). No significant relationship is found between

Table 10: Individual life events and fund switch intentions

	All life events Coefficient (SE)		Individual life events Coefficient (SE)					
	1	2	3	4	5	6	7	8
Marriage	.159**	.108*	.105*					
	(.059)	(.058)	(.057)					
Divorce	-.013	.011		.013				
	(.094)	(.092)		(.091)				
Childbirth	.035	-.059			-.048			
	(.068)	(.068)			(.067)			
Loss of a spouse	.002	.016				.021		
	(.036)	(.035)				(.035)		
Unemployment	.022	.035					.038	
	(.044)	(.043)					(.043)	
Disability	.009	.021						.033
	(.057)	(.056)						(.055)
Age		-.010***	-.010***	-.010***	-.010***	-.010***	-.010***	-.010***
		(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)
Gender		-.023	-.024	-.024	-.025	-.024	-.023	-.023
		(.029)	(.029)	(.029)	(0.029)	(0.029)	(.029)	(.029)
Adjusted R^2	.001	.045	.047	.045	.046	.045	.046	.045

Notes: *p<0.1, **p<0.05, ***p<0.001. The data were analysed using a linear regression with fund switch intentions as the dependent variable. Fund switch intentions were measured on an interval scale. The first model regresses all individual life events on the dependent variable simultaneously. Model two additionally controls for age and gender. Models 3-8 inserts each life event separately into the regression together with the control variables. Marriage, divorce, childbirth, loss of a spouse, unemployment, disability, and gender are measured as a dichotomous variable. Age is a continuous variable.

divorce, childbirth, the loss of a spouse, unemployment, and disability and fund switch intentions. Age affects fund switch intentions negatively and significantly in all cases.

Overall, partial evidence is found for five hypotheses (4-9A). The events of marriage (H4A), divorce (H5A), childbirth (H6A), the loss of a spouse (H7A), and disability (H9A) have the hypothesized positive impact on pension intentions for at least one of the proxies used to measure pension intentions. Participants' age has a negative relationship with pension intentions.

4.5 Hypotheses 4-9B: Individual life events and pension attitudes

In order to study the relationship between the life events and pension attitudes, several proxies are used. Regarding pension attitudes, NEST attitude, pension attitude, and finance attitude are investigated.

Table 11: Individual life events and NEST attitude

	All life events Coefficient (SE)		Individual life events Coefficient (SE)					
	1	2	3	4	5	6	7	8
Marriage	.673	1.326	1.349					
	(1.891)	(1.891)	(1.880)					
Divorce	3.993	3.664		3.768				
	(3.070)	(3.060)		(3.048)				
Childbirth	-1.501	-.345			-.177			
	(2.176)	(2.192)			(2.178)			
Loss of a spouse	1.676	1.373				1.436		
	(1.207)	(1.204)				(1.191)		
Unemployment	.205	-.079					.135	
	(1.463)	(1.459)					(1.451)	
Disability	.731	.496						.980
	(1.962)	(1.956)						(1.928)
Age		.163***	.169***	.165***	.166***	.163***	.166***	.165***
		(.041)	(.040)	(.040)	(.041)	(.040)	(.040)	(.040)
Gender		-1.594	-1.597	-1.619	-1.608	-1.582	-1.601	-1.601
		(.989)	(.987)	(.987)	(.988)	(.987)	(.988)	(.987)
Adjusted R^2	.001	.007	.008	.008	.008	.008	.008	.008

Notes: *p<0.1, **p<0.05, ***p<0.001. The data were analysed using a linear regression with NEST attitude as the dependent variable. NEST attitude is measured on a continuous scale. The first model regresses all individual life events on the dependent variable simultaneously. Model two additionally controls for age and gender. Models 3-8 inserts each life event separately into the regression together with the control variables. Marriage, divorce, childbirth, loss of a spouse, unemployment, disability, and gender are measured as a dichotomous variable. Age is a continuous variable.

Table 11 exhibits how the different life events affect NEST attitude. No significant effect of life events on NEST attitude could be detected, regardless of controls for age and gender. A significant effect with respect to each life event in particular on participant's NEST attitude is not found. Age, however, significantly affects NEST attitude positively (B: .163; p< 0.01).

The data do not provide support for any of the hypotheses (4-9B) regarding NEST attitude as none of the life events has a positive influence on participants' attitudes.

Results on whether pension attitude is affected by the different life events are shown in table 12. Marriage only marginally influences pension attitude when analysed in isolation (B: 2.905; p: .097). No significant effect is found for divorce, childbirth, loss of a spouse, and disability on participant's pension attitude.

Table 12: Individual life events and pension attitude

	All life events Coefficient (SE)		Individual life events Coefficient (SE)					
	1	2	3	4	5	6	7	8
Marriage	1.692	2.848	2.905*					
	(1.773)	(1.760)	(1.751)					
Divorce	1.990	1.302		.896				
	(2.879)	(2.847)		(2.841)				
Childbirth	-1.546	.619			1.031			
	(2.041)	(2.040)			(2.030)			
Loss of a spouse	-.316	-.777				-.987		
	(1.132)	(1.120)				(1.110)		
Unemployment	-3.080**	-3.410**					-3.486**	
	(1.372)	(1.358)					(1.351)	
Disability	-.340	-.718						-1.109
	(1.840)	(1.820)						(1.796)
Age		.277***	.270***	.263***	.266***	.265***	.267***	.264***
		(.038)	(.038)	(.037)	(.038)	(.037)	(.037)	(.037)
Gender		.005	.108	.088	.106	.075	-.002	.087
		(.920)	(.919)	(.920)	(.920)	(.920)	(.919)	(.920)
Adjusted R	.000	.024	.022	.021	.021	.022	.024	.021

Notes: *p<0.1, **p<0.05, ***p<0.001. The data were analysed using a linear regression with pension attitude as the dependent variable. Pension attitude is measured on a continuous scale. The first model regresses all individual life events on the dependent variable simultaneously. Model two additionally controls for age and gender. Models 3-8 inserts each life event separately into the regression together with the control variables. Marriage, divorce, childbirth, loss of a spouse, unemployment, disability, and gender are measured as a dichotomous variable. Age is a continuous variable.

Unemployment, however, has a significant effect on pension attitude (B: 3.080; p: .025), even after controlling for age and gender (B: 3.410; p: .012). This result holds when analysing unemployment in isolation (B: 3.486; p: .010). Age affects pension attitude in all cases.

The second proxy for participant's attitudes is their attitude towards pensions in general. Regarding the hypothesis 4-9B, only marriage (H4B) displays the predicted positive relationship, although marginally. Furthermore, in contrast with the hypothesized direction of the relationship, the data suggest that the event of unemployment (H8B) is negatively related with pension attitude.

Table 13 displays the results of the analysis of how financial attitude is impacted after different life events. Divorce appears to significantly affect financial attitude (B: 5.296; p: .030), and the result holds after

Table 13: Individual life events and finance attitude

	All life events Coefficient (SE)		Individual life events Coefficient (SE)					
	1	2	3	4	5	6	7	8
Marriage	.621	.337	.452					
	(1.498)	(1.504)	(1.497)					
Divorce	5.296**	5.475**		5.427**				
	(2.433)	(2.433)		(2.423)				
Childbirth	1.086	.542			.610			
	(1.724)	(1.743)			(1.734)			
Loss of a spouse	-.555	-.448				-.397		
	(.956)	(.957)				(0.948)		
Unemployment	-1.715	-1.650					-1.485	
	(1.159)	(1.160)					(1.155)	
Disability	1.161	1.250						1.211
	(1.555)	(1.555)						(1.534)
Age		-.067**	-.068**	-.071**	-.067**	-.068**	-.067**	-.070**
		(.033)	(.032)	(.032)	(.032)	(.032)	(.032)	(.032)
Gender		-.258	-.198	-.221	-.192	-.207	-.240	-.196
		(.786)	(.786)	(.785)	(.786)	(.786)	(.786)	(.785)
Adjusted R^2	.001	.002	.001	.003	.001	.001	.002	.001

Notes: *p<0.1, **p<0.05, ***p<0.001. The data were analysed using a linear regression with finance attitude as the dependent variable. Finance attitude is measured on a continuous scale. The first model regresses all individual life events on the dependent variable simultaneously. Model two additionally controls for age and gender. Models 3-8 inserts each life event separately into the regression together with the control variables. Marriage, divorce, childbirth, loss of a spouse, unemployment, disability, and gender are measured as a dichotomous variable. Age is a continuous variable.

controlling for age and gender (B: 5.296; p: .025). The influence on financial attitude with respect to divorce as an isolated event is significant as well (B: 5.427; p: .025). In addition, age showed a significant effect on financial attitude in all cases. No significant effect on participant's financial attitudes could be detected for marriage, childbirth, the loss of a spouse, and disability.

Turning to the hypotheses 4-9B with respect to the proxy 'finance attitude', only the event of a divorce (H5B) is in line with the prediction. Concerning the other life events, there appears to be no positive relation to the financial attitudes of participants.

Overall, only two life events show results in line with hypotheses 4-8B. Both marriage (H4B) and divorce (H5B) increase participants' attitudes for at least one attitude measure. Interestingly, becoming unemployed (H8B) causes a decrease in 'pension attitudes', which opposes the hypothesised direction. Additionally, the analysis reveals age as an important variable: NEST and pension attitudes are both positively related to age, whereas age negatively influences financial attitudes.

4.6 Hypotheses 4-9C: Individual life events and pension behaviour

This section of the results studies the link between each individual life event and participants' pension behaviour. Participants' behaviour is measured by their login behaviour, additional contribution behaviour, and fund switch behaviour.

The tests analysing the effects of life events in general on pension behaviour did not show any significant relationships. However, when investigating each life events separately in relation to pension behaviour, some significant effects appear, which can be found in table 14. In terms of login behaviour, there is a significant difference in login behaviour whether or not childbirth occurs (χ^2: 6.070; df: 2; p: .048). A comparison of column proportions reveals that those who had a child in the previous three years log in less than those who did not. Furthermore, older (>43) participants log in more often than their younger (<43) counterparts.

Regarding additional contributions made by participants, there is no difference between those

who experienced any of the life events and those who did not. Age is the only variable for which a significant difference is found: older participants make more additional contribution compared to young participants. As an additional test (untabulated), a linear regression was conducted using gross contributions as the dependent variable. Only childbirth appeared to be a significant predictor, although marginally. Childbirth has a negative impact on gross contributions (B: -.272; SE: .153; p: .075), but the

Table 14: Individual life events and pension behaviour

Panel A: Login behaviour			
	χ^2	df	p-value
Marriage	2.990	2	.224
Divorce	.269	2	.874
Childbirth	6.070**	2	.048
Loss of a spouse	.0167	2	.920
Unemployment	1.649	2	.438
Disability	.724	2	.696
Age	41.005***	2	.000
Gender	.340	2	.884
Panel B: Additional contribution behaviour			
	χ^2	df	p-value
Marriage	.110	1	.740
Divorce	.003	1	.954
Childbirth	1.439	1	.230
Loss of a spouse	.021	1	.884
Unemployment	1.323	1	.250
Disability	.071	1	.790
Age	16.853***	1	.000
Gender	1.876	1	.171
Panel C: Fund switching behaviour			
	χ^2	df	p-value
Marriage	5.260*	2	.072
Divorce	.946	2	.623
Childbirth	6.406**	2	.041
Loss of a spouse	.457	2	.796
Unemployment	.548	2	.760
Disability	1.444	2	.486
Age	54.321***	2	.000
Gender	10.775**	2	.005

Notes: *p<0.1, **p<0.05, ***p<0.001. The dependent variable pension behaviour is measured by three proxies; login behaviour, additional contribution behaviour, and fund switch behaviour. A Chi-square test was conducted to analyse the data. The first column shows the Chi-square statistic. The second column entails the degrees of freedom used for the Chi-square test. The third column displays the p-value for each independent variable, indicating a significant difference between groups of the independent variable. Life events are measured as a dichotomous variable. Age is split in two group; below median (<43) and above median (≥43).

effect disappears when controlled for age. When age is added, it becomes the only significant variable in the model (B: .025; SE: .003; p< .001).

Panel C displays the relationship between the separate life events and fund switching behaviour. There is a marginal significant difference between those who have married and those who have not (χ^2: 5.260; df: 2; p: .072), married individuals are more likely to switch funds when compared to their unmarried counterparts. Furthermore, there is a significant difference regarding the event of childbirth (χ^2: 6.406; df: 2; p: .041), those that had a child in the previous three years switched funds more than participants who did not. Furthermore, younger participants switch funds more than older participants and males more than females.

Overall, there is only partial support for the hypothesised positive relationship between the life events and pension behaviour (H4-9C). Both marriage (H4C) and childbirth (H6C) result in more active pension behaviour regarding fund switching. Additionally, and in contrast with the hypothesis (H6C), participants who had a child in the previous three years logged in less when compared to participants who did not report the event. Age has a significant impact on each of the behavioural measures. Older participants log in more and make more additional contributions in comparison to younger participants. Furthermore, younger (male) participants change funds more often than older (female) participants.

5. Conclusion and discussion

Experts have often proposed life events as influential moments in the life of pension fund participants, at which participants are more susceptible to pension communication, thereby providing an opportunity to improve participants' involvement with their pensions. This study reveals promising results for the existence of a link between life events and participants' pension intentions, attitudes, and behaviour. The results suggest that besides having an impact on one's subjective well-being, job satisfaction, and health, life events are relevant for retirement planning as well. Having experienced at least one life event increase pension fund participants' intentions to log into their online pension environment and to switch funds in the future. However, it does not enhance their tendency to make additional contribution into their pension fund. Regarding the attitudes of participants, no relationship with life events can be identified. Furthermore, experiencing at least one life event does not result in more desirable pension behaviour. Participants who experienced at least one life event do not log in more, do not make more additional contribution, and do not differ in terms of switching funds compared to participants who did not experience a life event.

However, analysing the life events separately suggests that researching life events in general shrouds the effects of individual life events. There are certain life events that do have a significant influence on the pension measures, even if the initial analysis does not report one. Being married increases one's intentions towards making additional contributions and switching funds, probably a reflection of an increased future orientation and shared responsibility induced by marriage. Furthermore, individuals who got married log in more compared to those who did not. These results correspond with Rickwood and White's (2009) findings that married individuals consider or alter their saving behaviour more than the unmarried. Divorce, on the other hand, induces an increase in log in intentions along with an increase in financial attitude. This could be the result of the change in their pension composition, which encourages divorcees to allocate time to their retirement planning. Furthermore, the event of childbirth results in

more positive intentions regarding additional contributions, likely induced by an increased future orientation. Concerning the actual changes in behaviour, those who had a child switch funds more than those who did not. However, participants who had a child log in less when compared to participants who did not. Another family-related event, the loss of one's spouse results in an increase in the tendency to log in, which is expected to be due to the change in pension outlook and by receiving their spouse's retirement savings. Becoming unemployed decreases attitudes towards pensions, which could be caused by increased financial stress (Luhmann & Eid, 2009). For the last life event considered in this study, disability, a marginal increase in login intention is observed. This is probably caused by the increased relevance of their retirement savings so far. Because, the disabled who are forced into unemployment are unable to collect further employer contributions, leaving them at a serious disadvantage in terms of retirement savings (Kelly et al., 2012).

Although several hypotheses are not supported by the data, there are several reasons why the current results are promising and indicative of a relationship between life events and pension intentions, attitudes, and behaviour. First, in the current study, a fundamental link between life events and pension intentions, attitudes, and behaviour is investigated, where participants who experienced a life event did not receive any pension communications customised for the specific event. As posited at the start of this paper, it is expected that when pension communications are adapted to particular life events, the results found in the study will be amplified and extended across the various measures used to assess pension intentions, attitudes, and behaviour. This would be in line with suggestions in the literature, which indicate that life events create unique opportunities to communicate with pension fund participants, as they increase the relevance of the topic to participants (BMC Pensioen Communicatie, 2014). Second, the number of participants who experienced a certain life event is significantly smaller than the number of participants who did not. This is expected to hinder the statistical tests in their ability to observe the true effects of the life events. In order to validate this expectation, summary statistics and regression results

are compared. There is partial support for this expectation, as in three cases (H4A, H9A, and H4C) a significant difference is suggested by the summary statistics, but not detected by the regressions.

6.1 Theoretical contribution

The current study contributes to the line of research attempting to enhance the pension involvement of pension plan participants. Suggested solutions by the literature include improving financial literacy through education (Lusardi & Mitchell, 2007a), employing effective default options (Carroll et al., 2005), and confronting participants with their future selves through virtual reality (Brüggen et al., 2013). Unfortunately, in the long term the effects of financial education disappear (Fernandes et al., 2014). When implemented correctly, default settings accelerate the rate at which participants sign up for their pension plan and enhance their contribution rate (Carroll et al., 2005), but after signing up pension involvement remains low. Brüggen et al., (2013) showed that using a hoped-for future self significantly increases participant's intention to consume less today to allocate more towards their pension. The effects of future selves on actual pension behaviour however, is yet to be established.

This study adds another potential solution to challenge the low levels of pension involvement, namely life events. Life events are often suggested as a solution, however, up to the point of publishing of this paper, it is the first instance in which the effects of various life events on pension involvement have been comprehensively studied. The current findings suggest that life events can stimulate pension intentions, attitudes, and behaviour positively.

6.2 Managerial contribution

The findings of this study have important implications for developing an effective communication strategy for pension providers. Designing a communication strategy based on life events provides an opportunity to counteract the widespread problem of low pension involvement (Adams & Rau, 2011; Alessie, van Rooij, & Lusardi, 2011; Diamond & Koszegi, 2003; O'Donoghue & Rabin, 1999). In order for this strategy to be feasible, pension providers have to be able to detect the life events their participants experience. If

pension providers are able to identify the life events their participants experience and adapt their communications accordingly, they can also deliver a very personalized message to the participant. In consumer goods marketing, personalisation is found to increase response rates, customer satisfaction, and subsequent engagement (Malthouse & Elsner, 2006), which is also expected to apply for pension communications. Furthermore, research indicates that individuals are more inclined to pre-commit to take action in the future instead of taking action immediately (Kahneman et al., 1990). Hence, it could be beneficial to modify the communication strategy in a way that encourages participants to pre-commit to receiving additional information or taking action. Additionally, it appears to be essential to react quickly to life events. According to the adaption theory (Brickman & Campbell, 1971; Diener et al., 2006), individuals (partially) adapt to the consequences of life events over time, thereby closing the window of opportunity created by life events.

6.3 Limitations and future research

The study exhibits several limitations. First, the generalisability of the results is subject to certain restrictions, first due to location-specific data (UK only). There is also a misrepresentation of the population: NEST states that 99% of their participants stick with the default investment fund, but 10.1% of the participants in the sample have reportedly switched their funds at least once. This misrepresentation is likely caused by the self-selection bias, which suggests that more engaged participations are more likely to respond. Another limitation of this study is the small portion of participants who experienced a certain life events compared to the participants who did not. Furthermore, the self-reporting nature of the data collection biases the results. However, the data set is complemented with internal data from NEST, which reduces the self-reporting bias. Moreover, most of the variables are measured on a categorical scale, restraining the flexibility and power for possible statistical tests. Lastly, the measures for the loss of a spouse and disability in the database also include events as a friend passing away or being hospitalized for a longer period. This misrepresentation is expected to diminish the true

effects of these events in this study, as the effects of losing a spouse and becoming disabled are expected to be more prominent.

Future studies need to be carried out in order to validate the link between life events and pension intentions, attitudes, and behaviour. A natural progression of this work is to analyse the effects of adjusting pension communication according to life events. Furthermore, longitudinal research should be conducted in order to test if and how the adaption theory is related to life events in the pension context.

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7. Appendix

Appendix A: Overview of the effects of life events

Author(s)	Area	IV	(mediator)	DV	Result	Sample
Adams & Rau (2011)	Psychology	Marriage		Retirement planning	Married people are better prepared for retirement and accumulate more overall savings compared to single or divorced individuals	Literature review
Anusic, Yap, & Lucas (2014).	Quality of Life Research	Marriage	-	Subjective Well-being	After marriage, people experience a short positive burst of life satisfaction, but over time life satisfaction returns to pre-marriage levels	Swiss; (n: 19.000)
Damman, Henkens & Kalmijn (2015)	Demography	Marriage		Retirement intentions	Married women intend and actually retire earlier compared to divorced women.	Dutch; (n: 420)
Georgellis, Lange,& Tabvuma (2012)	Vocational behaviour	Marriage		Job satisfaction	Prior to the first marriage people experience an increase in job satisfaction, however in the following three years, partial adaption takes place towards original satisfaction levels	UK; (n: 10.000)
Knoll, Tamborini, & Whitman (2012)	Marriage and family research	Marriage		Retirement intentions	Young adults who are married are more likely to perceive retirement as an important savings goal and to have an individual retirement account and to sign up to a defined contribution plan.	US; (n: 3.894)
Lucas, Clark, Georgellis, & Diener (2003)	Psychology	Marriage		Happiness	Marriage induces a small boost in happiness levels, however after the event happiness levels reverse back to prior-marriage levels. However, the authors acknowledge wide variations among individuals. People who reacted strongly on the initial event didn't adapt, instead they developed a new baseline for happiness.	German; (n: 24.000)
Luhmann, Hofmann, Eid, & Lucas, (2012)	Psychology	Marriage		SWB	Marriage increase people life satisfaction around the event. However, adaption starts rather quickly.	Meta-analysis: 188 publications
Plagnol & Scott (2011)	Quality of life research	Marriage		Changes in what matters to quality of life	Family, home comfort and happiness factors become more important to one's perception of quality of life after marriage. Contrary, friends and employment become less important.	UK; (n: 40.248)

Rickwood & White		Marriage	Retirement planning	Marriage causes people to consider or change their saving behaviour.	Australian; (n: 55)
Luhmann & Eid (2009)	Psychology	Marriage (repeated)	Life satisfaction	In general people who marry once are more satisfied than people who marry at least twice. Furthermore, repeated marriage do not show different levels of life satisfaction between marriages.	German; (n: 12.245)
Lucas (2005)	Psychology	Divorce	Happiness	Happiness and satisfaction decline around the divorce, conflicting with the adaption theory satisfaction levels do not rebound to prior-divorce levels. Remarkably, people who endure a divorce show lower happiness levels than people who remain married even before the divorce.	German; (n: 30.000)
Luhmann & Eid (2009)	Psychology	Divorce (repeated)	Life satisfaction	Previous research has shown that people adapt back to their previous life satisfaction levels. Remarkably, people also adapt to the event itself. Repeated divorces result in lower drops in life satisfaction compared to the initial event.	German; (n: 12.245)
Luhmann, Hofmann, Eid, & Lucas, (2012)	Psychology	Divorce	SWB	After a divorce SWB experiences a decline, followed by a positive adaption. The effect around the actual event is rather small, this is a result of people's anticipation of the divorce, which also decrease life satisfaction (Lucas, 2007b). Furthermore, Luhmann et al. (2012) argue that for people enduring a bad marriage, can actually benefit from a divorce in terms of SWB.	Meta-analysis: 188 publications
Pillow, Zautra, and Sandler (1996)	Psychology	Divorce	Distress	Regarding divorce, the stress provoked by the event does not lead to distress directly, however it creates a lot minor stressors which result in distress.	Not stated; (n: 359)
Anusic, Yap, & Lucas (2014).	Quality of Life Research	Childbirth	Subjective Well-being	Parents experience an increase in life satisfaction around the birth of their first child. In the following years they suffer a decline in terms of well-being. However on the long term their levels of SWB remain equal compared to childless couples	Swiss; (n: 19.000)
Damman, Henkens, & Kalmijn (2015).	Demography	Childbirth	Retirement intentions	Woman who gave birth to a child intend to retire later, compared to childless women. However the authors find no statistical proof regarding their actual behaviour.	Dutch; (n: 420)

Georgellis, Lange,& Tabvuma (2012)	Vocational behaviour	Childbirth	Job satisfaction	The birth of a child reduces job satisfaction on the long-term. No adaption takes place	UK; (n: 10.000)
Luhmann, Hofmann, Eid, & Lucas, (2012)	Psychology	Childbirth	SWB	In the long-term, the birth of a child decrease life satisfaction, after an initial increase. However, these long-term negative effects are compensated by daily affects they gain from their child.	Meta-analysis: 188 publications
Plagnol & Scott (2011)	Quality of life research	Childbirth	Changes in what matters to quality of life	Life event are capable of altering people's perception of what is important for their quality of life. People who had a child in the last five years view family as more important and financial, employment, friend aspects as less relevant.	UK; (n: 40.248)
Anusic, Yap, & Lucas (2014).	Quality of Life Research	Loss of a Spouse	Subjective Well-being	In the year of their spouse's death, life satisfaction levels drops steeply. Although widows adapt to their loss to some degree, the loss of a spouse has a long lasting impact on SWB.	Swiss; (n: 19.000)
Lucas, Clark, Georgellis, & Diener (2003)	Psychology	Loss of a Spouse	Happiness	After the death of the spouse, widows experience a substantial decline in happiness. The impact of this event is so severe, people are not able to adapt to it.	German; (n: 24.000)
Luhmann, Hofmann, Eid, & Lucas, (2012)	Psychology	Loss of a Spouse	SWB	The loss of a spouse has severe effects on life satisfaction. The initial decline as a result of the event is steeper compared to other events. Additionally, it takes much longer for widows to adapt.	Meta-analysis: 188 publications
Martikainen and Valkonen (1996)	Health	Loss of a Spouse	Mortality	Investigating the relationship between the loss of a spouse and mortality, Martikainen and Valkonen (1996) concluded that bereaved had a highly increased chance of dying due to alcohol-related, accidental, and violent causes. Furthermore, death by heart diseases and lung cancer was moderately larger for widows. Additionally, shortly after the event (<6 months), excess mortality rate where larger and the effects were more pronounced for younger people.	Finnish; (n: 1.580.000)
Pillow, Zautra, and	Psychology	Loss of a Spouse	Distress	Major life events can directly and indirectly induce stress. In the case of bereavement the event on its	Not stated; (n: 359)

Sandler (1996)					own was severe enough to cause distress. Additionally this effect was amplified by minor stressors that are consequences of the main event.	
Anusic, Yap, & Lucas (2014).	Quality of Life Research	Unemployment		Subjective Well-being	Life satisfaction is lower after unemployment, and people do not adapt their satisfaction levels	Swiss; (n: 19.000)
Bloemen, Hochguertel & Zweerink (2015)	Pension, aging, and retirement	Unemployment		Mortality	People who become unemployed have a 34% increased change of dying in the next 5 years. This increase runs through, stress induced diseases.	Dutch; (n: not stated)
Luhmann & Eid (2009)	Psychology	Unemployment (repeated)		Life satisfaction	Repeated unemployment decrease life satisfaction after each additional event of unemployment. This decline is due to various stressors as financial stress and loss of self-esteem.	German; (n: 12.245)
Luhmann, Hofmann, Eid, & Lucas, (2012)	Psychology	Unemployment		SWB	Unemployment is accompanied by a decline in life satisfaction. Furthermore, the adaption period is long.	Meta-analysis: 188 publications
Anusic, Yap, & Lucas (2014).	Quality of Life Research	Disability		Subjective Well-being	Disability has long lasting negative impact on people's subjective well-being.	Swiss; (n: 19.000)
Kelly et al. (2012)	Economics	Disability		Retirement income	People who are unable to keep working due to a chronic disease, are at a serious disadvantage regarding retirement income	Australian; (n: not stated)
Lucas (2007a)	Psychology	Disability		Distress and SWB	Disability has severe effects on SWB and distress. However, people tend to partially adapt to the induced distress, but SWB remains below the original level	German; (n: 67.000)
Bucciol & Zarri (2015)	Psychology	Loss of a child		Financial risk taking	Losing a child decreases the propensity to invest in stock with 7.8%. And affects financial risk taking on the long term.	US; (n: 9963)
Faravelli, Catena, Scarpato, & Ricca (2007)	Health	Negative life events	Stress	Psychiatric disorder	Negative life events as, death of a spouse, divorce, and unemployment increase one's susceptibility to psychiatric disorders by induced stress	Italian; (n: 2.363)
Ho, Cheung, & Cheung (2008)	Quality of life research	Personality	Negative life event	Life satisfaction	Negative life events partially mediate the positive relation between personality, emotional stability, family orientation, and harmony and life satisfaction.	Chinese; (n:1.961)

					When negative life events are concluded they have an negative effect on life satisfaction	
Lantz, House, Mero, & Williams (2005)	Sociology	Socioeconomics	(Financial) stress and negative life events	Mortality and health	People who are at a socioeconomic advantage endure more negative life events (death of a child, death of a spouse, divorce) which is related to more stress. Consequently, their risk of mortality increase together with poorer health.	US; (n: 3.617)
Parker, Paterson, & Hadzi-Pavlovic (2015)		Negative life events		Emotional response	To get a completer understanding of what people go through during and after the life event it is valuable which emotions are evoked by different events. Depression and stress are the most reported emotional responses to disability. The death of a spouse is accompanied by grief and sadness. On the other hand, divorce and unemployment induce depression and stress.	Australian; (n: 200)
Lucas (2007b)	Psychology	Life events		SWB	(summary of effects of life events) Furthermore, Lucas (2007b) acknowledges that there are sizable differences among individuals regarding the level adaption of SWB. These differences are likely due to variability in person's response to events and variations in the nature of the events. (closing statement): '' Happiness levels do change, adaptation is not inevitable, and life events do matter''.	German and British; (n: 67.000)
Turner, Goodin, & Lokey (2012)	Psychology	Unexpected life events		Cognitive system	Unexpected life events can disturb the cognitive system. During this disturbance people can redesign the cognitive system in their advantage. Thereby, life events provide opportunities to beneficial life changes.	US; (n: 17)
Holmes & Rahe (1967)	Psychosomatic research	Life events		Stress scale	Holmes and Rahe (1967) developed their Stress Scale to test the relationship between stressful life events and illness. Their scale has been validated and shows a correlations between life events and illness. The six life events included for this study take top spots on the scale, except for childbirth.	Not stated; (n:394)