The relationship between dispositional optimism, recent life changes and perceived stress in Irish adults.

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Course Code: PSY787
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March 2014
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Declaration Form

I hereby declare that I have produced this paper myself without any outside assistance except from the people and documents I quote. I have not copied this paper from other papers or documents except where I have explicitly stated so. I have not used this paper for examination purposes in any other course.

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Carmel McCann

March 2014
Abstract

Using a between subject, quantitative, survey design, the relationship between dispositional optimism, perceived stress and recent life changes within the Irish population was investigated. A snowball technique was used; invitations to complete an online survey were sent to twenty-eight people who then invited others to also take part. One hundred and ninety-five people, aged from eighteen to sixty-nine; one hundred and thirty-three female and sixty-two males, participated. A significant relationship between dispositional optimism, perceived stress and recent life changes was found. The majority of participants were optimistic and there was a significant negative relationship between dispositional optimism and perceived stress. Older adults were more optimistic and less stressed than younger ones and females were more stressed than males. The female stress levels and low optimism levels of younger adults merit further investigation. Carver’s (2013) Revised Life Orientation Tool measured dispositional optimism; Cohen, Kamarck, and Mermelestein (1983) Perceived Stress Scale measured stress and Miller and Rahe’s (1997) Recent Life Changes Questionnaire measured life-changes.
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Introduction

Reseaching the impact of the economic boom in Ireland between 1994 and 2001, Madden (2011) reported that life satisfaction increased and mental well-being improved during that period. Things have changed since then with an economic recession triggering major levels of unemployment, increased emigration and negative equity (Central Statistics Office (CSO), 2013). People are not simply passive recipients of the demand such changes place on them, however, they can negotiate their way through these situations by setting up and adjusting their goals (Eccles & Wigfield, 2002) if they are so inclined.

In 2009, a Gallup world poll used Cantril’s Self-Anchoring Striving Scale (Cantril, 1965), to measure participants’ optimism (Gallup, 2009). They asked participants to imagine a ladder with steps numbered from one to ten; ten representing the best possible life and one the worst and indicate which rung they were on at that time and which rung they thought they would stand on five years from then. The poll found that the Irish population was the most optimistic in the world (Gallagher, Lopez, and Pressman, 2013), news that may have caused some Irish people to smile wryly as they began to feel the ‘bite’ of recession. In 2012, another Gallup poll, asking the same questions found Ireland failed to rank in the top 15 countries, but it was still the most optimistic country in Europe with 47% of its population optimistic. Greece, another economically distressed country which had also availed of a rescue package from Europe in order to keep its economy
working, was ranked last in Europe (Gallup, 2013). It seemed the Irish were true optimists even in the face of adversity.

Perhaps they were benefitting from healthier behaviours as economist Christopher Ruhm (2000) suggested. He maintained that healthy behaviours can increase during recession as people lose their jobs and, having more time and less money, they tend to cook at home rather than eat out, thereby avoiding the less healthy options often prepared in restaurants and fast-food establishments. They may also spend time exercising or simply increase exercise levels by walking rather than driving or taking the bus because they cannot afford to do otherwise. The one health area that Rhum (2000) found declined during a recession was mental health. This is supported by research showing that mental health decreases more than physical health during tough economic times (Dávalos, & French, 2011). Family life is another victim of tough economic times. A national survey of UK families found that 78% felt that family life was tougher now than it was before the recession and three times as many families said their financial problems were a more significant cause of stress than the pressures of bringing up children (Cooper, 2012). Optimists, however, were more likely than pessimists to adjust successfully to stressful life circumstances (Rasmussen, Scheier, & Greenhouse, 2009).
Perceived stress

Stress has been defined as the physical, psychological and emotional response to a stressor (Cryer, McCarthy & Childre, 2003). Often referred to as the ‘fight or flight’ response (Nelson, Quick and Quick, 1989), awareness of a source of stress, such as an approaching lion, triggers the sympathetic nervous system to prepare the body to fight the aggressor or flee from the source of danger. Once the danger is past the parasympathetic nervous system should return the body to a state of homeostasis.

Even though it is called the ‘fight or flight’ response, stress can be triggered by a positive or negative experience. A person who has just discovered their family has been killed in an accident and a person who has been told their cancer diagnosis was incorrect both experience physiological responses, such as a quickening pulse and pounding heart (Sapolsky, 2006). “The stress hormones couldn’t care less what your heart’s beating faster about. Their job is to make sure your heart doesn’t run out of energy” (Sapolsky, 2006). Neither does it matter whether the threat is a physical or non-physical one. The approach of an out-of-control car will cause the same reaction as the approach of a much dreaded visit to the bank manager. While the physical stress response may be the same regardless of the stressor, Dickerson and Kemeny (2004) draw attention to the fact that not all negative situations trigger the same cortisol response (indicative of a stress reaction). They suggest that a combination of lack of control and negative social-evaluation are associated with the largest cortisol changes and the longest time to
recovery. It is easy to imagine members of the Irish population, such as the person who has lost their job through no fault of their own, or those who at one time were financially secure but now have to visit soup kitchens in order to feed their families, experiencing this combination of factors. Those who keep their jobs during tough economic times are not immune from the ill effects either. Houdmont and colleagues (2012) performed a study that demonstrated that increased levels of work-related stress were associated with the onset of the economic recession as well as stress-related absence from work and increased psychosocial hazard exposure in the work place. While some workers experience such difficulties, others in the same situation won’t as individuals react differently to possible stressors.

An event which one person finds stressful another may experience as simply challenging or even enjoyable. This is because both perception and cognitive appraisal are involved in identifying a stressor (Crum, Salovey & Achor, 2012). It is not just the presence of a source of disruption or threat but how it is evaluated that matters. Lazarus and Folkman (1984) maintain it is the person’s coping capability that influences how it is perceived, while Aldwin (2011) suggest previous life experiences or developmental stages may impact. Personality also influences how people respond to stress. Studying members of a police force, Kaur, Chodagiri, and Reddi (2013) found that personality played a significant role in the development of high psychological stress. Carver, Scheier and Sergerstrom (2010) found that optimists and pessimists react differently to stressors. Optimists being less reactive
to possible stressors, experience lower levels of stress. Other research found 
extraversion was negatively correlated with stress while psychoticism and 
neuroticism had a positive correlation and increased the likelihood of the individual 
experiencing negative stress (Fontana, 1993; Kaur, Chodaqiri & Reddi, 2013). Not 
all stress is negative, however. Selye (1956) recognised that there was both 
positive and negative stress. Calling it eustress, he identified the need for a certain 
level of arousal in order to perform well. At its optimal level, eustress facilitates 
high performance levels and stimulates creativity and motivation (Selye, 1956). 
Difficulties tend to arise when stress becomes a long-term experience rather than 
an immediate response. Deferring certain bodily functions while dealing with a 
stressor makes sense, digesting a recent meal, for example, is unimportant if the 
individual is facing a life-threatening situation. Growth, digestion, repair and 
reproduction are not important at such times. If stress becomes chronic, however, 
the long-term deferral of these functions, places the individual at risk of diseases 
such as peptic ulcers, irritable bowel syndrome, irregular ovulatory cycles and 
erectile dysfunction (Sapolsky, 2004). Risk of fatigue, insulin-resistance and muscle 
atrophy increase as the constantly mobilised energy is never stored. Chronic 
hypertension causes damage to blood vessels and can lead to atherosclerosis. 
Crum, Salovey and Achor (2013) note that stress has been linked to the six leading 
causes of death: heart disease, accidents, cancer, liver disease, lung ailments 
(Sapolsky, 1996) and suicide (Schneiderman, Ironson, & Siegel, 2005). They 
maintain, however that mind-set plays a role in determining the stress response. 
Belief that stress has enhancing consequences in certain areas such as performance
and productivity, may engender enhancing effects in these areas, whereas belief that stress is debilitating may engender negative effects (Crum et al., 2013). This is an example of cognition affecting stress levels, but stress levels can also affect cognition.

Boals and Banks, (2012) found that participant’s cognitive abilities were affected by stress when those with high stress scores showed higher levels of cognitive failure than those with low scores. Stress has also been linked to depression (Starr, Hammen, Brennan, & Najman, 2012) and relationship problems and aggression (Bodenmann, Meuwly, Bradbury, Gmelch, & Ledermann, 2010). Four ‘primal needs’ were identified by Karademas and colleagues (2008): self-preservation, social integration, personal identity; growth and personal world view. These needs are linked and a threat to one is interpreted as a threat against all. Identifying such a threat as a ‘Perceived Primal Threat’ (PPT), Karademas et al., (2008) suggest that PPT underlies the stress process.

PPTs are experience by both males and females but gender may affect an individual’s response to such threats. Mather and Lighthall (2012) indicate that gender differences in relation to stress are associated with different activity in the insula and dorsal brain regions. This inclines males to take more risks and females less risks when under stress. Women are believed to encounter more stressful situations than men (Almeida and Kessler, 1998) however, associated with their role in society (Kessler & McLeod, 1984) or sexual discrimination and violence.
(Heim et al., 2000). Women also tend to be more emotionally connected to those around them and are therefore affected to a greater extent than men by the stress being experienced by their friends and families (Kessler & McLeod, 1984; Turner, Wheaton, & Lloyd, 1995).

Age is another factor that may impact on the perception of stress, though findings are inconsistent in relation to age differences in emotional responses to daily stressors (Scott, Sliwinski & Blanchard-Fields, 2013). Some theorists, such as Lawton (1996) suggest that repeated exposure to negative affect states causes a ‘dampening’ effect and decreases the likelihood of triggering these states in the future. If this is the case, older Irish adults may be experiencing less stress during the current period of upheaval than their younger counterparts. Other theorists believe the opposite occurs, that repeated exposure to negative affect states leads to sensitisation and increases older adults’ stress reactions (Panksepp & Miller, 1996). Mroczek and Almeida (2004), for example, found older adults showed a stronger association than younger adults, between negative affect and daily stress.

**Recent Life Changes**

Having examined 5,000 medical records in an effort to discover whether stressful events might lead to illness, Holmes and Rahe (1967) derived a list of 43 life-events and applied subjective magnitude estimation (the magnitude of a stimulus and the subjective value the person gives it) to find the amount of change in adjustment required by each item. Using this list, they found a positive
correlation between life events and illness. In 1997, Miller and Rahe expanded the list, to 74 items and calculated scores called Life Change Units (LCU) which related to the number of days usually needed to adjust to the new situation. The overall total signifies a higher or lower likelihood of experiencing health difficulties. Regarding mental health difficulties, Myers, Lindhall and Pepper (1972) conducted a longitudinal study over a 2 year period which led them to the conclusion that any event requiring attention or behaviour adaptation could, potentially, damage an individual’s mental health. They found a correlation between an increase in life events and worsening of psychiatric symptoms while a decrease in life events was associated with improvement in symptoms.

Life events or changes are generally triggered as a person progresses through life but they can also be caused by macro-level social and economic changes. Tomasik, Silbereisen, Lechner, and Wasilewski (2013) maintain that demographic shifts and globalisation, demand a response or behavioural adaptation from individuals which produce stress and may reduce subjective well-being (Lechner, Tomasik, Silbereisen, and Wasilewski, 2013).

Socioeconomic Status (SES) may also be impacted by factors outside the individual’s control and this can be a risk factor for serious health events and long-term mental illness (Joseph, Matthews and Myers, 2013). Investigating the aftermath of Hurricane Katrina, Joseph et al., (2013) found that those who became unemployed immediately after the hurricane had five times higher odds of experiencing a cardio metabolic event within five years. A recession is not as
dramatic an event as Hurricane Katrina but the acute decline in SES experienced by those members of society who lost, often very high earning, jobs and the more general decline in SES experienced by many Irish people may expose them to similar risks.

**Optimism**

Dispositional Optimism, defined as high expectancy for positive outcomes and a low expectancy for negative outcomes (Scheier & Carver, 1985), was seen as a relatively stable personality trait (Scheier & Carver, 1992). It was associated with better psychological adjustment to stressors ranging from normative events such as entering college (Aspinwall & Taylor 1992) to extreme traumas like working at the site of an airplane crash (Dougall, Hyman, Hayward, McFeeley, & Baum, 2001). Optimism reduced the adverse effects of such stressful life events (Worsch & Scheier, 2013, Gustafsson & Skoog, 2012) and optimists perceive their situations as less stressful (Chang, Rand, & Strunk, 2000). Dougall and colleagues (2001) found that optimistic rescue and recovery workers, for example, reported less distress, used greater problem solving and problem focused strategies, and engaged in less avoidant and wishful thinking coping mechanisms. They also had, and availed of, greater amounts of social support. Optimists were more likely to persevere in times of crisis and showed higher self-efficacy (Carver et al., 2010). Dispositional optimists strove to eliminate, reduce or manage stressors rather than ignore, avoid, or withdraw from them (Nes and Segerstrom, 2006). Taylor and colleagues (2012)
found that dispositional optimism was associated with resilience to economic pressure and optimistic mothers had higher levels of involved parenting behaviours. In addition, optimism had beneficial effects in relation to academic stress for students (Huan et al., 2006) and represented a relationship asset for newly married couples (Neff, 2013).

Optimists were not entirely immune to the effects of stressful life events. Individuals with greater optimism were found to have reduced risk for suicidal ideation and suicide attempts but only in the face of low to moderate negative life events (Hirsch, Wolford, LaLonde, Brunk & Morris 2007). The association changed when the rate of negative life events reached higher levels. In business, dispositional optimists were more effective in stable environments but not in dynamically unstable ones (Hmieleski, 2009). Isaacowitz and Seligman (2001) found that older adults with a realistically pessimistic perspective adapted better to negative life events while Norem and Chang, (2002) found that defensive pessimism (expecting the worst in order to be prepared for it) could be adaptive in some circumstances as it helped those inclined towards anxiety to lessen its effects.

The majority of people are, however, optimistic (Fischer & Chalmer, 2008) and the 2009 Gallup poll supports this concept. Surveying populations in 142 countries it found 84% of individuals indicated they expected their futures to be either as good as (19.64%) or better than (69.45%) their current lives (Gallagher et al., 2013). Younger people were more optimistic than older people (Gallagher et al., 2013). Research into dispositional optimism and gender differs from these findings
however, as it found no significant relationship between the two (Boman, Smith, and Curtis, 2003; Lai and Cheng, 2004). Research findings in regard to age and dispositional optimism, are mixed. Lai & Cheng (2004) indicated dispositional optimism doesn’t change with age while Lennings, (2000) maintains that changes occur. You and Isaacowitz (2009), indicated dispositional optimism was a culture bound phenomenon where older Americans showed more optimism than younger ones but older Chinese individuals had lower amounts of optimism than young Chinese.

Regardless of whether they are male or female, younger or older, having a population replete with optimistic people may be a source of hope for Ireland in its currently challenging environment as Carver and colleagues, (2010) found that individuals high in optimism, approached challenges with enthusiasm and persistence. Aspinwall, and Taylor (1997) suggest that optimistic people feel less vulnerable which makes them better able to process threatening or negative information. Optimists processed information differently to pessimists, paying more attention to negative information rather than trying to ignore it and then they focused on the relevant aspects of it (Radcliffe and Klein, 2002). Selligman (1990) meanwhile, suggested that expecting success or attributing failure to external causes reduced rumination and led to a focus on new opportunities. He also maintained that pessimists could ‘learn optimism’ through a technique he developed with Gregory Buchanan, training individuals to adjust how they perceive and react to stressors by adjusting their self-talk. In a similar vein, Fox (2013) tells
of a new technique called Cognitive Bias Modification (CBM). In one study individuals who were trained to notice positive faces more than negative ones had lowered levels of salivary cortisol and fewer downbeat responses.

While high numbers of optimistic people will, hopefully benefit Ireland by dealing with its current challenges with enthusiasm and persistence (Carver et al., 2010), the level of individual optimism may be important to the outcome. Some research suggests that moderate levels of optimism have positive effects but higher levels have negative effects. Highly optimistic individuals can damage the performance of their business, through unrealistic expectations; avoiding contradictions by mentally reconstructing experiences and by discounting negative information (Geers & Lassiter, 2002). Examining the effects of optimism on the performance of Entrepreneurs’ new ventures, Hmieleski, and Baron (2009) suggest that highly optimistic entrepreneurs should be trained to be more realistic and to identify when to constrain their enthusiasm and when to use it to its fullest extent.

Current Study

A large body of evidence demonstrates that expectancies about the future impact wellbeing in the present (Nes & Sergerstrom 2006) and individuals who are more optimistic report lower levels of perceived stress (Chang, Rand & Strunk, 2000). The Irish population has been found to be optimistic, but there is more than one kind of optimism and the question of whether they are also high in dispositional optimism remains unanswered. If they are, it may (Carver and his
or may not be impacting on their levels of perceived stress as they experience life changes (Eccles & Wigfield, 2002).

**Hypotheses**

Three hypotheses will be investigated within the study. Firstly that there will be a significant relationship between dispositional optimism, perceived stress levels and recent life changes in the Irish adult population.

The study also wishes to investigate whether age is having a ‘dampening’ (Lawton, 1996) or a sensitising effect (Panksepp et al., 1996) on perceived stress levels of older adults and whether the optimism levels of the participants affects this, making the second hypothesis that there will be a significant relationship between age, dispositional optimism, perceived stress levels and recent life changes in the Irish adult population.

Finally, the study wishes to see whether or not there is a relationship between gender and optimism and if there is if it impacts on perceived stress levels as suggested by Mather et al., (2012). The third hypothesis therefore is that there will be a significant relationship between gender and dispositional optimism, perceived stress levels and recent life changes in the Irish adult population.
**Method**

**Materials**

The materials used in this study consisted of an 100-question online survey (appendix 1). It was comprised of an introduction page (informing participants of the inclusion criteria, anonymity, confidentiality and their right to withdraw) along with a demographic questionnaire composed by the researcher and three well-known and validated instruments: Recent Life Changes Questionnaire, (RLCQ: Miller & Rahe, 1997); Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983); and Revised Life Orientation Tool (LOT-R: Carver, C.S., 2013). The sequence of the questionnaires (PSS first, LOT-R second RLCQ third and finally the demographic questionnaire), was decided upon in an attempt to reduce the likelihood of the results being influenced by participant priming. It was thought that completing the recent life changes questionnaire first might have reminded participants of any negative events which had happened in the past year and influence their perceived stress or optimism levels, so it was decided to place this questionnaire third. The survey concluded with a short explanation of the purpose of the study, contact details for the researcher and organisations, such as Aware, that provide help for people suffering from mental health issues in case any issues were highlighted while doing completing the survey.
**Demographic questionnaire**

A demographic questionnaire was designed by the researcher containing the variables of Gender, Age, Relationship status, Number of children, Education standard, Employment status, Occupation, and Household income.

**Recent Life Changes Questionnaire (RLCQ) (Miller & Rahe, 1997).**

The RLCQ is a 72 item measure of life-changes experiences during a particular period of time. It is divided into five major life domains: Health, Work, Home and Family, Personal and Social, and Financial.

Adapted by Miller and Rahe, (1997) from the Social Readjustment Scale created by Holmes and Rahe (1967) the scores (known as Life Change Units (LCU)), applied to each item are related to the number of days usually needed to adjust to the new situation. All scores are totalled. One-year totals of 500 or more are considered indicative of high recent life-change stress (Miller & Rahe, 1997).

**Perceived Stress Scale (PSS) (Cohen, Kamarck, & Mermelstein, 1983).**

The PSS was used to measure perceived stress. It is a 10-item questionnaire designed to measure how stressful participants rate their thoughts and feelings about situations in their life over the past month. The 10 items are rated on a four-point Likert scale consisting of (1) never, (2) almost never, (3) sometimes,(4) fairly often, (5) very often. The positive items are reversed scored and then all items are
totalled. High scores indicate high perceived stress levels. The scale has a Cronbach’s Alpha reliability on average of .85 (Cohen et al., 1983, p. 386).

**Revised Life Orientation Tool (LOT-R) (Carver, C.S., 2013)**

The LOT-R was used to measure optimism. A measure of individual differences in generalised optimism versus pessimism the LOT-R is a modified version of Scheier and Carver, (1985) Life Orientation Test, which had 12 items, four positively worded, four negatively worded and four fillers. Two items were removed as they dealt with coping styles rather than optimism (Scheier et al., 1994). The revised version, the LOT-R has three items measuring optimism, three measuring pessimism and four fillers. The 10 items are rated on a five-point Likert scale consisting of (0) strongly disagree, (1) disagree, (2) neither agree nor disagree, (3) agree, (4) strongly agree. Items 3, 7, and 9 are reverse scored while the filler items 2, 5, 6, and 8 are not scored. Scoring is continuous. High scores indicate a general tendency to expect positive rather than negative outcomes. The scale has a Cronbach’s Alpha reliability on average of .70 ((Scheier, Carver & Bridges, 1994).

*Survey monkey* was used to create the online questionnaire which was distributed by email and added to Facebook pages.

*Data analysis* was performed using SPSS statistic program version 21.
Participants

The study population was the adult population of Ireland. A Power Analysis indicated a minimum sample size of 64 was required. The sample contained a total of 231 respondents from a variety of occupations. 36 were discounted due to incomplete questionnaires, leaving a sample of 195 (n = 195). One hundred and thirty three were female (N = 133, 68.2%) and sixty two were male (N = 64, 31.8%). 194 Participant indicated their age which ranged from 18 - 69 years. These were allocated to four age groups, aligning to different life periods. Group one consisted of forty-five 18 – 25 year olds (N = 45, 23.1%); group two consisted of fifty 26 – 40 year olds (N = 50, 25.6%); group three had eighty 41 - 55 year olds (N = 80, 41%) and group four consisted of nineteen 56 – 69 year olds (N = 19, 9.7%).

Missing values for single questions were replaced with the group mean value, taking into account both age and gender (if a 32 year old female failed to answer the third question in the LOT-R questionnaire, the mean for answers to that question by all other 32 year old females was entered as their value). Participation in this study was on a voluntary basis, with no incentives offered. All participants were aged 18 or over.

Design

The study employed a between subject, quantitative, survey design.
Procedure

The questionnaires were compiled using the questionnaire builder on www.surveymonkey.com. They were piloted and following some adjustments, a unique web-link was created.

An email invite, containing the web link, was sent to 28 possible participants. A mix of male, female, young, mid and older adults at different levels and types of employment and unemployment were chosen. They were asked to complete the survey and in order to instigate a ‘snowball’ effect, they were requested to invite as many people as they could to take part in the study and to place an invite onto their social media pages. Snowballing was used to in order to access a sample containing as wide a variety of the target population as possible. It was also hoped to avoid the criticism that is sometime made of psychological research that it is performed on student populations that are not representative of the target population (Banerjee, P. (2012)

The unique web-link was also placed on Facebook with an explanation of the study and invitation to Irish residents to take part. The Inclusion criteria were: Over 18 years of age and resident in Ireland with internet access. Exclusion criteria were: Under 18 years of age and lack of internet access or computer illiteracy.
Ethics

No pressure was placed on participants to take part in the study and they were informed that they could withdraw at any time. Each participant received an explanation of the study. They were assured of confidentiality and that no identifying information would be sought or collected. Survey Monkey assures users of data protection and once downloaded, data was stored on a password protected PC. Every effort was made to ensure that participation did not cause any distress to participants. In case any distress occurred, participants were given contact details for support services such as AWARE, the Samaritans and the Psychological Society of Ireland.
Results

Descriptive Statistics

Dispositional Optimism

Higher values denoted optimism. The average score for dispositional optimism was 15.85 (SD = 5.28) out of a possible 24. 74.88% (n = 146) of participants indicated optimism with scores higher than 12. 33.85% (n = 66) indicated high optimism by scoring in the top quarter and 3.6% (n = 7) attained the maximum score of 24. The median score of 17 was attained by eleven (5.6%) participants. Two participants scored a minimum score of 2 (1%).

Figure 1 Optimism levels
**Perceived Stress**

The average score for Perceived Stress was 16.94 (SD = 6.79) from a possible maximum of 40. The higher the score the greater the amount of perceived stress the individual was expressing. Two participants (1%) recorded a score of zero, with the maximum recorded score being thirty-four out of a possible forty.

**Recent Life Changes**

The average score for Recent Life Changes was 282.62 (SD = 157.73). A score of 500 or above was indicative of a stressful level of life-changes within the past twelve months. As indicated in Figure 2, 14% of participants obtained this high score, meaning 86% of participants had scores that didn’t indicate high stress. 33% obtaining a low score, while 24% had moderate and 30% had elevated scores.

![Recent Life Changes](image)

*Figure 2 Percentage of participants at each RLC level*
The Recent Life Changes questionnaire contained five sections, health; work; home and family; personal and social; financial. The overall percentage contributions of each of section were Health = 17.07%; Work = 28.05%; Home and Family = 19.21%; Personal and Social = 27.32% and financial = 8.34%.

The following table presents an overview of mean scores for Dispositional Optimism (LOT-R), Perceived Stress (PSS) and Recent Life Changes (RLC).

Table 1 Descriptive Statistics of Dispositional Optimism, Perceived Stress and Recent Life Changes.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dispositional Optimism</td>
<td>26.68</td>
<td>6.77</td>
</tr>
<tr>
<td>Perceived Stress</td>
<td>16.94</td>
<td>6.79</td>
</tr>
<tr>
<td>Recent Life Changes</td>
<td>282.62</td>
<td>157.73</td>
</tr>
</tbody>
</table>

Distribution of predictor and criterion variables

Shapiro-Wilk’s test (p>0.05) (Shapiro & Wilk, 1965; Razali & Wah, 2011) and a visual inspection of their histogram, normal Q-Q plots and box plots were conducted for the predictor variables of Dispositional Optimism (LOT-R) and Recent Life Changes (RLC) and criterion variable of Perceived Stress. These indicated that perceived stress was normally distributed but dispositional optimism and recent life changes were not.
Table 2 Descriptive statistics of distribution of Dispositional Optimism, Perceived Stress and Recent Life Changes.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SE of mean</th>
<th>Skewness Statistic</th>
<th>Skewness Std. Error</th>
<th>Kurtosis Statistic</th>
<th>Kurtosis Std. Error</th>
<th>p-value</th>
<th>Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOT-R</td>
<td>195</td>
<td>15.35</td>
<td>0.378</td>
<td>-0.538</td>
<td>0.174</td>
<td>-0.33</td>
<td>6</td>
<td>0.34</td>
<td>Not Normal</td>
</tr>
<tr>
<td>PSS</td>
<td>195</td>
<td>16.94</td>
<td>0.486</td>
<td>-0.101</td>
<td>0.21</td>
<td>-0.361</td>
<td>7</td>
<td>0.41</td>
<td>Normal</td>
</tr>
<tr>
<td>RLC</td>
<td>195</td>
<td>282.62</td>
<td>11.295</td>
<td>0.629</td>
<td>0.21</td>
<td>0.652</td>
<td>7</td>
<td>0.00</td>
<td>Not Normal</td>
</tr>
</tbody>
</table>

The Shapiro-Wilk’s tests revealed that both Gender and Age Groups were not normally distributed.

Descriptive statistics in relation to Gender

The Female mean for LOT-R was 15.60 (SD = 5.20) and the male mean was 16.37 (SD = 5.46), indicating that on average males were displaying higher levels of dispositional optimism than females.

The female mean for PSS was 17.71 (SD = 6.45) and the male mean was 15.29 (SD = 7.24), indicating that, on average, females perceived greater levels of stress than males.
The Female mean for RLC was 290.48 (SD = 149.35) and the male mean of 265.76 (SD = 174.44), indicating that, on average females encountered more stressful life-changes than males.

Table 3 Descriptive Statistics of Dispositional Optimism, Perceived Stress and Recent Life Changes in relation to Gender

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dispositional Optimism</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>15.60</td>
<td>5.20</td>
</tr>
<tr>
<td>Male</td>
<td>16.37</td>
<td>5.46</td>
</tr>
<tr>
<td>Perceived Stress</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>17.71</td>
<td>6.45</td>
</tr>
<tr>
<td>Male</td>
<td>15.29</td>
<td>7.24</td>
</tr>
<tr>
<td>Recent Life Changes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>290.48</td>
<td>149.35</td>
</tr>
<tr>
<td>Male</td>
<td>265.76</td>
<td>174.44</td>
</tr>
</tbody>
</table>

Distribution of predictor and criterion variables in relation to gender

Descriptive statistics revealed that LOT-R scores were not normally distributed for either females or males, with a skewness of -0.469 (SE = 0.21) and Kurtosis of -0.366 (SE = 0.42) for females and a skewness of -0.72 (SE = 0.30) and kurtosis of -0.095 (SE = 0.60) for the males. Similarly, the RLC scores were not normally distributed for either females or males, with a skewness of 0.63 (SE = 0.21) and Kurtosis of 0.65 (SE = 0.42) for females and a skewness of 0.899 (SE = 0.30) and
kurtosis of 1.49 (SE = 0.60) for the males. The PSS scores were normally distributed both for females and males, with a skewness of -0.10 (SE = 0.21) and Kurtosis of -0.36 (SE=0.417) for females and a skewness of -0.287 (SE = 0.30) and kurtosis of 0.118 (SE = 0.60) for the males.

**Descriptive statistics in relation to Age**

Ages ranged from 18 to 69 years with a mean of 38.97 (SD = 13.66). These were divided into four groups to indicate the various life stages. Group 1 consisted of the youngest participants (18 – 25 years), group 2 was the early adults (26 – 40 years), group 3 contained those in Mid life (41 – 55 years) and group 4 was the older adult group (56 – 69 years). The older adults had the highest dispositional optimism mean of 18.79 (SD = 3.73) as opposed to the mid adult mean of 16.50 (5.28), younger adults mean of 14.80 (SD = 4.56) and the early adult mean of 14.56 (SD = 5.88).

Early adults had the highest perceived stress mean 18.90 (SD = 6.80), closely followed by the young with a mean of 18.56 (SD = 6.80). The mid life group had the lowest perceived stress mean of 15.03 (SD = 7.16) while the older group had a mean of 15.79 (SD = 5.09).

The highest recent life changes mean of 310.84 (SD = 152.22) was scored by the youngest group, with the mid life group having the next highest mean of 284.95 (SD = 179.42) followed by the early adult group with a mean of 265.86 (SD = 132.40).
The lowest recent life changes mean was scored by the older adult group with a mean of 254.74 (SD = 135.80).

Table 4 displays the mean values of LOT-R and PSS for the four age groups showing the early adult age group with the lowest LOT-R mean value of 14.56 (SD = 5.88) and highest PSS mean of 18.90 (SD = 6.80), while the oldest age group scored the highest LOT-R mean of 18.79 (SD = 3.75) and the second lowest PSS mean score of 15.79 (SD = 5.09), suggesting the possibility of a relationship between high optimism and low stress. The oldest age group also had the lowest mean for RLC of 254.74 (SD = 135.80) which may be impacting their low PSS mean but the early adult age group had the second lowest RLC mean of 265.86 (SD = 132.39) with the highest PSS mean. The other RLC means were 310.84 (SD = 152.21) for the youngest group and 284.95 (SD = 179.41) for the mid-life group.
Table 4 Descriptive Statistics of Dispositional Optimism, Perceived Stress and Recent Life Changes in relation to Age Groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dispositional Optimism</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>14.80</td>
<td>4.561</td>
</tr>
<tr>
<td>2</td>
<td>14.56</td>
<td>5.880</td>
</tr>
<tr>
<td>3</td>
<td>16.50</td>
<td>5.284</td>
</tr>
<tr>
<td>4</td>
<td>18.79</td>
<td>3.735</td>
</tr>
<tr>
<td>Perceived Stress</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>18.56</td>
<td>5.829</td>
</tr>
<tr>
<td>2</td>
<td>18.90</td>
<td>6.804</td>
</tr>
<tr>
<td>3</td>
<td>15.03</td>
<td>7.167</td>
</tr>
<tr>
<td>4</td>
<td>15.79</td>
<td>5.094</td>
</tr>
<tr>
<td>Recent Life Changes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>310.84</td>
<td>152.216</td>
</tr>
<tr>
<td>2</td>
<td>265.86</td>
<td>132.396</td>
</tr>
<tr>
<td>3</td>
<td>284.95</td>
<td>179.417</td>
</tr>
<tr>
<td>4</td>
<td>254.74</td>
<td>135.800</td>
</tr>
</tbody>
</table>

Group 1 = 18 – 25 years; group 2 = 26 – 40 years; group 3 = 41 – 55 years; group 4 = 56 – 69 years
Group 1 = 18 – 25 years; group 2 = 26 – 40 years; group 3 = 41 – 55 years; group 4 = 56 – 69 years

**Figure 3** Graphs of Dispositional Optimism, Perceived Stress and Recent Life Changes means across the age groups. The final graph shows LOT-R and PSS means across age groups.

**Distribution of predictor and criterion variables in relation to age groups**

Table 5 displays descriptive statistics for the distribution of LOT-R, PSS and RLC scores for the four age groups. LOT-R scores were not normally distributed for either the young, early or mid life groups. Only the older life group scores were normally distributed with skewness of -0.50 (SE = 0.52) and Kurtosis 0.01 (SE = 1.01). PSS was normally distributed for all age groups apart from the older age group which had skewness of -0.39 (SE = 0.52) and Kurtosis -1.50 (SE = 1.01). RLC scores were also normally distributed for the majority of age groups with only the
mid life group displaying non-normal distribution showing a skewness 0.8 (SD = 0.27) and Kurtosis 0.95 (SE = 0.53).

**Table 5** Descriptive statistics for the Distribution of predictor and criterion variables in relation to age groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Age group</th>
<th>Skewness Statistic</th>
<th>Skewness Std. Error</th>
<th>Kurtosis Statistic</th>
<th>Kurtosis Std. Error</th>
<th>p-value</th>
<th>Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOT-R</td>
<td>1</td>
<td>-0.40</td>
<td>0.35</td>
<td>-0.72</td>
<td>0.70</td>
<td>0.04</td>
<td>Not Normal</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>-0.59</td>
<td>0.34</td>
<td>-0.54</td>
<td>0.66</td>
<td>0.02</td>
<td>Not Normal</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>-0.45</td>
<td>0.27</td>
<td>-0.52</td>
<td>0.53</td>
<td>0.00</td>
<td>Not Normal</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>-0.50</td>
<td>0.52</td>
<td>0.01</td>
<td>1.01</td>
<td>0.41</td>
<td>Normal</td>
</tr>
<tr>
<td>PSS</td>
<td>1</td>
<td>-0.14</td>
<td>0.35</td>
<td>-0.82</td>
<td>.695</td>
<td>0.39</td>
<td>Normal</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>0.09</td>
<td>0.34</td>
<td>-0.60</td>
<td>.662</td>
<td>0.62</td>
<td>Normal</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>0.16</td>
<td>0.27</td>
<td>-0.02</td>
<td>.532</td>
<td>0.53</td>
<td>Normal</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>-0.39</td>
<td>0.52</td>
<td>-1.50</td>
<td>1.01</td>
<td>0.02</td>
<td>normal</td>
</tr>
<tr>
<td>RLC</td>
<td>1</td>
<td>0.66</td>
<td>0.35</td>
<td>1.04</td>
<td>0.70</td>
<td>0.18</td>
<td>Normal</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>0.21</td>
<td>0.34</td>
<td>-0.28</td>
<td>0.66</td>
<td>0.89</td>
<td>Normal</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>0.80</td>
<td>0.27</td>
<td>0.95</td>
<td>0.53</td>
<td>0.00</td>
<td>Not Normal</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>0.50</td>
<td>0.52</td>
<td>-1.04</td>
<td>1.01</td>
<td>0.05</td>
<td>Normal</td>
</tr>
</tbody>
</table>
Inferential Statistics for Hypotheses

*Hypothesis 1*

There will be a significant relationship between dispositional optimism, perceived stress and recent life changes in the Irish adult population.

The mean score for LOT-R was 15.85 (SD = 5.28); for PSS it was 16.94 (SD = 6.79) and RLC had a mean score of 282.62 (SD = 157.73). A Spearman’s rho correlation coefficient found that there was a medium negative significant relationship between dispositional optimism and perceived stress ($r(193) = -0.58$, $p<.01$). It also found a small negative significant relationship between LOT-R and RLC ($r(193) = 0.18$, $p = .01$) and a small positive significant relationship between PSS and RLC ($r(193) = 0.27$, $p<.01$). This indicated that each pair of variables were related to each other.

**Table 6** Correlation and descriptive statistics for predictor and criterion variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>LOT-R</th>
<th>PSS</th>
<th>RLC</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOT-R</td>
<td>1.00</td>
<td></td>
<td></td>
<td>15.85</td>
<td>5.28</td>
</tr>
<tr>
<td>PSS</td>
<td>-0.58**</td>
<td>1.00</td>
<td></td>
<td>16.94</td>
<td>6.79</td>
</tr>
<tr>
<td>RLC</td>
<td>-0.18*</td>
<td>0.27**</td>
<td>1.00</td>
<td>282.62</td>
<td>157.73</td>
</tr>
</tbody>
</table>

Note: N = 195. LOT-R = Dispositional Optimism; PSS = Perceived Stress; RLC = Recent Life Changes

* * Correlation is significant at the 0.01 level (2 – tailed).
* Correlation is significant at the 0.05 level (2 – tailed)
The question remained as to whether all three variables were related. Multiple regression was used to test whether LOT-R and RLC were predictors of PSS. A Durban-Watson score of 1.80 was close to the required value of 2, indicating that the data was relatively free of correlated errors. The results of the regression indicated that the two predictors explained 39% of the variance ($R^2 = .39$, $F(2, 192) = 61.94$, $p < .00$). It was found that LOT-R significantly predicted PSS ($\beta = -.56$, $p < .00$, 95% CI = -.87 - -.56), as did RLC ($\beta = .18$, $p < .00$, 95% CI = .00 - .01).

A partial correlation, controlling for the effects of LOT-R found a small positive significant relationship between PSS and RLC ($r(193) = 0.22$, $p < .00$). This was a smaller relationship than was found when LOT-R was included in the correlation which was ($r(193) = 0.27$, $p<.01$). The relationship between RLC and LOT-R and between RLC and PSS are small, making it likely that much of the variance is accounted for by the larger relationship between LOT-R and PSS. The weakening of the relationship between PSS and RLC when LOT-R was controlled was a further indication that LOT-R was contributing to the relationship and therefore that all three variables were related. The null hypothesis can be rejected. There is a significant relationship between Dispositional Optimism, Perceived Stress and Recent Life Changes.
Hypothesis 2

There will be a significant relationship between age and dispositional optimism, perceived stress levels and recent life changes in the Irish adult population.

The mean score for Age was 38.97 (SD = 13.66), for LOT-R it was 15.85 (SD = 5.28); for PSS it was 16.94 (SD = 6.79) and RLC had a mean score of 282.62 (SD = 157.73).

A series of one-way Kruskal-Wallace reports were run. The results showed that the LOT-R score for the four age groups differed significantly ($\chi^2(3) = 11.28, p = .01$). The PSS scores for the four age groups also differed significantly ($\chi^2(3) = 12.96, p < .01$) but the RLC scores for the four age group did not differ significantly ($\chi^2(3) = 2.69, p = .44$).
Table 7 *Mean ranks of LOT-R, PSS and RLC*

<table>
<thead>
<tr>
<th>Age group</th>
<th>LOT-R</th>
<th>PSS</th>
<th>RLC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>84.44</td>
<td>111.56</td>
<td>108.52</td>
</tr>
<tr>
<td>2</td>
<td>86.69</td>
<td>112.83</td>
<td>93.59</td>
</tr>
<tr>
<td>3</td>
<td>104.24</td>
<td>82.48</td>
<td>96.26</td>
</tr>
<tr>
<td>4</td>
<td>128.50</td>
<td>87.13</td>
<td>86.89</td>
</tr>
</tbody>
</table>

Group 1 = 18 – 25 years; group 2= 26 – 40 years; group 3 = 41 – 55 years; group 4= 56 – 69 years

A Spearman’s rho correlation coefficient found that there was a small positive significant correlation between Age and LOT-R ($r(192) = .21, p < .00$) and a small negative significant relationship between Age and PSS ($r(192) = -.22, p < .00$), but there was no significant relationship between Age and RLC ($r(192) = -.07, p = .31$). As already reported, there was a medium negative significant relationship between LOT-R and PSS ($r(193) = -0.58, p<.01$). It also found a small negative significant relationship between LOT-R and RLC ($r(193) = 0.18, p = .01$) and a small positive significant relationship between PSS and RLC ($r(193) = 0.27, p<.01$).
Table 8 Inter-correlation and descriptive statistics for predictor and criterion variables and Age

<table>
<thead>
<tr>
<th>Variable</th>
<th>LOT-R</th>
<th>PSS</th>
<th>RLC</th>
<th>Age</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOT-R</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>15.85</td>
<td>5.28</td>
</tr>
<tr>
<td>PSS</td>
<td>-0.58*</td>
<td>1</td>
<td></td>
<td></td>
<td>16.94</td>
<td>6.79</td>
</tr>
<tr>
<td>RLC</td>
<td>-0.18*</td>
<td>0.27**</td>
<td>1</td>
<td></td>
<td>282.62</td>
<td>157.73</td>
</tr>
<tr>
<td>Age</td>
<td>0.21**</td>
<td>-0.21**</td>
<td>-0.07</td>
<td>1</td>
<td>38.97</td>
<td>13.66</td>
</tr>
</tbody>
</table>

Note: N = 195. LOT-R = Dispositional Optimism; PSS = Perceived Stress; RLC = Recent Life Changes

* * Correlation is significant at the 0.01 level (2 tailed).
* Correlation is significant at the 0.05 level (2 tailed)

A multiple regression was used to test whether Age, Dispositional Optimism, and Recent Life Changes were predictors of Perceived Stress. The results indicated that the three predictors explained 39% of the variance \( R^2 = .39, F(3, 190) = 43.08, p < .001\). As mentioned in relation to Hypothesis 1, a multiple regression found Dispositional Optimism and Recent Life Changes (without the inclusion of Age) also predicted 39% of the variance in relation to Stress. Age did not significantly predict Perceived Stress (\( \beta = -.04, p = .13, 95\% CI = -.09 - .01\)).

A partial correlation, controlling for the effects of age, also supported these finding. It found that the relationships between LOT-R, PSS and RLC did not alter when age was controlled for.

All of these tests indicate that the null hypothesis can be accepted; the Kruskal-Wallace reports failed to find a significant relationship between Age and RLC; the Spearman’s rho correlation coefficient agreed with this finding that there was no
significant relationship between Age and RLC while the multiple regression found Age did not significantly predict PSS.

The null hypothesis can be accepted. There is no significant relationship between Age, Dispositional Optimism, Perceived Stress and Recent Life Changes.

**Hypothesis 3**

There will be a significant relationship between gender, dispositional optimism, perceived stress and recent life changes.

The female mean for LOT-R was 15.60 (SD = 5.20) and the male mean was 16.37 (SD = 5.46). The female mean for PSS was 17.71 (SD = 6.45) and the male mean was 15.29 (SD = 7.24). The Female mean for RLC was 290.48 (SD = 149.35) and the male mean of 265.76 (SD = 174.44). These results indicated that, on average females displayed lower levels of optimism, higher levels of perceived stress and higher levels of recent life changes than males.

A Mann-Whitney U test was then used to test the hypothesis that there would be a significant difference between the LOT-R levels of females and males. The females had a mean rank of 94.83, compared to the male mean rank of 104.80. The Mann-Whitney revealed that the female condition did not differ significantly from the male condition (Z= -1.151, p = .250, two tailed) on LOT-R. The null can be accepted.
A Mann-Whitney U test was also used to test the hypothesis that there would be a significant difference between the RLC levels of females and males. The females had a mean rank of 133, compared to the male mean rank of 90.22. The Mann-Whitney revealed that the female condition did not differ significantly from the male condition (Z = -1.315, p = .189, two tailed). Therefore the null can be accepted.

An Independent sample t-test was used to test the hypothesis that there would be a significant difference between the PSS levels of females and males. Females (mean = 17.71, SD = 6.451 were found to have higher levels of PSS than males (mean = 15.29, SD = 7.244). The 95% confidence limits show that the population mean difference of the variables lies somewhere between 0.388 and 4.460. The independent sample t-test found that there was a statistically significant difference between PSS of females and males (t(193) = 2.35, p = 0.02). Therefore the null can be rejected.

A multiple regression was used to test whether Gender, LOT-R, and RLC were predictors of PSS. The results indicated that the three predictors explained 41% of the variance ($R^2 = .41$, $F(3, 19) = 43.43$, $p < .01$). LOT-R significantly
predicted PSS ($\beta = -.56, p < .00, 95\% \text{ CI} = -.87 - -.56$), as did RLC ($\beta = .18, p < .00, 95\% \text{ CI} = .00 - .01$) and gender ($\beta = -.12, p = .04, 95\% \text{ CI} = -.329 - .08$). The null hypothesis can be rejected. There is a significant relationship between Gender, Dispositional Optimism, Perceived Stress and Recent Life Changes.

**Other findings**

Those with children (mean 16.36, SD = 6.84) were found to have lower average levels of PSS than those without (mean 17.65, SD = 6.79). The 95% confidence limits show that the population mean difference of the variable lies somewhere between -3.23 and 0.66. An independent sample t-test found that there was no statistically significant difference between those who had children and those who didn’t have children in relation to PSS ($t(189) = -1.30, p = .19$).

The number of children aged 18 years or under ranged from 1 to 5. Those with 4 children under 18 years of age had the highest PSS mean of 25.33, followed by those with 3 children (mean = 18.22), those with one child (mean = 17.71), and those with 2 children (mean = 15.45). The lowest mean PSS score was achieved by those with 5 children (mean = 12). It may be worth noting that only two people had 5 children and it is possible they were a married couple so this score may say more about their particular stress levels.

A series of Mann-Whitney U tests revealed that there was no significant difference between males and females on the type of life changes they encountered; for health ($Z = -.60, p = .60$, two tailed); for work ($Z = -.26, p = .80$, two
tailed); for home (Z= 1.97, p = .05, two tailed); personal and social (Z= -1.48, p = .13, two tailed) and finance (Z= .55, p = .59, two tailed).

The number of life changes experienced by each gender was also explored and it was found that females had a mean of 7.71 (SD = 3.76) and males reported a mean of 7.11 (SD = 4.62). A Mann-Whitney U test revealed there was no significant difference in the number of life changes reported by males and females (Z= 1.36, p = .17, two tailed).

A series of Spearman’s rho correlation coefficients found that there was no significant correlation between household income and PSS (r(183) = .01, p < .95) or between household income and LOT-R (r(183) = .06, p = .43). There was no significant correlation between household income and RLC either (r(183) = -.05, p = .48).
Discussion

The aim of this study was to survey the Irish adult population and investigate whether there was a significant relationship between dispositional optimism, perceived stress and recent life changes. It was prompted by two Gallup polls which found that the Irish population was the most optimistic in the world in 2009 and remained the most optimistic in Europe in 2012 even while enduring a deep economic recession. Rather than repeat the Gallup investigation into optimism which used the two-question Cantril’s self-anchoring scale (Gallup, 2013), it was decided to see if Irish people had high levels of Dispositional Optimism. Dispositional optimism was chosen because it is a relatively stable personality trait (Scheier & Carver, 1992) where the individual’s general dispositional outcome expectancy for positive rather than negative outcomes is expressed (Scheier & Carver, 1985). Previous research had indicated that life change was stressful (Miller and Rahe, 1997) and that those with high levels of dispositional optimism had lower levels of stress (Chang, Rand, & Strunk, 2000).

The study found that Irish people were on average optimistic. A third of the participants attained the higher level of optimism scores and almost four percent displayed the maximum level of optimism. As expected, a positive relationship between recent life changes and stress was uncovered. In agreement with past research by Gustafsson and Skoog (2012), those individuals with higher levels of optimism displayed lower levels of perceived stress and controlling for the effects
of dispositional optimism altered the relationship between recent life changes and perceived stress. The alteration indicated that dispositional optimism had acted as a mediating factor and that higher levels of optimism contributed to lower perceived stress levels during times of change. In other words, when two Irish individuals, experienced similar levels of life-change, and one was high in optimism and the other low in optimism, they perceived different levels of stress. The person with higher optimism expressed lower stress levels than their counterpart with lower optimism scores. These results supported the first hypothesis that there was a significant relationship between dispositional optimism, perceived stress and recent life changes.

Examination of the participants’ individual levels of dispositional optimism, perceived stress and recent life changes showed that the majority (75%) of people were optimistic, had lower stress levels (67%) and experienced low to moderate life changes (56%). Among the interesting findings was the fact that only 14% of participants experienced high levels of recent life-change during a year of economic recession. It was also interesting that the early adult group had the lowest average level of dispositional optimism and highest average level of perceived stress. This could relate to the fact that the majority of this age group (25 – 40 year olds) were born during better times when Ireland was enjoying the ‘Celtic Tiger’ economic boom years and they are now experiencing their first economic crisis. They were, perhaps more distressed and less optimistic about returning to good times. They could not benefit from the ‘dampening’ effect (Lawton, 1996) that the older groups,
who lived through Ireland’s difficult times in the 60s and 70s may have. Apart from their lower dispositional optimism levels, no other reason was identified for their higher perceived stress levels. They had slightly higher levels of life-change but this did not prove significant. They are, of course, at a particular point in their lifespan where their goals, tasks and processes revolve around creating a home, building a family and progressing along a career path (Busseri, 2013), all of which may be impacted by a poor economy. Further investigation of this is suggested.

In agreement with Sapolsky (2006), a significant relationship between life-change and stress was also found though it was weaker than expected. This could be due to the protective effects of optimism as the research of Aspinwall and Taylor (1992) suggests. There was also a small correlation between high optimism and low recent life changes, indicating that a small number of individuals may have been more optimistic because they had experienced fewer life-changes.

The study then investigated whether age was significantly related to dispositional optimism, perceived stress and recent life changes. Previous research had shown conflicting findings in relation to age and dispositional optimism (Lai & Cheng, 2004; Lennings, 2000; You et al., 2009) and in relation to age and perceived stress (Lawton, 1996; Panksepp and Miller, 1996). A positive correlation was found between older age and higher levels of optimism. Older adults also indicated lower levels of perceived stress, which was in keeping with findings by Panksepp and Miller (1996).
Recent life-change scores did not differ according to age however and when all four variables were examined together a significant relationship was not found between them. This meant that the hypothesis that there would be a significant relationship between age, dispositional optimism, perceived stress and recent life changes was challenged and the null hypothesis was accepted.

Researching the situation in relation to gender, the combination of gender, dispositional optimism and recent life changes were found predictive of perceived stress thereby supporting hypothesis number three. That there would be a significant relationship found between the four variables. Females displayed higher average amounts of dispositional optimism but, in keeping with past studies (Boman, Smith, and Curtis, 2003; Lai and Cheng, 2004) the difference was not significant. This is in marked contrast to the results of the Gallop polls which found that females were more optimistic than males (Gallagher et al., 2013). The number of life changes indicated by females was higher than those reported by males but, once again, the difference was not significant.

Results for levels of perceived stress were in keeping with the literature and found that females perceived significantly higher amounts of stress than males. The literature offers a wide variety of reasons for this difference suggesting it may be due to females encountering more stressful situations (Almeida & Kessler 1998), or due to their role in society or because they are more emotionally connected to
family and friends. (Kessler & McLeod, 1984; Turner, Wheaton, & Lloyd, 1995).

The current study couldn’t elucidate why females perceived greater stress than males as they didn’t report significantly more life changes or significantly different life changes than the male participants. Finding may support Mather and Lighthall’s (2012) theory that differences between genders in relation to stress are caused by different activities levels in certain parts of male and females brains but this study cannot confirm this. The results for each hypothesis will now be considered in more detail.

**Hypothesis 1**

A great deal of research indicates that optimism reduces the adverse effects of stressful life events (Worsch & Scheier, 2013, Gustafsson & Skoog, 2012) and that optimists tend to perceive their lives as less stressful (Chang, Rand, & Strunk, 2000). A negative relationship between dispositional optimism and perceived stress was therefore expected and it was found.

The relationship between recent life changes and perceived stress was significant but weak, which at first glance appeared counter intuitive but two factors may contribute to the weakness of the result. The first possible ameliorating factor is the optimism of the participants which, as previously stated, can reduce the perception of stress. Secondly, the recent life changes measure, attributed scores to both positive and negative events as both are seen as possible stressor. This is in line with much research (Sapolsky, 2006), however the perceived
stress scale is weighted heavily towards primarily measuring negative events as stressful.

This current study found that the combination of dispositional optimism and recent life changes predicted 39% of the variance in perceived stress and that the relationship was significant. While this supported the hypothesis, it is worth noting that a prediction value of 39% is reasonably low, indicating that other factors, which are not catered for by these measures are also impacting on the perception of stress. Research suggests that personality factors like extraversion along with psychoticism and neuroticism affect the perception of stress (Fontana, 1993), as may the individual’s coping capabilities (Lazarus and Folkman, 1984) or life experience and developmental stages (Aldwin, 2011).

**Hypothesis 2**

As just stated, life changes can impact stress perception, so when a multiple regression indicated that the combination of age, dispositional optimism and recent life changes predicted 39% of the variance in perceived stress it could have appeared that there was a significant relationship between all four variables, but age was not a significant predictor of perceived stress. 39% was the same percentage as dispositional optimism, perceived stress and recent life changes predicted without the inclusion of age however, so further investigation was required. A partial correlation confirmed the fact that age was not a predictor of
perceived stress. The hypothesis that there would be a significant relationship between Age, Dispositional Optimism, Perceived Stress and Recent Life Changes was therefore not supported and the null hypothesis was accepted.

This study also examined whether different age groups had different levels of perceived stress or optimism. There was conflicting research in these areas. Lawton (1996) suggested that life experience and maturity enhanced the individual’s ability to deal with stressors while others like Panksepp and Miller, (1996) maintained that older individuals became sensitised to stress and thereby their stress reactions increased. This study found a significant difference between the four age groups in relation to perceived stress. The second-oldest group had the lowest mean rank for perceived stress, followed by the oldest group, while the second-youngest group had the highest. A significant negative relationship was found between age and perceived stress, even though there was no significant relationship between age and recent life changes. As Lawton (1996) maintained, the greater the age, the lower the stress reaction.

Optimism research also varied with some indicating that optimism levels increased with age (Lennings, 2000;You et al., 2009), others (Lai & Cheng, 2004) maintained they didn’t and You et al., (2009) found culture impacted on whether the levels changed or not. A Spearman’s Rho correlation coefficient indicated there
was a significant positive relationship between age and optimism and a Kruskal-Wallis report showed that all four age groups differed significantly. The oldest age group (56 – 69 years) reported the highest mean optimism levels followed by the next oldest group (40 – 55 years). The youngest age group (18 – 25 years) had the third highest (or second lowest) mean in relation to optimism with the early adult group (26 – 40 years) reporting the lowest mean optimism scores. These results differ from those found in the Gallup research where the young were the most optimistic. The fact that the age group with the lowest dispositional optimism score was also the age group with the highest perceived stress score agrees with previous research and expectations of the current study. The fact that they are the 26 – 40 year olds may be a cause for concern if they fail to benefit from the many positive aspects of dispositional optimism (Carver et al., 2010) during their child rearing age and at time when they are likely to be building their careers and Irish businesses of the future.

**Hypothesis 3**

The three predictor variables of Gender, Dispositional Optimism and Recent Life Changes predicted 41% of the variance in Perceived Stress, supporting the hypothesis that there would be a significant relationship between gender, dispositional optimism, perceived stress and recent life changes.
Further examination of results indicated that, on average, females expressed lower levels of optimism, higher levels of perceived stress and higher levels of recent life changes than males but not all of these results were significant. There was a significant difference between genders in relation to Perceived Stress which was in agreement with prior research by Mather and Lighthall, (2012), but the difference between gender in relation to dispositional optimism was not significant. This agreed with research by Boman et al., 2003 and Lai et al., 2004, but differed from the Gallup poll research which found females were more optimistic (Gallup, 2013). The difference between genders in relation to recent life changes was not found to be significant either. In short, females perceived significantly more stress than males even though they did not experience significantly more recent life changes or have significantly different levels of dispositional optimism.
Possible Limitations of this Study

This study attained and surpassed the minimum sample size of 64 which was suggested by a power analysis however, a larger sample size would have reduced the standard error when performing correlations and multiple regressions. An imbalance between the number of females and males may have impacted on results. A more even divide between genders would have reduced the possibility of errors.

Busseri (2013) indicates that each age group has a particular set of key goals, tasks and processes. While the lack of participants aged over 70 may have impacted on results and a repeat of the study ensuring it included members of this age group is recommended.

A multiple regression showed the combination of dispositional optimism and recent life changes accounted for 39% of the variance in relation to perceived stress but as this is a relatively low percentage, it indicates that there are other factors impacting on the perception of stress which this study did not set out to measure. Research suggests that personality factors (Chodagiri, & Redid, 2013) like extraversion along with psychoticism and neuroticism (Fontana, 1993), coping capabilities (Lazarus and Folkman, 1984) or life experience and developmental stages (Alswin, 2011) may impact the perception of stress. A new study including measures of these factors, might present a more comprehensive result.
Implications and future research directions

The study found that the Irish population were optimistic and that this impacted their level of perceived stress as they encountered life changes. It is possible that optimism is influencing the way in which the Irish population is dealing with the recession. Taylor and colleagues (2012) found dispositional optimism was associated with resilience to economic pressure and Nes and Segerstrom (2006) indicate that dispositional optimists strive to eliminate, reduce and manage stressors rather than ignore, avoid and withdraw from them. It would be interesting to perform a similar study in other countries that have required a rescue package from Europe to see if there is any correlation between dispositional optimism levels and economic resilience.

The fact that the younger age groups were the less optimistic than the older age groups, may have significant implications as the economy stabilises, especially for a country that is trying to foster entrepreneurship as Hmieleski, (2009) found that dispositional optimists were more effective is such situations. An experimental study is suggested, to investigate whether, as suggested by Selligman (1990) optimism training is possible for those with low dispositional optimism and whether such training would prove beneficial. Finally, a primarily optimistic population, with consequent lower stress levels and experiencing low levels of change, may be good news for health care in Ireland as the population are likely to avoid some of the
negative health implications of high stress (Sapolsky, 2006) and high life change (Miller & Rahe, 1997).

Further investigation into the different perceptions of stress by males and females is recommended in order to identify methods of reducing female’s higher stress levels.

Conclusion

This study wished to examine whether the Irish population was high in dispositional optimism and if they were, whether, as previous research indicated, it would affect their perception of stress as they experienced recent life changes. It was considered a particularly interesting time to perform such a study, as Ireland had experienced many changes in the recent past when its economy went from being one of the best performing economies in Europe, to a situation where Ireland required a rescue package from Europe to keep its economy afloat in 2010 (Economic and Social Research Institute, 2013).

The results of the research indicated that, as expected from the review of past literature, the majority of the Irish population was optimistic and a negative correlation existed between dispositional optimism and perceived stress as people experienced life changes. Older individuals were on average, more optimistic than younger ones and those in early adult phase of life (25 to 40 years) were the least
optimistic and had the highest average perceived stress levels. This may be a cause of concern for Ireland as these are the age group which will lay the foundations for the future. Addressing the question of whether age would have a ‘dampening’ or sensitising effect on stress reactions, the older age groups were found to have the lowest levels of perceived stress. While the average scores of males and females differed in relation to dispositional optimism and recent life changes, these differences were not significant. Once again in keeping with previous research, Irish females were found to perceive higher levels of stress than their male counterparts.

Factors, which are not catered for by the combination of dispositional optimism and recent life changes are impacting on the perception of stress and further research is required to uncover these, particularly in relation to the higher stress levels of the young. The small positive correlation between dispositional optimism and recent life changes could also benefit from further examination to explain the relationship.

In conclusion, a positive impression of the Irish situation has emerged. The participants were, in general optimistic and while a small minority were experiencing high levels of stressful changes, the majority were not. The optimism of the majority seemed to help reduce stress. A word of warning rang out that the younger generation were less optimistic than their predecessors and were feeling more stressed, but again not in an extreme way. It may be time to investigate the possibility of training them in optimism so as to ensure Ireland continues to benefit
from the enthusiasm and persistence (Carver et al., 2010) of an optimistic population.
References


Dávalos, M. E., & French, M. T. (2011). This recession is wearing me out! Health-related quality of life and economic downturns. *Journal Of Mental Health Policy And Economics, 14*(2), 61-72.


Sapolsky, R. M. (2004). Social Status And Health In Humans And Other Animals. *Annual Review Of Anthropology, 33*(1), 393-418.


Appendix 1 Online Survey

Thank you for taking the time to take part in this survey.

I am a final year Psychology student at Dublin Business School (DBS) and this research is being conducted for the purpose of meeting course requirements.

Please note:
You must be 18 years or over and resident in Ireland to take part.
The survey is anonymous. Any identifiable information will be collected.
You may withdraw from the survey at any time.

1. Please tick below to proceed.

I consent to take part in this survey.

Yes

Please be as honest and accurate as you can throughout.

Try to let your responses to each statement influence your responses to other statements.

Answer according to your own feelings, rather than how you think 'most people' would answer.

2. Please indicate whether you agree / disagree with the following statements.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Agree a lot</th>
<th>Agree a little</th>
<th>Neither agree nor disagree</th>
<th>Disagree a little</th>
<th>Disagree a lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>In uncertain times I usually avoid risk.</td>
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<td>I smile for no particular reason.</td>
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<td>People who know me always have smiling faces.</td>
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<tr>
<td>I tend to be optimistic about my future.</td>
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<td>I am an introvert.</td>
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</tbody>
</table>
3. Please indicate whether you agree / disagree with the following statements

<table>
<thead>
<tr>
<th>Statement</th>
<th>Agree a lot</th>
<th>Agree some</th>
<th>Neither sure</th>
<th>Disagree some</th>
<th>Disagree a lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>It's important for me to keep busy</td>
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<tr>
<td>I enjoy new and different things</td>
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<td>I don't feel sad easily</td>
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<td>I tend to focus on good things happening to me</td>
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<tr>
<td>I always expect things to go wrong</td>
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<tr>
<td>I am happier to be not sad than sad</td>
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</tbody>
</table>

Please remember all answers are anonymous.

The following questions ask about your feelings and thoughts during the LAST MONTH.
In each case, you will be asked to indicate how often you felt in thought that way.

4. In the last MONTH, how often have you:

<table>
<thead>
<tr>
<th>Feeling / Situation</th>
<th>Never</th>
<th>Almost never</th>
<th>Sometimes</th>
<th>Very often</th>
<th>Very often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seen upset because of something that happened to someone else?</td>
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<td>Felt you were unable to carry out important things in your life?</td>
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<td>Tired, worn out, and drained?</td>
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<td>Felt confused about your ability to handle your usual problems?</td>
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<tr>
<td>Felt that things were going your way?</td>
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</tbody>
</table>
5. In the last MONTH, how often have you:

<table>
<thead>
<tr>
<th>Feared that you could not cope with all the things you had to say?</th>
<th>Never</th>
<th>Almost never</th>
<th>Sometimes</th>
<th>Very often</th>
<th>Very often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever feel in nervous relations in your life?</td>
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<td>Felt that you were on top of range?</td>
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<tr>
<td>Been altered because of things that happened that were outside your control?</td>
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<tr>
<td>Felt difficulties were too high that you could not overcome them?</td>
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</table>

**Life Changes**

The following questions look at life changes you've encountered in the last year:

6. Please select any/all items you have experienced within the PAST YEAR.

- [ ] An illness or injury that kept you in bed for more than a week or sent you to hospital
- [ ] An illness or injury that was less obvious than above
- [ ] Major social worry
- [ ] Major change in eating habits
- [ ] Major change in sleeping habits
- [ ] Major change in your usual type of exercise or recreation
7. Please select any/all items you have experienced within the PAST YEAR.

- Change in a new type of work
- A change in your work hours or responsibilities
- More work responsibilities
- Work-related responsibilities
- A promotion
- A raise
- A transfer
- Trouble with your boss
- Trouble with your co-workers
- Trouble with your supervisor
- Other work issues
- Major business readjustment
- retirement
- Layoff
- Illness
- Took a course to help your work
Please select any/all items you have experienced with the PAST YEAR.

- None within same city or town
- None in another town, county
- None in another state
- None in other conditions
- Change in family get-together
- Major change in health or behavior of a family member
- Parent
- Problem
- Divorce or separation
- Birth of a child
- Adoption of a child
- Relative moves in with you
- Spouse begins or stops work
- Unemployment or economic change in your marriage
- Child's health issues
- Change in arguments with spouse
- Financial, job, or other issues
- Parent's divorce
- A parent remarries
- Separation from spouse due to work
- Separation from spouse due to marriage difficulties
- Divorce
- Birth of grandchild
- Death of spouse
- Unemployment
- Death of child
- Death of brother or sister
9. Please select any/all items you have experienced within the PAST YEAR.

- Gaining increased weight
- Beginning or ending school
- Change of school or college
- Change in parenting roles
- Gaining new serious illness
- Change in social activities
- Holiday
- New role (e.g., promotion)
- Experiencing family death
- Girlfriends or boyfriends problems
- Legal troubles
- An accident
- "Pulling out" of a close personal relationship
- Minor violation of the law
- Being new to job
- Major decision about career future
- Major personal achievement
- Death of a close personal friend

10. Please select any/all items you have experienced within the PAST YEAR.

- Major legal problem
- Major increase in income
- Investment or property investments
- Loss or damage to personal property
- Major illness
- Moderate purchase
- Foreclosure on mortgage or loan

**Demographic information**

11. Gender:

- Male
- Female

12. Age:
13. Please indicate your:
- Marital status:
- Education level:
- Number of people in household:

14. Do you have children?
- Yes
- No

15. If yes, how many are:
- Under 18?
- Over 18?

16. What is the highest level of education you have completed?

17. Employment status:
- Unemployed
- Employee
- Self-employed
- Other (please specify):

18. Occupation:

19. Household Income:

<table>
<thead>
<tr>
<th>Please Indicate</th>
<th>$0 - $1,000</th>
<th>$1,001 - $2,000</th>
<th>$2,001 - $3,000</th>
<th>$3,001 - $4,000</th>
<th>$4,001 - $5,000</th>
<th>$5,001 - $6,000</th>
<th>$6,001 - $10,000</th>
<th>$10,000 and above</th>
</tr>
</thead>
</table>

A little bit of background information:

In recent research, Ireland has been identified as one of the most optimistic countries in the world (Gallup, Kopee & Queisser, 2017)

The aim of this research is to investigate whether optimism within the Irish population is impacting on perceived stress levels as people cope with stressful life changes.

If you would like further details please email: 1234567@emnthesis.ie.
Thank you for your input.

It is unlikely that taking part in this research will cause any distress but the following details are provided in case you would like to seek help:

AWARE helpline: 1800 303 303 www.aware.ie

 Samaritans helpline: 1850 60 60 60

The Psychology Society of Ireland (PSI) www.psi.ie

THANK YOU FOR TAKING THE TIME AND EFFORT TO COMPLETE THIS SURVEY.