

Resilience and social support as moderators between financial stressors and strain

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Abstract

This study tested the hypotheses that social support and resilience would each buffer individuals against the potential negative effects of severe financial stressors by moderating the relationship between perceived financial stressor severity and three forms of strain: stress, depression, and anxiety. Correlation and multiple regression analyses were conducted on a sample (N = 580) of clients from a large South African organisation in order to test these hypotheses. Financial stressor severity was assessed using The Stressor Scale. Resilience was measured using The Resilience Scale. Social support was measured using the Multidimensional Scale of Perceived Social Support, and the DASS-21 was used to assess respondents' levels of stress, depression and anxiety. The buffering hypotheses were not supported. Resilience and social support were still significantly negatively associated with perceived stressor severity, as well as subjective reports of stress, anxiety and depression. This indicates that resilience and social support still played a protective role in the stress process, but that they function as antecedent variables as opposed to moderator variables; thereby altering the appraisal of financial stressors and, indirectly, the amount of strain respondents reported feeling as well.

Introduction

The generally fast pace of contemporary life often creates large amounts of stress within individuals. While this feeling of stress can occur as a result of a number of different stressors, research has shown that financially-related stressors are to blame for much of the stress felt by individuals in the contemporary world (Bailey, Woodiel, Turner, & Young, 1998, Tang & Hammontree, 1992, Peirce, Frone, Russel & Cooper, 1996). This is largely because so many of the basic activities in daily life involve the use and management of personal finances. Financial stress has thus been perceived to be one of the most significant and pervasive contributors to total psycho-social stress levels (Bailey, Woodiel, Turner, & Young, 1998).

In fact, Bailey's (1998) study found a correlation of $r = 0.70$ between financial stress and total personal stress, where financial stress accounted for 30% of the variance in total life satisfaction scores. This vindicates the perspective of the current study that financial stress is possibly, on average, the single most powerful determinant of total stress levels in people's lives today.

A study by Garman, Leech, and Grable (1996) revealed that financial stress was rated by workers in their sample as the single greatest source of overall stress. This study also found that financial stress was the most frequently presented problem in marriage counselling, alongside sex. Several other studies have shown that high levels of financial stress can have negative effects on various aspects of the psychological and physical health of individuals who exhibit them (Kim, 2004; Kim, et al, 2003; Kim, & Garman, 2004; O'Neill, et al, 2006; Prawitz, et al, 2006). The deleterious effects pathological amounts of stress can have, financial or otherwise, are not limited to the individuals themselves; employers of such individuals will possibly witness reductions in job performance, worker productivity, commitment to work, morale and loyalty as well as increased frequencies of absenteeism according to Kim and Garman (2004).

The literature thus suggests that financial concerns are amongst the most prevalent and significant contributors to subjective feelings of stress in most peoples' lives today. Given the negative effects high levels of stress can have, and in the midst of current and recent global economic recessions, the threat imposed by high levels of financial stress becomes disturbingly probable, as many individuals struggle to cater for their and their family's financial needs.

Research into this area is thus possibly more relevant and necessary than ever before, and further efforts to understand how financial stress comes about, and on how best to combat or prevent it, are therefore warranted.

This study did not assess the aforementioned organisational outcomes such as worker productivity, in relation to stress, as they are well-documented already (eg. Joo & Garman, 1998, Kim & Garman, 2004). Individual outcomes with a broader scope of relevance were focused on instead. Anxiety, depression, and subjective feelings of stress were thus investigated as potential forms of psychological strain to assess the effects of financial stressors in people's lives. These forms of strain are relevant to both work life and non-work life.

The aim of this study was not only to reveal possible associations between financial stressors and these variables, however, as the positive relationship between stressors and strains has already been supported in the literature (eg. Kendler, Karkowski & Prescott, 1999, Lazarus, 1993a). The primary aim of this study was instead to determine if resilience and social support acted as effective buffering mechanisms against the negative effects of financial stressors, reducing the effect these stressors have on psychological health by reducing the amount of strain individuals experience.

The review of the literature will begin with an in-depth explanation of financial stress, as much of the terminology used in the stress literature can be somewhat convoluted. Stress will first be defined and discussed on a broad level, before examining Lazarus' (1993a) model of stress, which was adopted as the theoretical perspective depicting the processes involved in stress for the purposes of this study. Once this dynamic stress process is adequately explained, the complex interplay between the sources of stress, the effects of stress, and how the constructs of social support and resilience may fit into these relationships, will be discussed. Social support and resilience will then be examined in more detail, especially with regard to their potential ability to act as buffers in the stress process, reducing the amount of strain placed on individuals as a result of financial stressors in their lives.

Financial Stress

What is financial stress?

Kim and Garman (2003) define financial stress levels as an individual's subjective assessment of their financial situation, including a level of satisfaction with the financial situation, the perceived ability to meet expenses as well as the amount of worry caused by savings levels, investment, and debt. This definition has several significant implications. Firstly, financial stress may not be linearly associated with raw income levels, because individuals have differing amounts of financial responsibilities as well as different spending habits. Secondly, it is the perception of the lack of financial resources that creates financial stress, and not necessarily the objective situation itself. Finally, individual differences may also exist with regard to perceptions about money, and of how much money is considered enough to live comfortably.

Perceived income adequacy is a variable that has received attention in the financial stress literature (Kim & Garman, 2006). It is defined as the degree to which an individual's income stream can cater for the various financial demands in his/her life (Danes & Rettig, 1993). This is too narrow a construct to account for the overall variability in financial satisfaction among individuals, however, as income may be sufficient to support some lifestyles but not others. Individuals may be well aware, for example, that their financial crisis stems from unwise spending and not from a lack of income.

Other definitions of financial stress exist as well, such as Voydanoff's (1984), which describes financial or economic stress as a combination of objective components, such as employment instability or economic deprivation, as well as subjective components, such as the uncertainty of continued employment or a perception of strain due to economic stressors. Kim and Garman (2006) note, however, that valid and reliable instruments assessing financial stress in this holistic manner do not currently exist. This is likely due to the ethical and practical difficulties associated with holistic data collection of this sort. Many studies which assess stressors thus rely on self-report data, which is sometimes thought to be more valid than objective assessments of stress, given the importance of appraisal in the stress process, discussed in more detail below in the section detailing Lazarus' (1993a) model of the processes involved in the elicitation of stress

reactions. Subjective, self-report measures of stressors and strain were thus implemented in this piece of research as well.

It is important to understand what forms financial stressors can take, as there are several. It is equally important to know which negative effects these stressors can have, as so many people today are vulnerable to stress due to financial concerns (Bailey, et al, 1998). Financial stressors can stem from three basic sources: personal, family and financial situations (McCubbin & Patterson, 1983). A personal financial stressor may include investment losses or injuries, for example. Family stressors may include major life events such as marriage, retirement, the birth of a child or the death of a family member. Financial stressors stemming from financial situations may include legal problems, medical bills, bankruptcy or costs associated with moving house, among a host of other things (Joo & Grable, 2004).

Boss (2001) also notes another important aspect of stressors: their cumulative nature. If stressors go unresolved while additional stressors begin to surface in an individual's life, the strain felt by that individual can increase dramatically. Stress or strain has also been found to have potential spill-over effects. Financial strain in particular has been found to affect the health of the individual experiencing the strain as well as other members of the individual's family. Similar spill-over effects have been observed in the workplace in the form of reductions in productivity, as well as increased absenteeism amongst financially distressed employees (Prawitz, Garman, Sorhaindo, O'Neill, Kim & Drentea, 2006). Organisational commitment, pay satisfaction and the efficient use of company time by employees have also all been found to be negatively associated with financial distress in employees (Kim & Garman, 2004). To properly understand what is meant by 'financial stress', the definitions, causes, and effects thereof are important to discuss, but do not suffice as an adequate understanding of the construct. The processes through which subjective experiences of stress arise are paramount, and are discussed next.

The Stress Process

The theoretical concept of stress is more complicated than most people realise, and the word 'stress' is often used colloquially to refer to both stressors and strains. Lazarus (1993a) acknowledges the confusion caused by misused or misinterpreted terminology within the

academic stress literature as well, but notes that four key processes should always be considered when trying to understand the dynamic process of stress. To fully understand what is meant by 'financial stress', it is thus imperative to understand how these processes elicit subjective feelings of stress.

1. A causal or external event, agent, or object exists. This is what Peter and Siegrist (2000) would label as a *stressor*. With respect to financial issues, this may assume the form of debt, a surprising and/or large expense, the actual loss of one's job and income, or the ongoing threat of job loss, among many other things.
2. Following this potential stressor event, an evaluation thereof occurs by the individual. This evaluation may be dynamic and complex, but fundamentally involves distinguishing the potential stressor as being either threatening or benign. This exemplifies the person-environment interaction conception of stress adopted by Lazarus (1993a), as the perception of a potential stressor as threatening or potentially harmful is exactly what causes it to be a stressor. If one lost one's job but had large amounts of money in savings and an inexpensive lifestyle, for example, this event may not be perceived to be a stressor at all. Thus, a potential stressor only becomes a stressor, being infused with the ability to cause stress or strain, if the individual in question perceives it as threatening, harmful or challenging (Lazarus, 1993a). This is probably why subjective measures of stress are considered to be more valid than their objective counterparts by some researchers (eg. Ackerman & Paolucci, 1983).
3. Following the appraisal of the event as a stressor, coping processes occur, both psychologically and physiologically, to deal with the demands placed on the individual by the stressor. Coping mechanisms may exist in a number of forms, and several models exist that distinguish different types of psychological coping strategies. Lazarus and Folkman (1980) distinguish between problem-focused coping and emotion-focused coping, for example. The former is seen as more proactive and focused on the external stressor itself whereas the latter is predominantly focused on the emotions the stressor elicits within the individual. Wadsworth, et al (2005), on the other hand, distinguish between *primary control coping*, *secondary control coping*, *disengagement coping*, *involuntary engagement coping* and *involuntary disengagement coping*.

While these models of coping will not be elaborated on here, it is important to note that coping is not always positive, pragmatic or helpful. The use and abuse of various substances is an example of a destructive coping strategy. This is not only limited to substances with immediate harmful effects, such as narcotics. Siahpush, Borland and Scollo (2003) identified a non-recursive relationship between financial stressors and smoking, whereby smoking was enacted as a coping strategy to ease strain caused by financial stressors by respondents in their study. The potentially high financial costs of smoking, however, acted as a financial stressor in itself, particularly among those who were already in dire financial straits. This is an example of what Wadsworth et al (2005) label maladaptive coping mechanisms, having the potential to do more harm than good. This study did not examine strategies for coping directly, but it is possible that resilience and social support alter the coping mechanisms employed in reaction to a severe financial stressor. Individuals who have adequate social support networks, or individuals who can be described as resilient, may be more likely to employ more effective and pragmatic coping strategies than others.

4. The final stage of the stress process, according to Lazarus, is a complex pattern of effects on the mind and body, often interlinked, usually referred to as the *stress reaction* or as *strain* (Lazarus, 1993a). Stressors and strains, according to Selye (1950), can assume both psychological and physiological forms. The subjective feeling of stress, for example, has clear psychological implications but it has also been associated with physical health ailments in various studies (eg. Gleit, Goldman, Chuang & Weinstein, 2007, Newbury-Birch & Kamali, 2001). Immediate physiological reactions to stressors also occur, such as elevated heart rate, faster breathing and the secretion of various neurotransmitters. These act as unconscious coping mechanisms that occur primarily to promote survival in a threatening situation by alerting the mind and preparing the body for the situation at hand (Charney, 2004). In light of this, Selye (1974) distinguished between two types of stress reactions; *distress* and *eustress*. The former is inherently negative, more in line with the colloquial or common understanding of stress. Reference to *strain* refers to this type of stress reaction. The latter is more positive, associated with good feelings and healthy bodily states. The survival-promoting physiological responses to stress, such as adrenaline, may be an example of a *eustress* reaction. For the purposes of the current study, strain or distress was measured in three ways, by assessing

respondents' levels of depression, anxiety, and subjective feelings of stress. Manifestations of *eustress* reactions were not measured in this study, as the focus was on the negative impact of stress on the psychological health of individuals, and not on any potential benefits thereof. With respect to anxiety, which Leonardo and Hen (2008) define as a state of cognitive and behavioural preparedness within an organism which occurs as a result of current or potential threats, one can see that it may often have a beneficial aspect, equipping an individual for an upcoming situation. For the purposes of this study, however, it is the pathological aspects of an anxiety which are focused on, which is a maladaptive state which hinders a person's ability to respond to environmental threats and challenges in an optimal way (Leonardo & Hen, 2008).

Lazarus' interactive model of stress has influenced numerous other theorists and stress researchers, many of whom adopt a similar view on the dynamic stress process which occurs between a person and their environment. For example, Peter and Siegrist (2000) define a *stressor* as a demand or threat from an individual's environment which taxes and challenges the individual. When efforts are made to react to the stressor and meet its demands, *coping* is said to occur. *Strain* is the individual's response to unmet or unresolved stressors (Peter & Siegrist, 2000). This reflects Lazarus' model, except that the first two processes are combined into Peter and Siegrist's (2000) definition of a stressor. Lazarus' model also reflects Voydanoff's (1984) conception of financial stress, as Voydanoff acknowledges both the objective and subjective components of stress, with a greater focus on the latter.

The present study drew from Lazarus' (1993a) dynamic model of stress and investigated relationships between financial stressors and various forms of strain: depression, anxiety, and the subjective perception of stress (distress) in respondents' lives. While coping occupies a clear role within Lazarus' interactive model of stress, much research exists on the role of coping in the stress process already, particularly as a mediator of the relationships between stressors and the aforementioned strain variables (eg. Day & Livingstone, 2001, Nolen-Hoeksema, 2000, Stanton, et al, 1994, Wadsworth, et al, 2005). Thus, other potential moderators of the relationship between stressors and strain were investigated instead. It was hypothesised that social support and resilience would moderate the relationships between financial stressor severity and strains by intervening in the aforementioned stress process. This could possibly happen at either stage 2 or stage 3 of Lazarus' stress process; resilience and social support could alter the perception and

appraisal of the potential financial stressor, such that it elicits a less severe stress response, or they could buffer individuals against strain by influencing the coping strategies that individuals employ when faced with financial stressors. Before these possible moderator effects can be further explored, it is important to understand which variables were used as measures of strain within the current study, and why these variables were chosen.

Strain

Strain has often been associated with emotions of anger, as well as depression and anxiety (Newbury-Birch & Kamali, 2001). Siegrist (2000) explains psychological forms of distress in terms of negative emotion, including anxiety and sadness. Auerbach, Abela, Zhu and Yao (2010) note that one of the most robust predictors of depression is stress. The literature therefore provides evidence for the conceptualisation of depression and anxiety as forms of strain themselves, predicted by severe stressors. In support of this perspective, Lazarus (1993b) proposed that psychological strain is a subset of emotions, including anxiety and sadness as well as several other emotions such as anger, guilt or shame. Gleib et al (2007) distinguished several distinct types of stressors in their research, including the broader conception of stressors as events which have the propensity to evoke anxiety

In light of these interrelationships, discussed in more detail below, three measures of strain were used in this study. These include subjective self-report measures of depression, anxiety, and of how much stress the respondents felt they were under at the time.

The interplay between stressors, coping strategies and various forms of strain

Auerbach et al (2010) note that there are common aetiological factors which result in both depression and anxiety, and that research has found that anxiety usually precedes depression (e.g. Woodward & Fergusson, 2001). To place this dynamic within Lazarus' interactive model of stress, Auerbach et al (2010) hypothesised that anxiety may impact coping strategies employed in dealing with stressors adversely, heightening vulnerability to strain and therefore depression. This perspective views anxiety as an external moderator on the relationship between coping

strategies and other forms of strain by influencing the coping strategies employed to deal with stressors. Highly anxious individuals may, for example, drink alcohol or smoke more than their less anxious counterparts to aid in their attempt to cope with stressors in their lives. This perspective seems feasible, and anxiety may stem from causes unrelated to specific stressors, such as genetics or life stressors much earlier in life, among other things (Southwick, Vythilingam & Charney, 2005). Stress, however, has also been found to cause anxiety (eg. Kim, 2004). The literature thus seems to suggest the possibility of a number of complex relationships between stressors, coping strategies and various forms of strain.

It seems that the relationship between stress and anxiety is non-recursive in nature; such that both constructs affect and predict one another in a cyclical manner. The same may be true of depression, as it may influence the choice and implementation of coping strategies used in response to stressors, making one potentially more vulnerable to experiencing strain as a result of stressors in one's life, as well as being a form of strain itself. Given the non-experimental nature of the current study, the variety of potential causal dynamics could not be investigated, and were not the focus of this study.

This mix-up of the constructs of stress, stressors, anxiety and depression reflects Lazarus' view (1993a) regarding the confusion between the various terminologies used within the stress literature. What does seem clear is that, perhaps in several ways, the constructs of depression and anxiety are intrinsically linked with one another and with the concept of stress. This conceptual overlap led me to hypothesise that financial stressors, the subjective perception of felt stress, depression, as well as anxiety would all be significantly and positively inter-correlated in the data which emerged from this study, hence hypothesis 1 below.

H1: Significant positive associations will be found between all of the following variables: perceived financial stressor severity, stress, depression and anxiety.

All three of the aforementioned forms of strain are also said to lead to dissatisfaction, low morale and poor work performance, making them a concern not just for the individuals who experience them, but for their employees and families as well (Newbury-Birch & Kamali, 2001). Hammen (2002, as cited in Wadsworth, et al 2005) notes that depression can also create a "context of stress", affecting others who come into contact with highly depressed people by increasing the

frequency of a variety of chronic and episodic stressors. While Hammen (2002) refers to the families of depressed individuals in making this claim, the fact that people spend so many hours a week at work, often with the same team of people, implies that these sorts of effects would likely be applicable in the work environment as well. This means that if social support and resilience are found to moderate the relationship between financial stressors and strain, as hypothesised, they could prove to be very effective means for combating stress and its deleterious effects on a number of fronts, including in the home and at work. Resilience and social support may thus have a broad scope of practical relevance in the treatment and prevention of pathological amounts of strain, warranting further research into the stress-reducing value these variables potentially contain. Before this potential resource in the battle against stress can be tested, however, it is imperative to better understand what social support and resilience are, what forms they may take, and how they may protect individuals against stress.

Social Support

Shumaker and Brownell (1984, p13) define social support as "an exchange of resources between at least two individuals perceived by the provider or the recipient to be intended to enhance the well-being of the recipient." "Resources" may assume one of an array of different forms, but researchers distinguish between psychological and non-psychological forms of support (Caplan, 1979; Cobb, 1976). Cobb (1976) views psychological forms of support as exchanges of information while non-psychological forms of support involve exchanges of material aids. Information may itself take a number of forms, such as advice to guide an individual or information which communicates the care the provider of the social support feels for the intended recipient.

Cohen and McKay (1984) speak of *tangible support* as a form of non-psychological support, acknowledging that it has not received nearly as much attention in past research because of its straight-forward and mundane nature. A financially stressed person would presumably be aided by financial donations in an obvious manner. Psychological support, on the other hand, makes for more interesting research as it has the potential to moderate the relationship between stressors and strain, without actually eliminating the stressors themselves. It also makes for research with

much more relevant and practical implications; few people are in a position to give financial handouts to those in need, whereas emotional support is something which most people can afford to give.

The buffering hypothesis of social support

Social support has been widely referred to as mechanisms through which interpersonal interactions may buffer individuals against the strain caused by stressors in their lives (Cohen & McKay, 1984). This is referred to as the buffering hypothesis, whereby stressed individuals with greater social support experience less of the deleterious effects of stress (distress) than stressed individuals with less social support do. When the perception of stress is minimal, however, social support has little effect on the recipient's stress levels. This again reflects Lazarus' (1993a) model of stress, as stressors in the environment need to exist before any distress or strain may be felt by the individual. Lazarus also mentions that a stress reaction is the result not only of the existence of a stressor, but of the perception that the stressor is threatening and that the individual in question does not have sufficient resources to cope with the stressor adequately. Social support, according to the buffering hypothesis, acts as a resource in this way, having the ability to mitigate or prevent a stress reaction by making threatened individuals feel more capable of dealing with the stressor in their lives (Cohen & McKay, 1984). This can happen in two ways: by affecting the recipient's appraisal of how threatening the relevant stressor is, or by altering their assessment of how well they can cope with the stressor (Cohen & McKay, 1984).

Social support can aid the recipient by assuming different forms. Social support can take the form of advice or suggestions on ways in which to cope with the stressor at hand more effectively. It can also make people feel like they are coping better by getting them to focus on positive aspects of their situation in addition to the more salient negative aspects. This positive refocus can be broad, including focusing on things outside the situation at hand, such as valued relationships in the individual's life (Pennebaker & Funkhouser, 1980, as cited in Cohen & McKay, 1984). This form of social support has been termed *appraisal support*, emphasizing the evaluation of things external to the recipient of the support, including the stressor itself (Cohen & McKay, 1984). *Emotional support*, on the other hand, focuses on the recipient themselves, by

making him or her feel loved, cared for or valued. It can also communicate to the recipients that they are esteemed and part of a wider network of mutual obligation which is there for them in a supportive manner (Cohen & McKay, 1984). There are, however, potential limitations to social support as a positive resource for coping with stressors. Some of these are briefly discussed below.

Limitations on social support as a buffering mechanism imposed by the support source

Cohen and McKay (1984) note that the effectiveness of social support as a buffering mechanism may have some situational limitations. If the stressor is perceived to be something which is not socially acceptable, or if the stressor or situation results in feelings of guilt or shame in the individual, then social support may not act as an effective buffering mechanism against stress for those people. These negative emotions may act as stressors in themselves. Furthermore, if discussion of the stressful situation may be detrimental to the relationship between the recipient and the provider of the social support or if the recipient does not trust the provider of the social support, social support may not have a buffering effect on the effects of stress (Cohen & McKay, 1984).

This is important as it implies that the source of the social support, among other things, is pivotal in determining the way in which the support is received and how effective it is. This study thus examines the differential moderating effects on the relationships between financial stressor severity and the aforementioned forms of strain by three different sources of social support, as can be seen in the hypotheses above. Perceived adequacy of social support from a significant other, from friends, and from family were investigated as potential buffers of stress as espoused in the buffering hypothesis of social support by Cohen and McKay (1984) to ensure that this potential limitation would not confound the results.

Hypotheses for social support

Whichever form it may take, and wherever the support comes from, social support is regarded by some researchers as being pivotal in protecting individuals against the deleterious effects of high levels of stress, and significant relationships have been found between social support and all three measures of strain employed in this study before (Zimet, et al, 1990). These considerations led me to hypothesise a number of relationships, listed below.

Hypothesis 2(a): There will be significant negative associations between social support from a significant other and financial stressor severity, stress, depression and anxiety.

Hypothesis 2(b): There will be significant negative associations between social support from friends and financial stressor severity, stress, depression and anxiety.

Hypothesis 2(c): There will be significant negative associations between social support from family members and financial stressor severity, stress, depression and anxiety.

Hypothesis 3(a): Social support from a significant other will moderate the relationship, in a protective manner, between financial stressor severity and each of the strain variables (stress, depression and anxiety) as per the buffering hypothesis.

Hypothesis 3(b): Social support from friends will moderate the relationship, in a protective manner, between financial stressor severity and each of the strain variable, (stress, depression and anxiety) as per the buffering hypothesis.

Hypothesis 3(c): Social support from family members will moderate the relationship, in a protective manner, between financial stressor severity and each of the strain variables (stress, depression and anxiety) as per the buffering hypothesis.

Resilience

In addition to the potential moderating effects various sources of social support may have on the relationships between financial stressor severity and strain, this study also investigated if resilience had a protective effect on this relationship in a manner similar to that proposed of social support in the buffering hypothesis.

What is resilience?

Research on resilience began by investigating the reasons why certain children grew up to be psychologically healthy and successful adults despite being subjected to extreme adversity in their younger years. Initially, these children were labelled as "invulnerable". This was too strong a term, however, as invulnerability implies an absolute protection from harm of any kind which does not change over time (Luthar, Cichetti & Becker, 2000). Thus, the concept of "resilience" first entered the psychology literature, defined as the ability to bounce back or cope extremely successfully with significant adversity (Rutter, 1985).

Tusaie and Dyer (2004) note that various domains of resilience exist, such as work performance, behavioural adjustment, psychosocial adjustment and physical health. Individuals may exhibit resilience to stressors in some of these domains and not in others. For example a victim of sexual abuse may achieve enormously in the academic field while struggling to maintain interpersonal relationships (Tusaie & Dyer, 2004). It is therefore questionable whether this hypothetical individual can be described as being resilient. This has led some researchers to believe that the existence of resilience must be evidenced by excellence in all of the aforementioned domains (eg. Tolan, 1996), whereas others require at least average performance in all domains, with excellence in one distinct sphere of life (Luthar, 1991). For the purposes of the current study, a broad measure of resilience was used to assess the construct in respondents, which taps into resilience on a general level, as opposed to focusing on specific facets in an individual's life. This measure will be discussed in more detail in the methodology chapter.

A historical overview of the resilience literature

Understanding the concept of resilience should include an understanding of how the construct of psychological resilience arose, and how it changed over time. The next few paragraphs will give a brief overview as to how research on psychological resilience began and developed over the years.

An evaluation of the existing literature on resilience can be divided into three distinct 'waves' of research, each with clear goals which stem from findings made in the former waves (Richardson, 2002). The first wave of resilience research was predominantly a response to the large focus in psychology on risk factors which predicted psychological problems. The first wave was thus a positive paradigm shift, which focused on the strengths of individuals that protected them against psychological problems, rather than on factors which made them more vulnerable to declines in mental health (Richardson, 2002).

The first wave of research thus focused on *resilient qualities*, identifying selective strengths or assets, usually conceptualised as traits, which protected people from serious adversity (Richardson, 2002). Several researchers (eg. Ramirez, 2007, Richardson, 2002) view the study by Werner and Smith (1992) as the foundational study in resilience literature. This longitudinal piece of research studied 505 individuals born in 1955 on the island of Kauai for 30 years. The multiracial sample included 200 individuals who were designated to be at high risk due to environmental risk factors such as poverty, prenatal stress, daily instability and serious mental health problems in parents (Richardson, 2002). Most of these individuals developed serious problems of some kind as adults, but 72 of the 200 were assessed as having turned into competent and caring adults.

The reasons why some of these individuals dealt with their adversity in such an adaptive manner in comparison to the majority of their peers stoked interest in the concept of resilience, and the characteristics displayed by these individuals, and similar individuals in resilience studies thereafter, became a topic of great importance. These characteristics were termed *protective factors*, and were viewed as being necessary personal or situational attributes for resilience to occur (Dyer & McGuinness, 1996, as cited in Ramirez, 2007). Werner and Smith (1992) found the following so-called protective factors to be common in most of the individuals assessed as being resilient in their study. With respect to personal characteristics, being female, robust,

socially responsible, adaptable, tolerant, achievement oriented, having a high self-esteem and being a good communicator, were found to be common among a large proportion of the individuals assessed as being resilient. Externally, a caring environment was also noted as being pivotal (Richardson, 2002).

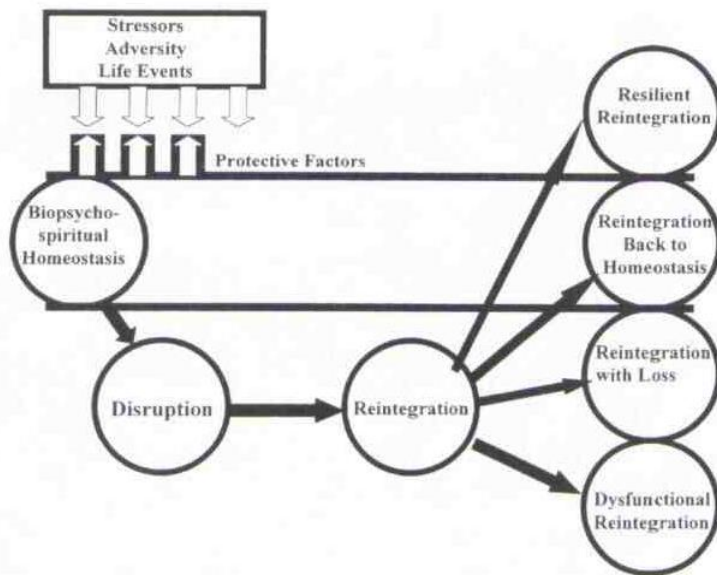
A number of similar studies were conducted to determine if more protective factors existed. Ramirez (2007) notes those found in Werner and Smith's study as well as another 5 similar studies (Anthony, 1974, Bernard, 1991, Garmezy, 1991, Masten, 1994, Rutter, 1987), mentioning 26 protective factors in total. The following were identified as protective factors in these studies: an easy temperament; positive relationships; a sense of personal worth; a sense of control over fate; effectiveness in work, play and love; a positive social orientation; assertiveness; above average social intelligence; an informal social support network; the ability to have close relationships; healthy needs and expectations; the ability to delay gratification; flexibility; an internal locus of control ; a desire for self-improvement; interpersonal sensitivity; problem-solving ability; decision-making ability; being future oriented; the ability to trust others; a sense of humour; critical thinking skills; the ability to manage a range of emotions; adaptive distancing; and high expectations (Ramirez, 2007).

The first wave of resilience research prompted the emergence of self-esteem and self-efficacy educational packages which called for supportive environments in which protective factors could develop, thereby making people more resilient to adversity. This happened, however, without the supervision or guidance of a comprehensive theory as to how these qualities actually develop and manifest as resilience (Richardson, 2002). Thus, although the protective factors were acknowledged as being important, theorists like Rutter (1987) viewed these findings as somewhat impractical without any knowledge of the processes which occur in determining and facilitating the emergence of these factors (Ramirez, 2007).

The second wave of resilience research thus focused on the processes by which protective factors emerged. This caused yet another paradigm shift in which resilience was conceptualised as more of a dynamic process and less of a trait or personal characteristic. Figure 1 demonstrates the Resilience Model as proposed by Richardson (1990), which attempts to explain the processes by

which resilience and the protective factors associated therewith unfold, epitomising the value gained in the second wave of resilience research.

Figure 1: The Resilience Model (Richardson, 2002)



This linear model depicts potential outcomes of a person or group of people passing through life events which are stressful, challenging or which present adversity. Bio-psycho-spiritual homeostasis is a point where the individual or group in question has adapted physically, mentally and spiritually to circumstances in their lives. This homeostasis is periodically disrupted by various events and stressors, both internal and external. These disruptions may also take the form of something positive, such as getting married or changing jobs, and are not necessarily negative. Consciously or unconsciously, individuals react to these disruptions, choosing and directing the outcomes of their circumstantial concerns (Richardson, 2002).

These outcomes have been partitioned into four distinct forms. *Dysfunctional reintegration* occurs when people resort to substance abuse, destructive behaviours or other means which may be indicative of mental health problems or a failure to cope effectively and adaptively with the requirements of the disruption at hand. *Reintegration with loss* refers to the loss of motivation, hope, ambition or drive as a result of the adverse circumstances individuals have faced. Richardson (2002) notes that people tend to cling to their 'comfort zones', which is what happens

when *reintegration back to homeostasis* occurs; no growth is made, but there is no permanent damage or loss either. Stabilisation occurs, without any positive or negative connotations, as individuals return to their particular homeostasis. *Resilient reintegration* refers to the acquisition of insights or personal growth due to the disruptions, an introspective process in which resilient qualities are identified and nurtured. This, according to Richardson (2002), is how internal resilient qualities emerge within people.

This model is important as it shows how the process may occur when resilience is found to buffer individuals against the negative effects of stress, as hypothesised. A financial stressor would occupy the role of a disruptor to an individual's bio-psycho-social homeostasis by placing demands on them. Resilient individuals would be more likely to negotiate the demands this disruption places on them, thus experiencing less severe strain and reintegrating in a more resilient manner. As discussed above, this would likely happen at stage 2 or stage 3 of Lazarus' (1993a) model of the process of stress.

Richardson (2002) concedes that the resilience model cannot account for all of the protective factors as identified within the first wave of resilience research, including gender, which cannot be changed, and social support, which is external to the individual. This model is thus predominantly focused upon the internal resilient factors which result from an introspective process. Richardson (2002) notes that resilient reintegration may be postponed, such as when overcoming childhood abuse and becoming stronger for it, but only doing so in later adult life. Importantly for the purposes of this study, without resilient reintegration, stressors and life prompts may go unresolved and thus become chronic in nature. This is the foundation for the first hypothesis pertaining to resilience, detailed below.

It is critical to understand that this model implies that adversity or challenge of some kind is necessary for resilient qualities to emerge at all. This is because bio-psycho-spiritual homeostasis, being a kind of 'comfort zone', does not make any demands on people, with the result that there would never be a need for adaptation. Disruptions of one form or another are thus required for resilient reintegration to occur, and thus for resilient qualities to exist within the individual in question (Richardson, 2002).

This model changed the understanding of what resilience was to an extent, as definitions like those above which focus on flexibility and the ability to bounce back more accurately reflect reintegration back to homeostasis, and not resilient forms of reintegration. According to Richardson's (1990) model, the terms 'flexibility' or 'bouncing back' should be replaced by terms such as 'growth' and 'adaptation' to reflect this conceptual alteration of resilience. With respect to trait versus process definitions of resilience, the presence of adversity is what distinguishes constructs such as ego-resiliency or hardiness, traits and personal characteristics associated with general resourcefulness and sturdiness of character, from resilience, which is now widely considered as being a dynamic developmental process (Luthar, 1996, Luthar, 2000, Luthar, et al, 2000).

To avoid possible confusion it must be noted that, for the purposes of this study, even though resilience has come to refer to a process as opposed to a trait, the use of terms such as "resilient individuals" does not imply that resilience exists as a discrete attribute within these individuals, like intelligence does, for example. Instead, reference to resilient individuals refers to the co-existence of some form of adversity or threat in the relevant individual's life, as well as evidence of positive adaptation despite these adverse circumstances (Luthar, et al, 2000).

Most recently, the so-called third wave of resilience research focuses on resilience not as discrete theory but as a meta-theory, encompassing a variety of different schools of thought (Richardson, 2002). Specifically, the question of where the "energy" for resilient reintegration comes from is asked and investigated. Persuasive disciplines from which insight in this wave of research is drawn are various, including philosophy, psychology, physics, neuroscience, various forms of religion and spiritual belief systems, and Eastern medicine, among others (Richardson, 2002). These perspectives are numerous, detailed and for the purpose of this piece of research, somewhat irrelevant, and will thus not be discussed further.

The current study may not fit neatly into any of the aforementioned 'waves' of research, but has a more pragmatic focus, in which the potential utility of resilience as a learned quality is explored in relation to the combating of stress. The next section discusses in more detail how resilience may protect individuals from stress; by altering the appraisal of financial stressors and influencing the use of coping mechanisms employed to react to these stressors.

The role of resilience in the stress process

Ramirez (2007) conducted a concept analysis on resilience based on findings in the literature. The defining attributes of resilience, which are characteristics of the concept, that repeatedly appear in the literature on the topic and are consistently present with the concept (Walker & Avant, 2005), include rebounding/reintegration, self-determination, flexibility, a sense of humour, self-esteem/self-efficacy and social support/positive relationships (Ramirez, 2007). Most relevant to the purposes of this study is the fact that research has found that resilience often co-occurs with social support (Tusaie & Dyer, 2004). This provides evidence for the likelihood that social support is a pivotal determinant as to whether or not people will reintegrate in a resilient manner when faced with adversity and challenge. It was thus hypothesised that a significant positive association would be present between social support and resilience in the present study (*Hypotheses 6a, 6b and 6c, below*).

While the protective factors found to be common in many resilient individuals, as well as the definition of the concept of resilience itself, may *prima facie* be expected to buffer individuals against high amounts of strain caused by stressors, Ong, Bergeman, Bisconti and Wallace (2006) note that correlations have been found between resilience and the use of specific coping mechanisms employed to react to stressors. These coping strategies often elicit positive emotions. Examples of such coping mechanisms include finding benefit or rewards through positive reappraisal (Affleck & Tennen, 1996), the use of humour, searching for positive meaning in ordinary events (Folkman, Moskowitz, Ozer & Park, 1997), as well as goal-directed problem-focused and emotion-focused coping strategies which regulate negative emotional experiences (Billings, Folkman, Acree & Moskowitz, 2000). Resilient individuals have also been found to recover from the effects of stress quicker, on both a psychological and physiological front (Tugade, et al, 2004).

Given these findings, Ong et al (2006) hypothesised that the relationship between resilience and forms of strain was mediated by the experience of positive emotions in times of stress. Evidence was found to support this hypothesis, as the frequency of experiences of positive emotions was

positively associated with resilience, and negatively associated with forms of strain (Ong, et al, 2006). Almeida (2005) corroborates this view, noting that resilience affects individuals' reactivity to stress.

If resilience is found to moderate the relationships between financial stressor severity and the three forms of strain employed in the present study, the findings of Ong et al (2006) give clues as to why this may be the case. Resilience may, through positive emotions or some other means, alter individuals' appraisals of stressors or how well they are able to deal with them, and it may also influence the coping mechanisms people employ in times of stress. This leads me to make a number of hypotheses about the nature of resilience in relation to stressors, and its potential to buffer individuals against the psychological strain which these stressors can evoke. These are listed below.

Resilience hypotheses

Hypothesis 4: There will be a significant, negative relationship between resilience scores and financial stressor scores.

Hypothesis 5 (a): Resilience will be significantly and negatively associated with stress.

Hypothesis 5 (b): Resilience will be significantly and negatively associated with depression.

Hypothesis 5 (c): Resilience will be significantly and negatively associated with anxiety.

Hypothesis 6 (a): Resilience will be significantly and positively associated with greater perceived adequacy of social support from a significant other.

Hypothesis 6 (b): Resilience will be significantly and positively associated with greater perceived adequacy of social support from family members.

Hypothesis 6 (c): Resilience will be significantly and positively associated with greater perceived adequacy of social support from friends.

Hypothesis 7: Resilience will moderate the relationship, in a protective manner, between financial stressor severity and each of the strain dimensions: stress, depression and anxiety, as per the buffering hypothesis.

Methodology

This section details the methodology utilised for the current research. It is important to note at the outset that the data utilised for this research report was not collected by the researcher. The data was initially collected as a pilot study for an online mental health site which was to be offered as a service for the clients of a large organisation in South Africa. A range of measures related to mental health were sent to the company's client base in order to assess the appropriateness of the measures for their clients. The data that emerged warranted further research and I was offered the opportunity of utilising the data for my MA research report. This chapter details the methodology used for the collection of data as undertaken by the company for their pilot study. It then describes the analyses that were conducted on the data that were specifically undertaken for the purposes of this research report.

Research Design

This study employed a non-experimental, cross-sectional, between subjects research design utilising quantitative data. All of the variables assessed in the study were operationalised through various questions and scales within a broader questionnaire which was employed as a pilot study to assess the psychological wellbeing of the clients of a South African organisation. The data was all gathered at a single point in time, making it a cross-sectional design. Cross-sectional designs have several important implications. Most importantly, given that temporal precedence cannot be established, no causal inferences regarding relationships between variables can be made. Given that relationships exist between two variables, inferences relating to directions of influence cannot be made, making it unclear which variable is independent and which is dependent on the other.

The theoretical perspective employed in this study, however, assigns the role of financial stressor to that of a predictor variable, making the various outcome variables, namely depression, anxiety and stress, criterion variables. This acknowledges the potential for bi-directional relationships between the variables while still having a clear theoretical perspective as to which variable most likely predicts the other (Huck, 2009). This perspective reflects the logic found in much of the

literature around financial stress and coping where non-recursive relationships are thought to occur between poor coping mechanisms and high financial stress levels, for example (eg. Siahpush, Borland, & Scollo, 2003).

Procedure

As mentioned previously, the data used in this study was taken from the database of a broader study. The data was thus archival; it was not collected by the researcher. The data was collected to test the psychometric properties of a composite wellbeing instrument which was developed for an online stress programme. 3000 randomly selected clients of the large South African organisation were invited to participate electronically in the study through an email which included an electronic link to the pilot questionnaire. 598 of these responded, at a response rate of 19.3%, composing the sample used for analyses in the pilot study as well as in the present research. These individuals were contacted again and were given instructions on how to respond to the online questionnaire. This was done anonymously and on a voluntary basis.

Sample

As mentioned, potential respondents were randomly selected from the company's client-base. Of the 598 individuals who responded to the electronic invitation, five were excluded from the sample used in this study due to incomplete questionnaire responses, and another 13 were removed because their age responses cast doubt on the genuineness of their responses. The ages given by these individuals were all 5 years or younger, making the accuracy of any of their other responses dubious. The total sample size utilised for analyses in this study was thus 580 people. This number varied between analyses to some extent, as certain item responses were omitted in some cases, making calculation of mean scores for the scale in which those items appeared impossible. Only respondents who answered all items within a scale were used in analyses in which that scale was relevant. The tables below indicate the descriptive properties of the final sample utilised for statistical analyses in this study.

Descriptive statistics of the sample utilised in the study

	Minimum	Maximum	Mean	Standard Deviation
Number of children	0	10	1.97	1.28
Age	25	80	44.8	11.8

Gender	Number of respondents	Proportion of sample
Male	231	39.8%
Female	349	60.2%

Marital Status	Number of respondents	Proportion of sample
Married/living with partner	401	69.2%
Divorced	60	10.3%
Widowed	11	1.9%
Unmarried/single	108	18.6%

Employment status	Number of respondents	Proportion of sample
Working full time	486	83.8%
Working part time	39	6.7%
Not working, seeking employment	9	1.6%
Not working, not seeking employment	46	7.9%

Highest level of education obtained	Number of respondents	Proportion of sample
University degree	212	36.5%
Diploma	200	34.6%
Matric certificate	157	27%
Did not finish school	11	1.9%

While the name and type of organisation from which this sample comes cannot be discussed for threat of compromising its confidentiality, one important thing must be noted. By virtue of the kind of service offered, and by which market this company targets, it can be inferred that the sample used for the purposes of this research comprises mainly of middle- and upper-income individuals. This notion is supported by the fact that only a very small percentage of the respondents did not finish school, much lower than the proportion of South Africans as a whole, indicating that the individuals in this sample likely had better opportunities than many South Africans are unfortunately privy to. This is important to note for two reasons. Firstly, the sample used in this piece of research may not be representative of the South African population, thus limiting the generalisability of its findings. Secondly, because this sample seems to be, on average, more financially privileged than the average South African, the amount and severity of financial stressors these individuals have in their lives is likely to not be as much or severe as for many other South Africans. They may thus be more insulated from the threats imposed by financial stressors than South Africans in general are.

Instruments

This section gives details on the measurements utilised for the collection of the data used in this study. It is split up into five distinct sub-sections: a demographics section and sections pertaining to each of the four scales present in the questionnaire - the Stressor Scale, the Resilience Scale, the Multidimensional Scale of Perceived Social Support (MSPSS), and the Depression, Anxiety and Stress Scale (DASS). These scales, including the demographics section of the questionnaire, are all present in their original form in the appendices of this paper.

Demographics

A variety of demographically-oriented questions were present in the questionnaire, which may be found in the copy of the questionnaire in the appendices of this paper. The variables assessed by these questions included the date of birth, the gender, the marital status and the employment status of the respondents as well as the highest level of education obtained by the respondents. The number and age of children of each participant were also investigated. None of these variables were used in the analyses of this study, however, and these variables thus do not appear in the research questions or in the analytical procedures employed. For the purpose of this study, they were used exclusively for descriptive purposes.

The Stressor Scale

This scale was designed by the research team responsible for the pilot study for which the database used in this study was collected. The rationale behind the scale was based on an extensive review of the stress and stressor literature, which revealed the most pertinent and pervasive stressors in the lives of people today. The scale examines the perceived severity of these stressors. The aim was to examine the existence and duration of these stressors in a short questionnaire, without making the assumption that stressors necessarily determine stress. The questionnaire states: "The following 10 questions relate to specific areas in your life. To what extent are you experiencing problems or anxiety regarding each area?" The specific areas include: "Your job/work"; "Managing the home and/or looking after children"; "Your relationship with your partner"; "Your relationship with your family (excluding your partner)"; "Your financial situation"; "Your social life (including a lack of social contact)"; "Your health or the health of someone close to you"; "Your work/life balance"; "Your and your family's security"; "Too many demands of your time".

Responses were given on a 5-point Likert-type scale, where higher values indicated greater perceived severity of the relevant stressor. For each of these questions, a subsidiary question existed, which assessed the length of time these stressors had existed in the respondent's life.

This question was only concerned with stressors perceived as moderately to highly severe (a score of 3 to 5). The purpose of these questions were to discern stressors which were chronic from those which were acute, however the degree to which stressors in individuals' lives were chronic was not the focus of the present research. The present study was specifically concerned with the perceived severity of financial stressors. The duration of the existence of the stressor was not examined, nor were the existence and duration of stressors unrelated to financial concerns. For these reasons, only the item pertaining to financial stressors, item 5, was used in the analyses. The severity of financial stressors in the respondents' lives was operationalised as the predictor or independent variable, which was hypothesised to impact the amount of strain individuals in the sample felt.

The reliability of the Stressor Scale was assessed in the original study, and was found to have an acceptable internal consistency between items, with a Cronbach Alpha coefficient of .79. Face validity for the scale was strengthened by means of a pilot study in which 20 employees from a large South African organisation, 52 undergraduate students and the initial study's research team, including an industrial/organisational psychologist, medical doctors, a business analyst with extensive survey experience, a statistician and a website designer, were all given the scale in its original form for scrutiny and feedback. Several items were added to the scale following this pilot study. The revised scale was given to the same sample on a second occasion and no further manipulations were suggested, resulting in the identification of the 10 different sources of stress common in contemporary life described above.

The findings of the pilot study gave evidence for the concurrent validity of the Stressor Scale, as the three most severe stressors for each respondent, on average, were significantly related to resilience, perceived social support, depression, stress and anxiety as measured by the three scales discussed below. As these associations were statistically significant and supportive of previous findings in the literature this lends credence to the concurrent validity of the Stressor Scale, as the construct which it measures was found to be associated with strain variables the way the stress literature would suggest.

The Resilience Scale

The Resilience Scale was created by Wagnild and Young in 1993 and is the earliest published instrument designed to quantitatively measure resilience (Wagnild, 2009). The scale was based on a qualitative study of resilience in older women in 1987 as well as a thorough review of the resilience literature at the time in an effort to create a valid quantitative measure of resilience (Wagnild, 2009). The scale initially consisted of 50 items, which was later reduced to 25. A 14-item version of the scale also exists, which was employed in the collection of the data used in this study. The scale's creators identified 5 subscales. These are *perseverance*, *equanimity*, *meaningfulness*, *self-reliance*, and *existential aloneness* (Wagnild, 2009).

The Resilience Scale has been used on various sample types over the past few years, showing good reliability on each occasion. Wagnild and Young (1993) tested the scale on student samples, caregivers of spouses with Alzheimer's disease, first-time mothers returning to work as well as public housing residents. Cronbach's alphas ranged from .73 to .91 in these samples, illustrating that the Resilience Scale can be used on diverse samples with similar reliability (Wagnild, 2009). Wagnild (2009) cites a further 12 studies conducted between 1999 and 2007 which used the Resilience Scale on an array of samples, including adolescents, middle-aged men and women and older adults from various backgrounds facing unique challenges. The reliability of the scale never dipped below $\alpha = .72$, and ranged from .85 and .94 in 11 of the 12 studies (Wagnild, 2009). In this study, the internal consistency of the Resilience Scale was also found to be acceptable, with $\alpha = .92$

In the 12 studies cited by Wagnild (2009), there were no age-related differences in resilience scores and only one of the 12 studies found significant race-related difference in resilience scores. In two of these studies, females had lower resilience scores than males but no gender-related differences were found in the 10 remaining studies. Significant positive associations between the resilience construct and a variety of other variables, including forgiveness, coherence, purpose in life, self-transcendence, physical wellbeing, morale, self-esteem and life satisfaction as well as significantly negative associations with depression and perceived stress were found in these studies, as was hypothesised. The combination of these findings suggests

that the Resilience Scale is not particularly sensitive to various demographic influences, and the vindication of hypotheses concerning the relationship between resilience and the aforementioned variables indicates good construct validity of the scale (Wagnild, 2009).

The Multidimensional Scale of Perceived Social Support (MSPSS)

The MSPSS was developed by Zimet et al in 1988 as a brief self-report measure of perceived social support adequacy from three domains: the respondent's family, the respondent's partner and the respondent's friends (Zimet, et al, 1990). The MSPSS is a 12 item quantitative Likert-type scale, assessing the adequacy of support from the aforementioned sources. Although the scale's response options usually appear with 7 options, ranging from *strongly disagree* to *strongly agree*, with higher scores indicating greater adequacy of perceived support, the scale employed in this study was scored on a 5 point scale instead to keep the response format as simple and consistent as possible. In the first ever study conducted using the MSPSS, by Zimet et al in 1988, the scale was administered to 275 undergraduate students, with coefficient alphas for the scale and subscales ranging from .85 to .91, exhibiting adequate internal consistency. Test-retest reliability values ranged from .72 to .85, and evidence for adequate construct validity of the MSPSS existed as significant negative correlations between the MSPSS subscales and the depression and anxiety subscales of the Hopkins Symptom Checklist were found, as was predicted (Zimet, et al, 1990).

A follow up study conducted to assess the psychometric properties of the MSPSS and its subscales was conducted on 265 pregnant women, 74 European adolescents and 55 paediatric residents (Zimet, et al, 1990). The original three-factor structure was corroborated in this study on all three populations, with adequate coefficient alphas for all three subscales and the scale as a whole, ranging from .81 to .94 (Zimet, et al, 1990). The samples were carefully chosen for the aforementioned study, as they were used to determine the validity of the subscales. As hypothesised, it was found that married respondents reported significantly greater support from their partners than did single respondents. Similarly, adolescents living with their families reported much greater support from family members than did those who did not live with their families (Zimet, et al, 1990). These findings suggest that the MSPSS and its subscales are valid

and reliable measures of perceived adequacy of social support, exhibiting high internal consistency across several samples. The internal consistency of the MSPSS with respect to the data which emerged in this study corroborate those of previous studies which used the measure, as the Cronbach's $\alpha = .93$

The Depression Anxiety Stress Scale (DASS)

The DASS is a 42 item self report measure of depression, anxiety and stress which was developed in 1993 by Lovibond and Lovibond and which has enjoyed extensive use over a variety of samples throughout much of the world. The DASS has also been translated into several different languages, including Chinese, Spanish, French, Japanese and others (Norton, 2007). The depression subscale assesses dysphoric mood states such as self-depreciation, lack of interest, hopelessness and anhedonia. The anxiety subscale assesses arousal states including muscular tension, autonomic arousal and anxious affect. Stress, as assessed by the DASS, is based in Selye's (1952) notion of stress, that of persistent arousal and tension, including a high propensity for becoming upset or frustrated very easily (Lovibond & Lovibond, 1995, as cited in Norton, 2007).

Lovibond and Lovibond (1995) found acceptable internal consistency for all three subscales of the DASS: .91 for depression, .84 for anxiety and .90 for stress. These results come from administration of the DASS to a non-clinical sample of 2914 people. Antony et al (1998) and Brown, Chorpita, Korotitsch and Barlow (1997) found similar alpha co-efficients in clinical samples. The internal consistency of the DASS was similarly strong in this study as well, with Cronbach's $\alpha = .95$ for the scale as a whole. The depression, anxiety and stress subscales, respectively, had $\alpha = .91$, $\alpha = .88$ and $\alpha = .86$. Lovibond and Lovibond (1995) found evidence for adequate convergent validity for the DASS as the depression subscale responses of the DASS were significantly related to those of the Beck Depression Inventory, while the anxiety subscale responses were significantly related to those for the Beck Anxiety Inventory when these scales were administered to a student sample $N = 717$. Correlations between the depression and anxiety constructs were significantly lower, indicating discriminant validity (Crawford & Henry, 2003).

Studies by Lovibond and Lovibond (1995), Anthony et al (1998), Brown et al (1997) and Clara, Cox and Enns (2001) included principal component factor analyses on the DASS, all of which illustrated a large proportion of total variance in scores being explained by three factors, with a three-factor model indicating an optimal model fit (Crawford & Henry, 2003). The DASS was originally intended to include measures only for depression and anxiety, casting doubt on the validity of the stress subscale. The aforementioned studies are some of the studies in existence which provide support for the independence and validity of the stress subscale (Crawford & Henry, 2003).

A study by Crawford and Henry (2003) attempted to collect more psychometric information on the DASS and its subscales by administering it as well as several other measures to a general adult population of 1771 individuals. Results of this study indicate that the total scale, as well as the three subscales all have adequate internal consistency, ranging from .90 to .97. Good convergent validity was illustrated by highly significant correlations between the DASS depression scale and the personal disturbance subscale of the Delusions-Symptoms States Inventory, developed by Bedford and Foulds (1978). This was true of correlations between the DASS depression scale and the Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983) as well as the correlations between the anxiety subscales of the aforementioned scales as well (Crawford & Henry, 2003). Crawford and Henry (2003) also concluded that the effect of demographic variables such as age, gender, race, education and occupation were statistically insignificant.

The DASS also exists in a 21 item alternative to the longer 42 item version. It was this version, the DASS-21, which was employed in this study. This was largely for the purposes of convenience, as the respondents in this study's sample had a very lengthy questionnaire to complete, and because the DASS-21 has proven to be as reliable and valid as the original 42-item version. Norton (2007) administered the DASS-21 to 895 undergraduate students in America to test whether differences existed in the responses amongst members of different ethnic groups. The findings of the study indicated that any differences in DASS responses which existed as a result of ethnic background were minor and unproblematic. The internal consistencies found for each of the subscales across all racial groups were adequate (Norton, 2007).

The studies mentioned here are but the tip of the iceberg as far as the innumerable studies which have employed the DASS are concerned, and the DASS and its subscales have shown good reliability and validity in most if not all of these pieces of research. Moreover, the DASS has been found to be relatively unbiased against any cultural group, allaying any fear of its validity in a multicultural society such as South Africa.

Methods of Analysis

Frequency distributions were run on all of the variables within the database. The data revealed that certain responses could not be used because the questionnaires were either drastically incomplete or because unusual responses brought the authenticity of the respondents' feedback into doubt. A total of 18 individuals were thus excluded from the final sample utilised in this study. Exploratory factor analyses were then run on the Resilience Scale, the Multidimensional Scale of Perceived Social Support (MSPSS) and the Depression Anxiety Stress Scale (DASS). The principal components extraction method and varimax rotation method were used in all three of these analyses. To assess the number of factors which emerged in each of the factor analyses scree plots, component matrices, Eigenvalues and the amount of variance explained by each potential factor were investigated. With respect to Eigenvalues, factors with Eigenvalues in excess of 1 were considered as acceptably powerful in terms of their explanatory power to be regarded as individual factors.

Reliability analyses were conducted on the aforementioned three scales as well as on the factors or subscales which emerged from the factor analyses conducted on these scales. These factors corresponded to the subscales identified by the relevant scales' creators. This was not the case for the Resilience Scale, however, which was found to contain a single factor only.

Once reliabilities and factor analyses were conducted for each of the scales a correlation analysis was run which contained all of the variables under investigation in the study. These include financial stressor severity, resilience, the three sources of social support which emerged from the MSPSS factor analysis, as well as the scores of the three subscales of the DASS, which also emerged in the relevant factor analysis.

To test the hypotheses made in the previous section a number of linear regressions were conducted. The predictor variable, the perceived severity of financial stressors in the respondents, was individually regressed with each of the hypothesised moderator variables: resilience, social support from partners, social support from friends, and social support from family. The predictor variable was also regressed against the three outcome variables identified in the DASS factor analysis: stress, depression and anxiety. The correlation and linear regressions were conducted in order to test the hypotheses made regarding the associations between the aforementioned variables. These include hypotheses 1, 2, 4, 5 and 6, which appear in the literature review chapter above.

Interaction variables were created for each of the hypothesised moderator effects, multiplying the respective financial stressor score with the moderator score, yielding four composite variables which were used to test for moderator effects as detailed in *hypothesis 3* and *hypothesis 7*. This was done as per the recommendations of Baron and Kenny (1986) regarding testing for moderation effects. When creating the interaction term used in testing for the protective value of social support from friends, for example, the financial stressor severity score was arithmetically multiplied by the total score from the friend support subscale of the MSPSS for each respondent, thus yielding one of the four interaction terms. The other three interaction terms were created by multiplying the financial stressor severity score with the relevant scores from the Resilience Scale and from the other two subscales of the MSPSS, respectively. Multiple regressions testing for these hypothesised moderation effects were conducted next, in which the independent variable, perceived financial stressor severity, one of the hypothesized moderator variables and the interaction variable corresponding to the relevant moderator variable, were regressed against each of the three outcome variables. This was done for each of the four hypothesised moderators, resulting in twelve multiple regressions, or three per moderator, as there were three dependent variables in the study - stress, anxiety and depression.

According to Baron and Kenny (1986), regressions of the independent variable - perceived financial stressor severity - and the hypothesised moderator variables onto each of the dependent variables - stress, depression and anxiety - test for the main effects that these constructs have on the relevant dependent variable. The creation of the interaction terms above is necessary to test for moderation effects, however. When one of these interaction terms is regressed onto one of

the dependent variables with statistical significance, an interaction or moderation effect is supported. To clarify with an example, perceived financial stressor severity and resilience may be regressed against depression. These regressions are done separately, and significant results indicate significant main effects of either of these variables on the dependent variable. In other words, a negative and significant result would indicate that resilience has a strong inter-correlation on depression, whereby more resilience is found to result in lower ratings of depression. If the regression of the interaction term between perceived financial stressor severity and resilience onto depression is significant, it indicates that perceived financial stressor severity and resilience interact in determining the amount of depression the respondents feel, on average, illustrating that resilience moderates the relationship between perceived financial stressor severity and depression. If this result is positive, the moderation effect is of a protective nature, supporting the buffering hypothesis outlined in the literature review.

The distinction between mediator and moderator effects

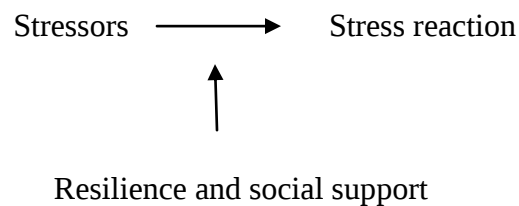
To ensure specificity and to avoid possible confusion, a brief digression into the distinction between moderator effects, such as those hypothesised to occur within this study, and mediator effects is warranted.

Moderators are distinct from mediators in that they do not lie on the direct causal path, but act as exogenous yet influential variables on the relationship between two or more variables (Baron & Kenny, 1986). The effect stressors have on strain, for example, may be explained by the coping mechanisms employed to deal with the stress; this is a mediating effect. Moderating effects, on the other hand, do not explain a relationship between two variables by putting an intervening variable in the middle of the relationship or causal chain, but attempt to explain variations in these relationships by illustrating varying levels of the hypothesised moderator variable. Another way to think about it is that in mediation effects, the influential power of the independent variable on the dependent variable is manifested within the mediating variable; if the mediating variable did not exist, the independent variable may not influence the dependent variable at all.

Thus, in a mediated relationship such as the interactive stress model (Lazarus, 1993a), stressors affect stress reactions through coping strategies.

Stressors → Coping strategies → Stress reaction

In a moderated relationship, however, such as proposed in this study, stressors and strain may be related irrespective of the existence of the moderator variables. But the level of these variables does affect the strength of the relationship between stressors and stress reactions, such that interactions occur between stressors and each of the moderator variables in determining the reactions to stress which individuals report. Resilience and social support were hypothesised to assume the roles of moderating variables in this study, protecting individuals against strain by altering the amount of strain elicited by a stressor of a certain perceived severity.



Ethical Considerations

Ethical clearance was not required from the university because the data was archival, thus meaning that the researcher did not have any direct or indirect communication with any of the participants. For this reason, it cannot be guaranteed by the researcher that participation was entirely voluntary, although the sampling procedure employed in the initial study responsible for the collection of the data suggests that this was the case. The data suggests a few things pertaining to potential ethical considerations. Firstly, the nature of the sample did not target any vulnerable group, and was composed of random members of client base of a large undisclosed South African organisation. All participants were over the age of 18. Although some response sets were removed from the analyses for being under this age, the alleged age of these respondents was far below 18, often only 2 or 3 years of age, clearly indicating inauthentic responses that could threaten the validity of the study's findings. Secondly, potentially sensitive information such as income level or race was not asked for in the questionnaire.

The questionnaire and data also clearly show that no names were asked for during the data collection process as each respondent has an identification number assigned to them instead. The respondents thus remained completely anonymous. The company which financed and organised the initial study responsible for the data collection will also remain confidential throughout this paper. Several responses in the data were also incomplete, to varying degrees, indicating that individuals had the opportunity to decide to no longer participate in the study at any stage in the data collection process, as incomplete questionnaires could not be validly used in the analysis of the data. The information above was made clear to the respondents in the electronic invitation to participate in the study.

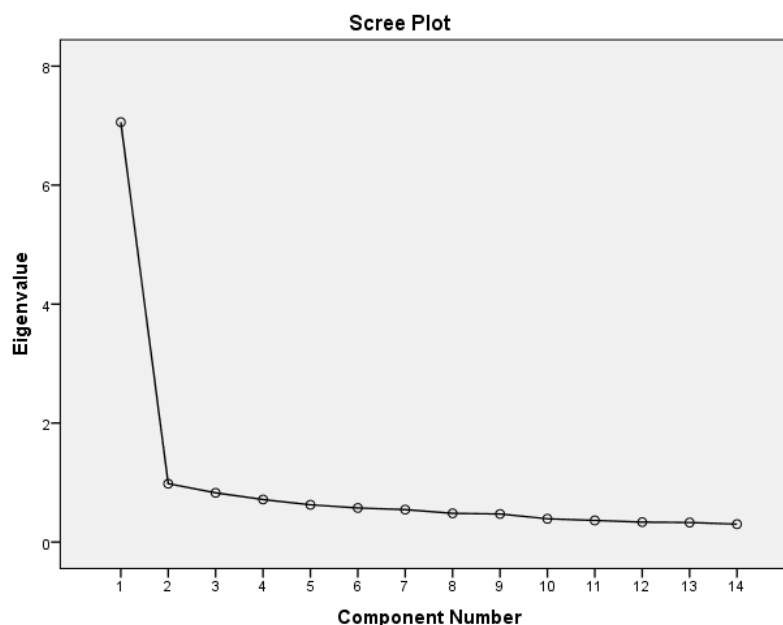
Results

This chapter presents the results of the statistical analyses which were used to test the hypotheses made during the review of the literature. The presentation of these results reflects the chronological order in which the analyses were conducted. Factor analyses were carried out first, followed by reliability analyses of the scales and of the subscales which emerged from the factor analyses. Psychometric information pertaining to these scales is thus discussed thereafter, before presenting results for inter-variable correlations and the array of regression analyses which were conducted.

Factor Analyses

As mentioned in the previous section, reliabilities and exploratory factor analyses using the principal components extraction method and varimax rotation method were conducted before any subsequent analyses, so as to ascertain the factor structures of the scales used in this study. The three tables below exhibit the component matrices for the Resilience Scale, the MSPSS and the DASS, respectively. The latter two are rotated component matrices, whereas the resilience scale could not be rotated as only one factor was extracted.

Figure 1: Resilience Scale scree plot



As Table 1 below shows, only one factor was extracted during the principal components factor analysis of the Resilience Scale. Each question in the scale loaded moderately to strongly on this

single factor, with factor loadings ranging from .62 to .80. The scree plot depicted in *Figure 1* also illustrates a single distinct slope before tailing off, showing that only a single identifiable factor existed within the Resilience Scale in the sample used in this study. Additionally, only one factor with an Eigenvalue in excess of 1 was identified, which accounted for just over 50% of the variance in responses throughout the scale. This factor had an Eigenvalue of 7.10. The single factor composition of the Resilience Scale was somewhat surprising, as the scale's developers, Wagnild and Young (1993), hypothesised a 5-factor structure of the scale, including *perseverance, equanimity, meaningfulness, self-reliance* and *existential aloneness* (Wagnild, 2009). This 5-factor structure of the Resilience Scale was not supported by the data in the present study.

Table 1: Resilience Scale Component Matrix

Items of the Resilience Scale	Factor 1
1. I usually manage one way or another.	.66
2. I feel proud that I have accomplished things in my life.	.74
3. I usually take things in my stride.	.65
4. I am friends with myself.	.74
5. I keep interested in things.	.72
6. My belief in myself gets me through hard times.	.80
7. My life has meaning and purpose.	.74
8. When I am in a difficult situation, I can usually find my way out of it.	.77
9. I feel that I can handle many things at a time.	.72
10. I can get through difficult times because I've experienced difficulty before.	.69
11. In an emergency, I'm someone whom people can normally rely on.	.63
12. I can usually find something to laugh about.	.69
13. I am determined.	.76
14. Self discipline is important.	.62

The exploratory principal components factor analysis conducted on the MSPSS extracted three distinct factors, as can be seen in *Table 2* and *Figure 2* below. Following rotation, each item of the scale loaded strongly onto a single of the three respective factors, giving evidence for the existence of three distinct and largely independent factors or subscales within the MSPSS. This is evident in *Figure 2* as well, as one long, steep slope was followed by two successive shorter slopes before tailing off into obscurity. These three slopes are visual representations of the three factors or components extracted in the factor analysis. The three factors extracted in the factor analysis all had Eigenvalues in excess of 1, which is considered to be a cut-off point when investigating how many individual factors or subscales exist in a scale. Factors 1, 2 and 3 had Eigenvalues of 6.7, 1.85 and 1.42, respectively.

Factors 1, 2 and 3 in *Table 2* correspond to the perceived adequacy of support from a significant other, from friends, and from family, respectively. These factor loadings were expected, with each item loading strongly onto the corresponding factor or subscale as espoused by Zimet et al (1990), the scale's creators. This is apparent when examining the questions upon which each factor was strongly loaded. Questions 1, 2, 5 and 10, for example, all loaded strongly onto Factor 1. Examining each of these questions shows that this factor feasibly relates to the subscale of 'support from a significant other', as Zimet et al (1990) hypothesised, as each of these items makes reference to a 'special person'. Factor 1 accounted for the largest amount of the variance in responses to the scale, accounting for 55.6% of the total variance. Factors 2 and 3, associated with social support from friends and social support from family members, accounted for 15.4% and 11.9% of the total variance, respectively. Factor 1 clearly accounted for the vast majority of the variance in the responses to the scale. This is unsurprising. 'Special person' is a broad term with a wide possible scope of reference. Thus, although the subscale is sometimes considered as pertaining to support from a "significant other" (Zimet, et al, 1990, p611), which is often understood to be someone the respondent is romantically involved with, the phrasing of questions 1, 2, 5 and 10 does not limit respondents to refer to people within these sorts of relationships. Friends or family members may thus assume the role of the significant other in the respondent's eyes.

Figure 2: Multidimensional Scale of Perceived Social Support scree plot

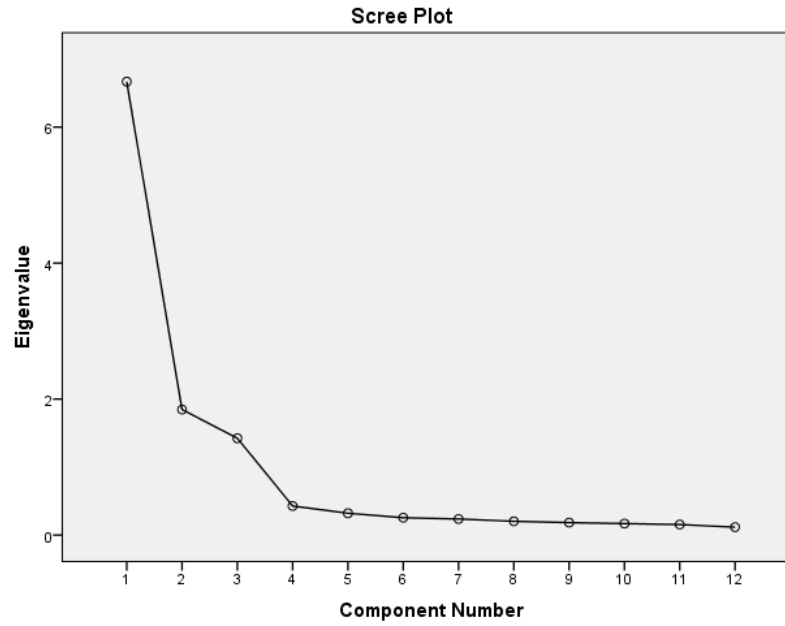


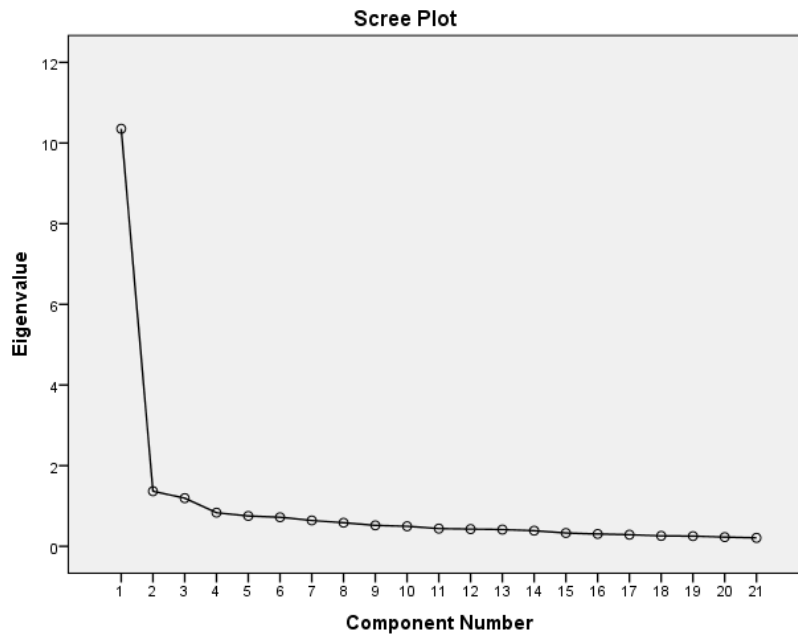
Table 2: Multidimensional Scale of Perceived Social Support Rotated Component Matrix

Items of the MSPSS	Components		
	Factor 1	Factor 2	Factor 3
1. There is a special person who is around when I am in need.	.84	.19	.32
2. There is a special person with whom I can share my joys and sorrows.	.86	.21	.28
3. My family really tries to help me.	.25	.17	.83
4. I get the emotional help and support I need from my family.	.29	.18	.86
5. I have a special person who is a real source of comfort to me.	.87	.23	.25
6. My friends really try to help me.	.19	.85	.25
7. I can count on my friends when things are going wrong.	.21	.84	.23
8. I can talk about my problems with my family.	.24	.28	.79
9. I have friends with whom I can share my joys and sorrows.	.22	.88	.18
10. There is a special person in my life who cares about my feelings.	.90	.17	.17
11. My family is willing to help me make decisions.	.21	.22	.84
12. I can talk about my problems with my friends.	.13	.88	.16

As expected, three distinct factors emerged during the factor analysis of the DASS. *Table 3* appears on the following page and illustrates the factor loadings of each item in the Depression Anxiety Stress Scale onto each of the three factors identified in the factor analysis. The scree plot of this factor analysis, shown below in *Figure 3*, shows one steep slope followed by two comparatively much smaller ones before tailing off into obscurity. While it is not immediately evident from looking at the scree plot whether there is one factor or whether there are three, three of the factors extracted had an Eigenvalue in excess of 1, indicating the three-factor structure of the scale. The three factors extracted in this study's factor analysis correspond to the three subscales which the DASS is purported to assess. Factor 1 represents the depression subscale, factor 2 the anxiety subscale and factor 3 the stress subscale. These factors had Eigenvalues of 10.35, 1.37 and 1.2, respectively. An examination of the factor loadings of each item in *Table 3* shows this to be the case, although some of the items loaded on more than one factor with similarly strong factor loadings. Item 2, for example, loads moderately on factors 2 and 3. This is not surprising, and reflects trends as discussed in the literature review which view depression, anxiety and stress as forms of strain which are often highly inter-correlated and which often manifest simultaneously. This multiple loading is not ideal, however, as certain questions tapped into more than one construct, making it more difficult to accurately determine which latent constructs each of the factors represented.

As discussed in the methodology section, the DASS has been found to have a three factor structure in several past pieces of research which correspond to the depression, anxiety and stress subscales alleged by the scale's developers (Lovibond & Lovibond, 1993). The factor loadings found in some of these studies thus aided us to determine which factors corresponded to which construct. In the present study depression accounted for 49% of the total variance in responses whereas anxiety and stress accounted for only 6.5% and 5.7% respectively. The depression subscale thus enjoyed far more explanatory power than the anxiety and stress scales, which was also clearly evident in the scree plot in *Figure 3*, as one slope was much longer and steeper than the two thereafter.

Figure 3: Depression Anxiety Stress Scale scree plot



The factors, or subscales, of each of the three respective scales upon which the factor analyses were run were operationalised as distinct variables in themselves. Only one factor was extracted from the Resilience Scale, and thus resilience was used in a broad sense, whereas social support was split up into three variables pertaining to the three distinct sources of social support identified in the factor analysis run on the MSPSS. The same is true for the DASS; three distinct strain subscales were extracted in the relevant factor analysis, and thus strain was operationalised as a combination of three distinct variables - depression, anxiety, and stress. These were treated as distinct variables, and subsequent regression analyses were thus carried out for three separate strain dependent variables.

Table 3: Depression Anxiety Stress Scale Rotated Component Matrix

Items of the DASS-21	Components		
	Factor 1	Factor 2	Factor 3
1. I found it hard to wind down.	.03	.17	.81
2. I was aware of dryness of my mouth.	.004	.51	.49
3. I couldn't seem to experience any positive feeling at all.	.57	.39	.29
4. I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion).	.17	.77	.10
5. I found it difficult to work up the initiative to do things.	.46	.38	.21
6. I tended to over-react to situations.	.32	.36	.52
7. I experienced trembling (eg, in the hands).	.22	.67	.13
8. I felt that I was using a lot of nervous energy.	.38	.53	.47
9. I was worried about situations in which I might panic and make a fool of myself.	.26	.62	.26
10. I felt that I had nothing to look forward to.	.80	.26	.18
11. I found myself getting agitated.	.47	.27	.62
12. I found it difficult to relax.	.40	.22	.72
13. I felt down-hearted and blue.	.73	.18	.42
14. I was intolerant of anything that kept me from getting on with what I was doing.	.43	.17	.63
15. I felt I was close to panic.	.43	.57	.35
16. I was unable to become enthusiastic about anything.	.74	.34	.29
17. I felt I wasn't worth much as a person.	.79	.21	.18
18. I felt that I was rather touchy.	.48	.26	.53
19. I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase).	.31	.65	.25
20. I felt scared without any good reason.	.45	.56	.25
21. I felt that life was meaningless.	.79	.23	.11

Reliability analyses for scales and subscales

Once the factor structures of the DASS, MSPSS and the Resilience Scale were ascertained, reliability analyses were conducted on each of the scales, as well as each of the subscales/factors identified during the factor analyses. The Cronbach's Alpha reliability coefficients were all highly acceptable and are depicted in *Table 4* below.

Table 4: Internal Consistencies (Cronbach's α) of the scales and subscales

Name of Scale/Subscale	Cronbach's α	Name of Scale/Subscale	Cronbach's α
Resilience Scale	$\alpha = 0.92$	DASS overall	$\alpha = 0.95$
MSPSS overall	$\alpha = 0.93$	DASS depression	$\alpha = 0.91$
MSPSS significant other	$\alpha = 0.94$	DASS anxiety	$\alpha = 0.88$
MSPSS friends	$\alpha = 0.92$	DASS stress	$\alpha = 0.86$
MSPSS family	$\alpha = 0.92$		

Descriptive statistics for outcome variables

Table 4 below details the descriptive statistics for each of the outcome variables which emerged from an analysis of frequency distributions within the relevant variables. As can be seen from the high skewness and kurtosis values and from the histograms below in *Figure 4*, the anxiety and depression subscales of the DASS were not distributed normally, but were highly positively skewed, as the skewness values were greater than 1 (Bulmer, 1979). In light of this, and because the statistical procedures chosen to test the hypotheses of this study (correlations and regressions) are of a parametric nature and thus required normal or near-normal distributions in the dependent variables, some of the data needed to be transformed.

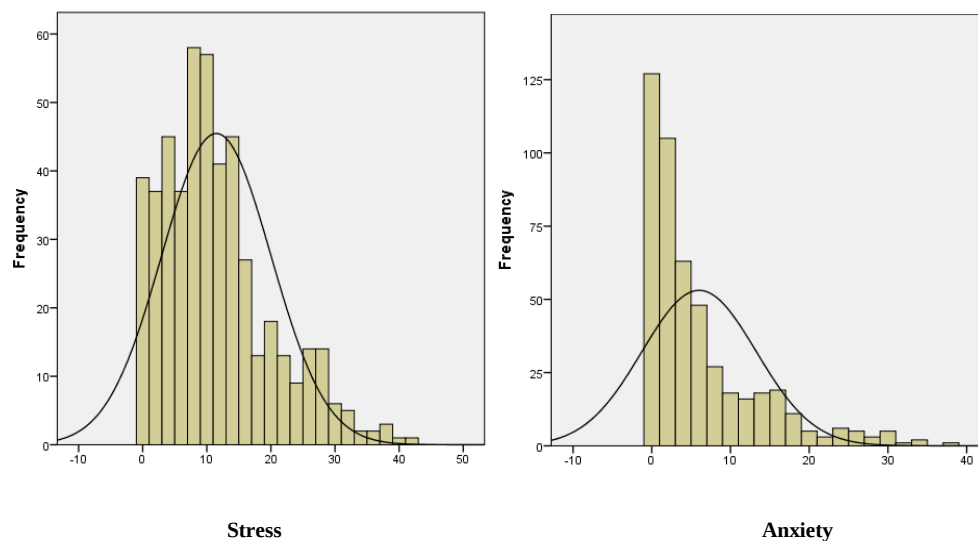
Following the advice of Howell (2007) and Tabachnick and Fidell (2007), the highly positively skewed distributions of the variables which captured the anxiety and depression subscales of the DASS required logarithmic (Log 10) transformations. These transformations were thus conducted. As can be seen by the skewness values of the transformed data in the last two columns of *Table 4*, the distributions were no longer skewed after transformation, falling within the range of -0.5 and +0.5 which Bulmer (1979) purports to be the range in which distributions can be considered to be approximately symmetrical, approaching normality. While the kurtosis values were still not within the -1 and +1 range, and the test statistics calculated by dividing the relevant kurtosis values by the corresponding standard error of kurtosis values were much lower than the -1.96 cut-off guideline, this was considered to be mostly due to the large sample size and it was judged to be unproblematic with respect to the use of subsequent parametric analyses.

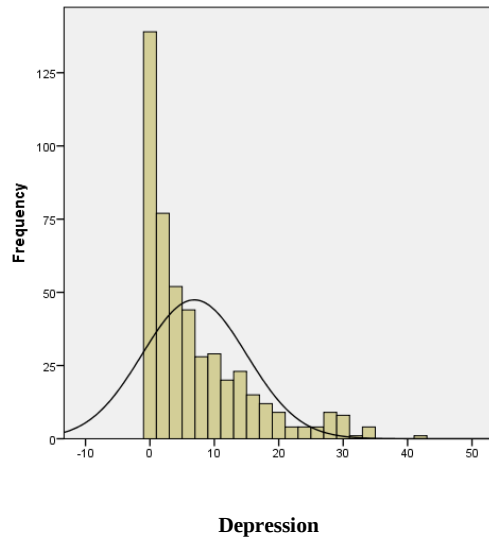
With respect to the other assumptions which need to be met before parametric statistical techniques can be validly employed, the dependent variable needs be measured on an interval or ratio scale of measure. In this study, the dependent variables were measured on a likert-type scale, which is an interval scale. As only one group was used in the design of this study, homogeneity of variance between groups was irrelevant and not required. Random sampling from a defined population actually did occur, despite this requirement being often overlooked in social science research for practical reasons. In this instance, however, individuals were randomly selected from the client base of the aforementioned South African company, which can be considered as the defined population to which this study's findings apply. Plots indicated that there were linear relationships between each of the independent and dependent variables. In addition to these considerations, the assumption of homoscedasticity needed testing as well (Osborne & Waters, 2002). When regression analyses were conducted, residual plots for the dependent variables were scrutinised, and when horizontal, flat lines of best fit were added to these plots it became clear that homoscedasticity existed for each of the dependent variables.

Table 4: Descriptive statistics of the strain variables before and after transformation

	Stress	Anxiety	Depression	Anxiety Transformed	Depression Transformed
Mean	11.48	6.01	6.89	0.62	0.65
Std. Deviation	8.55	7.26	8.12	0.46	0.49
Variance	73.02	52.71	66	0.21	0.24
Skewness	0.93	1.70	1.51	0.03	-0.39
Std. Skewness	0.11	0.11	0.11	0.11	0.11
Kurtosis	0.57	2.74	1.91	-1.08	-1.27
Std. Kurtosis Error	0.22	0.22	0.22	0.22	0.22
Range	42	38	42	1.59	1.63
Minimum	0	0	0	0	0
Maximum	42	38	42	1.59	1.63

Figure 3: Histograms illustrating the frequency distributions of the DASS subscales





Variable Correlations

The correlation matrix below exhibits associations found between all variables under investigation in this study during a correlation analysis. The numerical values represent the Pearson's correlation coefficient between the respective variables. Significant results are marked with the asterisk symbol as follows.

$p < 0.05^{**}$

$p < 0.001^{***}$

Table 5: Correlation matrix of all variables used in analyses

Variables	Financial Stressor	Resilience	S.O. Support	Friend Support	Family Support	Depression	Anxiety	Stress
Financial Stressor	1							
Resilience	-.30**	1						
S.O. Support	-.18**	.37**	1					
Friend Support	-.17**	.35**	.46**	1				
Family Support	-.22**	.39**	.57**	.50**	1			
Depression	.30**	-.45**	-.30**	-.24**	-.32**	1		
Anxiety	.25**	-.23**	-.15**	-.12*	-.20**	.70**	1	
Stress	.26**	-.34**	-.19**	-.20**	-.27**	.74**	.75**	1

As Table 5 shows, all of the variables investigated in the study were significantly correlated with one another. The relationship between anxiety and perceived adequacy of social support from friends had a significance level of 0.01 and the relationship between anxiety and perceived adequacy of social support from a significant other had a significance level of 0.001. All other significance levels were < 0.0005, as indicated by dual asterisks in Table 5. Some of these relationships were anticipated and some were not. It was anticipated that stress, depression and anxiety be inter-correlated, as the literature suggests, vindicating the operationalisation as each as valid measures of strain. Given that these variables were viewed as strain measurements, it was expected that they would be positively correlated with the perceived severity of financial stressors. *Hypothesis 1* was thus supported.

It was hypothesised that resilience and the three sources of social support would act as protective factors for individuals against the negative effects of the strain or outcome variables, stress, depression and anxiety. The negative relationships that existed between these protective variables and the relevant strain measures, as well as perceived financial stressor severity, were thus also anticipated, supporting *hypotheses 2a, 2b and 2c, hypothesis 4 and hypotheses 5a, 5b and 5c*. This provides evidence for the assertion made earlier that, if these variables moderate the

stressor-strain relationship, this moderation would be of a protective nature, buffering individuals against the likelihood and severity of strain as opposed to making them more vulnerable to these effects. Resilience was also significantly related to each of the three sources of perceived social support, giving credibility to the assertion that resilience is externally facilitated by a caring environment (Richardson, 2002). *Hypotheses 6a, 6b and 6c* were thus also all supported.

What was not necessarily anticipated was the relationships that existed between financial stressor severity and the four protective variables: significant other, family and friend social support sources, and resilience. Financial stressor severity was significantly and negatively related to these variables. This result will be revisited in the discussion chapter.

The high inter-correlations observed in the correlation matrix have the potential to threaten the validity of the subsequent regression analyses, because multicollinearity may occur, as the correlations between the variables in this study were of a magnitude great enough to potentially adversely affect regression estimates (Pedhazur, 1997). Specifically, the magnitude of correlations between stress and depression and anxiety, respectively, were high enough to make multicollinearity a possible threat. The existence of multicollinearity has the potential to yield very high R^2 values even when individual beta weights are not statistically significant. The addition or removal of variables in a multiple regression can also cause unduly large changes to the model. To avoid these possible adverse consequences, the variables used in the study, including the composite/interaction variables, were centered to avoid the problems multicollinearity can cause. The centering of data is a simple process, whereby the mean for a set of responses to a scale is calculated, and all individual scores are then subtracted from that mean. The calculation of means and the subtracting of scores from this mean are done separately for each variable.

While this precaution was taken, the very high correlations observed in the correlation matrix above were between the dependent variables only, of which there was only one in each regression analysis, meaning that multicollinearity should not threaten the results of the regression analyses in any way. The unnecessary centering of data when multicollinearity is not a threat should not and did not affect the validity of the regression results. To ensure this,

regression analyses were conducted with centered variables and again with their non-centered counterparts. Very small changes were observed in the standardized coefficients while the significance values of the interaction terms and R^2 values remained unchanged. As it is specifically the significance levels which determine when a significant moderation effect occurs or not, the centering of the data should thus have no unforeseen and adverse effects when testing for moderation.

Regression Analyses

As Baron and Kenny (1986) suggest, regression analyses can be used to test for interaction effects between two or more variables on one or more dependent variables. They can be used to identify potential moderator variables. According to Baron and Kenny (1986), the predictor variable should first be individually regressed with each of the outcome variables. This should be done for the hypothesised moderator variables as well. Thus, perceived financial stressor severity, the predictor variable, as well as resilience and the three sources of social support, the hypothesized moderator variables, should each be individually regressed onto each of the three outcome variables - perceptions of stress, depression and anxiety. The results of these individual regressions are detailed in tables 6, 7 and 8 below.

Table 6: Individual predictor and moderator regressions with stress

Variable	T	Standardized coefficient	Adjusted R²	P
Financial stressor	5.95	.26	.07	.000
Resilience	-7.92	-.34	.11	.000
Significant other support	-4.22	-.19	.03	.000
Friend support	-4.47	-.20	.04	.000
Family support	-6.30	-.28	.07	.000

Table 7: Individual predictor and moderator regressions with depression

Variable	T	Standardized coefficient	Adjusted R²	P
Financial stressor	6.84	.30	.09	.000
Resilience	-11.09	-.45	.20	.000
Significant other support	-6.69	-.29	.08	.000
Friend support	-5.34	-.24	.05	.000
Family support	-7.57	-.33	.10	.000

Table 8: Individual predictor and moderator regressions with anxiety

Variable	T	Standardized coefficient	Adjusted R²	P
Financial stressor	5.68	.25	.06	.000
Resilience	-5.22	-.23	.05	.000
Significant other support	-3.36	-.15	.02	.001
Friend support	-2.72	-.12	.01	.007
Family support	-4.50	-.20	.04	.000

As can be seen from these regression results, all of the predicted moderator variables had significantly negative associations with each of the three outcome variables, whereas increased perceived severity of financial stressors was positively associated with the outcome variables. These results, in conjunction with the results of the correlation analysis, indicate significant main effects between each of the outcome variables and each of the predicted moderator variables, including the predictor variable, financial stressor severity. Hypotheses 1, 2, 4, 5 and 6 were thus supported.

On the whole, the adjusted R² values were not particularly high, indicating that many other factors influence the onset of depression, stress, and high levels of anxiety. Of all the predicted moderator variables, resilience seemed to account for the most variance in each of the outcome variables, accounting for up to 20.4% of the variance in depression. Support from family enjoyed the most explanatory power of all the social support sources in depression, anxiety and in stress. The adjusted R² values for financial stressor severity and each of the social support subscale variables were highest when depression was used as the outcome variable, indicating that they may be more beneficial in preventing or protecting individuals from depression than from anxiety or stress.

The results above give evidence of significant main effects occurring between each of the dependent variables and each of the independent and hypothesized moderator variables. It has thus been established that perceived financial stressor severity is significantly and positively associated with each of the outcome variables. This is true for each of the moderator variables as well, except that the nature of these associations was negative. An interaction or moderator effect, however, only occurs when the relationship between the independent variable (perceived financial stressor severity) and the dependent variable (stress, depression and anxiety) changes as a function of the moderator variable (resilience and social support). Regression analyses including an interaction term were thus executed to test for these hypothesised moderation effects.

To determine whether a moderation/interaction effect occurs between the predictor variable and the hypothesised moderator variable, a composite variable should be made by multiplying the predictor with the moderator and regressing this interaction variable against each of the criterion/dependent variables. The results of these composite variables' regression with the relevant dependent variables indicates whether a significant moderation effect occurs or not (Baron & Kenny, 1986). The tables below illustrate the results of these analyses, indicating the t-values, p-values (significance levels), standardized coefficients (beta) and the adjusted R^2 values, which indicate the amount of variance in the outcome variable which can be explained by the relevant interaction variable. Although regression analyses had to be individually done for each of the dependent variables, the tables below are arranged with respect to the interaction variables.

Table 8: Resilience and financial stressor severity interaction variable

Outcome Variables	T	Standardized coefficient	Adjusted R²	P
Depression	-.05	-.002	.24	.96
Anxiety	-.25	-.01	.12	0.81
Stress	-1.841	-.08	.14	0.66

Table 9: Family support and financial stressor severity interaction variable

Outcome Variables	T	Standardized coefficient	Adjusted R²	P
Depression	1.43	.06	.15	.15
Anxiety	.22	.01	.09	.83
Stress	-.79	-.04	.11	.43

Table 10: Significant other support and financial stressor severity interaction variable

Outcome Variables	T	Standardized coefficient	Adjusted R²	P
Depression	.58	.03	.14	.56
Anxiety	.71	.03	.08	.48
Stress	-.82	-.04	.08	.41

Table 11: Friend support and financial stressor severity interaction variable

Outcome Variables	T	Standardized coefficient	Adjusted R ²	P
Depression	-1.70	-.07	.12	.09
Anxiety	-.16	-.007	.07	.88
Stress	-1.84	-.08	.09	0.66

These results illustrate that significant interaction effects between financial stressor severity and each of the hypothesised moderator variables, resilience, significant other social support, friend social support and family social support, did not exist in predicting levels of depression, anxiety or stress within this sample. In other words, the relationships between perceived financial stressor severity and each of the three outcome variables, stress, depression and anxiety, did not vary significantly as levels of either of the four hypothesised moderators varied. According to Baron and Kenny (1986) a moderation effect is observed when the regression of an interaction variable onto a dependent variable is significant. This was clearly not the case in this study, as the lowest significance level was $\alpha = 0.089$. While this comes close to significance at $\alpha = 0.05$, most of the other p-values were much higher, indicating not only that the hypothesised moderator effects were not statistically significant, but also that the level of each of the moderator variables seemed to do almost nothing to the relationships between the independent variable and the various dependent variables, missing significant levels by a large margin. *Hypotheses 3a, 3b and 3c and hypothesis 7* were thus not supported.

Discussion

This study investigated the roles which social support and resilience play within the stress process. It was hypothesised that these variables would play a protective role within this process, such that greater amounts of social support and resilience would be associated with less severe stress reactions. Specifically, subjective perceptions of stress, depression and anxiety, all of which are possible forms of strain or distress, were hypothesised to be negatively related to the amount of resilience and perceived social support within the sample. It was also hypothesised that resilience and perceived social support would moderate the relationship between the perceived severity of financial stressors in individuals' lives and the aforementioned forms of strain.

The reasons for these expectations were based on the findings of past research, in which the presence of adequate social support sources and personal resilience aided individuals in coping with stressors in their lives (eg. Tugade & Fredrickson, 2004, Cohen & Wills, 1985). Findings of past research on the topic aside, the logic employed in making these hypotheses was based on the theoretical definitions of the constructs of resilience and social support themselves. Rutter's (1985) definition of resilience, for example, is the ability to bounce back or cope extremely successfully with significant adversity. Adversity, as exemplified by financial stress in this piece of research, is thus intrinsically related to the construct of resilience itself.

Shumaker and Brownell's (1984, p13) definition of social support, "an exchange of resources between at least two individuals perceived by the provider or the recipient to be intended to enhance the well-being of the recipient", similarly involves an elevation of the well-being of the recipient of the social support. Adequate social support would thus presumably be associated with less severe stress reactions in these recipients. This logic is discussed in more detail below with reference to the main effects which were witnessed for resilience and social support on strain, respectively.

Resilience main effects

If people are more resilient, then, according to Rutter's (1985) definition of resilience, they should cope more effectively with significant adversity by being able to 'bounce back' from adverse situations. A brief glance at some of the protective factors associated with resilient individuals, such as effective emotion management and an internal locus of control, *prima facie*

lead one to believe that resilient individuals would cope better with adversity of many kinds than less resilient people would (Ramirez, 2007). There seems to be no reason to believe that adversity in the form of financial stressors would be an exception, and the factors associated with resilient individuals should, *prima facie*, help individuals cope with this form of adversity in a similar manner to other forms of adversity .

The link between resilience and coping mechanisms has been established before in past research. Ong, et al, (2006) found significant positive correlations between resilience and coping mechanisms which elicit positive emotions and positive appraisals, whereby benefit, reward and positive meaning are sought within a difficult situation. It has also been found that resilient individuals recover quicker from the deleterious effects of stress than their less resilient peers (Tugade, et al, 2004). It seems that Rutter's (1985) very definition of resilience, mentioned in the "resilience" section of the introduction to this paper, implies that resilience and strain would be inversely correlated with one another.

Support was found for these hypotheses, and resilience was significantly, moderately and negatively associated with each of the three strain measures - depression, anxiety and perceptions of stress. The means by which resilience may protect individuals against strain is discussed in more detail below, in the section on the hypothesised moderator effects.

Social support main effects

With respect to social support, it seemed similarly logical to expect that it would help people deal both cognitively and emotionally with a wide range of possible challenges in life, by helping the recipients of the support to view the situation in a more positive or pragmatic way. Cohen and McKay (1984) note that social support can alter the perception of stressors in two basic ways: by making the stressor seem less threatening and by altering the recipient's perception of whether or not they can cope with or manage the stressor effectively. Social support can thus alter the appraisal of the stressor. It can also assume the form of emotional support, whereby recipients are made to feel that they are not alone in their strife (Cohen & McKay, 1984). Social support thus has the ability to protect people against the effects of stress in at least two fundamental ways.

Support was found for the hypotheses regarding the protective effects of social support and strain, as social support from friends, family and a significant other were all significantly and negatively related to depression, anxiety and to perceptions of stress.

The reasons that resilience and social support were expected to protect individuals against the effects of strain were thus based on a combination of common sense, the theoretical definitions themselves, and on literature on the topics, which contains several studies which have found negative relationships between feelings of strain and both social support and resilience (eg. Tugade, et al, 2004, Zimet, et al, 1990). The hypotheses of this study were thus based on an array of previous findings on the topic, on the very definitions of the relevant constructs themselves, and on a common sense notion of how the variables would interact and relate. The reasons for these expectations were vindicated, as both resilience and each of the three sources of social support were found to be significantly and negatively associated with the three measures of strain which were used in this study.

The hypothesised moderation effect of resilience and social support in the stress process

It was also hypothesised that resilience and the perception of adequate social support would buffer individuals against the strain which financial stressors can potentially create by moderating the relationship between perceived financial stressor severity and the aforementioned strain variables. Within this proposed moderator framework, it was thus not only expected that significant main effects would occur between the hypothesised moderator variables and the strain variables. Significant interaction effects between perceived financial stressor severity and the hypothesised moderator variables on the strain variables were also anticipated. While the hypotheses pertaining to the main effects of resilience and social support on strain (hypotheses 2 and 5) were all supported, no evidence was found to suggest that any significant interaction effects existed between financial stressor severity and resilience or social support on the three forms of strain as the dependent variables.

In other words, it was found that greater resilience and social support were associated with perceptions of less severe stress, anxiety and depression. This was true independent of the severity of financial stressors in the respondents' lives. The hypothesised interaction effects, on

the other hand, necessarily involve the perception of the severity of the financial stressors in the lives of the respondents within the study's sample. For this interaction or moderation effect to occur, the degree to which financial stressor severity impacted strain would need to change depending on the level of the moderator variables; resilience and perceived adequacy of social support. This was not the case, however, and hypotheses 3 and 6 were therefore not supported.

There are several possible reasons why the hypothesised interaction/moderation effects were not witnessed. The first of these is rooted in the support found for the main effects between resilience and social support on the three strain variables. These effects were all found to be moderately to strongly significant. This meant that the existence of high amounts of resilience or social support in itself meant that respondents were less likely to feel strain in their lives. The internal, personal strength to overcome hardship and adversity in the form of resilience and the external aid received in the form of social support thus meant that individuals in the sample were less likely to feel anxious, depressed or stressed, irrespective of the severity of financial stressors in their lives. The main effects were thus potentially strong enough to make any reference to interaction effects somewhat redundant. The perceived severity of financial stressors in respondents' lives thus became relatively less important, as individuals who were highly resilient or who perceived a large amount of social support to be present in their lives felt less strain, whether the financial stressors in their lives were perceived as severe or not. This says a lot about the protective roles that social support and resilience play in the stress process, as they are largely effective even when the stressors in people's lives are perceived as being of a critical nature.

With respect to the lack of support for the moderation effect of social support, Carlson and Perrewé (1999) tested the means by which social support helped reduce strain in their sample. They examined social support on a number of levels, testing it in relation to stressors in family conflict as an antecedent, intervening, moderator and independent variable. It was concluded that social support in this context was best viewed as an antecedent variable to the stressors which resulted in family conflict, such that its value lay in the altering of the appraisals of various stressors, which in turn affected the amount of conflict present in the family. Social support may have played a similar role in this study as well, affecting the appraisal of stressors and thus indirectly affecting the amount of strain individuals felt, as more innocuous stressors would

likely result in less severe strain/distress responses. The protective role which resilience plays in the stress process may operate in a similar way, altering the appraisal of stressors and the ability to cope effectively with them.

As discussed in the literature review, it was expected that resilience and social support would moderate the relationship between perceived financial stressor severity and strain by intervening in Lazarus' (1993a) stress process model at stage 3; in other words, by altering coping strategies enacted as reactions to a financial stressor which had already been appraised to have a certain degree of severity. Following Carlson and Perrewe's (1999) logic, the hypothesised moderator variables may have instead intervened at stage 2 of the aforementioned stress process, acting as antecedent variables which affected both the appraisal of the stressor as well as the strain felt after appraisals and attempts to cope had been made. If this is the case, it shows why significant main effects were found but that the hypothesised moderator effects were not. Nevertheless, what is clear is that social support and resilience protect individuals against strain from financial stressors, even if the way this occurs is not quite as predicted in the current study.

Another reason the hypothesised moderator effects were not supported may partially reside in the operationalisation of the financial stressor severity variable. This was measured with a subjective, self-report question which asked respondents to rate the severity of any possible financial stressors in their lives. The questions assessing the subjective perception of the stress, anxiety and depression that respondents felt were subjective, self-report questions as well. Given that respondents gave their subjective perceptions of their financial situation, as opposed to an objective measure of debt, for example, one might expect that any variability in the responses to the questions assessing the amount of strain they were under would largely co-vary with their perceptions of the severity of the financial stressors in their lives. It seems unlikely that a respondent would report severe financial stressors in their lives at the same time as reporting that they were not feeling stressed, anxious or depressed at all. Financial stressor severity was assessed using a single measure, and thus mono-method bias may threaten the validity of the operationalisation of the theoretical construct itself. The Stressor Scale which was used to assess respondents' levels of financial stress was created by the researchers responsible for the pilot study which collected the data for this piece of research, and the measure has thus not been adequately tested yet.

This possible explanation is corroborated by the statistically significant positive associations found between perceived financial stressor severity and each of the strain variables in this study. It also makes the possibility of resilience and social support acting as antecedent variables in the stress process quite sensible, as the subjective nature of both the strain questions and the perceived financial stressor severity question meant that the presence of social support or of high resilience may alter responses to these questions in the same basic way.

For an interaction effect to be witnessed, the degree to which perceived financial stressor severity and the measures of strain were associated with one another would have to change as a function of the hypothesised moderator variables. In this case, differences in resilience or perceived social support may have altered the perceptions of strain and of the severity of the financial stressor, such that the stressor and strain variables co-varied to a very similar degree. In other words, a resilient individual, for example, would likely rate the financial stressor as being less severe as well as reporting that they were not under a lot of strain. A relatively non-resilient person, on the other hand, would likely rate both the stressor and strain as being more severe. The relationship between stressor and strain would therefore not change as a function of the amount of resilience, as both would be perceived as less or more severe if the individual in question was more or less resilient, respectively. This again points to the possibility that the main effects of resilience and social support were strong enough to change the perception of both the relevant stressor and of the strain which individuals felt. The confusion caused by the overlap in stress terminology could also mean that respondents understood the questions relating to stressor severity and strain to be tapping into the same latent variable - a colloquial understanding of stress.

With respect to social support specifically, Cohen and McKay (1984) note that the effectiveness of social support as a buffering mechanism may have some situational limitations. These potential limitations were discussed in the literature review. Cohen and McKay (1984) also note that different forms of stressors can be distinguished from one another with respect to social support as requiring different forms of support. As mentioned previously, support can take several forms, including tangible support, appraisal support, self-esteem support and belonging support. With respect to financial stressors, some forms of support may be viewed as less helpful than others. This should not have affected the results, however, as social support of an unhelpful

nature, even if provided in abundance, should be reflected as inadequate in the measures thereof, since social support was measured by a subjective, self-report assessment of the perceived adequacy of the social support. Moreover, social support was found to have a protective role in the stress process; the means by which it protected individuals was just not the way it was hypothesised to. It did not moderate the relationship between financial stressor severity and strain; it may have acted as an antecedent variable, affecting the former directly, and thus the latter indirectly.

Limitations of the Study

This study has several limitations, which could cast doubt on the relevance of the findings within a broader context. These limitations may also partially explain why the hypothesised moderator effects which have been found before in other pieces of research were not found in the present study. The limitations can be split into three basic categories: potential problems with the measurement of financial stressors, the nature of the sample, and issues related to causality.

The first of these limitations - already discussed above – is that the question assessing the perceived severity of financial stressors in the individual's life was of a purely subjective nature, and this subjective perception may have significantly impacted the respondents' respective reports on strain measures. The operationalisation of financial stressor severity lacked any objective information on the financial situation of the respondents, such as their income level or whether or not they were in debt. While subjective assessments of this sort may be argued to be more valid than objective reports of the respondents' financial situation inasmuch as it is the perception of a potential stressor as threatening which causes it to actually become a stressor, and having the ability to cause distress, a combination of subjective, objective and perhaps even reference point measures of financial stressor severity could have been added for a more holistic report on the respective respondent's financial situation (Ackerman & Paolucci, 1983). This was not done, however, as holistic measures of financial situation can be difficult to implement. In addition, more support has been found for subjective measures of financial situations, as they have been found to explain more variance in measures such as life quality than have objective measures of financial situations (eg. Ackerman & Paolucci, 1982)

Another concern which must be raised in regard to the relevance and the general of the findings of the study is rooted in the nature of the sample used. As mentioned previously, the sample was comprised of the clientele of a certain South African company. While this company will not be described in any detail in order to ensure that its confidentiality is upheld, it must be noted that the type of service that it offers is an expensive one, and the market that it targets is thus limited to people within the middle and upper socioeconomic classes. This is clearly important when dealing with the notion of financial stress, as the individuals within the sample are relatively privileged in comparison to the South African population as a whole. Apart from the fact that the sample, on a socioeconomic level, may not be representative of the South African population, the people within the sample may very likely be under much less financial pressure than many other South Africans during this challenging economic downturn.

This could also impact the relationships between certain variables within the study. The relationships between the strain variables and perceived financial stressor severity, for example, may be a lot stronger for people who are less privileged than those in the sample presumably are. The reason for this is that if financial stressors are not perceived as being particularly severe, it is more likely that other types of stressors account for more of the variability in the strain measures than would financial stressors for people who are not as financially comfortable. Conversely, if financial stressors are perceived as being significantly severe, other types of stressors may seem to be relatively less threatening, and therefore would account for less of the variability in the respective strain scores.

Finally, the fact that this piece of research was of a non-experimental nature meant that causation could not be inferred; associations between variables could be established but causal paths could not be. This is important because, as discussed in the review of the stress literature, it is very likely that non-recursive, bi-directional relationships could exist between strain and the perception of the severity of the financial stressor. This piece of research assigned the role of a predictor variable to the financial stressor severity construct, taking for granted that it is the perception of stressors as being severe which causes strain. While this is not incorrect, strain in the form of depression, for example, could affect individuals' outlooks on life and specifically on their appraisals of the severity of financial stressors in their lives. As the causal path could feasibly run in both directions, it is reasonable to infer that in many instances the relationships

between the aforementioned variables are bi-directional and cyclical in nature. It is thus impossible to ascertain whether the financial stressor preceded the strain or vice versa.

The methodology employed in this study also limits the discussion on the means by which social support and resilience protect individuals against the deleterious effects of strain. While it was initially expected that resilience and social support would moderate the relationship between financial stressor severity and the three strain dimensions, the results show that it is more likely that these hypothesised moderator variables were actually antecedent variables which affect both the perception of the stressor and the strain which this would elicit. While this explanation seems plausible, the design of the research means that this cannot be tested here, and longitudinal studies in the future should test these dynamics in a way which this piece of research was unable to.

Implications of the Study

The findings of this study have a few important implications. As mentioned, this study found no evidence to support the notion that social support and resilience act as buffering mechanisms in the stress process by means of moderation between the perception of a stressor and the strain which that stressor could potentially elicit. This is contrary to certain theoretical perspectives held by researchers such as Cohen and McKay (1984), which view social support as occupying the role of a moderator in this relationship. While the reasons for thinking that this would be so make sense, as social support and resilience have the ability to alter coping strategies which occur following the existence of a particular stressor in an effort to deal with the challenge at hand and thus to avoid strain, this study did not corroborate this perspective.

Instead, this study provided evidence for a different perspective, as espoused by Carlson and Perrewe (1999), where social support acted as an antecedent variable which directly affected the appraisal of the stressor, and therefore the amount of strain as well, as strain occurs when stressors are not adequately dealt with. It is possible, however, that both perspectives hold value, and that social support affects the coping strategies utilised in response to perceived stressors as well. Following insignificant moderation effects found for resilience within this study, resilience may occupy a similar antecedent role within the stress process. The combination of the findings

of this study, Carlson and Perrewe's (1999) study, as well as others' (Eg. Cohen & McKay, 1984), show that resilience and social support can act as effective ameliorators of strain in at least two different ways: by altering the appraisals of stressors and by moderating the relationship between stressors and strain.

Findings like these may change the conception of social support and resilience, to an extent, as these constructs are sometimes conceptualised as intrinsically containing an ability to help individuals cope with stressors in their lives. This buffering ability is sometimes taken for granted as meaning that strain effects are reduced in the presence of a certain stressor. While this is true, this study showed that, although the stressor may objectively remain the same irrespective of the level of resilience and social support present, it is the perception of the stressor which holds more value than the objective characteristics thereof, and that these constructs affect the subjective perception and appraisal of potential stressors. It is by altering the appraisal of these stressors and by influencing the coping mechanisms following an appraisal of a potential stressor, that resilience and social support protect individuals against the harmful effects of distress or strain.

What is certain, as has been found before in prior research, is that social support and resilience have the ability to protect individuals against the potential harm caused by stressors in their lives. Thus, practically speaking, even if the aforementioned constructs do not protect individuals in the ways often thought, they are still clearly effective means of combating and preventing large amounts of stress in individuals, which is so commonplace in the contemporary world.

Resilience may be difficult to teach, as the literature suggests that it needs a certain amount of adversity for its development to begin with, and may thus be more of a naturally occurring process associated with personality traits such as a high self-esteem. Social support, on the other hand, is usually free and easy to give, from a financial perspective, and thus remains one of the most practical means for combating large amounts of stress in individuals, in both work life and private life. More research should thus be devoted to testing various methods by which resilience can be engendered in people, as well as understanding the psychological barriers which exist that prevent people from giving social support, when it can ideally be given much more easily than many other forms of support, such as financial support. Research like thus would hone in on the potential these constructs have to ameliorate stress reactions, allowing people in a variety of

contexts to capitalise on their potential to prevent strain related to financial concerns, and perhaps others as well.

Conclusion

In the context of recent worldwide economic recessions, the threat imposed by financial stress is very real, and research has shown that many people feel a lot of pressure with respect to financial concerns. In light of this, research into financial stress and the possible avenues for its prevention and treatment are highly significant. This study examined two potential means for the combating of financially related stress - resilience and social support. It was hypothesised that these variables would play a moderating role in the relationships between financial stressor severity and three forms of strain: anxiety, depression and feelings of stress. While these moderator hypotheses were not supported, significant negative associations were found between the hypothesised moderator variables and perceived financial stressor severity, depression, anxiety, and stress. Highly resilient individuals, or individuals who perceive a large amount of social support to be present in their lives, are thus less likely to view financial stressors in their lives as severe, and are less likely to feel highly strained or distressed.

As mentioned in the discussion chapter above, the way in which resilience and social support protected individuals against large amounts of strain in this sample was not as initially anticipated. These variables did not assume the role of moderators, but of antecedent variables which altered the appraisal of stressors, and therefore influenced the amount of strain which results from those appraisals. While other research on the topic has supported the buffering hypothesis of social support and resilience as moderator variables in the stress process, this study found that these variables may protect individuals in a slightly different way. Resilience and social support may thus be capable of protecting individuals from extreme levels of strain in more than one way.

It would be a mistake to think that the findings of these studies and this one to be at odds; while different mechanisms of amelioration have been supported in the stress literature, what does

seem clear is that resilience and social support are promising resources for dealing with financial stress in everyday life. In light of this, more research into how these constructs can be most effectively harnessed is warranted, so that efficient, cost-effective preventative methods and treatments of stress can be implemented in various institutions, such as workplaces and schools. A better understanding of how stress can be effectively managed can also aid the general public in preventing and treating high amounts of stress in more informal ways as well. This study thus contributes to the growing body of literature which shows that taxing stress reactions can be reduced by having adequate social support networks in one's life, and having a resilient character.

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Appendix

This section is an excerpt of the original 22 page pilot questionnaire, which was given to the randomly selected client base of a large South African organisation. This comprised the sample

used in this piece of research. Instructions and some details of the theoretical constructs measured in the questionnaire were added at various points, as can be seen below. Only questions which assessed variables used in the current study are present here; other questions existed in the original questionnaire as well, such as questions pertaining to traumatic events and psychological wellbeing. Asterisks next to questions indicated that answering the question was mandatory, and that further questions could not be answered if these were not filled in, as the questionnaire was administered electronically. Anything written in italics did not appear in the original document, and has been added here as an explanatory side-note.

Section A: Total Stress Questionnaire (with demographics)

Stress is the way our bodies respond to changes or challenges life throws at us, preparing us to meet the tough situations with focus and strength. However, too much stress is not healthy and can lead to anxiety, depression and physical illness.

Your level of stress is affected by numerous factors, including the challenges you face in your life (your job, relationships, finances etc.), your personality and the way you cope with these challenges as well as the support you have around you from your friends and family.

The questionnaire below can be used to determine all of these factors, specific to you. This will help you to identify where there are areas of stress in your life and how you cope with these stressors. The aim is to use this questionnaire to not only identify stress areas, but also to learn how to better manage your stress in the future.

These questionnaires are intended as a guide to help you understand your stress. If your answers to most questions suggest you have very high stress levels, and if you are finding it difficult to cope please consult a medical professional for therapeutic advice.

1. *Sex

- ☐ Male
- ☐ Female

2. *What is your date of birth?

DD MM YYYY

DOB

3. What is your highest level of education?

- ☐ Less than matric
- ☐ Matric
- ☐ Diploma
- ☐ University Degree

4. Employment status

- ☐ I work full time.
- ☐ I work part time.
- ☐ I am not working and am actively looking for a job.
- ☐ I am not working and am not looking for a job.

5. What is your marital status

- ☐ Married/living with partner
- ☐ Divorced
- ☐ Widowed
- ☐ Unmarried

6. No. of children living with you

Section B: Stressor Diagnostic (Determining what types of stressors occur in your life)

This section evaluated the perceived severity of ten common sources of stress in contemporary life. Only the question relating to financial stress was used in the study and the others will not be listed here. The section begins with a brief description of what a stressor is, and how it differs from stress, as the terminology can be confusing to the layman or -woman, easily confounded with one another.

Stressor vs Stress - here's the difference:

Stressor = a challenge or situation that places a real demand on you, physically or mentally.

Stress = your reaction to a stressor.

The longer the stressor affects you, the greater the risk to your health. If not handled well or reduced, stressors can lead to anxiety, depression or physical illness.

The following 10 questions relate to specific areas in your life. To what extent are you experiencing problems or anxiety regarding each area?

1. Your financial situation

- Hardly any problems or concerns
- Some small problems or concerns but nothing serious
- Moderately serious problems or concerns
- Serious problems or concerns
- Extremely serious problems or concerns

Section C: Perceived Social Support (How much support do you get from friends, family, or a significant other?)

Multidimensional Scale of Perceived Social Support (MSPSS) by Zimet, Dahlem, Zimet & Farley (1988)

*We are interested in how you feel about the following statements. Read each statement carefully and indicate how you feel about each one by selecting the most appropriate statement.

For each of the following questions, respondents had five options to choose from when assessing how accurate these statements were. They were:

a - Strongly Disagree;

b - Disagree;

c - Neutral;

d - Agree;

e - Strongly Agree

1. There is a special person who is around when I am in need.
2. There is a special person with whom I can share my joys and sorrows.
3. My family really tries to help me.
4. I get the emotional support I need from my family.
5. I have a special person who is a real source of comfort to me.
6. My friends really try to help me.
7. I can count on my friends when things go wrong.
8. I can talk about my problems with my family.
9. I have friends with who I can share my joys and sorrows.

10. There is a special person in my life who cares about my feelings.
11. My family is willing to help me make decisions.
12. I can talk about my problems with my friends.

Section D: Resilience (Determining how quickly you recover)

The resilience Scale by, Wagnild & Young, 1993

*Please indicate how much you disagree or agree with each statement.

As in the MSPSS, for each of the following questions, respondents had five options to choose from when assessing how accurate these statements were. They were:

a - Strongly Disagree;

b - Disagree;

c - Neutral;

d - Agree;

e - Strongly Agree

1. I usually manage one way or another.
2. I feel proud that I have accomplished things in my life.
3. I usually take things in my stride.
4. I am friends with myself.
5. I keep interested in things.
6. My belief gets me through hard times.

7. My life has meaning and purpose.
8. When I am in a difficult situation, I can usually find my way out of it.
9. I feel that I can handle many things at a time.
10. I can get through difficult times because I've experienced difficulty before.
11. In an emergency, I'm someone whom people can normally rely on.
12. I can usually find something to laugh about.
13. I am determined.
14. Self discipline is important.

Section E: Depression, Anxiety and Stress Scale (DASS-21)

*Please read each statement and indicate how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

For each of the following questions, respondents indicated how applicable the statement was to their life, and had four response options as follows:

a - Did not apply to me at all

b - Applied to me to some degree, or some of the time

c- Applied to a considerable degree, or a good part of time

d - Applied to me very much, or most of the time

1. I found it hard to wind down
2. I was aware of dryness of my mouth
3. I couldn't seem to experience any positive feeling at all

4. I experienced breathing difficulty (eg. Excessively rapid breathing, breathlessness in the absence of physical exertion)
5. I found it difficult to work up the initiative to do things
6. I tended to over react to situations
7. I experienced trembling (eg. in the hands)
8. I felt that I was using a lot of nervous energy
9. I was worried about situations in which I might panic and make a fool of myself
10. I felt that I had nothing to look forward to
11. I found myself getting agitated
12. I found it difficult to relax
13. I felt down-hearted and blue
14. I was intolerant of anything that kept me from getting on with what I was doing
15. I felt I was close to panic
16. I was unable to become enthusiastic about anything
17. I felt I wasn't worth much as a person
18. I felt that I was rather touchy
19. I was aware of the action of my heart in the absence of physical exertion (eg. sense of heart rate increase, missing a heart beat)
20. I felt scared without any good reason
21. I felt that life was meaningless

These questions are intended as a guide to help you understand your stress. If your answers to most questions suggest you have very high stress levels, and if you are finding it difficult to cope, please consult a medical professional for therapeutic advice.