

# **HOPE, RELIGIOSITY AND SUBJECTIVE WELL-BEING**

Hermann Werner Nell

10725385

Mini-dissertation submitted in fulfilment of the requirements for the  
degree *Magister Artium* in Applied Positive Psychology at the  
Vanderbijlpark Campus of the North-West University

Supervisor: Prof. S. Rothmann

Vanderbijlpark

May 2014

## REMARKS

The reader is kindly requested to take note of the following:

- In the writing of this dissertation, the referencing and editorial style as prescribed by the *Publication Manual* (6<sup>th</sup> edition) of the American Psychological Association (APA) was followed, as this is the prescribed referencing style of the Master's in Applied Positive Psychology of the North-West University (Vanderbijlpark Campus).
- The reader is also kindly requested to take note that this mini-dissertation has been written in the article format, which consists of an introductory chapter, one research article containing the main findings of the study, and a final chapter outlining the conclusions, limitations, and recommendations pertaining to the study.

## **ACKNOWLEDGEMENTS**

A work such as this cannot be completed without the support, contributions, and assistance of many individuals. Such was also the case in the writing of this mini-dissertation, and I would like to extend my heartfelt gratitude to the following individuals:

- To my study-leader, Professor Ian Rothmann – thank you for your assistance during the research process, and for skillfully guiding me in finding my own way through all the tricky patches! I continue to be inspired by the depth and breadth of your scholarly and methodological knowledge and expertise. But even more than this, I admire the person that you are.
- To Professor Chrizanne van Eeden, whose vision and indomitable drive in the face of several challenges drove the successful establishment of the first ever Master’s degree in Applied Positive Psychology (MAPP) programme in Africa – thank you!
- Thank you to all those participants who gave of their time in completing questionnaires – I hope that this document will stand as a testament to the fact that the time that you so kindly sacrificed was not in vain.

## **SUMMARY**

Topic: Hope, religiosity and subjective well-being

Key terms: *hope, religiosity, subjective well-being, satisfaction with life, positive affect, negative affect*

This study explored the relationship between religiosity, hope, and subjective well-being among a group of 430 participants (28.8% male, 88.4% black, 8.4% white) residing in the Gauteng Province South Africa. The sample consisted of students ( $n = 210$ ) as well as family members of these students ( $n = 220$ ). A cross-sectional quantitative survey design was used. Data was gathered using the Adult Trait-hope Scale, a three item measure of religiosity, the Satisfaction with Life Scale (SWLS), and the Positive and Negative Affect Schedule (PANAS). Descriptive statistics were computed in SPSS 22. Following this, correlations between all latent variables were calculated in Mplus Version 7.11, where after latent variable modelling was performed. During this process, an initial measurement model was specified, which was examined for goodness of fit, and compared against two competing measurement models. The best fitting model was then subjected to a process of model development, and subsequently re-specified as a structural model. The fit of this model was again assessed and compared to two competing structural models. Finally, indirect effects between religiosity, hope, and subjective well-

being (comprised of positive affect, negative affect, and life satisfaction) were investigated. The results revealed that religiosity was a significant predictor of both agency and pathway hope, and that the strength of this relationship was moderate in the case of agency hope, and weak in the case of pathway hope. In turn, agency hope predicted higher levels of life satisfaction and positive affect, and lowered levels of negative affect. However, with the exception of positive affect (with which it was positively associated), pathway hope was not related to any of the subjective well-being variables, suggesting that it is less significantly associated with subjective well-being than agency hope. The results of the mediation analysis revealed that agency hope acted as a significant mediator of the relationship between religiosity and life satisfaction, positive affect, and negative affect. Pathway hope mediated the relationship between religiosity and positive affect. These results suggest that the elevated levels of subjective well-being often found in relation to religiosity can at least in part be attributed to the fact that religion is associated with elevated levels of hope.

The mini-dissertation is concluded with a chapter that outlines the conclusions and limitations related to the study, and on this basis, several recommendations were proposed for future research and practical application of the findings.

# TABLE OF CONTENTS

|   |           |
|---|-----------|
| <b>CHAPTER 1</b> .....  | <b>1</b>  |
| <b>INTRODUCTION, PROBLEM STATEMENT, AND OBJECTIVES</b> .....                          | <b>1</b>  |
| <b>1.1 Introduction</b> .....   | <b>1</b>  |
| 1.1.1 Factors that moderate the relationship between religiosity and SWB.....         | 3         |
| 1.1.2 Mediators of the relationship between religiosity and SWB.....                  | 5         |
| <b>1.2 Problem Statement</b> .....  | <b>9</b>  |
| <b>1.3 Research Objectives</b> .....  | <b>12</b> |
| 1.3.1 General research objective.....   | 12        |
| 1.3.2 Specific research objectives.....   | 13        |
| <b>1.4 Ontological, Epistemological, and Theoretical Framework of the Study</b> ..... | <b>13</b> |
| 1.4.1 Ontological and epistemological assumptions guiding the study.....              | 13        |
| 1.4.2 Theoretical framework.....  | 14        |
| 1.4.2.1 Hope theory .....   | 15        |
| 1.4.2.2 Subjective well-being.....  | 15        |
| 1.4.2.3 Religiosity and spirituality .....  | 17        |
| <b>1.5 Research Method</b> .....  | <b>18</b> |
| 1.5.1 Phase 1: Literature review.....   | 18        |
| 1.5.2 Phase 2: Empirical study.....   | 19        |
| 1.5.2.1 Research design .....   | 19        |
| 1.5.2.2 Participants .....  | 21        |
| 1.5.2.3 Measuring instruments.....  | 22        |
| 1.5.2.4 Research procedure.....   | 25        |
| 1.5.2.5 Data analysis.....  | 26        |
| <b>1.6 Ethical Considerations</b> .....   | <b>29</b> |
| <b>1.7 Chapter Division of the Mini-dissertation</b> .....                            | <b>30</b> |
| <b>1.8 Chapter Summary</b> .....  | <b>31</b> |
| <b>References</b> .....   | <b>32</b> |

|  |           |
|--|-----------|
| <b>CHAPTER 2</b> .....                                     | <b>38</b> |
| <b>RESEARCH ARTICLE</b> .....                              | <b>38</b> |
| <b>HOPE, RELIGIOSITY, AND SUBJECTIVE WELL-BEING</b> .....  | <b>39</b> |
| <b>CHAPTER 3</b> .....                                     | <b>79</b> |
| <b>CONCLUSIONS, LIMITATIONS, AND RECOMMENDATIONS</b> ..... | <b>79</b> |
| <b>3.1 Conclusions</b> .....                               | <b>79</b> |
| <b>3.2 Limitations of the Study</b> .....                  | <b>88</b> |
| <b>3.3. Recommendations</b> .....                          | <b>90</b> |
| 3.3.1 Recommendations for future research .....            | 90        |
| 3.3.2 Recommendations for practice .....                   | 91        |
| <b>References</b> .....                                    | <b>92</b> |

## LIST OF TABLES

| <b>Table</b>  | <b>Page</b> |
|---|-------------|
| <b>Chapter 2: Research Article</b>  |             |
| Table 1: Characteristics of the Participants ( $N = 430$ )  | 50          |
| Table 2: Descriptive Statistics, Reliabilities and Correlations between Religiosity, Hope Agency (Hope A), Hope Pathway (Hope P), Satisfaction with Life (SWL), Positive Affect (PA) and Negative Affect (NA) | 57          |
| Table 3: Fit Statistics of Competing Measurement Models   | 59          |
| Table 4: Improving the Fit of the Measurement Model   | 61          |
| Table 5: Standardized Regression Coefficients of the Variables  | 64          |
| Table 6: Indirect Effects of Religiosity on Satisfaction with Life (SWL), Positive Affect (PA), and Negative Affect (NA)  | 67          |

## LIST OF FIGURES

| <b>Figure</b>                      | <b>Page</b> |
|------------------------------------|-------------|
| <b>Chapter 1</b>                   |             |
| Figure 1. Hypothesised model       | 12          |
| <b>Chapter 2: Research Article</b> |             |
| Figure 1. Hypothesised model       | 47          |
| Figure 2. Final structural model   | 65          |

## **CHAPTER 1**

### **INTRODUCTION, PROBLEM STATEMENT, AND OBJECTIVES**

The aim of this chapter is to provide an orientation to the study on which this mini-dissertation is based, in which the main aim was to establish whether, and to what extent, the relationship between religiosity and subjective well-being (SWB) might be mediated by hope. Following a general introduction, an elucidation of the concepts relevant to this study (such as religiosity, subjective well-being, and hope), and an overview of existing literature on the topic, the research problem is discussed, which serves as a prelude to outlining the main research questions and objectives guiding the present study. After this, the researcher's ontological and epistemological position is presented. The remainder of the chapter is devoted to a discussion of the research methodology that was followed during the course of the study, along with an overview of ethical matters relevant to the research. The chapter concludes with an outline of the division of chapters in the mini-dissertation.

#### **1.1 Introduction**

The relationship between religiosity and subjective well-being has received significant scholarly attention in recent years, with a growing body of research investigating the ways in which these constructs

interrelate. The majority of these studies report a small to moderate positive association between religiosity and subjective well-being (Argyle, 1999; Diener, Tay, & Myers, 2011; Lavric & Flere, 2008). For example, in a comprehensive meta-analysis of studies which focused on the relationship between religiosity and psychological adjustment, Hackney and Sanders (2003) combined effect sizes from 35 cross-sectional studies and found a small positive correlation between religiosity and psychological status ( $r = 0.10, p < 0.0001$ ). However, other studies failed to replicate these findings, and detected either no relationship between these constructs, or in some instances even reported a negative association in which higher levels of religiosity were correlated with an increased incidence of negative affect or depression (Diener et al., 2011; Lavric & Flere, 2008; Leurent et al., 2013; Park, Hong, Park, & Cho, 2012). In the meta-analysis conducted by Hackney and Sanders (2003), 78 negative relationships were found in a set of 264 effect sizes.

Taken together, these mixed and often contradictory findings suggest that the relationship between religiosity and subjective well-being is likely to be complex and significantly mediated and/or moderated by a number of other variables.

### **1.1.1 Factors that moderate the relationship between religiosity and SWB**

Various demographic factors have been identified which significantly moderate the relationship between religiosity and subjective well-being. Among these, gender was found to act as such a moderating variable in that the relationship between religiosity and SWB tends to be stronger for women than it is for men. Age was likewise found to be a moderating variable, as the association between religiosity and subjective well-being was found to be stronger among older people. The manner in which an individual practices his or her religion was also found to act as a moderating influence, as those who actively and publically participate in their religions experienced higher levels of subjective well-being than those who did not (Argyle, 1999; Compton, 2005; Diener et al., 2011). Additionally, in their meta-analysis of 35 cross-sectional studies on the relationship between religiosity and psychological adjustment, Hackney and Sanders (2003) found that more positive psychological outcomes were associated with those with greater 'internality' of religious beliefs than with those who practice mere institutional religiosity. Individuals whose religious style conformed to the latter category were found to be more likely to experience psychological distress.

Additionally, cultural context in particular seems to play a very prominent role as moderating variable. In this regard, based on their own findings as well as an extensive review of existing literature on the topic, Leurent et al. (2003) claim that research findings made in any given

cultural context pertaining to the relationship between religiosity and SWB may very likely not generalise to another. Lavric and Flere (2008) echo these sentiments when they conclude that “there is no single, cross-culturally present relationship between religious orientation and psychological well-being” (p. 172). The moderating influence of culture on this relationship has been investigated in several studies, such as those of Lavric and Flere (2008) who found that the association between religiosity and SWB was markedly higher in cultures characterized by higher levels of religiosity than in those which are less religious. In the latter case, correlations between these variables are often found to be either non-significant, or even negative. On the basis of a large scale study in which 153 countries were represented, Diener et al. (2011) found that the social conditions that characterize a particular nation was a highly significant and strong predictor of religiosity levels, both of a nation as a whole, as well as of the individuals living within such nations. Specifically, those residing in countries characterized by adverse and challenging social conditions were found to be significantly more religious than individuals living in countries where high levels of prosperity and national harmony prevail. In these countries, religiosity levels are often low, both on an individual, as well as on a national level.

Furthermore, existing research findings also indicate that the specific cultural group an individual belongs to serves to moderate the relationship between religiosity and subjective well-being. As an example, the association between the latter two variables has been found to be

stronger for African Americans than for Caucasian Americans (Argyle, 1999; Compton, 2005).

In conclusion, research on the factors that moderate the relationship between religiosity and SWB paints a picture of a stronger positive association between these variables among those who are older, female, African American, actively and publically participating in their religions, and those living in countries that are characterized by high levels of national religiosity, and that are rife with social challenges.

### **1.1.2 Mediators of the relationship between religiosity and SWB**

On the basis of a review of existing literature, Pargament, Smith, Koenig, and Perez (1998) concluded that the relationship between religiosity and subjective well-being appears to be mediated by at least six different factors. First, and perhaps most significantly, religion provides its adherents with an explanatory framework in relation to life's existential uncertainties, which in turn leads to an increased sense of life meaning and purpose. As such, the elevated levels of well-being that are often found to be associated with religiosity can at least in part be attributed to the heightened sense of life meaning that adherents derive from their religions. Second, one of the most significant pathways in which religiosity enhances subjective well-being is in providing its followers with an enhanced social support structure, which in turn, has been found to be one of the strongest of all predictors of subjective well-

being (Compton, 2005; Diener et al., 2011; Ganga & Kutty, 2013). Third, religiosity was also found to enhance subjective well-being by encouraging the adoption of healthier lifestyles. For example, in one study, religious adolescents were found to be less likely to smoke, and to abuse alcohol or drugs (Donahue & Benson, 1995). Fourth, religion has been found to promote personality integration, which supports higher levels of well-being. Fifth, religiosity is associated with a pattern of increased generativity, which involves spending personal time, resources, and energy for the benefit of others (Donahue & Benson, 1995) which in turn enhances personal life satisfaction (Pargament et al., 1998). Finally, religion promotes subjective well-being by providing individuals with a variety of different coping strategies, which include both private forms of coping such as prayer and faith, as well as social forms, such as receiving support from other members of a religious community (Pargament, 1997).

Another psychological variable that could likely play an important role in explaining the positive relationship that has been found between religiosity and SWB is hope (Snyder et al., 1991; Snyder, Sigmon, & Feldman, 2002). Hope theory (which is discussed in greater detail in section 1.4.2.1.) views hope as a multifaceted cognitive set consisting of two sub-components which include hope agency (an individual's belief that they have the capacity to achieve a desired goal) and hope pathway (an individual's belief that he or she will be able to find one or more pathways towards the attainment of a valued goal) (Snyder et al., 1991).

Hope has been found to be associated with a variety of positive mental health outcomes, such as enhanced subjective well-being (Snyder, et al., 2002), and lowered incidence of depressive symptoms (Chang et al., 2013).

On the basis of the tenets of hope theory, Snyder et al. (2002) hypothesised that many of the positive outcomes and psychological benefits associated with religion could be explained by hope. Other researchers believe that this hypothesis might be particularly applicable in the context of the 'salvation religions' (such as Christianity), in which hope is viewed as a central component of religious faith (Ciarrocchi, Dy-Liacco, & Deneke, 2008). However, this hypothesis does not appear to have received any significant scholarly attention, and relatively few studies exist which investigated the link between religiosity and hope. In one such study that was undertaken, Ciarrocchi et al. (2008) found that religiosity was a highly significant predictor of agency hope. Whilst religiosity was also found to predict pathway hope, this association was fairly weak. Echoing these findings, Ai, Peterson, Tice, Bolling, and Koenig (2004) also found that religiosity was a strong predictor of agency hope, but that it failed to predict pathway hope. Taken together, these findings suggest that religiosity appears to primarily impact agency hope. Existing literature as yet appear to offer little clear empirical explanation for these differential associations. It could perhaps be speculated that the religious belief in an all-powerful deity who is able to effect positive changes in an individual's life and provide him or her with the strength and support

needed to attain desired outcomes might enhance the experience of agency hope.

Similarly, Ciarrocchi and Heaven (2012) conducted a longitudinal study among a group of adolescents in which they found that a causal relationship exists between religious values and trait hope, which suggests that religion might play an instrumental role in promoting hope among adolescents. Nonetheless, these findings do not provide adequate or sufficient empirical support for the hypothesis that hope mediates the relationship that exists between religiosity and SWB. Despite this eventuality, very little international research could be located which focuses on this topic, and none at all were found which examined either direct or indirect relationships between the constructs of religiosity, hope, and subjective well-being in an African context. Among the few international studies that were conducted, Seligman (2002) briefly reports on the results of a study in which it was found that increased levels of well-being brought about by higher levels of religiosity were virtually completely accounted for by increases in hope. The study was conducted within the context of a number of different religious congregations in the U.S.A. According to their own claims, Chang et al. (2013) appear to have conducted the only study to date which focuses on the role played by hope as a mediating variable between religiosity and depressive symptoms. These researchers found that both pathway and agency hope acted as significant mediators as they successfully predicted the relationship between religiosity and the incidence of depressive

symptoms. However, as these authors point out, additional research is needed to ascertain whether or not hope would also be predictive of the positive mental health outcomes that have been associated with religion, such as positive affect and life satisfaction (Chang et al., 2013).

## **1.2 Problem Statement**

The inter-relationships between the constructs of religiosity, hope, and subjective well-being have not been well researched. This seems to be particularly the case in relation to the role played by hope as a mediating variable between religiosity and SWB. Additionally, existing studies that did investigate and confirm hope's role as mediator of other mental health outcomes such as coping and depression appear to have focused mostly on geriatric study populations (e.g. Van Ness & Larson, 2002), on those who have been diagnosed with clinical depression (e.g. Chang et al., 2013), or on those who are coping with life-threatening or severe illnesses such as cancer (e.g. Hasson-Ohayon, Braun, Galinsky, & Baider, 2009). Few studies appear to have examined the specific inter-relationships that exist between hope, religiosity, and subjective well-being, and none could be located that have done so within the contexts of study populations that are younger, relatively physically and mentally healthy, and non-clinical.

Furthermore, whilst research on this topic in general appear to be scant on an international level, it would seem that virtually no research has been done on the inter-relationships between religiosity, hope, and

SWB in the (South) African context. However, several cogent reasons exist to suggest that such research would be warranted and necessary. First, in light of the research findings indicating that the relationships between religiosity and various facets of psychological well-being and mental health are greatly moderated by cultural context (Argyle, 1999; Lavric & Flere, 2008; Leurent et al., 2013), the need arises to investigate the specific dynamics pertaining to whether, and in which ways religiosity, hope, and SWB are related in an (South) African context. Second, given that trait hope was found to play a critical role in affecting individual well-being (Ciarrocchi & Heaven, 2012), the relationships between this construct and other variables such as religiosity merits empirical attention. Third, hope has been found to be the most important source of general life meaning in the context of a group of South African university students (Nell, 2014), suggesting that an empirical investigation of the correlates and possible antecedents of this construct is highly relevant. Fourth, given that South Africa as a nation is a highly religious country in which 85% of the general population consider religion to constitute an important part of their daily lives (Diener, Tay, & Myers, 2011), it would be particularly important to investigate the role played by religion in fostering a sense of hope, and gaining a better understanding of how this relationship affects subjective well-being. Fifth, research conducted by Diener et al. (2011) shows that religion plays a particularly important role in affecting subjective well-being in nations where adverse and difficult life conditions such as social inequality and poverty are prevalent, as is

the case with the majority of African countries. In such countries, religion likely serves the role of providing supportive social structures and other related benefits that can significantly attenuate the harmful effects of such challenging and adverse social circumstances (Diener et al., 2011). It seems quite reasonable to hypothesize that hope might be one such benefit. Finally, if hope is found to mediate the relationship between religiosity and SWB, it would suggest that hope might play an important role as a form of religious coping. Such knowledge could be of practical use to those who are working in the context of religious institutions, and particularly to those working in counselling and therapeutic contexts with clients who are religious.

In light of the research problem discussed above, the following main research question was formulated to serve as basis for the present study:

- To what extent, if at all, is the relationship between religiosity and subjective well-being (which is comprised of the three sub-constructs of life satisfaction, positive affect, and negative affect) mediated by agency hope and pathway hope?

This primary research question gave rise to the following two secondary research questions:

- What direct relationships exist between agency hope, pathway hope, religiosity, and subjective well-being?
- What indirect relationships exist between agency hope, pathway hope, religiosity, and subjective well-being?

In light of the review of the literature, the following structural model was proposed, which outlines the hypothesized relationships between these variables (Figure 1).

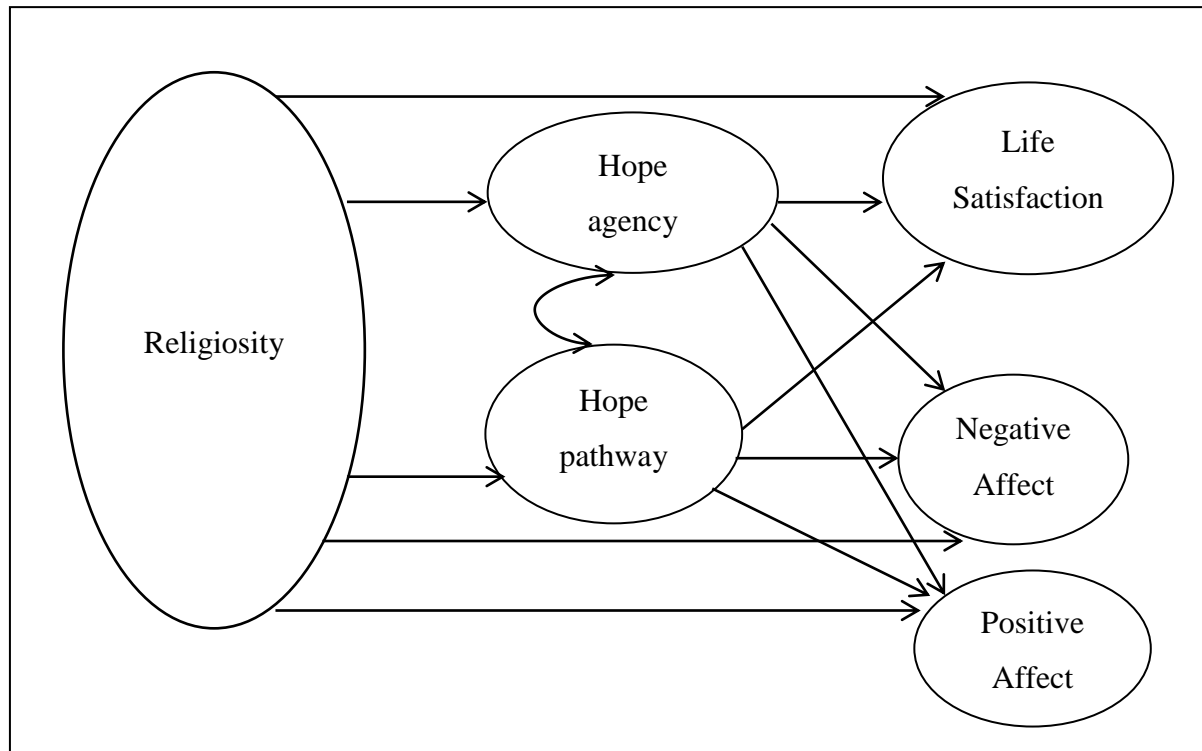


Figure 1. Hypothesised model

### 1.3 Research Objectives

The following general and specific research objectives were set for this study:

#### 1.3.1 General research objective

In light of the research questions outlined above, the general research objective of this study was to establish whether, and to what

extent, the relationship between religiosity and subjective well-being is mediated by agency hope and pathway hope.

### **1.3.2 Specific research objectives**

Following from the secondary research questions, two specific research objectives were set for the study: First, to investigate the direct relationships between agency hope, pathway hope, religiosity, and subjective well-being, and second, to investigate the indirect relationships between agency hope, pathway hope, religiosity, and subjective well-being.

## **1.4 Ontological, Epistemological, and Theoretical Framework of the Study**

This section is devoted to an overview of the ontological, epistemological and theoretical perspectives that framed the study.

### **1.4.1 Ontological and epistemological assumptions guiding the study**

It has long been noted that science is not a value-free endeavour (Sarantakos, 2013). As such, it is necessary that researchers make their ontological and epistemological assumptions explicit. The present study was conducted within the framework of an objectivist ontological position, and a positivist epistemological orientation. An objectivist ontology

assumes that an absolute truth exists, which is deemed to be independent of the researcher. In this ontology it is assumed that reality is objective, to some extent fixed, and that it is governed by certain patterned laws. In turn, a positivist epistemology, which is derived from an objectivist ontology, holds that the way in which we come to know about a certain phenomenon is via empirical and experiential routes. Evidence systematically observed via the senses or their extensions, and the controlled experiment, as reflected in the scientific method, are regarded as the only valid pathways to truth (Sarantakos, 2013). These assumptions give rise to a quantitative methodological position, in which research designs are carefully structured according to the dictates of the scientific method, resulting in rigorous, replicable, precise, and systematic processes of participant selection, data gathering, and data analysis. Whilst these represent ideal outcomes, they nevertheless served to guide the present study.

#### **1.4.2 Theoretical framework**

Within the broader ontological and epistemological framework outlined in the previous section, the present research was also guided by more specific theoretical frameworks and their associated empirical constructs. The most significant of these are hope theory, as proposed by Snyder et al. (1991), and the theory pertaining to subjective well-being (see Diener, 2009). More specifically, the constructs of *agency hope* and

*pathway hope* as used in this study are based on hope theory. The constructs of *life satisfaction*, *positive affect* and *negative affect* as measured in this study are based on the theory of subjective well-being. The following sections are devoted to a discussion of these theories and an overview of the constructs of religiosity and spirituality as they are used in this study.

#### **1.4.2.1 Hope theory**

According to the tenets of hope theory as proposed by Snyder et al. (1991), hope is viewed as a multifaceted cognitive set which in turn is comprised of two sub-components, referred to as hope agency, and hope pathway. Hope agency relates to the belief that one has the capacity and the ability to achieve a desired outcome or goal. In turn, hope pathway pertains to an individual's belief that he or she will be able to find or identify one or more specific pathways towards the achievement of personally valued goals.

#### **1.4.2.2 Subjective well-being**

As it has been conceptualised within the domain of positive psychology, subjective well-being (SWB) consists of three components. The first component involves a cognitive appraisal by an individual of the extent to which a person is satisfied with his or her own life. As such, this dimension represents the cognitive, evaluative component of SWB.

Second, subjective well-being involves the degree to which a person experiences general happiness or positive feelings, and third, SWB is characterized by relatively low levels of negative affect and neuroticism. Taken together, the combined relative level of positive and negative affect experienced by an individual is referred to as affect balance, and represents the affective dimension of subjective well-being. Whilst positive and negative affect were once regarded as two sides of a single continuum, recent research has clearly shown that these two components of SWB are relatively independent, even though a degree of controversy still lingers over this issue (Diener, 2009).

This overall conceptualization of SWB has several implications. First, it implies that SWB is concerned with subjective, rather than objective evaluations and conditions of a person's life. Whilst the latter conditions, which can include wealth, health, societal conditions, and the like, do function as potential influences on an individual's level of SWB, they are not seen as an inherent or necessary part of SWB (Diener, 2009; Veenhoven, 2010). Second, evaluations of subjective well-being do not only focus on the absence of the negative, but also actively focus on the extent to which positive outcomes such as positive affect and life satisfaction are present. Third, SWB measures are typically of a global, rather than a domain specific nature, and represent an overall assessment of an individual's subjective evaluation of their satisfaction and happiness with their lives as a whole (Diener, 2009; Veenhoven, 2010).

### ***1.4.2.3 Religiosity and spirituality***

When focusing on the construct of religiosity within the context of the psychology of religion, it is necessary to differentiate between religiosity and spirituality, which represent two related, yet conceptually distinct constructs. Whereas religiosity is generally seen as referring to the extent to which individuals identify with or endorse a particular organised belief system, which generally involves specific rituals, practices, and symbols that are typically associated with an element of reverence for the transcendent or sacred, spirituality is generally seen to refer to the extent to which individuals seek and experience a personal, individual sense of connection with the transcendent (Del Rio & White, 2012). However, despite the existence of such conceptual differences between these two constructs, they nonetheless appear to affect mental health and psychological well-being in very similar ways (Chang et al., 2013). However, to avoid the complications that could arise as a result of the conflation of these two constructs, the focus in the current study was restricted to religiosity. As such, even though the findings made in this study in relation to the relationship between religiosity, hope and SWB are likely to be fairly similar to those that would exist for spirituality, hope, and subjective well-being, this assumption has to be seen as tentative, and would require additional empirical substantiation.

## **1.5 Research Method**

The research method followed in the study consisted of an initial literature review, which was then followed by an empirical study. This section is devoted to an overview of these two research phases.

### **1.5.1 Phase 1: Literature review**

In any academic study, a literature review is required to ascertain whether and where any gaps, limitations, or shortcomings might exist in relation to the current understanding of a given topic. A literature review also serves to guide the formulation of the research question, to clarify empirical constructs, to sensitize the researcher to the most apt methodological approaches for studying the topic, and to provide a framework for interpreting the results of the study (Sarantakos, 2013). In the present study, the literature review focused on academic literature related to hope and hope theory, on subjective well-being theory, as well as on prior research pertaining to the inter-relationships between religiosity, hope, and various facets of SWB.

Relevant articles and other scholarly work that have been published between 1950 and 2014 have been identified using databases such as *EBSCOHOST*, *Google Scholar*, *Science Direct*, *Jstor*, *SABINET*, *ISI web of knowledge*, *SAePublications*, and *Emerald*. To guide the literature search, the following terms were used: hope, religiosity/religion, subjective well-being, positive affect, negative affect, and satisfaction with life/life-

satisfaction. To focus these searches, the terms 'Africa' and 'South-Africa' were sometimes added to further filter results in order to identify locally relevant studies on these topics.

During this process, the following journals were identified as containing articles relevant to the research topic: *The Journal of Psychology in Africa*, *The South African Journal of Psychology*, *The Journal of Happiness Studies*, *The Journal of Positive Psychology*, *Journal for the Scientific Study of Religion*, *Psychology of Religion and Spirituality*, *Journal of Psychology and Theology*, *Journal of Religious Health*, and the *Journal of Personality Psychology*, among others.

## **1.5.2 Phase 2: Empirical study**

This section provides an overview of the empirical phase of the study, and outlines matters pertaining to the research design, participant selection, data collection, research procedures, and data analysis related to the study.

### **1.5.2.1 Research design**

According to Mouton (2003), a research design is a blueprint or plan that outlines how a researcher intends to conduct his or her research, and as such, provides an outline of the type of study that is planned. A research design indicates what type of sampling method, data collection

strategies, and data analysis methods will be employed during the course of the study.

In light of the research aims guiding this study, which involve measurement of relationships between specific variables such as hope, religiosity, and SWB, this study followed a quantitative approach. More specifically, a cross-sectional survey approach was adopted as basis for this study. This approach, which is situated within a positivist ontology, allows the researcher to draw multiple samples from a given target population at one point in time (Sarantakos, 2013). It was deemed to be most suitable approach for investigating the mediational effects of hope in relation to religiosity and SWB as it would enable the findings to be generalized more effectively than would be the case with a purely qualitative inquiry. Within the cross-sectional design, latent variable modelling was used to assess the fit of the hypothesized model and to investigate whether the hypothesized indirect effects between religiosity, hope, and SWB exist. Latent variable modelling is a statistical methodology that adopts a confirmatory (and therefore hypothesis-testing) approach in relation to the analysis of a structural theory pertaining to some phenomenon. In latent variable modelling, the hypothesised model can be tested statistically to simultaneously analyse the entire system of variables and their hypothesised inter-relationships to determine the extent to which it is consistent with the data (Byrne, 2012).

### **1.5.2.2 Participants**

Data was gathered from three separate participant groups ( $n = 430$ ) using a non-probability convenience sampling method (Sarantakos, 2013). First, questionnaires were administered to a group of social science students in their third year of study at the Vaal-Triangle campus of the North-West University ( $n = 110$ ). These students were enrolled for a research methodology module (SOCL 321) as part of their graduate studies, and the completion of quantitative questionnaires formed part of the learning outcomes of this particular module. As additional educational outcome, and after receiving the necessary training, each student enrolled for this module has been required to administer at least two questionnaires to family members ( $n = 220$ ). Finally, a set of questionnaires was administered to a group of second year social science students ( $n = 100$ ) at the end of one of their introductory lessons in order to avoid any interference with these students' instructional time.

By including family members and friends of the first student group, the limitations that are usually inherent in convenience samples (Wagner, Kawulich, & Garner, 2012) are likely to be mitigated to some degree. Furthermore, this sampling strategy ensured that the sample is reasonably diverse in terms of demographic characteristics such as race, culture / language group, gender, and age, and also that the restrictions of working solely with a sample consisting of students would at least be partially overcome. Overall then, the benefits of this sampling method, which costs less and is more time-efficient than random sampling

methods (Sarantakos, 2013) were considered to outweigh its disadvantages. However, as this is still not a true probability sample, it could not be assumed that the sample would necessarily be representative of the wider target population from which it is drawn. As such, generalization of the results beyond the sample group should be done with circumspection.

### ***1.5.2.3 Measuring instruments***

Data was collected by means of a structured questionnaire. Such questionnaires typically have a rigid structure with a high degree of standardization and represent the most commonly used method of data collection in the social sciences (Sarantakos, 2013). The first section of the questionnaire was aimed at obtaining basic demographic information in relation to participants' age, gender, race, and language/cultural group. In the second section of the questionnaire, a variety of standardized questionnaires were used to measure participants' levels of hope, religiosity, and subjective well-being.

The Adult Trait-hope Scale (Snyder et al., 1991) was used to measure hope. This scale consists of 12 items (of which 4 items are fillers) measured on an 8-point scale ranging from 'definitely false' to 'definitely true'. Four items measure hope agency, which pertain to an individual's sense of successful determination in striving towards valued goals (e.g. 'I've been pretty successful in life.'). The remaining 4 items measure the construct of pathway hope, which relate to a person's

cognitive appraisal of his or her capacity to generate the means necessary for surmounting obstacles and reaching important goals (e.g. 'Even when others get discouraged, I know I can find a way to solve the problem.'). This scale has exhibited acceptable test-retest reliability which ranged from 0.85 to 0.82 over a time period of three to ten weeks respectively. Furthermore, internal consistency of the scale as a whole ranged from 0.74 to 0.84, with even higher levels reported for the respective subscales of agency and pathway hope (Snyder et al., 1991).

Religiosity was measured by means of three items. The first of these requested participants to provide a rating of how religious they consider themselves to be on a 5-point scale which ranged from 'not at all' to 'extremely'. In previous research, this particular item was found to be highly reliable, offering results which were as reliable as those based on multi-item measures of religiosity (Dollinger & Malmquist, 2009). However, to allow for latent variable modelling to be performed, two additional items assessing religiosity were included. First, participants were asked to rate the frequency of personal prayer on a 5-point scale which ranges from 'never or almost never' to 'more than once a day'. In the final item, participants were requested to indicate how often they attend religious gatherings or services on a 5-point scale which ranges from 'never' to 'more than once a week'.

Subjective well-being was measured by the Satisfaction with Life Scale (SWLS) (Diener, Emmons, Larsen, & Griffin, 1985) as well as the Positive and Negative Affect Schedule (PANAS) (Watson, Clark, &

Tellegen, 1988). More specifically, the SWLS was used to assess life satisfaction, which constitutes the cognitive dimension of SWB. The PANAS was used to measure positive and negative affect, which comprise the affective dimension of subjective well-being. The PANAS consists of 20 items, of which 10 are summed to measure positive affect (PA), and 10 are summed to measure negative affect (NA). Participants were requested to rate the frequency with which they experience specific emotions (which include example items such as feeling interested, nervous, irritable, afraid, ashamed, strong, active, and inspired) on a 5-point verbal scale ranging from 'very slightly or not at all' to 'extremely'. Whilst a variety of time frames have been used to frame participants' responses in the context of the PANAS, for the purpose of the present study, following Crawford and Henry (2004), participants were requested to rate the frequency with which they experienced these emotions 'during the past week'. Validation studies among a large adult population in the UK indicated that the PANAS possesses sound psychometric properties, with alpha levels of 0.89 for items on the PA subscale, and 0.85 for the NA subscale indicating high levels of scale reliability. The scale was also found to exhibit measurement invariance across several demographic subgroups (Crawford & Henry, 2004).

The SWLS (Diener et al., 1985) comprises 5 items that are measured on a 7-point Likert-type scale which ranges from 'strongly disagree' to 'strongly agree'. Sample items include 'So far I have gotten the important things I want in life', and, 'If I could live my life over, I

would change almost nothing'. The items of the SWLS exhibit good internal consistency, with a Cronbach alpha of 0.87 over a two-month period. Sound test-retest reliability has also been found over the same time period, with correlations of 0.82 being reported (Diener et al., 1985). The SWLS has been found to be reliable and valid for use in a South African context (Wissing et al., 1999).

#### ***1.5.2.4 Research procedure***

Students who were enrolled for a research methodology module at the North-West University (SOCL321) were requested, as part of their learning outcomes for this particular module, to both personally complete, and to administer the structured questionnaire used in this study to family members. However, to do so in an ethical manner, each questionnaire contained an opt-out section in which students could indicate that whilst they would complete the questionnaire for didactic purposes, they did not wish for their questionnaires to be used for research purposes. Doing so would not incur any penalty in the way in which the activity was to be assessed (as 'complete' or 'not complete'). No questionnaire where students have checked this opt-out box was utilized in the study. Students completed the questionnaires during a practical class period in a pencil and paper format. The questionnaires took around 30 minutes to complete. As part of the module, students also received training in administering questionnaires. Once this training was completed, students

were required to administer at least two questionnaires to friends and/or family members.

Finally, a notice was circulated to a group of second year social science students which outlined the purpose of the study, and which requested students to participate in the study by completing the questionnaires at the end of one of their scheduled contact sessions in exchange for 2% credit on their participation marks. Questionnaires were completed in a pencil and paper format during the contact session.

#### ***1.5.2.5 Data analysis***

Data from the questionnaires were captured by the statistical consultation services of the North-West University. Following this, the data was analysed in SPSS 22 (SPSS Inc., 2009). First, the data set was screened for errors and outliers following the procedure outlined in Field (2005). Once this process was completed, descriptive statistics such as the mean, mode, variance, standard deviation, range, skewness, and kurtosis were calculated for all items, scales, and subscales, in order to obtain an overview of the data.

The data set was then transposed into Mplus Version 7.11 (Muthén & Muthén, 2012) to test measurement and structural models. First, correlations were computed between all continuous variables in order to obtain an initial overview of the relationships.

To calculate the reliabilities of scales, the procedure to compute composite reliability (Raykov, 2009) was used in preference to the

conventional procedure of computing Cronbach alpha coefficients. The former procedure enables the factor loadings of each item onto its associated latent construct to be taken into account, and therefore provides a more accurate reliability estimate than is the case with Cronbach Alpha, in which all items are assumed to contribute equally to their latent constructs.

Following this, the relationships between the constructs were examined by means of latent variable modelling (Byrne, 2012; Hair, Black, Babin, & Andersen, 2010). Maximum likelihood estimation with robust standard errors (MLR estimation) was used to estimate the covariance matrix, as it (unlike the more commonly used maximum likelihood (ML) estimator) is considered to be a robust estimator that is not significantly affected by multivariate kurtosis that might exist in a given data set (Wang & Wang, 2012). Following this, an initial measurement model was specified and tested. In this model, the 6 latent variables of religiosity (measured by 3 items), hope agency (measured by 4 items), hope pathway (measured by 4 items), life satisfaction (5 items), positive affect (10 items) and negative affect (10 items) were all allowed to co-vary.

To facilitate a comparative analysis, two competing measurement models were specified and similarly tested. In order to assess the fit of these models, the Tucker-Lewis index (TLI;  $> 0.90$ ), as well as the comparative fit index (CFI;  $> 0.90$ ), the Standardized Root Mean-square Residual (SRMR;  $< 0.08$ ), and the Root Mean Square Error of

Approximation (RMSEA; < 0.80) were used as evidence of acceptable fit (Byrne, 2012). To compare the fit between competing models, the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC) were used, with the model with the lowest values on these indices representing the best-fitting and most parsimonious model (Byrne, 2012). The best fitting model was then subjected to a process of model development in order to improve its level of fit, and was thereafter re-specified as a structural model and again compared with competing structural models. However, as the model was specified using MLR estimation, comparison of the AIC and BIC values, as well as regular chi-square difference testing could not be conducted. Instead, the Satorra-Bentler scaled (mean-adjusted) chi-square differences test was used to compare the fit among the competing structural models. In this test, the usual normal-theory chi-square statistic that is obtained is divided by a scaling correction in order to better approximate a chi-square value under conditions of non-normality. To compute the chi-square difference test the following formula was used:  $cd = (d_0 * c_0 - d_1 * c_1) / (d_0 - d_1)$ , in which  $cd$  represents the difference test scaling correction,  $d_0$  the degrees of freedom in the nested model,  $c_0$  the scaling correction factor for the nested model,  $d_1$  the degrees of freedom in the comparison model, and  $c_1$  the scaling correction factor for the comparison model. The Satorra-Bentler scaled chi-square difference test (TRd) was then calculated using the formula:  $TRd = (T_0 * c_0 - T_1 * c_1) / cd$ , where  $T_0$  and  $T_1$  represent the

MLR chi-square values for the nested and comparison model, respectively (Muthén & Muthén, 2014).

Once the best fitting structural model was identified, the model was tested in Mplus for the presence and significance of indirect effects between religiosity, hope (pathway and agency), and life satisfaction, positive affect, and negative affect. To verify that the indirect effects were statistically significant, two-sided bias-corrected 95% confidence intervals (CI's) were constructed, following the procedure outlined by Hayes (2013). However, Muthén and Muthén (2014) point out that bootstrapping cannot be used with MLR estimation. This is the case as bootstrapping affects the standard errors of a model (which differ depending on whether ML or MLR estimation is used), but not the parameter estimates (which are similar for ML and MLR estimation). As such, the model was re-estimated using ML estimation before the bootstrapping procedure was conducted.

## **1.6 Ethical Considerations**

The present study (which formed part of a more comprehensive investigation of the relationship between spirituality and psycho-social well-being) was approved by the NWU ethics committee (ethics number: FH-SB-2013-0002). Several aspects related to the ethics of the study have already been discussed at some length in previous sections (e.g. section 1.5.2.4). To avoid unnecessary repetition, these matters will not

be restated, and the remainder of this section will be devoted to an overview of additional ethical matters pertaining to the study.

Full informed and signed consent was obtained from all participants after they had been informed of the nature and scope of the study. Participants were also clearly informed that their participation was voluntary, and were assured of their right to withdraw from the research at any time without penalty. It was explained to all participants that their responses would be treated confidentially and that all identifying particulars would be removed from the completed questionnaires. Feedback was provided to those participants who requested this. No physical or psychological harm was anticipated to occur as a result of the study, and no such eventualities arose during the course of the study.

### **1.7 Chapter Division of the Mini-dissertation**

The following presents an outline of the chapter division of this mini-dissertation, which has been written in the article format in accordance with the NWU policy pertaining to this mode of presentation.

Chapter 1: Introduction, problem statement, and objectives

Chapter 2: Article: Hope, religiosity, and subjective well-being

Chapter 3: Conclusions, limitations, and recommendations

## **1.8 Chapter Summary**

This chapter served to introduce the present study by providing contextual background and a review of existing literature in relation to the central research aim guiding the study, which involves an investigation of the direct and indirect relationships between religiosity, hope, and subjective well-being. In addition to outlining these and other objectives of the study, the research procedure that was followed in the study was elucidated, and the ontological, epistemological, and theoretical frameworks that guide the study were discussed. The aim of this chapter is to serve as a backdrop for the presentation and discussion of the empirical findings that were made during the course of this study. Chapter 2 presents the bulk of these findings in the form of a research article (which is in accordance with the article format as specified by the NWU). The third and final chapter is devoted to an overview of the implications, limitations, and recommendations relating to the study.

## References

- Ai, A. L., Peterson, C., Tice, T. N., Bolling, S. F., & Koenig, H. G. (2004). Faith-based and secular pathways to hope and optimism subconstructs in middle-aged and older cardiac patients. *Journal of Health Psychology, 9*, 435–450.
- Argyle, M. (1999). Causes and correlates of happiness. In D. Kahneman, E. Diener, & N. Schwartz (Eds.), *Well-being: The foundation of hedonic psychology* (pp. 353–373). New York, NY: Russell Sage Foundation.
- Byrne, B. M. (2012). *Structural equation modelling with Mplus: Basic concepts, applications, and programming*. New York, NY: Routledge.
- Chang, E. C., Kahle, E. R., Yu, E. A., Lee, J. Y., Kupfermann, Y., & Hirsch, J. K. (2013). Relations of religiosity and spirituality with depressive symptoms in primary care adults: Evidence for hope agency and pathway as mediators. *The Journal of Positive Psychology, 8*, 314–321.
- Ciarrocchi, J. W., Dy-Liacco, G. S., & Deneke, E. (2008). Gods or rituals? Relational faith, spiritual discontent, and religious practices as predictors of hope and optimism. *The Journal of Positive Psychology, 3*, 120–136.
- Ciarrocchi, J. W., & Heaven, P. C. L. (2012). Religious values and the development of trait hope and self-esteem in adolescents. *Journal for the Scientific Study of Religion, 51*, 676–688.

- Compton, W. C. (2005). *An introduction to positive psychology*. Belmont, CA: Wadsworth.
- Crawford, J. R., & Henry, J. D. (2004). The Positive and Negative Affect Schedule (PANAS): Construct validity, measurement properties and normative data in a large non-clinical sample. *British Journal of Clinical Psychology, 43*, 245–265.
- Del Rio, C. M., & White, L. J. (2012). Separating spirituality from religiosity: A holymorphic attitudinal perspective. *Psychology of Religion and Spirituality, 4*, 123–142.
- Diener, E. (2009). Subjective well-being. In E. Diener (Ed.), *The science of well-being: The collected works of Ed Diener* (pp. 11–58). New York, NY: Springer.
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment, 49*, 71-75.
- Diener, E., Tay, L., & Myers, D. G. (2011). The religion paradox: If religion makes people happy, why are so many dropping out? *Journal of Personality and Social Psychology, 101*, 1278–1290.
- Dollinger, S. J., & Malmquist, D. (2009). Reliability and validity of single-item self-reports: With special reference to college students' alcohol use, religiosity, study, and social life. *Journal of General Psychology, 136*, 321–241.
- Donahue, M., & Benson, P. (1995). Religion and the well-being of adolescents. *Journal of Social Issues, 51*, 145-160.

- Field, A. (2005). *Discovering statistics using SPSS*. London, United Kingdom: SAGE Publications.
- Ganga, N. S., & Kutty, V. R. (2013). Influence of religion, religiosity and spirituality on positive mental health of young people. *Mental Health, Religion & Culture, 16*, 435-443.
- Hackney, C. H., & Sanders, G. S. (2003). Religiosity and mental health: a review of the empirical literature. *Journal of Psychology and Theology, 19*, 6-25.
- Hair, J. F., Black, W. C., Babin, B. J., & Andersen, R. E. (2010). *Multivariate data analysis: A global perspective*. Upper Saddle River, NJ: Pearson.
- Hasson-Ohayon, I., Braun, M., Galinsky, D., & Baider, L. (2009). Religiosity and hope: A path for women coping with a diagnosis of breast cancer. *Psychosomatics, 50*, 525-533.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: The Guilford Press.
- Lavric, M., & Flere, S. (2008). The role of culture in the relationship between religiosity and well-being. *Journal of Religious Health, 47*, 164-175.
- Leurent, B., Nazareth, I., Bellon-Saameno, J., Geerlings, M. I., Maarros, H., Saldivia, S., ... King, M. (2013). Spiritual and religious beliefs as risk factors for the onset of major depression: an international cohort study. *Psychological Medicine, 43*, 2109-2120.

- Mouton, J. (2003). *How to succeed in your master's and doctoral studies*. Pretoria, South Africa: Van Schaik Publishers.
- Muthén, L. K., & Muthén, B. O. (2012). *Mplus user's guide* (6th ed.). Los Angeles, CA: Muthén & Muthén.
- Muthén, L. K., & Muthén, B. O. (2014). Chi-Square Difference Testing Using the Satorra-Bentler Scaled Chi-Square. Retrieved from <http://www.statmodel.com/chidiff.shtml>
- Nell, H. W. (2014). Sources of life meaning among South African university students. *Journal of Psychology in Africa, 24*, 129-143.
- Pargament, K. I. (1997). *The psychology of religion and coping: Theory, research, and practice*. New York, NY: Guilford.
- Pargament, K. I., Smith, B. W., Koenig, H. G., & Perez, L. M. (1998). Patterns of positive and negative religious coping with major life stressors. *Journal for the Scientific Study of Religion, 37*, 710-724.
- Park, J. I., Hong, J. P. Park, S., & Cho, M. J. (2012). The relationship between religion and mental disorders in a Korean population. *Psychiatry Investigation, 9*, 29-35.
- Raykov, T. (2009). Evaluation of scale reliability for unidimensional measures using latent variable modelling. *Measurement and Evaluation in Counseling and Development, 42*, 223-232.
- Sarantakos, S. (2013). *Social research*. London, United Kingdom: Palgrave Macmillan.
- Seligman, M. E. P. (2002). *Authentic happiness*. New York, NY: Free Press.

- Snyder, C. R., Harrison, C., Anderson, J. R., Holleran, S. A., Irving, L. M., Sigmon, S. T., ... Harney, P. (1991). The will and the ways: development of an individual-differences measure of hope. *Journal of Personality Psychology, 60*, 570–585.
- Snyder, C. R., Sigmon, S. T., & Feldman, D. B. (2002). Hope for the scared and vice versa: Positive goal-directed thinking and religion. *Psychological Inquiry, 13*, 234–238.
- SPSS Inc. (2009). *SPSS for Windows*. Chicago, IL: Author.
- Van Ness, P. H., & Larson, D. B. (2002). Religion, senescence, and mental health. *American Journal of Geriatric Psychiatry, 10*, 386–397.
- Veenhoven, R. (2010). Greater happiness for a greater number: Is that possible and desirable? *Journal of Happiness Studies, 11*, 605–629.
- Wagner, C., Kawulich, B. B., & Garner, M. (2012). *Doing social research: A global context*. London, United Kingdom: McGraw-Hill.
- Wang, J., & Wang, X. (2012). *Structural equation modeling: Applications using Mplus*. West Sussex, United Kingdom: Wiley.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS Scales. *Journal of Personality and Social Psychology, 47*, 1063–1070.
- Wissing, M. P., Thekiso, S., Stapelberg, R., Van Quickelberge, L., Choabi, P., Moroeng, C., & Nienaber, A. (1999, July). *The psychometric properties of scales measuring psychological well-being in an*

*African group: The THUSA study.* Paper presented at the International Africa Psychology Congress, Durban, South Africa.

## **CHAPTER 2**

### **RESEARCH ARTICLE**

## **HOPE, RELIGIOSITY, AND SUBJECTIVE WELL-BEING**

### **Abstract**

This study explored the relationship between religiosity, hope, and subjective well-being among 430 participants (28.8% male, 88.4% black, 8.4% white) residing in the Gauteng province of South Africa. A cross-sectional quantitative survey design was used. Data was gathered using a measure of religiosity, the Adult Trait-hope Scale, the Satisfaction with Life Scale, and the Positive and Negative Affect Schedule. The results revealed that agency hope (but not pathway hope) acted as a significant mediator of the relationship between religiosity and life satisfaction, positive affect, and negative affect. This suggests that the elevated levels of subjective well-being often found in relation to religiosity can at least in part be attributed to the fact that religion is associated with elevated levels of agency hope.

*Keywords: hope, religiosity, subjective well-being, satisfaction with life, positive affect*

## **Religiosity and Subjective Well-being**

In recent years, a growing body of research has sought to investigate the relationship between religiosity and various facets of subjective well-being (SWB). Whilst most studies report a small to moderate positive relationship between these two constructs (Argyle, 1999; Diener, Tay, & Myers, 2011; Hackney & Sanders, 2003; Lavric & Flere, 2008), others find either no relationship, or even a negative relationship in which higher levels of religiosity were associated with an increased likelihood and incidence of negative affect or depression (Leurent et al., 2013; Diener et al., 2011; Lavric & Flere, 2008; Park, Hong, Park, & Cho, 2012). These findings suggest that the relationship between religiosity and psychological well-being is a complex one that is both mediated and moderated by other variables. In a moderational sense, various demographic factors have been found to significantly affect the relationship between religiosity and well-being. Specifically, relationships between religiosity and well-being tend to be somewhat stronger for women, older persons, African Americans (when compared to Caucasian Americans), and those who actively and publically participate in their religions (Argyle, 1999; Compton, 2005; Diener et al., 2011). Cultural context in particular appears to play such a significant role that, on the basis of their findings, as well as on their review of existing literature, Leurent et al. (2103) claim that findings related to the relationship between religiosity and well-being in any specific population may likely not generalise to another. Lavric and Flere (2008) echo these

views when they conclude that “there is no single, cross-culturally present relationship between religious orientation and psychological well-being” (p. 172). Specifically, these authors found that the correlation between religiosity and subjective well-being was significantly higher in cultures with high levels of religiosity than in countries with lower levels of religiosity. In the latter case, correlations were often found to be non-significant, or even negative (2008).

Furthermore, Diener et al. (2011) conducted a study in 153 nations, and found that social conditions in a given country was a strong and significant predictor of both individual and national levels of religiosity, with those living in countries with challenging social conditions being significantly more religious than those residing in countries with high levels of prosperity and national harmony, where religiosity levels are often found to be very low.

### **Mediators of the Relationship between Religiosity and SWB**

A review of existing literature by Pargament, Smith, Koenig, and Perez (1998) found that the relationship between religiosity and subjective well-being was mediated by at least six factors. First, religion provides a sense of life meaning and purpose, suggesting that higher levels of well-being associated with religiosity can at least in part be attributed to the enhanced sense of life meaning that adherents derive from their religions. Second, religiosity enhances well-being by providing its adherents with social support, which in turn, is one of the strongest

predictors of well-being (Compton, 2005; Diener et al., 2011). Third, religiosity was also found to be positively related to well-being by encouraging the adoption of healthier lifestyles. A fourth way in which religiosity was found to enhance SWB was by promoting personality integration. Fifth, higher levels of religiosity were found to lead to increased levels of generativity, which involves spending time and energy for the benefit of others (Donahue & Benson, 1995). In turn, such generativity has been found to predict higher levels of well-being (Pargament et al., 1998). Finally, religion enhances subjective well-being by providing people with a variety of coping strategies, which include both private forms of coping such as prayer and faith, as well as social forms such as receiving support from other members of a religious community (Pargament, 1997).

One additional psychological variable that might play a particularly important role in understanding the positive associations of religiosity with subjective well-being is hope. According to hope theory (Snyder et al., 1991), hope is a multifaceted cognitive set which comprises two sub-components. First, *hope agency* refers to the belief that one has the capacity to attain a desired goal or outcome. Second, *hope pathway* represents the belief by the individual that he or she will be able to find one or more specific pathways towards the attainment of valued goals. On the basis of hope theory, Snyder, Sigmon, and Feldman (2002) postulated that many of the benefits of religion could potentially be explained by hope. This hypothesis might be particularly salient in the

context of 'salvation religions' such as Christianity, in which hope features as an integral component of faith (Ciarrocchi, Dy-Liacco, & Deneke, 2008). However, relatively few empirical studies investigated this link. Among those that did, Ciarrocchi et al. (2008) found that agency hope in particular, and to a much lesser extent, pathway hope were significantly predicted by religiosity. Similarly, in a group of patients awaiting cardiac surgery, Ai, Peterson, Tice, Bolling, and Koenig (2004) also found religiosity to be a significant predictor of agency hope, but not of pathways-hope, suggesting that these two facets of hope are related to religiosity in different ways. Ciarrocchi and Heaven (2012) conducted a longitudinal study among adolescents in which they established that there is a causal relationship between religious values and trait hope, suggesting that religiosity might play an instrumental role in promoting hope among adolescents. However, these findings do not provide sufficient empirical support for the hypothesis that hope may mediate the relationship between religiosity and subjective well-being.

### **Religiosity, Hope, and Subjective Well-being**

Subjective well-being comprises three components. First, it involves a cognitive evaluation of the extent to which an individual is satisfied with his or her life. Second, it involves the extent to which an individual experiences positive feelings or general happiness, and finally, subjective well-being is characterised by low levels of neuroticism or negative affect (Compton, 2005).

In examining the relationship between religiosity and well-being within the context of the psychology of religion, it is important to differentiate between the two related, yet conceptually distinct constructs of religiosity and spirituality. Whereas religiosity is usually taken to refer to the degree to which individuals endorse a particular belief system, which involves specific practices, rituals, or symbols that are associated with reverence for the transcendent or sacred, spirituality is typically taken to refer to the degree to which persons seek and experience a personal sense of connection with the transcendent (Del Rio & White, 2012). Despite conceptual differences, however, these constructs have been found to affect mental health in a very similar way (Chang et al., 2013). However, to avoid the conflation of these constructs, the present study will focus only on religiosity.

The relationships between religiosity, hope, and SWB, and especially the role of hope as mediator between religiosity and SWB have not been well researched. Furthermore, existing studies that investigated and confirmed the role of hope as mediator of various other mental health outcomes such as depression and coping have mostly focused on either geriatric populations (Van Ness & Larson, 2002), those who are clinically depressed (Chang et al., 2013), or are coping with severe or life threatening illnesses such as cancer (Hasson-Ohayon, Braun, Galinsky, & Baider, 2009). In the latter study, hope was found to be a mediator between religiosity and three different coping styles among a group of 233 Israeli women diagnosed with breast cancer (Hasson-Ohayon et al.).

Chang et al. (2013) conducted the only study to date on the role of hope as mediator between religiosity and depressive symptoms, and found that both hope pathway and hope agency acted as significant mediators in predicting the relationship between religiosity and depressive symptoms. However, as these authors also point out, additional research is required to ascertain if hope would also predict positive mental health outcomes associated with religion such as subjective well-being (Chang et al., 2013).

Overall, relatively few studies seem to have investigated the specific relationships between hope, religiosity, and SWB, and none appear to have done so within the context of younger, non-clinical, and relatively healthy target populations. Of the few international studies that do exist, Seligman (2002) reports on a study which found that increases in hope virtually completely accounted for increased levels of well-being brought about by higher levels of religiosity within the context of a number of religious congregations in the United States.

Additionally, whilst research on this topic seem to be scant on an international level, it appears that virtually no research at all has been conducted on the relationship between religiosity, hope, and well-being in the (South) African context. In the light of findings that relationships between variables such as religiosity and various facets of psychological well-being are greatly moderated by cultural context (Argyle, 1999; Lavric & Flere, 2008; Leurent et al., 2013), a need exists to better understand whether, and in what ways religiosity, hope and well-being are related in

an (South) African context. Given that trait hope has been found to be critical for individual well-being (Ciarrocchi & Heaven, 2012); that hope has been found to be the most important source of life meaning within the context of a group of South African university students (Nell, 2014), and given that South Africa is a highly religious country where 85% of the population consider religion an important part of their lives (Diener et al., 2011), it would be particularly important to investigate the role played by religion in fostering a sense of hope, and gaining a better understanding of how this relationship affects subjective well-being. Additionally, research by Diener et al. (2011) suggests that religion plays an especially important role in affecting well-being in countries where difficult life circumstances such as poverty and social inequality are prevalent, as is the case with the majority of African countries. In these countries, religion likely provides supportive social structures and other benefits that can significantly dampen the harmful effects of such adverse social circumstances (Diener et al., 2011). It is plausible that hope might be one such benefit. Furthermore, a better understanding of the extent to which hope might constitute a form of religious coping could be of practical use to those working within the context of religious institutions, and particularly to those working in counselling and therapeutic contexts with clients who are religious.

## Study Aim

The main aim of this study was to establish whether, and to what extent the relationship between religiosity and subjective well-being is mediated by hope agency and hope pathway. A secondary aim was set to investigate both the direct and the indirect relationships between hope agency, hope pathway, religiosity, and subjective well-being. In light of the review of the literature, the following structural model is proposed, which outlines the hypothesized relationships between these variables (Figure 1).

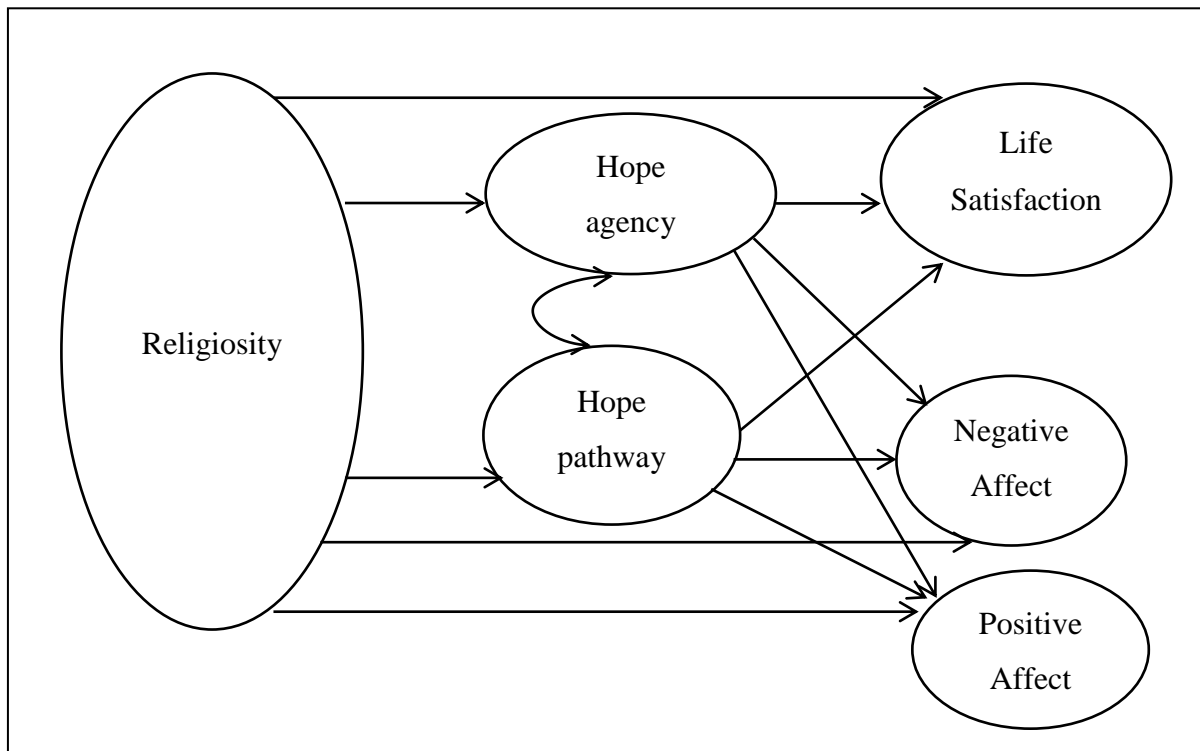


Figure 1. Hypothesised model

This model proposes that positive relationships exist between religiosity and agency hope (hypothesis 1), as well as between religiosity and pathway hope (hypothesis 2). It also proposes that these three

variables are in turn positively related to both life satisfaction and positive affect, but negatively associated with negative affect. Specifically, it is proposed that religiosity is positively associated with life satisfaction (hypothesis 3), and with positive affect (hypothesis 4), and negatively associated with negative affect (hypothesis 5). Furthermore agency hope is expected to be positively related to life satisfaction (hypothesis 6) and positive affect (hypothesis 7), and negatively associated with negative affect (hypothesis 8). Likewise, pathway hope is proposed to be positively associated with life satisfaction (hypothesis 9) and positive affect (hypothesis 10), and negatively associated with negative affect (hypothesis 11). The model also proposes that indirect (mediation) effects exist between religiosity, (pathway and agency) hope, and life satisfaction, positive affect, and negative affect.

## **Method**

### **Research Design**

A quantitative cross-sectional survey approach (Sarantakos, 2013) was adopted in this study. The research approach was descriptive, exploratory, and correlational. Within the cross-sectional survey design, latent variable modelling was used to assess the fit of the hypothesized measurement and structural models and to investigate indirect effects between variables.

## **Participants**

Data was gathered from three different participant groups ( $n = 430$ ) by employing a non-probability convenience sampling method (Sarantakos, 2013). First, questionnaires were administered to 110 social science students in their final undergraduate year of study at the North-West University. As part of their studies, these students were enrolled for a research methodology module, and were requested to complete the questionnaires as part of their course requirements. As additional educational outcome, and after the students received the necessary training, each student was also required to administer two questionnaires to family members ( $n = 220$ ). A final set of questionnaires was administered to a group of 100 social science students who volunteered to complete the surveys at the end of one of their introductory lectures.

The ages of the participant group as a whole varied from 17 to 53 years (Mean = 22.54,  $SD = 6.47$ ). The characteristics of the participant group are set out in Table 1.

Table 1

*Characteristics of the Participants (N = 430)*

| Item           |                | Frequency | Percentage |
|----------------|----------------|-----------|------------|
| Gender         | Male           | 124       | 28.8       |
|                | Female         | 302       | 70.2       |
| Race           | Black          | 380       | 88.4       |
|                | White          | 36        | 8.4        |
|                | Coloured       | 7         | 1.6        |
|                | Asian          | 2         | 0.5        |
| Cultural group | Sesotho        | 167       | 38.8       |
|                | isiZulu        | 78        | 18.1       |
|                | Setswana       | 50        | 11.6       |
|                | isiXhosa       | 36        | 8.4        |
|                | Afrikaans      | 25        | 5.8        |
|                | English        | 25        | 5.8        |
|                | Northern Sotho | 23        | 5.3        |
|                | Other          | 22        | 5.1        |

It was intended that the inclusion of students' family members in the sample would to some extent mitigate the limitations that tend to characterise convenience samples (Wagner, Kawulich, & Garner, 2012). Furthermore, this sampling strategy ensured that the participant sample was reasonably diverse in terms of demographic characteristics such as gender and age, as well as cultural, language, and racial groupings. It also ensured that the limitations of working solely with a student sample would at least be partially overcome.

## **Measuring Instruments**

Data were collected by means of a battery of structured questionnaires. The first section of the questionnaire aimed at obtaining demographic information about participants' age, gender, race, and cultural group. The second section of the questionnaire was comprised of several standardized measurement instruments designed to measure participants' levels of hope, religiosity, and subjective well-being.

To measure hope, the Adult Trait-hope Scale (Snyder et al., 1991) was used. This scale is comprised of 12 items (of which 4 items are used as fillers) which are measured on an 8-point scale ranging from 'definitely false' to 'definitely true'. Four items measure hope agency, which relate to a person's sense of successful determination in striving towards valued goals (e.g. 'I meet the goals I set for myself'). The remaining 4 items measure pathways hope, which pertain to an individual's cognitive appraisal of their capacity to generate the means necessary for surmounting obstacles and reaching their goals (e.g. 'There are lots of ways around any problem'). This scale has shown acceptable test-retest reliability ranging from 0.85 to 0.82 over a period of three to ten weeks respectively. Furthermore, internal consistency of the total scale was found to range from 0.74 to 0.84, with higher levels reported for the individual subscales (Snyder et al., 1991).

To measure religiosity, a three-item questionnaire was used. The first question requested participants to rate how religious they considered themselves to be on a 5-point scale ranging from 'not at all' to

'extremely'. This item has been found to be highly reliable, and to offer results that are as reliable as those derived from multi-item measures of religiosity (Dollinger & Malmquist, 2009). However, in order to enable latent variable modelling to be performed on the data, participants were also asked two additional questions aimed at measuring religiosity. First, participants were requested to rate the frequency with which they engage in prayer on a 5-point scale ranging from 'never or almost never' to 'more than once a day'. The final item requested participants to indicate how often they attend religious services or gatherings on a 5-point scale ranging from 'never' to 'more than once a week'.

Finally, subjective well-being was measured by means of the Satisfaction with Life Scale (SWLS) (Diener, Emmons, Larsen, & Griffin, 1985) and the Positive and Negative Affect Schedule (PANAS) (Watson, Clark, & Tellegen, 1988). The SWLS (Diener et al., 1985) consists of 5 items which are measured on a 7-point scale ranging from 'strongly disagree' to 'strongly agree'. Sample items include: 'I am satisfied with my life' and 'The conditions of my life are excellent'. The items of this scale were found to exhibit good internal consistency, with a Cronbach alpha coefficient of 0.87. Furthermore, the SWLS has sound test-retest reliability, with correlations of 0.82 over a two-month time period (Diener et al., 1985). Wissing et al. (1999) found the SWLS to be reliable and valid for use in a South African context.

The PANAS is comprised of 20 items, of which 10 measure positive affect (PA), and 10 measure negative affect (NA). Participants were asked

to rate the frequency with which they experience specific positive and negative emotions (example items include feeling jittery, afraid, ashamed, interested, excited, and inspired) on a 5-point verbal scale that ranges from 'very slightly or not at all' to 'extremely'. Whereas several time frames have been used to frame participants' responses to the items in the PANAS, in the present study, following Crawford and Henry (2004), participants were asked to rate the frequency with which they experienced these emotions 'during the past week'. Validation studies among a large adult population in the United Kingdom revealed that the PANAS possesses robust psychometric properties, with Cronbach alpha coefficients of 0.89 for items on the PA subscale and 0.85 for the NA subscale, indicating high levels of inter-item reliability. The scale also exhibited measurement invariance across various demographic subgroups (Crawford & Henry, 2004).

### **Research Procedure**

Students enrolled for a research methodology module at a South African university were requested (as part of the learning outcomes for this module) to complete the questionnaires during a practical class period in a pencil and paper format. As part of the didactic outcomes set for this module, students also received training in administering questionnaires. Once this training was completed, these students were each required to administer two questionnaires to family members.

Finally, a notice was circulated to a group of undergraduate social science students which outlined the purpose of the study and requested students to participate in the study by completing the questionnaires at the close of one of their scheduled introductory lectures in exchange for 2% credit on their participation marks.

### **Data Analysis**

Data from the questionnaires were captured by the statistical department of the university. Following this, descriptive statistics were calculated with the SPSS 22 program (SPSS Inc., 2009). Correlations between latent variables were calculated in Mplus Version 7.11 (Muthén & Muthén, 2012). In all cases, the cut-off level for statistical significance was set at  $p < 0.05$ . To calculate the reliabilities of the scales used in the study, the procedure to compute composite reliability (Raykov, 2009) was used in preference to the conventional procedure of computing Cronbach alpha coefficients. When calculating composite reliability, the individual factor loadings of item onto their associated latent constructs are taken into account, which provides a more accurate reliability estimate than Cronbach Alpha coefficients, in which all items are assumed to contribute equally to their respective latent constructs.

Mplus was also used to examine the relationships between the various latent variables used in the study. Based on the hypothesized relationship between the factors, a measurement model was specified and tested in Mplus, using maximum likelihood estimation with robust

standard errors (MLR estimation). To establish whether this model represented the best fit of the data, two competing measurement models were tested. To assess the fit of these measurement models, the Tucker-Lewis index (TLI;  $> 0.90$ ), as well as the comparative fit index (CFI;  $> 0.90$ ), the Standardized Root Mean-square Residual (SRMR;  $< 0.08$ ), and the Root Mean Square Error of Approximation (RMSEA;  $< 0.08$ ) were used as indicators of fit (Byrne, 2012). To compare the fit of competing measurement models, the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC) indices were used. The model with the lowest values on these fit indices was retained as the best fitting and most parsimonious model (Byrne, 2012). This measurement model was subsequently subjected to a process of model development, and was thereafter re-specified as a structural model. This model was also compared with several competing structural models in order to verify that it did indeed represent the best fit to the data. As MLR estimation was used, which prohibits the direct comparison of chi-square values of competing models, the Satorra-Bentler scaled chi-square difference test was calculated and used to compare these models (Wang & Wang, 2012).

Finally, the indirect effects between religiosity, hope, and SWB were computed in Mplus. The indirect effects that were identified were then tested for their statistical significance by using two-sided bias-corrected 95% confidence intervals (CIs) as recommended by Hayes (2013).

## **Ethical Considerations**

The present study was evaluated and approved by the ethics committee of the North-West University. Informed, signed consent was obtained from all participants, who were fully informed of the nature and scope of the study. During this process, participants were informed that their participation in the study was completely voluntary, and they were assured of their right to withdraw from the research at any time without penalty. Participants were also assured that their responses would be treated confidentially. Feedback on the results of the study will be provided to those participants who requested this. Furthermore, to ensure that the students enrolled for the research methodology module were not treated in an unethical manner, each questionnaire had an opt-out section where students could indicate that whilst they completed the questionnaire for didactic purposes, they did not want their questionnaires to be used for research purposes. Doing so did not incur any penalty in the way in which the activity was assessed (as either 'complete' or 'not complete'). No questionnaires were used in cases where students have checked this opt-out box.

## **Results**

Table 2 provides statistics on the number of participants, as well as on the mean, standard deviation, alpha coefficients, and inter-item correlations for all scales and subscales used in this study.

Table 2

*Descriptive Statistics, Reliabilities and Correlations between Religiosity, Hope Agency (Hope A), Hope Pathway (Hope P), Satisfaction with Life (SWL), Positive Affect (PA) and Negative Affect (NA)*

| Scale          | N   | Mean  | SD   | $\alpha$ | 1      | 2       | 3       | 4      | 5      |
|----------------|-----|-------|------|----------|--------|---------|---------|--------|--------|
| 1. Religiosity | 419 | 3.45  | 0.92 | 0.71     |        |         |         |        |        |
| 2. Hope A      | 425 | 24.91 | 4.38 | 0.71     | 0.44** |         |         |        |        |
| 3. Hope P      | 422 | 25.78 | 4.25 | 0.70     | 0.28** | 0.73**  |         |        |        |
| 4. SWL         | 422 | 24.18 | 5.84 | 0.78     | 0.26** | 0.61**  | 0.34**  |        |        |
| 5. PA          | 368 | 36.87 | 7.24 | 0.80     | 0.26** | 0.61**  | 0.52**  | 0.48** |        |
| 6. NA          | 357 | 24.64 | 7.05 | 0.74     | -0.01  | -0.23** | -0.17** | -0.16* | -0.14* |

*Note.* \*  $p < 0.05$  \*\*  $p < 0.01$

As can be seen in Table 2, all scales had acceptable composite reliability coefficients that were above the cut-off point of 0.70 generally recommended for the social sciences (Field, 2005).

An investigation of the correlations between the variables used in this study reveal that moderate to strong positive correlations existed between religiosity, life satisfaction, positive affect, as well as hope agency and hope pathway. Negative affect was found to have weak negative correlations with positive affect, life satisfaction, and both hope variables, but was uncorrelated with religiosity.

### **Testing the Measurement Model**

On the basis of the hypotheses guiding the present study, a six-factor measurement model was specified (model 1). This model was tested in Mplus by means of confirmatory factor analysis (CFA) to

establish whether the items employed in all of the scales would load satisfactorily onto the latent variables which they purport to measure. Additionally, in order to establish whether this measurement model would represent the best fitting model, two competing measurement models were specified and similarly tested.

Model 1 consisted of 6 latent variables, which included religiosity (measured by 3 items), hope agency (measured by 4 items), hope pathway (4 items), positive affect (10 items), negative affect (10 items) and life satisfaction (5 items). In this model, all latent variables were allowed to correlate.

Model 2 was similarly specified, with the exception that all the items on the hope agency and hope pathway scales were specified to load onto a single latent variable entitled 'hope'. As such, this model consisted of 5 latent variables.

Finally, model 3 was again specified similarly to model 1, with the exception that the items measuring positive affect and those measuring negative affect were constrained to load onto a single latent variable (affect balance).

Table 3 presents fit statistics for each of these models.

Table 3

*Fit Statistics of Competing Measurement Models*

| Model   | $\chi^2$ | <i>df</i> | TLI  | CFI  | RMSEA | SRMR | AIC      | BIC      |
|---------|----------|-----------|------|------|-------|------|----------|----------|
| Model 1 | 1016.99  | 579       | 0.87 | 0.88 | 0.04  | 0.05 | 46680.70 | 47179.97 |
| Model 2 | 1085.17  | 584       | 0.85 | 0.86 | 0.05  | 0.06 | 46749.77 | 47228.74 |
| Model 3 | 1725.91  | 584       | 0.66 | 0.68 | 0.07  | 0.09 | 47456.80 | 47935.77 |

*Note.*  $\chi^2$  = chi-square statistic; *df* = degrees of freedom; TLI = Tucker-Lewis Index; CFI = Comparative Fit Index; RMSEA = Root mean-square error of approximation; SRMR = standardized root mean-square residual; AIC = Akaike Information Criterion; BIC = Bayes Information Criterion.

Table 3 reveals that model 3 fit the data very poorly. The first two models had a significantly better, but still inadequate level of fit. Whereas scores on the SRMR and RMSEA for model 1 and 2 were well within the limits that were set for the study, the scores on the CFI and TLI failed to reach the cut-off point of 0.90. However, following the recommendations outlined in Byrne (2012), model 1 was accepted as being the most parsimonious model as it had the lowest AIC and BIC values.

### **Model Development**

Given that model 1 did not achieve the desired level of fit in relation to the TLI and CFI, a process of model development was undertaken. This was achieved by examining the factor loadings of items onto their latent constructs and by studying the modification indices (MIs). Investigation of the factor loadings for all items revealed that item 2 on the PANAS

exhibited a low factor loading (0.13) and that this item therefore did not contribute significantly towards the measurement of negative affect. As such, the measurement model was re-specified in model 2 without this item. As revealed in Table 4, this model exhibited an improved, but still not adequate level of fit with regard to the CFI and TLI. Further investigation revealed that item 20 of the PANAS had high levels of shared error variance with several other items used in this subscale, and as such model 3 was specified without this item, resulting in a further improvement in fit. Investigation of the modification indices (MIs) for all items revealed a large MI between items 1 and 3 of the PANAS (MI = 25.22), which respectively measure the degree to which participants were 'interested' and 'excited'. As these items load onto the same latent factor and could have been construed similarly by the participants, the error variances of these items were allowed to correlate in model 4. As shown in Table 4, this resulted in an adequate fit on all indices except the TLI. Further scrutiny of the MIs revealed a significantly large correlation between the error variances of items 16 ('determined') and 17 ('attentive') of the positive affect sub-scale of the PANAS (MI = 25.97). Given the similarity in meaning between these two constructs, which both imply a high degree of applied focus, these errors were allowed to co-vary freely in model 5. Additional investigation revealed another substantial MI between the error variances of item 4 ('upset') and 11 (irritable) of the PANAS (MI = 14.89). Again, based on the observation that these items are fairly similar in that they both revolve around a sense of negative

emotional agitation involving an element of anger, the error variances of these two items were allowed to co-vary in model 6. As shown in Table 4, this model achieved an acceptable level of fit on all indices. As such, this model was selected as the best fitting measurement model.

Table 4

*Improving the Fit of the Measurement Model*

| Model          | $\chi^2$      | <i>df</i>  | TLI         | CFI         | RMSEA       | SRMR        | AIC             | BIC             |
|----------------|---------------|------------|-------------|-------------|-------------|-------------|-----------------|-----------------|
| Model 1        | 1016.99       | 579        | 0.87        | 0.88        | 0.04        | 0.05        | 46680.70        | 47179.97        |
| Model 2        | 973.07        | 545        | 0.87        | 0.88        | 0.04        | 0.05        | 45397.75        | 45884.85        |
| Model 3        | 885.61        | 512        | 0.88        | 0.89        | 0.04        | 0.05        | 44230.88        | 44705.80        |
| Model 4        | 861.24        | 511        | 0.89        | 0.90        | 0.04        | 0.05        | 44205.08        | 44684.05        |
| Model 5        | 837.54        | 510        | 0.89        | 0.90        | 0.04        | 0.05        | 44180.04        | 44663.08        |
| <b>Model 6</b> | <b>823.03</b> | <b>509</b> | <b>0.90</b> | <b>0.91</b> | <b>0.04</b> | <b>0.05</b> | <b>44165.57</b> | <b>44652.67</b> |

*Note.*  $\chi^2$ , chi-square statistic; *df*, degrees of freedom; TLI, Tucker-Lewis Index; CFI, Comparative Fit Index; RMSEA, Root mean-square error of approximation; SRMR, standardized root mean-square residual; AIC, Akaike information Criterion; BIC, Bayes Information Criterion.

In the final measurement model, standardised coefficients from items to their corresponding factors ranged from 0.43 to 0.84, and were all statistically significant at the  $p < 0.001$  level, thereby confirming the posited relationships between all items and the latent variables they were purported to measure (see Hair, Black, Babin, & Andersen, 2010).

## **Specifying and Testing the Structural Model**

The best fitting measurement model (model 6) was re-specified as a structural model and subsequently tested in Mplus version 7.11. This process enabled the hypothesized relationships among the latent factors to be tested. The results indicated that this model fit the data acceptably well ( $\chi^2 = 823.03$ ,  $df = 509$ ,  $TLI = 0.90$ ,  $CFI = 0.91$ ,  $RMSEA = 0.04$ ,  $SRMR = 0.05$ ,  $AIC = 44165.57$ ,  $BIC = 44652.67$ ).

However, to establish whether this structural model did indeed represent the best fitting model, two competing nested structural models were tested. In the first competing model (model 2) all direct paths between religiosity and life satisfaction, positive affect and negative affect were constrained to zero, thereby representing a full mediational model ( $\chi^2 = 825.31$ ,  $df = 512$ ,  $TLI = 0.90$ ,  $CFI = 0.91$ ,  $RMSEA = 0.04$ ,  $SRMR = 0.05$ ,  $AIC = 44161.92$ ,  $BIC = 44636.84$ ).

In the second competing model (model 3) the direct paths between religiosity and hope agency, as well as between religiosity and hope pathway were constrained to zero, representing a model in which no mediation effects were indicated. This model fit the data less well than either of the previous two models ( $\chi^2 = 860.39$ ,  $df = 511$ ,  $TLI = 0.89$ ,  $CFI = 0.90$ ,  $RMSEA = 0.04$  and  $SRMR = 0.07$ ,  $AIC = 44202.81$ ,  $BIC = 44681.79$ ).

As these models were tested using MLR estimation, and as normal chi square difference testing cannot be conducted between competing structural models that have been estimated this way, Satorra-Bentler

scaled chi-square difference tests (TrD) were calculated manually in order to compare the fit between these models, following the procedure outlined by Muthén and Muthén (2014). Such a comparison of the competing structural models revealed that no statistically significant differences in terms of goodness of fit existed between model 1 and model 2 ( $\text{TrD} = 3.79, \Delta df = 4, p > 0.05$ ), suggesting that model 2 does not fit the data significantly better than model 1. As such model 1 was retained over model 2. Model 1 fit the data significantly better than model 3 ( $\text{TrD} = 36.67, \Delta df = 3, p < 0.001$ ), and consequently the latter model was rejected. Model 1 was therefore retained as best fitting structural model.

Table 5 provides the standardized path coefficients that were estimated for the structural model (model 1).

Table 5

*Standardized Regression Coefficients of the Variables*

| Variable            | Estimate | SE   | Est/SE | $p$    |
|---------------------|----------|------|--------|--------|
| <b>Religiosity</b>  |          |      |        |        |
| Hope agency         | 0.42     | 0.07 | 6.26   | 0.00** |
| Hope pathway        | 0.28     | 0.06 | 4.32   | 0.00** |
| Life satisfaction   | -0.01    | 0.07 | -0.09  | 0.93   |
| Positive affect     | 0.02     | 0.07 | 0.31   | 0.76   |
| Negative affect     | 0.11     | 0.08 | 1.46   | 0.14   |
| <b>Hope agency</b>  |          |      |        |        |
| Life satisfaction   | 0.71     | 0.11 | 6.37   | 0.00** |
| Positive affect     | 0.39     | 0.11 | 3.56   | 0.00** |
| Negative affect     | -0.30    | 0.12 | -2.51  | 0.01*  |
| <b>Hope pathway</b> |          |      |        |        |
| Life satisfaction   | -0.09    | 0.11 | -0.85  | 0.39   |
| Positive affect     | 0.26     | 0.10 | 2.60   | 0.01** |
| Negative affect     | 0.02     | 0.11 | 0.15   | 0.88   |

*Note.* SE = standard error; EST/SE = estimate divided by standard error;

\*  $p < 0.05$  \*\*  $p < 0.01$

These results confirm that significant positive relationships exist between religiosity and both agency hope as well as pathway hope, suggesting that religiosity either leads to or is merely associated with higher levels of both types of hope. Agency hope, in turn, was significantly and positively related to life satisfaction and positive affect, but had an inverse association with negative affect. Conversely, pathway hope was unrelated to life satisfaction and negative affect, but did predict positive affect in a positive direction. As such, it would appear that agency

hope is a significant predictor of more components of subjective well-being than pathway hope. Furthermore, the posited direct relationships between religiosity, life satisfaction, positive affect, and negative affect were all non-significant, suggesting that the direct associations between these variables are weak.

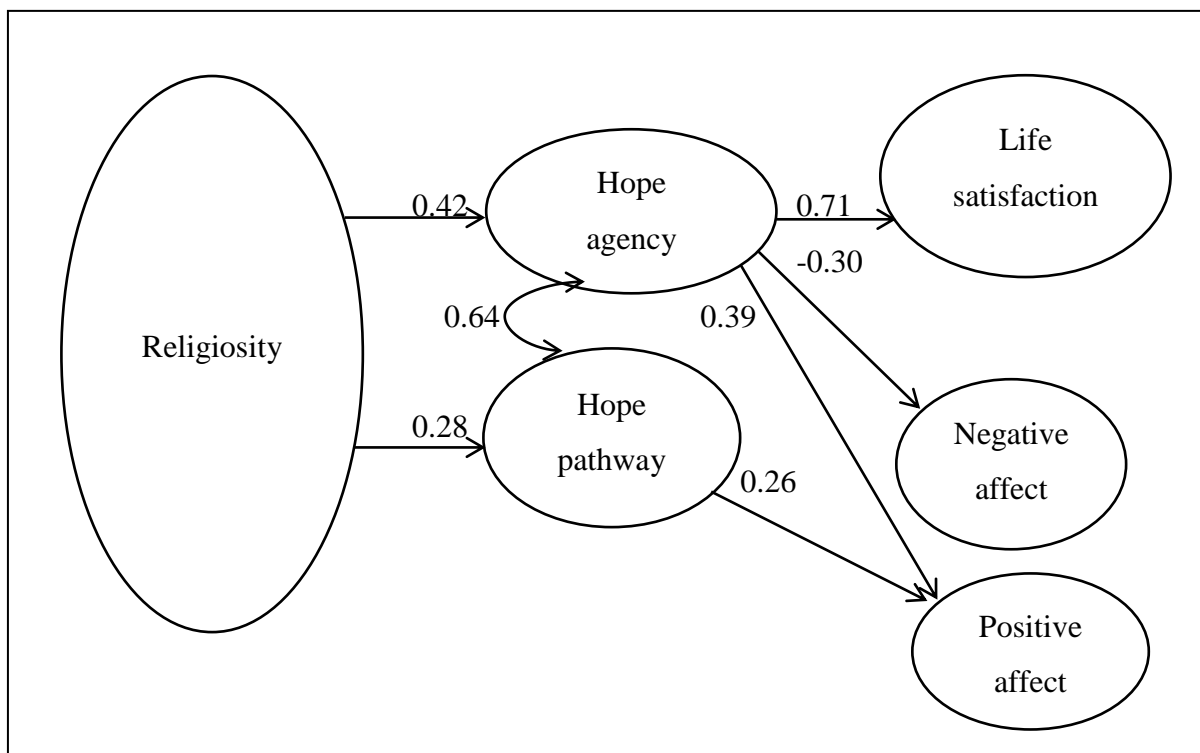


Figure 2. Final structural model (Note: Only significant paths are shown)

Overall, the structural model accounted for 41.5% of the variance in life satisfaction, 36.2% of the variance in positive affect, 17.5% of the variance in hope agency, 7.5% of the variance in pathway hope, and 6.8% of the variance in negative affect.

## **Indirect Effects**

To investigate the indirect relationships between the latent variables, mediation analysis was performed in Mplus. To evaluate the statistical significance of the indirect effects, the procedure outlined by Hayes (2013) was followed, in which bootstrapping is employed to calculate two-sided, bias-corrected 95% confidence intervals (CI).

The results of this analysis are presented in Table 6, which reports both the overall as well as the specific indirect effects that were found between the variables. Statistically significant ( $p < 0.05$ ) indirect effects were detected between religiosity and all subjective well-being variables (which include life satisfaction, positive affect, and negative affect), thereby confirming the hypothesized mediation effect of hope between these variables. The strongest indirect effect was found in the relationships between religiosity, agency hope, and life satisfaction, suggesting that this represents the most significant specific mediational pathway between religiosity, hope, and subjective well-being. However, significant (but substantively smaller) indirect effects were also detected between religiosity, agency hope, and positive as well as negative affect. As such, the findings suggest that religiosity is associated with elevated levels of agency hope, which in turn leads to higher levels of subjective well-being, specifically in the form of higher levels of life satisfaction, and, to a somewhat lesser extent, higher levels of positive affect and lowered levels of negative affect. However, it appears that the relationships between religiosity, pathway hope, and the various indicators of

subjective well-being are virtually non-existent, or at best highly marginal. Whilst the indirect pathway between religiosity, pathway hope, and positive affect did manage to reach statistical significance, the substantive size of the effect is very small. As such, the hypothesised indirect (mediation) effects between religiosity, pathway hope, and subjective well-being are not substantively supported by the findings.

Table 6

*Indirect Effects of Religiosity on Satisfaction with Life (SWL), Positive Affect (PA), and Negative Affect (NA)*

| Variable  | Estimate | SE   | 95%<br>Bias-corrected<br>confidence interval |
|---|----------|------|--|
| Sum of indirect effects from religiosity to SWL | 0.27     | 0.06 | 0.25 to 0.66                                 |
| Via Hope Agency                                 | 0.30     | 0.08 | 0.25 to 0.76                                 |
| Via Hope Pathway                                | -0.03    | 0.04 | -0.18 to 0.04                                |
| Sum of indirect effects from religiosity to PA  | 0.23     | 0.05 | 0.16 to 0.38                                 |
| Via Hope Agency                                 | 0.16     | 0.06 | 0.07 to 0.33                                 |
| Via Hope Pathway                                | 0.07     | 0.04 | 0.02 to 0.18                                 |
| Sum of indirect effects from religiosity to NA  | -0.12    | 0.04 | -0.23 to -0.05                               |
| Via Hope Agency                                 | -0.12    | 0.06 | -0.28 to -0.03                               |
| Via Hope Pathway                                | 0.01     | 0.03 | -0.05 to 0.08                                |

## Discussion

The aim of this study was to investigate the role played by hope as a mediator of the relationship between religiosity and subjective well-being. Findings derived from latent variable modelling and mediation analyses confirmed the existence of such an indirect relationship, and

indicated that agency hope in particular mediated the relationship between religiosity and life satisfaction, and between religiosity and both positive and negative affect. More specifically, religiosity was found to be positively associated with agency hope, and in turn, increases in agency hope predicted higher levels of life satisfaction and positive affect, and reduced levels of negative affect. These findings provide support for those made by Chang et al. (2013) who found that hope mediated the relationship between religion and depressive symptoms, and also provide evidence that hope which is related to religiosity is also associated with positive mental health outcomes.

In the present study, religiosity was also found to be positively associated with pathway hope, possibly by enhancing individuals' ability to envision pathways towards their desired goals. It is possible that the religious belief that God is able actualize certain realities in an individual's life might partly explain this relationship. Pathway hope significantly predicted positive affect (as component of subjective well-being). However, pathway hope did not significantly affect life satisfaction or negative affect, suggesting that no notable mediation effects exist in relation to these variables. These conclusions support the findings of Ciarrocchi et al. (2008) that religiosity is a strong predictor of agency hope, and a significant, but fairly weak predictor of pathway hope. To some extent the results of the present study also support finding of Ai, Peterson, Tice, Bolling, and Koenig (2004) that religiosity predicts agency hope. However, these authors found no association between religiosity

and pathway hope. Taken together, the overall theme that emerges from all these studies is that religiosity primarily and consistently appears to predict higher levels of agency hope, but do so inconsistently, weakly, or not at all in relation to pathway hope. However, the specific causal paths and processes through which these relationships function are unclear from both the present study as well as from existing literature on the topic. It could however be speculated that higher levels of religiosity are associated with an elevated belief or feeling among such individuals that they are empowered, strengthened, or otherwise supported in their strivings towards important life outcomes by an all-powerful deity, thereby enhancing hope by increasing the individual's sense of agency and their belief that they are able to achieve important aims in life. If this is indeed the case, it would imply a modification to hope theory in which hope agency is not only enhanced by the individual's belief in his or her *own* capacity to reach desired goals, but also by their belief that a powerful 'other' could do so on their behalf. However, at present these notions are still speculative and future research is required to tease out the causal processes involved in the relationship between religiosity, hope, and subjective well-being.

### **Implications of the study**

The findings of this study are significant in that they offer an additional explanation for the often found positive relationship between religiosity and subjective well-being by showing that this relationship is

mediated in part through agency hope (and to a very marginal extent, by pathway hope). This finding represents a significant contribution to the psychology of religion as these findings are of theoretical significance in explaining the relationships between religiosity, hope, and subjective well-being.

In addition, the findings add to a growing body of knowledge (for a review, see Pargament et al., 1998) which suggests that the SWB-related benefits of religiosity can be explained to a large extent by the outcomes associated with religion, such as meaning, social support, generativity, personality integration, the adoption of healthier lifestyles, and religious coping. The findings of this study indicate that hope (and most especially agency hope) should also be counted amongst the list of variables that have been found to mediate the relationship between religiosity and subjective well-being.

Finally, the findings of this study might also contribute to explaining the findings by other researchers that a stronger connection exists between religiosity and SWB in countries that are highly religious than in those that are not (Diener et al., 2011), and that higher levels of religiosity occur in countries that are afflicted by challenging social conditions (Lavric & Flere, 2008). It could very well be that hope might be a more valued outcome in countries where present circumstances are challenging, which could in turn result in higher levels of religiosity in such countries, where religion is usually a readily available socio-cultural resource. Given the association between hope and SWB, the findings of

this study might therefore contribute to explaining why the relationship between religiosity and SWB might be higher in nations with challenging social circumstances. In developed countries where national harmony prevails, hope for a better future would be a less necessary and valued outcome than it would be in countries where conditions are challenging, and the consequent need for religion in these nations is therefore likely to be less. Among those who are religious in such nations, the hope enhancing benefits of religion would be less salient, which might contribute to the attenuated association between religiosity and SWB that have been found in such countries (Lavric & Flere, 2008).

The findings of this study also have several practical implications. The finding that agency hope is much more substantively related to subjective well-being than pathway hope might be of use to those working with clients or patients in general counselling or therapeutic contexts and who wish to enhance their clients' levels of subjective well-being. In particular, the findings suggest that greater gains in SWB might result from enhancing agency hope, than pathway hope.

Furthermore, the finding that religiosity enhances agency hope, which is in turn associated with higher levels of subjective well-being, might be of practical use to therapists and counsellors working with religious clients or within pastoral contexts. By emphasizing and strengthening the (agency) hope-enhancing aspects of clients' religious beliefs, their subjective well-being might be significantly enhanced.

## **Limitations of the Study and Directions for Future Research**

This study is not without limitations. White and male participants were under-represented in the sample, which limits the generalizability of the findings to some extent. As such, it cannot be assumed that the results obtained in this study will necessarily be equivalent across gender and racial groups. Furthermore, the participant group consisted primarily of young adults (Mean age = 22.54 years). It is quite possible that the dynamics in relation to religiosity, hope, and subjective well-being might differ across age groups. As such, the findings should be viewed as being mainly applicable to young adults, and additional research would be required to investigate the strength and nature of these inter-relationships among children, older adults, and geriatric populations.

Additionally, as the study was not based on a true probability sample, generalization of the results beyond the sample group should be done with caution. Given that the study employed a cross-sectional design, no inferences can be drawn in relation to causality. Whilst latent variable modelling can be used to test structural relationships between variables, the causal relations between such variables can only be argued and not claimed. As such, the possibility that religiosity directly causes higher levels of subjective well-being, which in turn foster raised levels of hope, cannot be eliminated. It is also possible that higher levels of hope might predispose individuals to increased levels of religiosity. However, in light of Ciarrocchi and Heaven's (2012) finding that religiosity caused higher levels of trait hope among adolescents, these possibilities appear

unlikely. Future research could fruitfully be focused on verifying the causal relations between these variables.

### **Conclusion**

Taken together, the results of this study suggest that an important way in which religion contributes to the subjective well-being of its adherents is through the fact that it provides or engenders hope. While the findings showed that religiosity was associated with elevated levels of both agency hope and pathway hope, agency hope was significantly associated with higher levels of all three components of subjective well-being, while pathway hope was only related to positive affect. As such, it appears that religion might empower individuals with the belief that they (perhaps through the support of a deity) are able to achieve desired future goals. In turn, higher levels of such agency hope seem to foster enhanced subjective well-being in the form of heightened life satisfaction and positive affect, and lowered levels of negative affect. These findings serve to provide a further explanation of the psychological value that religion holds for the average individual, and have practical implications for counsellors and therapists working in both general and pastoral contexts.

## References

- Ai, A. L., Peterson, C., Tice, T. N., Bolling, S. F., & Koenig, H. G. (2004). Faith-based and secular pathways to hope and optimism subconstructs in middle-aged and older cardiac patients. *Journal of Health Psychology, 9*, 435–450.
- Argyle, M. (1999). Causes and correlates of happiness. In D. Kahneman, E. Diener, & N. Schwartz (Eds.), *Well-being: The foundation of hedonic psychology* (pp. 353–373). New York, NY: Russel Sage Foundation.
- Byrne, B. M. (2012). *Structural equation modelling with Mplus: Basic concepts, applications, and programming*. New York, NY: Routledge.
- Chang, E. C., Kahle, E. R., Yu, E. A., Lee, J. Y., Kupfermann, Y., & Hirsch, J. K. (2013). Relations of religiosity and spirituality with depressive symptoms in primary care adults: Evidence for hope agency and pathway as mediators. *The Journal of Positive Psychology, 8*, 314–321.
- Ciarrocchi, J. W., Dy-Liacco, G. S., & Deneke, E. (2008). Gods or rituals? Relational faith, spiritual discontent, and religious practices as predictors of hope and optimism. *The Journal of Positive Psychology, 3*, 120–136.
- Ciarrocchi, J. W., & Heaven, P. C. L. (2012). Religious values and the development of trait hope and self-esteem in adolescents. *Journal for the Scientific Study of Religion, 51*, 676–688.

- Compton, W. C. (2005). *An introduction to positive psychology*. Belmont, CA: Wadsworth.
- Crawford, J. R., & Henry, J. D. (2004). The Positive and Negative Affect Schedule (PANAS): Construct validity, measurement properties and normative data in a large non-clinical sample. *British Journal of Clinical Psychology, 43*, 245–265.
- Del Rio, C. M., & White, L. J. (2012). Separating spirituality from religiosity: A holomorphic attitudinal perspective. *Psychology of Religion and Spirituality, 4*, 123–142.
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment, 49*, 71–75.
- Diener, E., Tay, L., & Myers, D. G. (2011). The religion paradox: If religion makes people happy, why are so many dropping out? *Journal of Personality and Social Psychology, 101*, 1278–1290.
- Dollinger, S. J., & Malmquist, D. (2009). Reliability and validity of single-item self-reports: With special reference to college students' alcohol use, religiosity, study, and social life. *Journal of General Psychology, 136*, 321–241.
- Donahue, M., & Benson, P. (1995). Religion and the well-being of adolescents. *Journal of Social Issues, 51*, 145–160.
- Field, A. (2005). *Discovering statistics using SPSS*. London, United Kingdom: SAGE Publications.

- Hackney, C. H., & Sanders, G. S. (2003). Religiosity and mental health: a review of the empirical literature. *Journal of Psychology and Theology, 19*, 6–25.
- Hair, J. F., Black, W. C., Babin, B. J., & Andersen, R. E. (2010). *Multivariate data analysis: A global perspective*. Upper Saddle River, NJ: Pearson.
- Hasson-Ohayon, I., Braun, M., Galinsky, D., & Baider, L. (2009). Religiosity and hope: A path for women coping with a diagnosis of breast cancer. *Psychosomatics, 50*, 525–533.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: The Guilford Press.
- Lavric, M., & Flere, S. (2008). The role of culture in the relationship between religiosity and well-being. *Journal of Religious Health, 47*, 164–175.
- Leurent, B., Nazareth, I., Bellon-Saameno, J., Geerlings, M. I., Maarros, H., Saldivia, S., ... King, M. (2013). Spiritual and religious beliefs as risk factors for the onset of major depression: an international cohort study. *Psychological Medicine, 43*, 2109–2120.
- Muthén, L. K., & Muthén, B. O. (2012). *Mplus user's guide* (6th ed.). Los Angeles, CA: Muthén & Muthén.
- Muthén, L. K., & Muthén, B. O. (2014). Chi-square difference testing using the Satorra-Bentler Scaled Chi-Square. Retrieved from <http://www.statmodel.com/chidiff.shtml>

- Nell, H. W. (2014). Sources of life meaning among South African university students. *Journal of Psychology in Africa, 24*, 129-143.
- Pargament, K. I. (1997). *The psychology of religion and coping: Theory, research, and practice*. New York, NY: Guilford.
- Pargament, K. I., Smith, B. W., Koenig, H. G., & Perez, L. M. (1998). Patterns of positive and negative religious coping with major life stressors. *Journal for the Scientific Study of Religion, 37*, 710–724.
- Park, J. I., Hong, J. P. Park, S., & Cho, M. J. (2012). The relationship between religion and mental disorders in a Korean population. *Psychiatry Investigation, 9*, 29–35.
- Raykov, T. (2009). Evaluation of scale reliability for unidimensional measures using latent variable modelling. *Measurement and Evaluation in Counseling and Development, 42*, 223-232.
- Sarantakos, S. (2013). *Social research*. London, United Kingdom: Palgrave Macmillan.
- Seligman, M. E. P. (2002). *Authentic happiness*. New York, NY: Free Press.
- Seligman, M. E. P. (2011). *Flourish: A new understanding of happiness and well-being*. London, United Kingdom: Nicholas Brealy.
- Snyder, C. R., Harrison, C., Anderson, J. R., Holleran, S. A., Irving, L. M., Sigmon, S. T., ... Harney, P. (1991). The will and the ways: development of an individual-differences measure of hope. *Journal of Personality Psychology, 60*, 570–585.

- Snyder, C. R., Sigmon, S. T., & Feldman, D. B. (2002). Hope for the scared and vice versa: Positive goal-directed thinking and religion. *Psychological Inquiry* 13, 234–238.
- SPSS Inc. (2009). *SPSS for Windows*. Chicago, IL: Author.
- Van Ness, P. H. & Larson, D. B. (2002). Religion, senescence, and mental health. *American Journal of Geriatric Psychiatry*, 10, 386–397.
- Wagner, C., Kawulich, B. B., & Garner, M. (2012). *Doing social research: A global context*. London, United Kingdom: McGraw-Hill.
- Wang, J., & Wang, X. 2012. *Structural equation modeling: Applications using Mplus*. West Sussex, United Kingdom: Wiley.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS Scales. *Journal of Personality and Social Psychology*, 47, 1063–1070.
- Wissing, M. P., Thekiso, S., Stapelberg, R., Van Quickelberge, L., Choabi, P., Moroeng, C., & Nienaber, A. (1999, July). *The psychometric properties of scales measuring psychological well-being in an African group: The THUSA study*. Paper presented at the International Africa Psychology Congress, Durban, South Africa.

## **CHAPTER 3**

### **CONCLUSIONS, LIMITATIONS, AND RECOMMENDATIONS**

This chapter is devoted to an overview of the conclusions, recommendations, and limitations that emanated from the study. First, following a brief summary of the study, the most significant conclusions that have been drawn on the basis of the findings are discussed. After this, the factors which act as limitations in relation to the study's findings are outlined. Finally, on the basis of these conclusions and limitations, recommendations for future research will be put forward.

#### **3.1 Conclusions**

The main aim of the present study was to establish whether, and to what degree, the relationship between religiosity and subjective well-being (which is comprised of positive affect, negative affect, and life satisfaction) is mediated by agency and pathway hope. This overall aim was in turn broken down into two secondary objectives: First, to investigate the direct relationships between hope agency, hope pathway, religiosity, and subjective well-being, and second, to investigate the indirect relationships between religiosity, hope agency, hope pathway, and subjective well-being.

Existing research findings on the relationship between religiosity and SWB are mixed, with some studies finding positive associations

between these two constructs (Diener, Tay, & Myers, 2011; Hackney & Sanders, 2003), and others finding either no such association, or even a negative relationship where higher levels of religiosity are associated with elevated levels of anxiety and even depression (Lavric & Flere, 2008; Leurent et al., 2013; Park et al., 2012). Additional research revealed that this variable relationship between religiosity and SWB can in part be explained by the presence or absence of a variety of moderating and mediating variables. In a moderational sense, the relationship between religiosity and SWB have been found to be stronger among females, older individuals, in cultures that are characterized by high levels of national religiosity and/or adverse and challenging social conditions, and among African American persons (when compared to Caucasian Americans) (Argyle, 1999; Compton, 2005; Diener et al., 2011). From a mediational point of view, a review of existing literature by Pargament, Smith, Koenig, and Perez (1998) found that the relationship between religiosity and subjective well-being was mediated by at least six factors. First, religion provides a sense of life meaning and purpose. Second, religiosity enhances well-being by providing its members with social support, which in turn, is one of the strongest predictors of well-being (Compton, 2005; Diener et al., 2011). Third, religiosity was also found to be positively related to well-being by encouraging the adoption of healthier lifestyles; fourth, by promoting personality integration, and fifth, by increasing generativity, which involves spending time and energy for the benefit of others (Donahue & Benson, 1995; Pargament et al., 1998). Finally,

religion enhances subjective well-being by providing people with a variety of coping strategies, which include both private forms of coping such as prayer and faith, and social forms, such as receiving support from other members of a religious community (Hasson-Ohayon, Braun, Galinsky, & Baider, 2009; Pargament, 1997). In the present study, the researcher proposed that hope might serve as additional mediator of the relationship between religiosity and SWB.

Existing research on the relationship between religiosity and hope appears to concur that religiosity is positively related to agency hope (Ciarrocchi, Dy-Liacco, & Deneke, 2008). However, religiosity's relationship with pathway hope is less clear, with some studies finding mild positive associations between these two variables (Ciarrocchi et al., 2008), and others finding no association (Ai, Peterson, Tice, Bolling, & Koenig, 2004). Hope agency and hope pathway in turn, have been found to be positively related to various aspects of SWB (Snyder, Sigmon, & Feldman, 2002).

However, little research has been conducted regarding the interrelationships between all three variables (religiosity, hope, and SWB), and virtually none appear to have focused explicitly on the role of hope as mediator between religiosity and SWB. Furthermore, in an African and South African context, no research at all appears to have been conducted on this topic. In light of the finding that the relationship between religiosity and SWB is strongly affected by cultural context (Lavric & Flere, 2008; Leurent et al., 2013), the paucity of empirical data on this topic for

(South) African populations was regarded as a significant gap in existing research.

These gaps prompted the present study, which aimed to investigate the inter-relationships between religiosity, hope, and SWB. The study adopted a cross-sectional survey design, based on an objectivist ontology and a positivist epistemological position (Sarantakos, 2013). Within this general design, a latent variable modelling approach was used to examine the structural relationships between latent variables. Data were collected from a group of 430 participants which consisted of undergraduate social science students ( $n = 210$ ), as well as family members of these students ( $n = 220$ ). A structured questionnaire was used to collect data. To measure agency and pathway hope, the Adult Trait-hope Scale (Snyder et al., 1991) was used. Subjective well-being, which is comprised of positive affect, negative affect, and life satisfaction, was measured with two scales. To measure life satisfaction, the Satisfaction with Life Scale (SWLS) (Diener, Emmons, Larsen, & Griffin, 1985) was used. Affect balance (the balance between positive and negative affect) was measured by means of the Positive and Negative Affect Schedule (PANAS) (Watson, Clark, & Tellegen, 1988). Finally, religiosity was measured by three items that enquired about participants' general level of religiosity, as well as about the frequency with which they engaged in prayer and attended religious gatherings.

Data from these questionnaires were first analysed in SPSS 22 (SPSS Inc., 2009), where descriptive statistics calculated. Composite

reliability of the various scales were computed using the procedure described by Raykov (2009). Correlations were computed in Mplus Version 7.11 in order to examine the relationships between the latent variables used in the study. Following this, latent variable modelling was performed in Mplus, in accordance with the procedure outlined in Byrne (2012). An initial measurement model consisting of 6 latent variables was specified and tested, using the Chi square, the Tucker-Lewis index (TLI; > 0.90), as well as the Comparative Fit Index (CFI; > 0.90), the Standardized Root Mean-square Residual (SRMR; < 0.08), and the Root Mean Square Error of Approximation (RMSEA; < 0.08) as indicators of fit (Byrne, 2012). This model was in turn compared to two competing measurement models, using the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC) fit indices, and the model with the lowest values on these indices was retained. This model was then subjected to a process of model development to increase its level of fit. Once this was achieved, the model was re-specified as a structural model and again tested against two competing structural models. As MLR estimation was used to test the models, the Satorra-Bentler scaled chi-square differences test was used to compare the fit between these models (Muthén & Muthén, 2014). Finally, indirect effects were calculated in Mplus, and assessed for their statistical significance using two-sided bias-corrected 95% confidence intervals, as recommended by Hayes (2013).

In relation to the main aim of the study the major finding that emerged from the data analysis was that hope does indeed serve to

mediate the relationship between religiosity and subjective well-being. However, this mediation mechanism was found to be mainly restricted to hope agency. More specifically, the main finding of the study was that higher levels of religiosity were associated with elevated levels of agency hope, which in turn, were associated with higher levels of life satisfaction and positive affect, and lowered levels of negative affect. Furthermore, the direct paths between religiosity and the SWB variables were all non-significant, suggesting that the relationships between these variables are fully mediated by agency hope (in the case of all three components of SWB) and, to a much less significant extent, by pathway hope (in the case of positive affect). The findings partly support those made by Chang et al. (2013) who found that both agency and pathway hope acted as mediators between religiosity and depressive symptoms, and provide evidence to affirmatively answer these researcher's question as to whether hope would also predict *positive* mental health outcomes associated with religion.

Religiosity was also found to be associated with enhanced levels of pathway hope in the present study. However, the latter construct did not significantly predict any changes in any of the variables measuring subjective well-being, with the exception of positive affect, with which it was positively associated. Whilst a statistically significant indirect pathway was found between religiosity, pathway hope, and positive affect, the size of this effect was very small. It would therefore appear that as far as hope is concerned, agency hope exhibits a notable indirect relationship

with all three variables reflecting subjective well-being, while pathway hope only exhibits a weak indirect relationship with positive affect.

Taken together, these findings suggest that one of the most significant psychological benefits associated with religion is hope. Specifically, it would seem that religiosity enhances (or is merely positively associated with) both agency and pathway hope. The exact mechanism through which such a process might work is not clear from the present study. However, in relation to pathway hope, which involves an increased ability to envision a clear pathway to the attainment of a desired goal, it could be speculated that religion provides a solution to the 'how' involved in goal attainment by proposing that such pathways towards valued outcomes could be created, facilitated, or otherwise enabled by a deity. In this regard, Snyder et al. (2002) hypothesise that religion offers prayers, rites, and rituals that are believed to aid the religious person in obtaining divine assistance in reaching their goals. However, at present these contentions are somewhat speculative, and remain to be either confirmed or disconfirmed by future research.

The results of the present study also indicate that religion enhances agency hope, which relates to such a person's sense that he or she is able to achieve desired outcomes in life. Whether this occurs through an enhanced belief and or faith in the individual's own capacity for such goal attainment, or whether this belief is vested in a deity who is trusted to support the person in this process (or even take care of the process of goal attainment altogether), is unclear from the present study. However,

Snyder et al. (2002) postulate that religion enhances agency hope by instilling confidence in believers that they can accomplish their goals. This confidence is believed to be a result of specific religious beliefs and the supportive social resources that characterise most religious communities. Whatever the causal mechanism, the heightened sense of hope derived from an increased sense of direct or indirect personal agency in turn appears to lead to higher levels of subjective well-being. In particular, such individuals tend to feel more satisfied with their lives, experience more positive emotions, and feel fewer negative emotions. (In the case of pathway hope this effect is very weak, and is restricted to a positive association with positive affect).

The findings add to a growing body of knowledge (Compton, 2005; Pargament et al., 1998) which suggests that the SWB-related benefits of religiosity can be explained to a large extent by the qualities and conditions that are associated with religion, such as meaning, social support, generativity, personality integration, the adoption of healthier lifestyles, and religious coping. The findings of this study indicate that hope (and specifically agency hope) should also be counted amongst the list of variables that might mediate the relationship between religiosity and subjective well-being.

On a theoretical level, the findings serve as another example of the interrelatedness of the hedonic and *eudaimonic* aspects of well-being, by showing that the important *eudaimonic* construct of hope (in particular agency hope) is positively related to the hedonic construct of subjective

well-being. Whilst the relationship between these two dimensions of well-being is a subject of significant scholarly debate (Henderson & Knight, 2012), the findings from this study seem to support the notion that *eudaimonic* and hedonic elements of well-being are distinct, yet interdependent, at least as far as hope and SWB are concerned.

The results of this study might also serve to at least partially explain the finding by Diener et al. (2011) that the social conditions in a given country are strong and significant predictors of both individual and national levels of religiosity, with those living in countries with challenging social conditions being significantly more religious than those in countries with high levels of prosperity and national harmony. It could be argued that a greater need for hope would exist in countries where present circumstances are challenging and difficult. In light of the finding that religiosity is positively associated with hope, it seems quite plausible that the need for hope that might characterize such nations could cause a greater number of its citizens to turn to religion, which is a relatively easily available socio-cultural resource. In countries where high levels of prosperity and harmony prevail, the need for hope for a better future would likely be substantially lower, and as such, the need for, and value of religion would be less in such countries, possibly resulting in lower levels of religiosity.

In a related fashion, the findings of the present study might also contribute to explaining findings such as those made by Lavric and Flere (2008) that the positive relationship between religiosity and subjective

well-being is notably stronger in cultures characterized by higher levels of religiosity than in those which are less religious, where such associations are either non-significant, or even negative. In light of the finding that the more religious countries are typically those with the most challenging social circumstances, this could suggest that the hope enhancing elements of religion might at least be partially responsible for the stronger relationship between religiosity and SWB in more religious, and therefore more socially challenged countries. In countries where levels of religiosity are low, conditions are typically more prosperous and harmonious, and the role of religion in providing hope (and therefore also in enhancing SWB) is likely to be less salient.

It seems quite plausible that in the absence of socio-cultural resources and conditions that typically foster SWB in prosperous nations, such as wealth, good governance, and economic, political, and personal freedom (Diener, 2009; Veenhoven, 2010), religion constitutes an important and readily available socio-cultural resource that contributes to enhanced levels of both hope, and subjective well-being among the citizens of nations facing challenging social conditions.

### **3.2 Limitations of the Study**

As is the case with all scholarly research, this study is not without its limitations. Whilst a reasonably large sample was used in this study, white and male participants were under-represented in the sample, which limits the generalizability of the findings to some extent. This eventuality

also prohibited the researcher from performing equivalence testing, and as such, it cannot be assumed that the results obtained in this study will necessarily be equivalent across gender and racial groups.

Furthermore, the mean age of the participant group (22.54 years,  $SD = 6.47$ ) reveals that the sample predominantly consisted of young adults. It is quite possible that the dynamics in relation to religiosity, hope, and subjective well-being might differ across age groups. As such, these findings should be viewed as being mainly applicable to young adults, and additional research would be required to investigate the strength and nature of these inter-relationships among children, older adults, and geriatric populations.

Additionally, as the study was not based on a true probability sample, generalization of the findings beyond the context of the sample group should be done with caution.

Furthermore, as the study is founded on a cross-sectional design, no inferences can be drawn in relation to causality. Whilst latent variable modelling can be utilized to test the structural relationships between multiple variables, the causal relationships between such variables can only be argued, but not claimed. As such, the possibility cannot be eliminated that religiosity directly causes higher levels of subjective well-being, which in turn lead to elevated levels of hope. It is also possible that higher levels of agency and/or pathway hope might predispose individuals to increased levels of religiosity, which in turn enhance their subjective well-being. However, in light of findings by Ciarrocchi and Heaven (2012)

which indicated that religiosity caused higher levels of trait hope among adolescents, these possibilities appear to be less probable than that of the relationships between these variables posited in this study.

### **3.3. Recommendations**

The results of the study have several implications, both in relation to future research, as well as in relation to practical application, as will be discussed in the next two sections.

#### **3.3.1 Recommendations for future research**

Based on the limitations of the present study, future research could be conducted with the aim of establishing whether the indirect effects that have been found between religiosity, hope, and SWB are invariant across gender, cultural, and racial groups. To do so, a diverse sample in which various such sub-groups are well-represented would need to be drawn. In addition, in light of the fact that the participant group used in this study predominantly consisted of young adults, this study could be repeated among participants who are at different stages in the life cycle, such as those in midlife, and older adults, to ascertain if the nature, direction, and strength of the inter-relationships between hope, religiosity and SWB vary across these age cohorts.

Furthermore, given the cross-sectional nature of the present study, and the concomitant limitations of such a design in terms of drawing

inferences related to causality, longitudinal research could be conducted to investigate the causal relationships between these variables.

### **3.3.2 Recommendations for practice**

The findings of the study also have several practical implications which could serve as basis for a variety of recommendations.

The results of this study show that whereas agency hope was positively related to all indices of subjective well-being, pathway hope was only related to positive affect. This finding might be of use to those working in general counselling or therapeutic contexts and who wish to enhance their clients' levels of subjective well-being. In particular, the findings suggest that greater gains in SWB might result from enhancing agency hope, than pathway hope.

Furthermore, the finding that religiosity enhances (especially agency) hope, which is in turn associated with higher levels of subjective well-being, might be of practical use to therapists and counsellors working with religious clients or within pastoral contexts. By emphasizing and strengthening the hope-enhancing aspects of clients' or patients' religious beliefs, their subjective well-being might be significantly enhanced.

## References

- Ai, A. L., Peterson, C., Tice, T. N., Bolling, S. F., & Koenig, H. G. (2004). Faith-based and secular pathways to hope and optimism subconstructs in middle-aged and older cardiac patients. *Journal of Health Psychology, 9*, 435–450.
- Argyle, M. (1999). Causes and correlates of happiness. In D. Kahneman, E. Diener, & N. Schwartz (Eds.), *Well-being: The foundation of hedonic psychology* (pp. 353–373). New York, NY: Russel Sage Foundation.
- Byrne, B. M. (2012). *Structural equation modelling with Mplus: Basic concepts, applications, and programming*. New York, NY: Routledge.
- Chang, E. C., Kahle, E. R., Yu, E. A., Lee, J. Y., Kupfermann, Y., & Hirsch, J. K. (2013). Relations of religiosity and spirituality with depressive symptoms in primary care adults: Evidence for hope agency and pathway as mediators. *The Journal of Positive Psychology, 8*(4), 314–321.
- Ciarrocchi, J. W., Dy-Liacco, G. S., & Deneke, E. (2008). Gods or rituals? Relational faith, spiritual discontent, and religious practices as predictors of hope and optimism. *The Journal of Positive Psychology, 3*(2), 120–136.

- Ciarrocchi, J. W., & Heaven, P. C. L. (2012). Religious values and the development of trait hope and self-esteem in adolescents. *Journal for the Scientific Study of Religion, 51*(4), 676–688.
- Compton, W. C. (2005). *An introduction to positive psychology*. Belmont, CA: Wadsworth.
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment, 49*, 71–75.
- Diener, E. (2009). Subjective well-being. In E. Diener (Ed.), *The science of Well-Being: The collected works of Ed Diener* (pp. 11–58). New York, NY: Springer.
- Diener, E., Tay, L., & Myers, D. G. (2011). The religion paradox: If religion makes people happy, why are so many dropping out? *Journal of Personality and Social Psychology, 101*, 1278–1290.
- Donahue, M., & Benson, P. (1995). Religion and the well-being of adolescents. *Journal of Social Issues, 51*, 145-160.
- Hackney, C. H., & Sanders, G. S. (2003). Religiosity and mental health: a review of the empirical literature. *Journal of Psychology and Theology, 19*, 6–25.
- Hasson-Ohayon, I., Braun, M., Galinsky, D., & Baider, L. (2009). Religiosity and hope: A path for women coping with a diagnosis of breast cancer. *Psychosomatics, 50*, 525–533.

- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: The Guilford Press.
- Henderson, L. W., & Knight, T. (2012). Integrating the hedonic and eudaimonic perspectives to more comprehensively understand wellbeing and pathways to wellbeing. *International Journal of Wellbeing, 2*, 196–221.
- Lavric, M., & Flere, S. (2008). The role of culture in the relationship between religiosity and well-being. *Journal of Religious Health, 47*, 164–175.
- Leurent, B., Nazareth, I., Bellon-Saameno, J., Geerlings, M. I., Maarros, H., Saldivia, S., ... King, M. (2013). Spiritual and religious beliefs as risk factors for the onset of major depression: an international cohort study. *Psychological Medicine, 43*, 2109–2120.
- Muthén, L. K., & Muthén, B. O. (2014). Chi-square difference testing using the Satorra-Bentler Scaled Chi-Square. Retrieved from <http://www.statmodel.com/chidiff.shtml>
- Pargament, K. I. (1997). *The psychology of religion and coping: Theory, research, and practice*. New York, NY: Guilford.
- Pargament, K. I., Smith, B. W., Koenig, H. G., & Perez, L. M. (1998). Patterns of positive and negative religious coping with major life stressors. *Journal for the Scientific Study of Religion, 37*, 710–724.

- Park, J. I., Hong, J. P. Park, S., & Cho, M. J. (2012). The relationship between religion and mental disorders in a Korean population. *Psychiatry Investigation, 9*, 29–35.
- Raykov, T. (2009). Evaluation of scale reliability for unidimensional measures using latent variable modelling. *Measurement and Evaluation in Counseling and Development, 42*, 223–232.
- Sarantakos, S. (2013). *Social research*. London, United Kingdom: Palgrave Macmillan.
- Snyder, C. R., Harrison, C., Anderson, J. R., Holleran, S. A., Irving, L. M., Sigmon, S. T., ... Harney, P. (1991). The will and the ways: development of an individual-differences measure of hope. *Journal of Personality Psychology, 60*, 570–585.
- Snyder, C. R., Sigmon, S. T., & Feldman, D. B. (2002). Hope for the scared and vice versa: Positive goal-directed thinking and religion. *Psychological Inquiry 13*, 234–238.
- SPSS Inc. (2009). *SPSS for Windows*. Chicago, IL: Author.
- Veenhoven, R. (2010). Greater happiness for a greater number: Is that possible and desirable? *Journal of Happiness Studies, 11*, 605–629.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS Scales. *Journal of Personality and Social Psychology, 47*, 1063–1070.