

**A Higher Purpose: How Individuals with Different Belief Systems Exhibit Daily-Life Resilience**

Marcel Mertens

Department of Psychology, University of Twente

M12: Bachelor Thesis Positive Clinical Psychology and Technology

Thomas Vaessen, PhD

Jannis Kraiss, PhD

June 28, 2023

Page-count: 37

APA 7th Edition

## **Abstract**

**Objective.** Daily stress increasingly affects the mental well-being of Western societies.

Literature points to resilience differences among individuals with different belief systems, requesting a closer look at their mechanisms concerning adaptation to daily stressful events.

**Methods.** A one-week experience sampling method study was conducted with a convenience sample of 71 participants. This comparative study investigated group differences for three measures of daily-life resilience between spiritual, religious, and non-spiritual non-religious individuals through linear-mixed effects models and mediation analyses. It was tested if affiliation to the belief systems moderates the association between the attribution of stressful daily events to a higher purpose and daily-life resilience; if this attribution style (1) mediates the effect of the three groups on daily-life resilience, and (2) moderates the association between positive affect and daily-life resilience for differently affiliated individuals.

**Results.** Spiritual individuals indicated significantly greater resilience compared to religious individuals ( $b_1 = 1.210$ ;  $b_2 = 1.321$ ,  $p_{1|2} = .026$ ;  $b_3 = 1.121$ ,  $p_3 = .042$ ). The attribution style partially explained the religious individuals' daily-life resilience, and the attribution's effect on one resilience measurement was inhibited by spiritual affiliation ( $b = -0.293$ ,  $p = .044$ ).

Moreover, the external attribution style weakened the impact of positive affect on stress adaptation for religious and non-affiliated individuals.

**Conclusion.** The study highlights distinct differences in daily-life resilience and effects of external attributions between spiritual and religious individuals. Future studies should explore the unique and potentially different coping mechanisms spiritual and religious people utilise to protect themselves from daily adversities.

## **A Higher Purpose: How Individuals with Different Belief Systems Exhibit Momentary Resilience**

### **Introduction**

Within recent years, demands on individuals' daily life and the resulting experience of stress have reached a level of high medical concern. While 57% of American and Canadian workers report to experience high levels of stress in 2020 daily, about 39% of Western Europeans report daily work-related stress in 2020 (Armstrong & Richter, 2021). Enduring high levels of daily stress can lead to both, detrimental psychological health outcomes such as affective disorders (Charles et al., 2013), and chronic physical conditions such as cardiovascular disease (Leger et al., 2018). How individuals deal with such high amounts of daily stress, and which resources they draw upon to protect themselves from the effects of daily adversities remains an important question.

### ***Resilience and Experience Sampling Method***

Adaptivity to stress is often investigated as resiliency. Traditionally, resilience has been investigated as bouncing back to one's baseline well-being after facing major stressful life-events (Bjorck & Thurman, 2007; Reynolds et al., 2013; Blanke et al., 2022). However, considering the prevalence of daily stress in the Western society today, Ong & Leger (2022) advance the concept to a more dynamic daily-life process and define resilience as "the capacity of a dynamic system to adaptively respond to environmental adversity" (Ong & Leger, 2022, p. 1593). An accurate approach to study such dynamic dimensions of daily-life resilience (*momentary resilience*) is the experience-sampling method (ESM; Myin-Germeys et al., 2018; Vaessen et al., 2019; Lyu et al., 2017). ESM can assess factors contributing to momentary resilience in daily life by repeatedly administering structured self-report diaries after a signal (called beep) is given to the participant's smartphone (Myin-Germeys et al., 2018).

### ***Attribution Style***

One such key psychological factor influencing daily momentary resilience is the attribution style people use. Attribution style refers to how individuals explain situations, causes, and their outcomes (Peterson & Seligman, 1984). Recent ESM research by Kent et al. (2020) found that attributing events to daily spiritual experiences, sometimes referred to as spiritual coping (SC), moderates the effects of daily stress on psychological well-being. They concluded that attributing events to daily spiritual experiences is associated with reduced depressive symptoms and greater flourishing outcomes. This aligns with previous work by Peterson & Seligman (1984), demonstrating that consistently attributing uncontrollable negative events to internal characteristics (internalizing) correlates with adverse mental health outcomes, while attributing them to the context (externalizing) has the opposite effect. SC is an external attribution style, employed preferably by religious individuals who follow a categorical belief system (Pargament et al., 1998; Balboni et al., 2022). It usually involves feeling comforted (positive SC) or being punished by a higher external power (negative SC), correlating with increased or decreased resilience, respectively (Pargament & Hahn, 1986; Reynolds et al., 2013). With this foundation, it is pertinent to explore further implications of people's spiritual affiliations in the context of momentary resilience.

### ***Belief Systems***

The belief system people follow might be an important predictor for momentary resilience. Especially religious individuals have been shown to exert increased resiliency through their coping styles, such as SC (Reynolds et al., 2013, Kent et al., 2020), and social support (Schwalm et al., 2021). In a large meta-review, Balboni et al. (2022) showed that religious communities are better protected from serious illnesses, show fewer depressive symptoms and

increased well-being, compared to non-religious communities. However, they found that not only religious individuals but also spirituality generally, accounts for those effects. Spirituality in a broad sense can be defined as a largely self-determined belief system (Berghuijs et al., 2013) and fundamentally emerges from an “intrinsic aspect of humanity through which persons seek ultimate meaning, purpose [...] and experience relationship to self, family, others, community, society, nature and the significant or sacred” (Balboni et al., 2022, p. 186). Likewise, the recent meta-analysis by Schwalm et al. (2021) revealed a coherent pattern of affirmative associations linking spiritual and religious people, referred to as faithful individuals, with enhanced resilience. More precisely though, the correlation was found to be highest for those of spiritual affiliation.

### ***Resilience Mechanisms of Faithful Individuals***

How faithful individuals exert their consistently positive influence on resilience remains a subject of contention though, with limited knowledge specifically in the context of daily momentary resilience. As posited by Smith et al. (2012), having a sense of meaning and purpose is a pertinent predictor and could serve as a main contributing factor by which faithful individuals exhibit their high resiliency. Presumably, spiritual individuals enhance their resilience by among others, discovering personal significance and exhibiting unique coping strategies (Smith et al., 2012; Schwalm et al., 2021), which sets them apart from religious people, nurturing resilience mainly through their social communities (Schwalm et al., 2021). Both faithful groups share the coping style to find meaning or purpose during stressful times though (Zinnbauer & Pargament, 2005; Smith et al., 2012) which might indirectly increase their positive affect (Loewenthal et al., 2000).

### ***Positive Affect***

Positive affect stands as a firmly established predictor of resilience, possibly augmented by spirituality (Smith et al., 2012; Loewenthal et al., 2000). Faithful individuals tend to actively cultivate positive emotions by fostering virtues associated with positive affect such as love and joy (Smith et al., 2012). Previous research suggests that stressful events might trigger specific religious coping mechanisms for religiously affiliated individuals, such as cognitive reappraisal of the event, which subsequently evokes positive affect while reducing distress (MacIntosh, 1995; Loewenthal et al., 2000). However, Lyu et al. (2017) demonstrated in their ESM study that independent of the individual's belief system, college students' momentary resilience is strongly influenced by positive emotions and awareness thereof. Hence, positive affect might be a relevant factor of momentary resilience for both, faithful and non-faithful individuals.

### ***Reasoning and Aim of the Study***

Converging the literature, SC, positive affect and the individual's belief system could hint at relevant predictors for momentary resilience. The exact mechanisms through which SC exerts its effects on positive affect and how SC influences individuals with different belief systems regarding their momentary resilience in daily life is yet unclear. It is reasoned that when connected to a higher meaning or purpose, SC could embody an underlying mechanism which influences both, the momentary resilience of individuals with different belief systems, and an interfering link between positive affect and successful adaptation to daily stressful events. To fill this gap, more research into momentary resilience is needed, drawing a distinction between traditional religious individuals and spiritual individuals following a rather intrinsic, self-determined faith. Given the limited understanding of how SC and individuals with different belief systems exert daily momentary resilience, this study aims to deepen the understanding of the relationship between spirituality, religion, attributing stressful events to a higher purpose,

positive affect and momentary resilience, offering insights for future interventions and practical applications in positive psychology and related practices.

### ***Current Research***

The thesis examined how the three belief system groups of religious, spiritual, and non-spiritual non-religious (NSNR) individuals differ in their momentary resilience and how the external attribution style of attributing events to a higher purpose influences each group in the general Western population. The comparative study was conducted with quantitative ESM measurements. Due to lacking a clear, standardised operationalisation of momentary resilience in literature, three measurements of momentary resilience were used (see Measures).

Specifically, the following hypotheses were tested, i) *The three groups of spiritual, religious and NSNR significantly differ in their momentary resilience*, assuming that, based on findings of Schwalm et al. (2021), the spiritual group displays the highest levels of momentary resilience and NSNR the lowest; ii) *The association between attributing daily stressful events to a higher purpose and momentary resilience is moderated by the belief system groups*, assuming that this association is significantly stronger through moderation of being spiritually and religiously affiliated, due to descriptions of Smith et al. (2012); iii) *Attributing stressful events to a higher purpose partially mediates the effect of the belief system groups on adaptation to stressful events*, assuming that, based on notions of Smith et al. (2012), the attribution style explains a significant part of the association between individuals with religious and spiritual affiliation and their adaptation to daily stressful events; iv) *The attribution of daily stressful events to a higher purpose moderates the effect of positive affect on adaptation to stressful events*, assuming that this moderation negatively impacts stress adaptation because the attribution style is supposedly used in absence of positive affect for all individuals.

## Methods

### *Participants*

103 participants have been initially sampled via convenience sampling. Participants consisted of students of the University of Twente and acquaintances of the researchers. The population comprised Dutch, German and other European countries. Dissemination of the participation request and study information was done orally and via social media. Inclusion criteria were being healthy adults (18 years or older) with sufficient English language skills and having a smartphone with an internet connection. The study was approved by the Faculty of Behavioural, Management and Social Sciences (BMS) ethics committee of the University of Twente (No. 230631). Upon request, participants could receive a personalised overview, which is further elaborated upon in the procedure and materials section.

### *Measures*

Three self-constructed questionnaires consisting of a baseline questionnaire, ESM questionnaire and final questionnaire were administered during the study. The order and temporal presentation are elaborated upon in the procedure. All items were measured as self-report.

**Belief System.** The belief system was measured by a direct question in the baseline questionnaire. Participants could answer the question *with which belief system do you identify yourself* with *Christianity, Islamism, Hinduism, Buddhism, Judaism, Orthodox, Spiritualistic (self-determined), None* and *Other*. Being *religious* was operationalised as indicating one of the first six responses or *Other*, to include unlisted religions. *Spiritual* and *NSNR* were categorised as a direct response to *Spiritualistic (self-determined)* and *None* respectively.



**Stressful Event.** To what extent an event was perceived as stressful was rated by the statement *This event was stressful/not stressful*, after being asked to *Now, please think about the most significant event that occurred ever since the last beep*. The event thus referred to any most significant situation that has occurred between the last beep ( $t_{-1}$ ) and the current beep ( $t_0$ ) when filling out the ESM questionnaire. A 6-point Likert scale (1 = very unpleasant; 6 = very pleasant) was used as a response option. A neutral response option was omitted to receive clear valence in ratings of the past event. Stressful events were coded as such when having indicated three or lower on the item.

**Momentary Resilience.** Momentary resilience was operationalised by two separate questions in the ESM questionnaire using a seven-point Likert scale coded as 1 (Strongly disagree) to 7 (Strongly agree). Adopted from Dong et al.'s (2013) Modified CD-RISC, the items *I can deal with whatever comes* and *I can handle unpleasant feelings* were used to operationalise momentary resilience. The latter item was altered to *I can handle unpleasant situations* to fit the study's investigation into resilience after facing daily adversities. Following the definition of Ong & Leger (2022), the words *Right now, I feel like* were added in front of the items to measure resilience as momentary *capacity* of the individuals. The resulting modified resilience items consisted of *Right now, I feel like I can handle unpleasant situations* and *Right now, I feel like I can deal with whatever comes*.

**Retrospective Resilience.** Retrospective resilience is a form of momentary resilience, intended to check whether individuals successfully recovered from stressful previous events. The self-defined item *I could handle the event* was used (i.e. event between the last beep and the current beep). Retrospective resilience was operationalised with a seven-point Likert scale in the ESM questionnaire coded as 1 (Strongly disagree) to 7 (Strongly agree).

**Higher Purpose.** The extent to which participants attributed the past event to a higher purpose was operationalised with a seven-point Likert scale using the item *To what extent do you attribute the occurrence of this event to having a higher purpose?* in the ESM questionnaire. The concept of a higher purpose is derived from notions of spirituality by Berghuijs et al. (2013) and the Modified CD-RISC item *Things happen for a reason* (Dong et al., 2013). The scale was coded as 1 (Strongly disagree) to 7 (Strongly agree).

**Past Positive Affect.** Past positive affect (PPA) reflects the positive affect during the previous beep ( $t_{-1}$ ), while current positive affect refers to the positive affect during the current ESM questionnaire ( $t_0$ ) at a given time. PPA is considered a superior predictor of positive mood influences on handling a past stressful event (occurring between  $t_{-1}$  and  $t_0$ ) because it represents the positive emotional state *before* facing the stressful event, whereas the current positive affect is affected by the previously experienced stressful event itself. Current positive affect was operationalised as a mean of positive affect measurements calculated with five seven-point Likert scale items consisting of *Right now, I feel* (1) *good about myself*, (2) *cheerful*, (3) *enthusiastic*, (4) *satisfied*, (5) *relaxed*. The items were coded as 1 (Strongly disagree) to 7 (Strongly agree). PPA then was operationalised as a lag value denoted by a newly created variable of the current positive affect from the last beep ( $t_{-1}$ ) on the same day.

### ***Procedure and Materials***

Participants received an e-mail three days prior to the start of the study to remind them about the research and to download the relevant mobile application Ethica version 661 (Ethica Data, 2023). Another mail was sent to participants upon starting the study providing them with the link to the respective research in Ethica. Admission was possible for two consecutive days. Participants could enrol by clicking on the provided link or filling in the respective study code.

When registered, participants were asked to fill in the baseline questionnaire. From the following day onwards, the ESM questionnaires were presented, consisting of 25 items (alterations of different Likert scales and dichotomous responses) repeatedly submitted to participants ten times per day for seven consecutive days. The recurring ESM questionnaire was intended to be completed within one minute. Each submission entailed a notification on the participant's smartphone. The beeps were semi-random within a 90 minutes interval starting at 8.00 AM and ending at 11.00 PM each day. Participants could fill in the ESM questionnaire after the beep within a time frame of 15 minutes, whereafter the questionnaire expired. After seven days of participation, the final questionnaire was presented. Thereafter, the active participation ended for participants. All participants were pseudonymized by Ethica.

The research materials consisted of the participant's smartphone and the downloaded Ethica mobile application. The informed consent form was transmitted via Ethica. The three survey questionnaires included the baseline questionnaire (measuring among others demographics and belief systems), ESM questionnaire (measuring among others momentary resilience, retrospective resilience, positive affect, higher purpose and stressful events) and final questionnaire (asking for feedback, request for personalised overview and thanking participants). These questionnaires were as well transmitted via Ethica. Participants could request a personalised overview of their performance over the week including a combination of statistical graphs and short explanations thereof, such as displaying their mood over time with indications of their preferred coping mechanisms.

### **Data Analysis**

The data were analysed using the statistical software R version 4.3.0 (R Core Team, 2023). Participants without providing informed consent and cancelled sessions were removed.

Double entries from repeatedly filling out the baseline questionnaire were removed, favouring the first completed questionnaire. The cut-off for participants being included was having filled out at least 10% of the total 70 ESM notifications to retain a reasonable amount of data.

Thereafter, the baseline questionnaire was merged with the ESM questionnaire. The linear mixed-effects (LME) models were created with the *lme4* package (Bates et al., 2015).

To test the first hypothesis, whether *the three groups of spiritual, religious and NSNR significantly differ in their momentary resilience*, nine LME models were created. For each of the three momentary resilience measurements as outcome, three separate models were created with the belief system groups as predictor treating (1) NSNR as reference, (2) religious individuals as reference, and (3) the faithful groups converged as unit with NSNR as reference to compare faithful individuals overall against NSNR. The switch of reference was done to compare whether spiritual individuals differ significantly from religious individuals. Participants were treated as random intercepts to account for the repeated measures design in all models. The retrospective resilience outcome was modelled considering only stressful events (see Measures).

To test the second hypothesis, whether *the association between attributing daily stressful events to a higher purpose and momentary resilience is moderated by the belief system groups*, an interaction effect was examined with three LME models. The models tested whether the belief system groups moderate the association between attributing stressful events to a higher purpose and the momentary and retrospective resilience measurements as outcomes. The participants were treated as random intercepts. Only stressful events were considered for all models. The control group NSNR was treated as the reference group.

To test the third hypothesis, whether *attributing stressful events to a higher purpose partially mediates the effect of the belief system groups on adaptation to stressful events*, three

mediation analyses were conducted using the *mediation* package (Tingley et al., 2014), considering only stressful events. This was achieved using three times two linear models consisting of (1) a regression of retrospective resilience as dependent variable on each belief system separately with higher purpose attribution as mediator for the effect of the belief system groups on the dependent variable, (2) a direct effects model of the mediation model after controlling for the mediator. Thus, the models assume independence of repeated measures for an overall group comparison and each belief system was compared to the converged two other belief system groups as a reference. A Shapiro-Wilk test was used to check the assumption of normality and therewith determine whether ordinary least squares or non-parametric bootstrapping is the preferred statistical method.

To test the fourth hypothesis, whether *the attribution of daily stressful events to a higher purpose moderates the effect of positive affect on adaptation to stressful events*, three LME models were created. Retrospective resilience was treated as outcome variable with PPA and attributing events to a higher purpose as predictors investigating a possible interaction between them. Participants were treated as random intercepts. To examine the interaction effect for each of the three belief system groups separately, the analysis was repeated three times with three subsets of the stressful event data, each filtered to only include measurements of one belief system group isolated. Lastly, for combined effects of the belief system groups, a fourth LME analysis was conducted with the belief system groups as additional covariate to the moderation.

## **Results**

### ***Sample description***

From the initial 103 participants, 15 participants had been excluded for not providing informed consent and a further 17 for discontinuation. The remaining sample consisted of 71 participants

( $M_{age} = 29.75$ ,  $SD_{age} = 13.49$ ) cumulating 1801 observations in total. However, 61 measurements were not considered during some analyses due to missing relevant values of expired questionnaires. Further sample descriptives are summarized in Table 1.

**Table 1**

*Sample Descriptives*

	Gender			Age			
	<i>Male</i>	<i>Female</i>	<i>Non-binary</i>	<i>M</i>	<i>SD</i>	<i>Mdn</i>	<i>Range</i>
Belief system							
Spiritual	2	2	0	22.5	0.58	22.5	22-23
Religious	11	20	0	27.32	13.76	22	20-81
NSNR	15	20	1	32.64	13.49	26	19-61
Total	28	42	1	29.75	13.49	23	19-81

*Note.*  $N_{Total} = 71$

***The Three Groups of Spiritual, Religious and NSNR Significantly Differ in Their Momentary Resilience***

Dissenting the first hypothesis, the three groups showed no significant differences in their momentary resilience on all three outcomes with NSNR as reference group. Moreover, the faithful groups combined did not differ in momentary resilience from the NSNR group. The assumption that spiritual individuals show the highest momentary resilience, and religiously affiliated the lowest, could thus not be affirmed. However, spiritual individuals exerted significantly greater momentary and retrospective resilience than religious individuals. Lastly, it is worth noting that the spiritual group displayed a median score of seven on the two momentary resilience outcome measurements. However, spiritual individual's scores, like the other two

groups, exhibited variability and were not solely limited to the maximum scores, as presented in Table 2. The results of the LME models are summarised in Table 3.

**Table 2**

*Descriptive Statistics of the three Belief System Groups on the three Momentary Resilience Outcomes.*

Measurement	Observations	Min	Max	<i>Mdn</i>	Q1	Q3	<i>M</i>
Right now, I feel like I can handle unpleasant situations							
Spiritual	N = 108	2	7	7	6	7	6.472
Religious	N = 853	1	7	5	4	6	4.928
NSNR	N = 816	1	7	6	5	6	5.148
Right now, I feel like I can deal with whatever comes							
Spiritual	N = 108	2	7	7	6	7	6.454
Religious	N = 849	1	7	5	4	6	4.827
NSNR	N = 813	1	7	6	5	6	5.114
I could handle the event ( <i>stressful events</i> )							
Spiritual	N = 106	3	7	5	5	6	5.421
Religious	N = 839	1	7	5	4	6	4.552
NSNR	N = 804	1	7	5	4	5	4.708

*Note.* Some observations were excluded due to missing relevant values by expired questionnaires.

**Table 3**

*Results of LME Models with Belief System Groups as Predictor of the Momentary and Retrospective Resilience Outcomes. A Further Comparison is Made Between Faithful and NSNR Individuals.*

Measurement	Estimate ( <i>b</i> )	<i>SE</i>	Test statistic ( <i>t</i> )	df	<i>p</i> -value
Right now, I feel like I can handle unpleasant situations					
NSNR as Reference ( $R^2 = 0.56$ )					
(Intercept)	5.160	0.168	30.706	69.478	$p < .001^{***}$
Religious	-0.276	0.247	-1.119	68.907	$p = .267$
Spiritual	0.934	0.529	1.766	68.355	$p = .082$
Religious as Reference ( $R^2 = 0.56$ )					
(Intercept)	4.884	0.180	27.077	68.417	$p < .001^{***}$
NSNR	0.276	0.247	1.119	68.907	$p = .267$
Spiritual	1.210	0.533	2.270	68.252	$p = .026^*$
NSNR vs. Faithful ( $R^2 = 0.56$ )					
(Intercept)	5.160	0.173	29.808	70.641	$p < .001^{***}$
Faithful	-0.137	0.246	-0.558	70.112	$p = .579$
Right now, I feel like I can deal with whatever comes					
NSNR as Reference ( $R^2 = 0.56$ )					
(Intercept)	5.144	0.182	28.198	69.185	$p < .001^{***}$
Religious	-0.382	0.268	-1.426	68.723	$p = .159$
Spiritual	0.940	0.575	1.635	68.211	$p = .107$
Religious as Reference ( $R^2 = 0.56$ )					



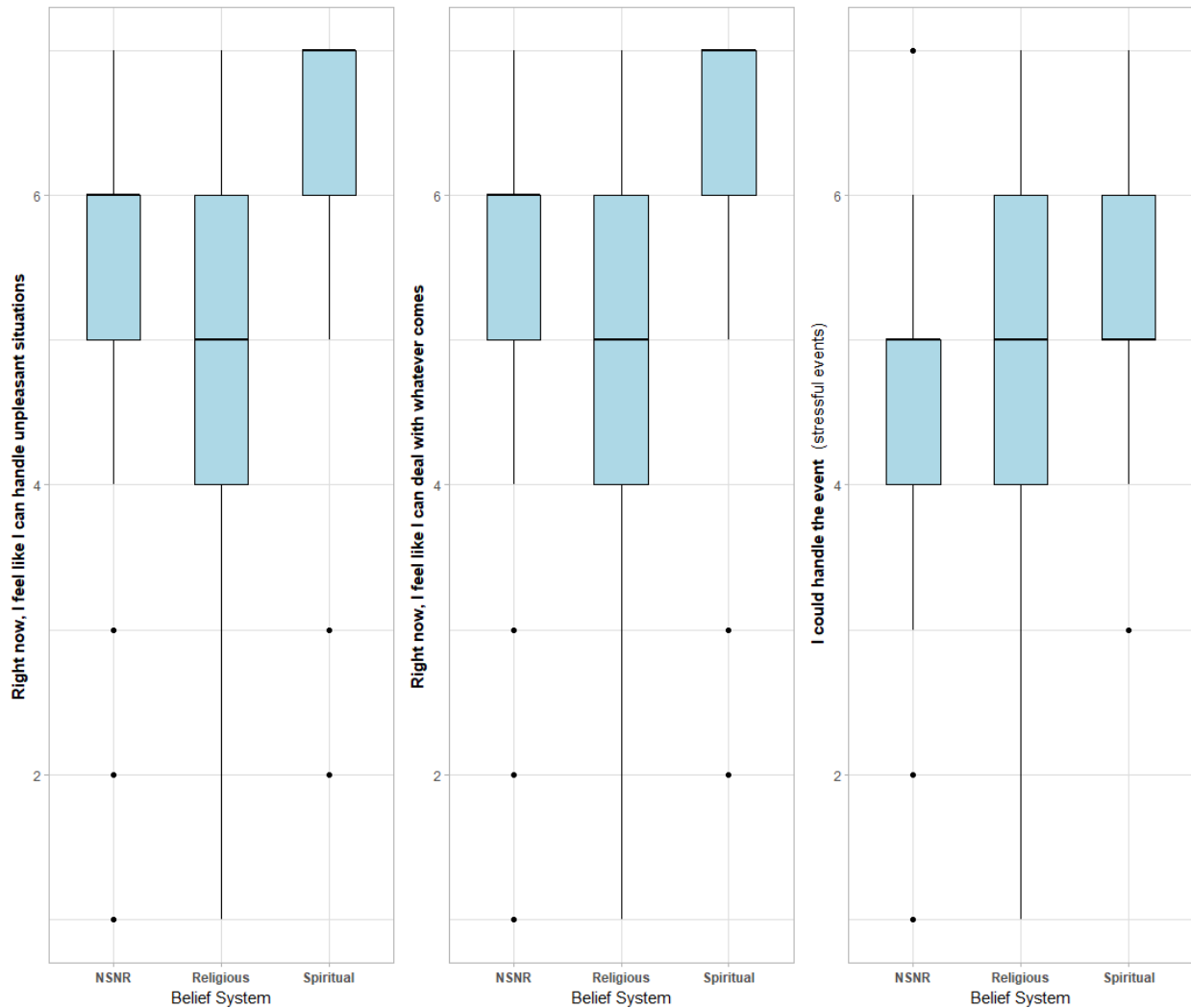
(Intercept)	4.762	0.196	24.303	68.326	$p < .001^{***}$
NSNR	0.382	0.268	1.426	68.723	$p = .156$
Spiritual	1.321	0.579	2.282	68.128	$p = .026^*$
NSNR vs. Faithful ( $R^2 = 0.61$ )					
(Intercept)	5.144	0.188	27.370	70.282	$p < .001^{***}$
Faithful	-0.231	0.267	-0.862	69.851	$p = .391$
I could handle the event ( <i>stressful events</i> )					
NSNR as Reference ( $R^2 = 0.50$ )					
(Intercept)	4.741	0.168	28.220	66.865	$p < .001^{***}$
Religious	-0.361	0.241	-1.498	63.854	$p = .139$
Spiritual	0.760	0.540	1.406	77.575	$p = .164$
Religious as Reference ( $R^2 = 0.50$ )					
(Intercept)	4.380	0.173	25.294	61.196	$p < .001^{***}$
NSNR	0.361	0.241	1.498	63.854	$p = .139$
Spiritual	1.121	0.542	2.069	76.745	$p = .042^*$
NSNR vs. Faithful ( $R^2 = 0.50$ )					
(Intercept)	4.742	0.172	27.594	67.145	$p < .001^{***}$
Faithful	-0.246	0.240	-1.024	65.102	$p = .310$

*Note.* Significance level: ‘\*’  $p < .05$ , ‘\*\*’  $p < .01$ , ‘\*\*\*’  $p < .001$ .

The following boxplots in Figure 1 display the momentary resilience differences among the three belief system groups in comparison.

**Figure 1**

*Combined Boxplots of the Total Momentary and Retrospective Resilience Measurements for each Belief System Group*



***The Association Between Attributing Daily Stressful Events to a Higher Purpose and Momentary Resilience is Moderated by the Belief System Groups***

Partially dissenting the second hypothesis, the effect of attributing stressful events to a higher purpose on momentary resilience was moderated solely by the spiritual group in the first model. The interaction showed negative effect sizes, yielding a reduced momentary resilience of spiritual participants when using a higher purpose. Lastly, the spiritual group, but not the

religious group, has shown to significantly and positively differ from the NSNR control group in their momentary resilience, but not retrospective resilience. The results of the three LME models are displayed in Table 4.

**Table 4**

*Results of three LME Models Testing the Interaction Between Attributing Stressful Events to a Higher Purpose and the Belief System Groups on three Momentary Resilience Measurements, Treating NSNR as the Reference Group.*

Predictor	Estimate ( <i>b</i> )	<i>SE</i>	Test statistic ( <i>t</i> )	df	<i>p</i> -value
(1) Right now, I feel like I can handle unpleasant situations.					
(Intercept)	4.930	0.255	19.345	133.516	$p < .001^{***}$
Higher Purpose	-0.042	0.055	-0.761	695.911	$p = .447$
Religion	-0.508	0.372	-1.364	142.755	$p = .175$
Spiritual	2.138	0.865	2.472	205.029	$p = .014^*$
Higher Purpose:Religion	0.075	0.070	1.068	706.999	$p = .286$
Higher Purpose:Spiritual	-0.293	0.145	-2.016	676.657	$p = .044^*$
(2) Right now, I feel like I can deal with whatever comes.					
(Intercept)	4.728	0.267	17.709	124.772	$p < .001^{***}$
Higher Purpose	-0.001	0.055	-0.179	702.926	$p = .858$
Religion	-0.487	0.390	-1.249	130.962	$p = .214$
Spiritual	2.222	0.896	2.480	182.672	$p = .014^*$

Higher	0.062	0.070	0.882	706.091	$p = .378$
Purpose:Religion					
Higher	-0.270	0.145	-1.867	672.550	$p = .062$
Purpose:Spiritual					
(3) I could handle the event					
(Intercept)	4.722	0.223	21.169	151.659	$p < .001^{***}$
Higher Purpose	0.009	0.055	0.157	631.938	$p = .876$
Religion	-0.576	0.329	-1.750	178.567	$p = .082$
Spiritual	0.483	0.792	0.610	285.023	$p = .543$
Higher	0.053	0.071	0.739	690.045	$p = .460$
Purpose:Religion					
Higher	0.064	0.150	0.428	689.085	$p = .669$
Purpose:Spiritual					

*Note.* Significance level: ‘\*’  $p < .05$ , ‘\*\*\*’  $p < .01$ , ‘\*\*\*\*’  $p < .001$ . Only stressful events were considered for all models.

***Attributing Stressful Events to a Higher Purpose Partially Mediates the Effect of the Belief System Groups on Adaptation to Stressful Events***

Partially affirming the third hypothesis, the higher purpose attribution style was a significant partial mediator for the effects of the religiously affiliated group on retrospective resilience. The Shapiro-Wilk test indicated non-normality for all three models ( $p_{1|2|3} < 0.001$ ). The preferred method to determine the indirect effect was thus reasoned to be non-parametric bootstrapping (iterations = 10,000).

Although the direct effect of the spiritual group on retrospective resilience turned out significant, this effect was not mediated by the attribution style. However, the religious group's retrospective resilience could be partially attributed to the attribution style. Consequently, the inferior influence of religious affiliation on retrospective resilience, when compared to the other groups, was mitigated by approximately half its negative direct effect when adopting a higher purpose attribution. In contrast, the NSNR group showed negative impacts of the attribution style on the ability to handle stressful events. Hence, the superior retrospective resilience of the NSNR group, compared to the other groups, was mitigated and could be partially attributed to the use of the higher purpose attribution. However, the combined effect of the NSNR group's retrospective resilience and its mediation by the attribution style was insignificant and the mediation does therefore not account for the total effect. Lastly, it must be acknowledged that the assumption of independence among the repeated measurements limited the amount of variance explained and generalisability in the three models. The results obtained from the mediation analyses and direct effects models are presented in Table 5. A visual overview of the mediation analyses in terms of a mediation path diagram is presented in Figure 2 for each belief system group.

**Table 5**

*Results of Mediation Analyses with Attributing Stressful Events to a Higher Purpose as a Mediator for the Effects of the Isolated Belief System Groups on Retrospective Resilience, and their Direct Effects Models.*

Predictor	Estimate ( <i>b</i> )	<i>SE</i>	Test statistic ( <i>t</i> )	95% CI	<i>p</i> -value
(1) Spirituality					
ACME	0.052			-0.01 – 0.15	<i>p</i> = .105
ADE	0.745			0.29 – 1.21	<i>p</i> = .003**

Total Effect	0.797		0.34 – 1.26	$p = .002^{**}$
Prop. Mediated	0.065		-0.01 – 0.23	$p = .106$

---

Direct Effect Model for Spirituality ( $F(3, 709) = 73.27, p < .001; R^2 = 0.02$ )

---

(Intercept)	4.371	0.114	38.469	$p < .001^{***}$
Spirituality	0.745	0.300	2.484	$p = .013^*$
Higher Purpose	0.078	0.032	2.469	$p = .014^*$

---

(2) Religion

---

ACME	0.197		0.09 – 0.31	$p < .001^{***}$
ADE	-0.401		-0.61 – -0.18	$p < .001^{***}$
Total Effect	-0.204		-0.39 – -0.01	$p = .035^*$
Prop. Mediated	-0.968		-5.38 – -0.26	$p = .036^*$

---

Direct Effect Model for Religion ( $F(2, 710) = 10.49, p < .001; R^2 = 0.03$ )

---

(Intercept)	4.393	0.113	38.829	$p < .001^{***}$
Religion	-0.401	0.108	-3.725	$p < .001^{***}$
Higher Purpose	0.143	0.035	4.059	$p < .001^{***}$

---

(3) NSNR

---

ACME	-0.195		-0.31 – -0.13	$p < .001^{***}$
ADE	0.316		0.10 – 0.60	$p = .005^{**}$
Total Effect	0.122		-0.07 – 0.33	$p = .214$
Prop. Mediated	-1.595		-15.38 – 11.89	$p = .214$

---

Direct Effect Model for NSNR ( $F(2, 710) = 7.64, p < .001; R^2 = 0.02$ )

---

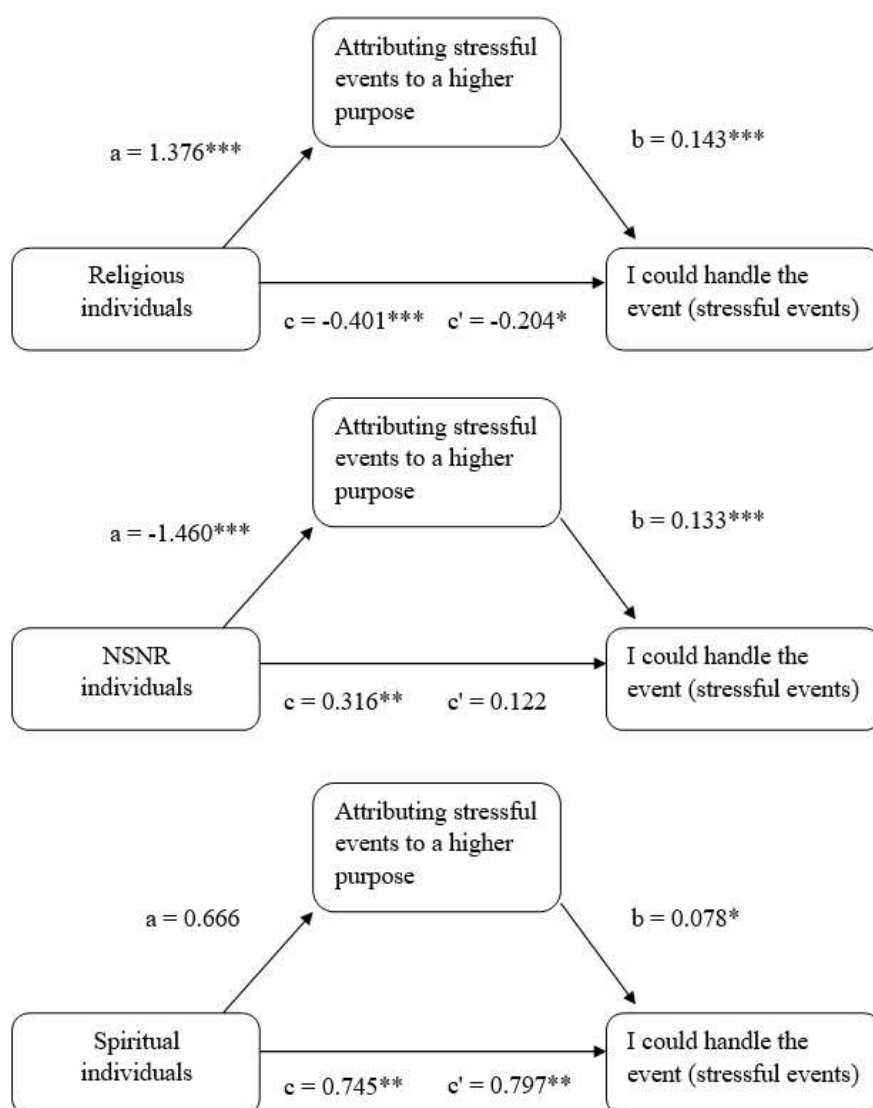
(Intercept)	4.073	0.203	8.938	$p < .001^{***}$
-------------	-------	-------	-------	------------------

NSNR	0.316	0.110	4.142	$p = .004^{**}$
Higher Purpose	0.133	0.036	3.701	$p < .001^{***}$

*Note.* Significance level: ‘\*’  $p < .05$ , ‘\*\*’  $p < .01$ , ‘\*\*\*’  $p < .001$ . ACME = Average Causal Mediation Effect, ADE = Average Direct Effect, Prop. Mediated = Proportion Mediated. Only stressful events were considered in all models.

## Figure 2

### Mediation Path Diagrams for Each Belief System Group



*Note.* Significance level: ‘\*’  $p < .05$ , ‘\*\*’  $p < .01$ , ‘\*\*\*’  $p < .001$ . The models assumed independence of measurements. ‘a’ represents the direct effect of the group on the mediator calculated by a linear regression of the mediator on the group. ‘b’ represents the direct effect of the mediator on the outcome from the direct effects model as presented in Table 5. ‘c’ represents the average direct effect of the group on the outcome denoted as ADE in Table 5. ‘c’ represents the combined effect of the mediation and ADE on the outcome denoted as total effect in Table 5.

***The Attribution of Daily Stressful Events to a Higher Purpose Moderates the Effect of Positive Affect on Adaptation to Stressful Events***

Partially dissenting the fourth hypothesis, only NSNR and religious individuals showed effects of their positive affect on retrospective resilience to be moderated by the higher purpose attribution. However, only six observations were considered in the spiritual group, due to the low number of reported stressful events and missing relevant values for PPA, which rendered an imprecise analysis for this group.

For the religious and NSNR groups, the attribution style significantly moderated the association between PPA and retrospective resilience. The interaction’s negative effect size indicates mitigated PPA influence on retrospective resilience when utilising a higher purpose attribution to stressful events. Likewise, the general model with the belief system groups as a covariate indicated a negative effect size for the interaction. Hence, attributing stressful events to a higher purpose resulted in the inhibition of the PPA influence on retrospective resilience for religious and NSNR individuals, even when controlling for combined effects of the groups.

Lastly, the attribution style and PPA were both significant direct predictors of the ability to handle stressful events in all models, except for the spiritual group. The results of the moderation analyses are presented in Table 6.



**Table 6**

*Results of LME Models with the Higher Purpose Attribution as Moderator of the Association Between PPA and Retrospective Resilience Outcomes, Isolated for each Belief System Group. A Fourth LME Model was Conducted with the Belief System Groups as three-level Covariate.*

Measurement	Estimate ( <i>b</i> )	<i>SE</i>	Test statistic ( <i>t</i> )	<i>df</i>	<i>p</i> -value
(1) Spirituality (N = 6, $R^2 = 0.35$ )					
(Intercept)	-20.226	16.632	-1.216	1.796	$p = .360$
PPA	6.080	3.942	1.542	1.769	$p = .278$
Higher Purpose	7.157	4.820	1.485	1.821	$p = .287$
PPA:Higher Purpose	-1.675	1.145	-1.463	1.848	$p = .291$
(2) Religion (N = 245, $R^2 = 0.49$ )					
(Intercept)	1.712	0.816	2.098	237.144	$p = .037^*$
PPA	0.575	0.201	2.862	239.456	$p = .005^{**}$
Higher Purpose	0.561	0.196	2.862	233.093	$p = .005^{**}$
PPA:Higher Purpose	-0.125	0.049	-2.576	231.621	$p = .011^*$
(3) NSNR (N = 176, $R^2 = 0.51$ )					
(Intercept)	2.338	0.607	3.852	102.326	$p < .001^{***}$
PPA	0.611	0.139	4.412	119.776	$p < .001^{***}$
Higher Purpose	0.570	0.219	2.606	150.196	$p = .010^*$
PPA:Higher Purpose	-0.143	0.051	-2.820	151.648	$p = .005^{**}$

(4) Belief system as covariate (N = 427, $R^2 = 0.49$ )					
(Intercept)	2.356	0.501	4.699	293.794	$p < .001^{***}$
PPA	0.576	0.115	5.011	376.262	$p < .001^{***}$
Higher Purpose	0.532	0.134	3.960	412.457	$p < .001^{***}$
Religious	-0.566	0.243	-2.327	49.012	$p = .024^*$
Spiritual	0.479	0.663	0.723	59.943	$p = .473$
PPA:Higher Purpose	-0.123	0.032	-3.846	405.446	$p < .001^{***}$

*Note.* Significance level: ‘\*’  $p < .05$ , ‘\*\*’  $p < .01$ , ‘\*\*\*’  $p < .001$

## Discussion

This comparative study sought to investigate differences in momentary resilience of individuals with different belief systems and how attributing stressful events to a higher purpose influences their momentary resilience within the daily lives of the general Western population.

To answer the research question, the results indicated that the spiritual group displayed overall greater momentary resilience compared to the religious group. However, the two faithful groups separated and combined did not differ significantly from the NSNR group in terms of momentary and retrospective resilience. However, when taking the effects of the attribution style and PPA from stressful events of the same day on momentary resilience into account, religious individuals showed to significantly and negatively differ from the NSNR group. In contrast, when taking the attribution style and all stressful events into account, the spiritual group showed significant, and positive momentary resilience differences compared to the NSNR group, except for retrospective resilience. Furthermore, the external attribution style partially explained the religious group’s retrospective resilience. Only spiritual individuals showed a significant

interaction with the effects of higher purpose attributions, resulting in mitigated influence of the attribution style on one momentary resilience outcome. Lastly, PPA showed significant positive direct effects on the ability to handle stressful events, but this effect was mitigated by the attribution style for religious and NSNR individuals.

### ***The three Groups of Spiritual, Religious and NSNR Significantly Differ in their Momentary Resilience***

Partially affirming initial expectations, spiritual individuals exhibited significantly greater momentary resilience when compared to their religiously affiliated fellows. Opposed to Zhang et al.'s (2020) findings on general well-being, which renders spiritual and religious individuals to be overall more similar than distinct, this study revealed significant differences between spiritual and religious individuals in the context of momentary resilience. Recognizing spirituality as distinct from religion is therefore advised in the context of daily-life resilience. Such a difference between the findings could hint at distinct mechanisms at play for specifically momentary resilience. It would be interesting to investigate those differences and establish a framework on how momentary resilience influences the general well-being of individuals with different affiliations in future studies.

However, contrary to previous research indicating that religious affiliation is associated with greater resilience compared to non-affiliated individuals (Pargament et al., 1998; Koenig et al., 2020; Schwalm et al., 2021; Balboni et al., 2022), this study unexpectedly found only partially significant differences, suggesting inferior momentary resilience of religious individuals. To explain this discordant finding, it is important to consider that most previous studies focused on trait resilience rather than momentary resilience, suggesting a potentially crucial distinction. It is known that religious individuals often rely on their social support system

to bolster resilience (Smith et al., 2012), and this support may be more likely to be mobilized during major negative life events rather than daily adversities. Additionally, Balboni et al. (2022) found that engaging in religious practices proportionally enhances the positive effects of religious affiliation on mental health, and potentially resilience, in a dose-response manner. That is, the more religious individuals engaged with their community, the less risk for all-cause mortality and adverse coping such as drug misuse were observed (Balboni et al., 2022). Those findings suggest that it is not only mere affiliation with religion but also actively practising and embodying religious values which predict resilience.

In light of these findings, the lower momentary resilience observed among religious individuals in this study might be attributed to a reduced urgency to seek social support, and therewith not gaining resiliency, and insufficient adherence to religious practices and values, which was not attended to in this study. It might be that without engagement in their religious communities, religious individuals exhibit similar or even lower momentary resilience than NSNR individuals. Lastly, it is worth noting that across all models, all groups consistently scored lower on retrospective resilience compared to their momentary resilience estimations, suggesting a potential overestimation effect of their actual stress management capacity.

***The Association Between Attributing Daily Stressful Events to a Higher Purpose and Momentary Resilience is Moderated by the Belief System Groups***

Firstly, the findings suggest that being spiritually affiliated renders greater momentary resilience than the NSNR group when experiencing stressful events. In this context, a superiority can be observed of the spiritual group's momentary resilience over the NSNR group. Secondly, the influence of the attribution style on momentary resilience was inhibited solely by the spiritual group, but only for one momentary resilience outcome. That said, spiritual individuals may draw

upon other non-investigated resources such as a sense of personal meaning (Smith et al., 2012), engagement in emotion regulation strategies (Akbari & Hossaini, 2018) or cognitive reappraisal (Loewenthal et al., 2000). Similar studies like the one from Kent et al. (2020) suggest that the effects of stressful daily events could be buffered by attributing those events to daily spiritual experiences. Their ESM study did not investigate momentary resilience though, but a range of psychological constructs and mental health outcomes. It could be that the higher purpose attribution may not interact with the belief system groups directly but with the stress experienced by daily adversities in predicting momentary resilience, which would pose an interesting research question for future studies.

Surprisingly, the attribution style did not result as a predictor of any momentary resilience outcome in the interaction model with the belief system. However, all other models show the attribution style to significantly influence momentary resilience consistently positively. This difference could be potentially explained by the different subsets used for each model.

***Attributing Stressful Events to a Higher Purpose Partially Mediates The Effect of the Belief System Groups on Adaptation to Stressful Events***

To explain the unexpected results multiple aspects should be considered. Firstly, the assumption of independent measurements could account for the low amount of explained variance in the models. The resulting poor model fit suggests that the models might be insufficient in modelling the mediation and inferences should be drawn very cautiously. Future studies should utilise LME models for more precise mediation analyses.

Secondly, the results suggest that also NSNR individuals attribute events to a higher purpose, but that they rather experience unfavourable momentary resilience outcomes. This could mean that the NSNR group tends to use this resource as a more maladaptive, potentially

avoidant coping strategy. Previous research by Krägeloh et al. (2012) supports this assumption. They found that individuals who use SC without strong faithful affiliation tend to utilise it in avoiding ways such as distraction or denial. However, for those high in religious affiliation, adaptive coping strategies like acceptance were associated with SC (Krägeloh et al., 2012). Hence, the way how different individuals based on their faithful affiliation view and utilise the attribution style might differ fundamentally and could explain the associated decrease and increase in momentary resilience for NSNR and religious individuals respectively.

In line with Krägeloh et al. (2012) and others (Pargament et al., 1998; Smith et al., 2012), the religious group showed to enhance their momentary resilience by the attribution style, potentially due to their affiliation with God or a higher power (Pargament et al., 1998), which they might imply in the notion of higher purpose. In turn, the sense of connection and praise from a higher power could hint at greater resiliency outcomes as mentioned by Reynolds et al. (2013). Attributing daily stressful events to a higher purpose can therefore be a useful tool for religious individuals to effectively foster daily-life resilience.

However, spiritual individuals might draw upon other unexplored resources that were not investigated in this study. The attribution style could be a by-product of another potential resource acting as a mediator, such as acceptance, or the intrinsic search for meaning in life (Krägeloh et al., 2012; Smith et al., 2012). Future research could investigate through which resources spiritual individuals exhibit their superior momentary resilience. Investigating further group differences and mechanisms through which faithful groups exhibit momentary resilience, preferably by using ESM, would contribute to a better understanding of the factors that explain the resilience gap.

### ***The Attribution of Daily Stressful Events to a Higher Purpose Moderates the Effect of Positive Affect on Adaptation to Stressful Events***

The insignificant result for spiritual individuals could be explained by the insufficient model fit for spiritual individuals due to their low number of observations, which likely rendered inaccurate analysis results. Further research with larger sample sizes is needed to explore how spiritual individuals foster positive emotions in more depth. This would provide valuable insights for developing targeted interventions and tailored resilience support programs.

Due to the findings of Lyu et al. (2017), that positive emotions significantly predict and enhance momentary resiliency in students, it was expected that PPA has a significant influence on momentary resilience. The current study's findings concord with their results. The attribution style and PPA seem to be strongly involved in handling stressful daily events. However, their interaction suggests that instead of complementing each other, the attribution style might be utilized in the absence of positive affect. Thus, when lacking positive affect, individuals might be prompted to rely on other strategies, such as SC, as a substitute. Interestingly, this seemed to be the case for non-faithful persons as well, suggesting that NSNR individuals do also engage in SC. Interventions aimed at promoting resilience should therefore consider the influence of positive affect and focus on cultivating positive emotions. Integrating those results into answering the research question, religious and NSNR individuals showed positive affect and higher purpose attributions to be significant predictors for successful stress management, but they seem to not work in conjunction.

#### ***Limitations***

The study had several limitations in terms of statistical power, primarily due to difficulties encountered during the study setup in Ethica. Multiple issues occurred, including

sending out the baseline questionnaire multiple times, participants receiving the wrong questionnaire, and time constraints, resulting in increased drop-out rates and reduced participant motivation. To mitigate this limitation, participants have been contacted and updated throughout the study, whenever such mistake occurred. Convenience sampling led to only four individuals identifying as spiritual, limiting the generalizability of the results. Furthermore, the study did not gather information about the extent to which individuals live by the values and practices of their belief system, nor did it specify how individuals view the higher purpose attribution, which could provide valuable insights in future studies.

### ***Conclusion***

The study's findings highlight a clear distinction between spiritual and religious individuals in terms of daily-life resilience. Attributing stressful events to a higher purpose might play a partial mediating role for religious individuals, increasing their ability to successfully handle stressful events. Lastly, attributing stressful events to a higher purpose could interfere with resiliency benefits of positive affect. When investigating how individuals with different belief systems adapt to daily stressful events, those differences should be considered.



## References

- Akbari, M., & Hossaini, S. M. (2018). The Relationship of Spiritual Health with Quality of Life, Mental Health, and Burnout: The Mediating Role of Emotional Regulation. *Iranian Journal of Psychiatry, 13*(1), 22–31.
- Armstrong, M., & Richter, F. (2021, December 8). *Infographic: Employees increasingly under stress*. Statista Infographics. <https://www.statista.com/chart/26363/share-employees-feeling-stress-timeline/>
- Balboni, T. A., VanderWeele, T. J., Doan-Soares, S. D., Long, K. N. G., Ferrell, B. R., Fitchett, G., Koenig, H. G., Bain, P. A., Puchalski, C., Steinhauser, K. E., Sulmasy, D. P., & Koh, H. K. (2022). Spirituality in Serious Illness and Health. *JAMA, 328*(2), 184–197. <https://doi.org/10.1001/jama.2022.11086>
- Bates, D., Mächler, M., Bolker, B., & Walker, S. (2015). Fitting Linear Mixed-Effects Models Using lme4. *Journal of Statistical Software, 67*(1), 1–48. <https://doi.org/10.18637/jss.v067.i01>
- Berghuijs, J., Bakker, C., & Pieper, J. (2013). New spirituality and social engagement. *Journal for the Scientific Study of Religion, 52*(4), 775–792. <https://doi.org/10.1111/jssr.12062>
- Bjorck, J. P., & Thurman, J. W. (2007). Negative life events, patterns of positive and negative religious coping, and psychological functioning. *Journal for the Scientific Study of Religion, 46*(2), 159–167. <https://doi.org/10.1111/j.1468-5906.2007.00348.x>
- Blanke, E. S., Schmiedek, F., Siebert, S., Richter, D., & Brose, A. (2022). Perspectives on resilience: Trait resilience, correlates of resilience in daily life, and longer-term change in affective distress. *Stress and Health, 39*(1), 59–73. <https://doi.org/10.1002/smi.3164>

- Charles, S. T., Piazza, J. R., Mogle, J., Sliwinski, M. J., & Almeida, D. M. (2013). The wear and tear of daily stressors on Mental Health. *Psychological Science, 24*(5), 733–741.  
<https://doi.org/10.1177/0956797612462222>
- Dong, F., Ablah, E., Nelson, C., Shah, S., & Khan, A. (2013). Validation of a modified CD-RISC. *Kansas Journal of Medicine, 6*(1), 11–20. <https://doi.org/10.17161/kjm.v6i1.11430>
- Ethica Data. (2023). Ethica: Mobile Sensing and Data Collection Platform.  
<https://ethicadata.com/>
- Kent, B. V., Henderson, W. M., Bradshaw, M., Ellison, C. G., & Wright, B. R. E. (2020). Do daily spiritual experiences moderate the effect of stressors on psychological well-being? A smartphone-based experience sampling study of depressive symptoms and flourishing. *The International Journal for the Psychology of Religion, 31*(2), 57–78.  
<https://doi.org/10.1080/10508619.2020.1777766>
- Koenig, H. G., Al-Zaben, F., & VanderWeele, T. J. (2020). Religion and psychiatry: Recent developments in research. *BJPsych Advances, 26*(5), 262–272.  
<https://doi.org/10.1192/bja.2019.81>
- Krägeloh, C. U., Chai, P. P., Shepherd, D., & Billington, R. (2010). How religious coping is used relative to other coping strategies depends on the individual's level of religiosity and spirituality. *Journal of Religion and Health, 51*(4), 1137–1151.  
<https://doi.org/10.1007/s10943-010-9416-x>
- Leger, K. A., Charles, S. T., & Almeida, D. M. (2018). Let it go: Lingering negative affect in response to daily stressors is associated with physical health years later. *Psychological Science, 29*(8), 1283–1290. <https://doi.org/10.1177/0956797618763097>

- Loewenthal, K. M., Macleod, A., Goldblatt, V., Lubitsh, G., & Valentine, J. D. (2000). Comfort and joy? Religion, cognition, and mood in Protestants and Jews under stress. *Cognition and Emotion, 14*, 355–374.
- Lyu, M., Xi, J., & Luo, Y. (2017). Daily emotional characteristics in individuals with different resilience levels: Supplementary evidence from experience-sampling method (ESM). *Acta Psychologica Sinica, 49*(7), 928–940. <https://doi.org/10.3724/sp.j.1041.2017.00928>
- McIntosh, D. N. (1995). Religion-as-schema, with implications for the relation between religion and coping. *International Journal for the Psychology of Religion, 5*(1), 1–16. [https://doi.org/10.1207/s15327582ijpr0501\\_1](https://doi.org/10.1207/s15327582ijpr0501_1)
- Myin-Germeys, I., Kasanova, Z., Vaessen, T., Vachon, H., Kirtley, O., Viechtbauer, W., & Reininghaus, U. (2018). Experience sampling methodology in mental health research: New Insights and Technical Developments. *World Psychiatry, 17*(2), 123–132. <https://doi.org/10.1002/wps.20513>
- Ong, A. D., & Leger, K. A. (2022). Advancing the study of resilience to daily stressors. *Perspectives on Psychological Science, 17*(6), 1591–1603. <https://doi.org/10.1177/17456916211071092>
- Pargament, K. I., & Hahn, J. (1986). God and the just world: Causal and coping attributions to god in health situations. *Journal for the Scientific Study of Religion, 25*(2), 193. <https://doi.org/10.2307/1385476>
- Pargament, K. I., Smith, B. W., Koenig, H. G., & Perez, L. (1998). Patterns of positive and negative religious coping with major life stressors. *Journal for the Scientific Study of Religion, 37*(4), 710. <https://doi.org/10.2307/1388152>

- Peterson, C., & Seligman, M. E. (1984). Causal explanations as a risk factor for depression: Theory and evidence. *Psychological Review*, *91*(3), 347–374.  
<https://doi.org/10.1037/0033-295x.91.3.347>
- R Core Team. (2023). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. <https://www.R-project.org/>
- Reynolds, N., Mrug, S., & Guion, K. (2013). Spiritual coping and psychosocial adjustment of adolescents with chronic illness: The role of cognitive attributions, age, and Disease Group. *Journal of Adolescent Health*, *52*(5), 559–565.  
<https://doi.org/10.1016/j.jadohealth.2012.09.007>
- Schwalm, F. D., Zandavalli, R. B., de Castro Filho, E. D., & Lucchetti, G. (2021). Is there a relationship between spirituality/religiosity and resilience? A systematic review and meta-analysis of observational studies. *Journal of Health Psychology*, *27*(5), 1218–1232.  
<https://doi.org/10.1177/1359105320984537>
- Smith, B. W., Ortiz, J. A., Wiggins, K. T., Bernard, J. F., & Dalen, J. (2012). Spirituality, resilience, and positive emotions. *The Oxford Handbook of Psychology and Spirituality*, 437–454. <https://doi.org/10.1093/oxfordhb/9780199729920.013.0028>
- Tingley, D., Yamamoto, T., Hirose, K., Keele, L., & Imai, K. (2014). mediation: R Package for Causal Mediation Analysis. *Journal of Statistical Software*, *59*(5), 1–38.  
<https://doi.org/10.18637/jss.v059.i05>
- Vaessen, T., Viechtbauer, W., van der Steen, Y., Gayer-Anderson, C., Kempton, M. J., Valmaggia, L., McGuire, P., Murray, R., Garety, P., Wykes, T., Morgan, C., Lataster, T., Lataster, J., Collip, D., Hernaus, D., Kasanova, Z., Delespaul, P., Oorschot, M., Claes, S., ... Myin-Germeys, I. (2019). Recovery from daily-life stressors in early and chronic

psychosis. *Schizophrenia Research*, 213, 32–39.

<https://doi.org/10.1016/j.schres.2019.03.011>

Zhang, H., Hook, J. N., Hodge, A. S., Van Tongeren, D. R., Davis, D. E., & Jin, L. (2022).

Nonreligious spirituality, mental health, and well-being. *Spirituality in Clinical Practice*,

9(1), 60–71. <https://doi.org/10.1037/scp0000279>

Zinnbauer, B. J., & Pargament, K. I. (2005). Religiousness and Spirituality. In R. F. Paloutzian &

C. L. Park (Eds.), *Handbook of the psychology of religion and spirituality* (pp. 21–42). The

Guilford Press.