The relationships between character strengths and subjective wellbeing:

Evidence from Greece under lockdown during COVID-19 pandemic

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Abstract: COVID-19 was first identified in December 2019. As long as this type of coronavirus was new, the main way for governments to avoid the spread of the infection was enforced quarantine. Besides the public health protection, quarantine can have psychological impact to the residents with main symptoms to be angst, anxiety, depressive and PTSD symptoms. As it has been found that character strengths can promote subjective wellbeing, the purpose of the study was to examine this relationship under the new situation of quarantine, in Greek population. The total sample consisted of 354 participants, aged 18-72 years. The tools used were PANAS, PERMA and VIA-114GR. The results showed that love, curiosity, persistence, hope and zest are strongly associated to subjective wellbeing even in conditions such as quarantine and can support specific aspects of it.

1. Introduction

In December 2019, in Wuhan, China, a new type of coronavirus was first identified, which leads to coronavirus disease 2019 (COVID-19), caused by the severe acute respiratory syndrome "coronavirus 2" (SARS- CoV-2) [1]. The severity of the disease differs from mild to severe [2] and it seems to be highly contagious [3-5]. The main symptoms are cough, fever and breathlessness

however, a lot of patients positive to the virus have no symptoms [3]. WHO announced COVID-19 outbreak as pandemic on 11 March 2020. A pandemic is a situation where a rather infectious disease spreads worldwide in a short period of time [1].

As this type of coronavirus was new, there was neither an effective treatment nor a vaccine [3,6]. This led to the implementation of a series of prevention strategies by the governments of the affected countries, including rules of hygiene, social distancing and quarantine [3]. Quarantine (voluntary or enforced) is a state, where people need to be isolated for a specific period of time in a specific place, in order to prevent the spread of an infectious disease to other people. Although, being in quarantine may promote the health of people, it may also have a negative counterpart to their emotional and social health [7]. This negative aspect of quarantine has also been mentioned in other similar outbreaks, such as SARS (2003) and H1N1 (2009) [7].

Specifically, being in quarantine can cause angst to people when concerning their future, the possible implementation of new preventive measures and the potential scarcity of essentials [7,8]. Moreover, it has been observed that people in quarantine are really concerned about their own and their loved ones' wellness [7,9,10] regardless of whether they are infected or not [11]. Augmented difficulty is also observed in staying at home and constraining their transportations, hobbies and meeting with their loved ones [9,10], while expressing disappointment and boredom [7,10]. Another element that should be taken into consideration is the duration of the quarantine, as it seems to affect the severity of psychological consequences [7,9-11].

The main psychological symptoms sighted under quarantine circumstances are anxiety/stress, depression, and post-traumatic stress disorder (PTSD) [7,9]. It seems that the augmented stress levels observed at the peak of the outbreak are retained even after the end of it, mostly because of the constant references to the outbreak by the media [8]. Some researchers

support that these symptoms may be detected weeks, months even years after the end of the quarantine [7]. This leads us to wonder how important it is to include effective mitigation measures in the quarantine planning procedure [7].

Until now, besides a history of chronic psychological disorder, there are no recorded any elements of someone's character that could predict effectively quarantine's psychological impact [7,8,12].

1.1 Positive Psychology

However, there are some people, who can stay calm despite the chaos around them. Positive psychology seems to answer this question, that is, how people deal with adverse situations such as a pandemic, which leads to a preventive quarantine. Positive psychology focuses on whatever makes life worth living. It is not about recovering from anything problematic, but centers on every positive element that each has, and aims to develop and thrive everyone's potential. Its purpose is the high levels of functioning through the development of each positive characteristic of humans [13]. Specifically, among positive psychology's central concerns are people's character strengths [14].

1.2 Five Virtues and Twenty-four Character Strengths

People with strong character strengths seem to accomplish the aforementioned goal, since character strengths are the positive traits that enable people to fulfill their potential [14,15]. It has been found, that higher levels of character strengths are correlated with higher levels of life satisfaction, which leads to lower levels of psychological and social problems and higher levels of

function in domains such as interpersonal relationships, work performance, physical health etc. [13].

Character strengths are the main psychological components of virtues. Virtues are universal characteristics, and may have a biological ground. They are selected through an evolutionary process, as they help people survive [16]. In Greek population, a model of 5 virtues, composed of 24 character strengths is established. These virtues are the interpersonal virtue, the virtue of intellect, the restraint, the knowledge and the transcendence virtue [17]. In particular, it has been found that kindness, love, honesty, fairness, and persistence are the five strengths that are most common in Greek people [17]. Table 1 shows the dimensions of every virtue, that is, which character strengths each virtue consists of.

Table 1. The five virtues and their character strength constituents.

Virtues	Character Strengths
Interpersonal Virtue	Forgiveness, Modesty, Appreciation of beauty, Kindness, Love, Teamwork, Fairness, Leadership
Virtue of Intellect	Curiosity, Open-mindedness, Creativity, Perspective, Bravery, Social intelligence, Humor
Virtue of Restraint	Self-regulation, Prudence, Persistence, Honesty
Transcendent Virtue	Gratitude, Hope, Spirituality, Zest
Virtue of Knowledge	Love of Learning

1.3 Age and Gender Differences in Virtues and Human Strengths

There seems to be a difference according to age, with adults aged from 55 to 64 years old reporting higher levels of almost all restraint dimensions while adults among 18 and 24 years having the lowest score at prudence and self-regulation. Moreover, participants aged among 45 and 54 years old demonstrate the highest levels of transcendent virtue and the respective strengths. Alongside, gender differences have also been noted, for example, women reported higher levels of kindness, appreciation of beauty while men reported higher level of creativity, humor, curiosity [17].

1.4 Subjective Wellbeing

Complementary, subjective wellbeing has also a great association with experiencing less negative emotion, such as that quarantine causes, and in arousing positive emotions and feeling of flourishment [18]. Various theories have attempted to figure out the main components of subjective wellbeing [19]. However, the most recent working multidimensional theory is Seligman's, 2011[15], PERMA theory. The components of subjective wellbeing are five: a) Positive Emotions: experiencing positive emotions leads to wellbeing; b) Engagement: dedication and subsequent satisfaction after physical, cognitive and emotional activity; c) Positive Relationships: healthy and supportive relationships with family, friends and other important people; d) Meaning in Life: coming across a way to make life worth living; e) Accomplishments, the afterglow of accomplishments as a mainspring for action [19].

1.5 Hedonic and Eudaimonic Wellbeing

Most researchers agree that there are two concepts of wellbeing, hedonic and eudaimonic [20]. *Hedonic wellbeing* is about pleasure, enjoyment, comfort, satisfaction, ease, and centers on what somebody wants the present moment. Positive affect is dominated and negative affect is in a low degree [21]. On the other hand, *eudaimonic wellbeing* is about meaning, value, personal growth, maturity, self-realization, excellence, quality, accomplishments, and engagement. It focuses both on the present and the future in proportion. Nevertheless, there are some common elements between the two concepts such as life satisfaction and subjective value [21]. Most studies suggest that people need both aspects of wellbeing to flourish. They are not two opposite elements, in contrast one complements the other, so it is necessary for both variables to be considered, when subjective wellbeing and its outcomes are studying [21]. Hence, in this study we wanted to examine both eudaimonic wellbeing and hedonic wellbeing.

1.6 Character Strengths and Subjective Wellbeing Indices

There is a positive correlation between character strengths and subjective wellbeing [22,23]. In particular, it has been found that in Greek population, all character strengths except for modesty, love of learning, appreciation of beauty, and self-regulation have a positive correlation to all five PERMA factors and overall wellbeing. The strengths of love, hope, curiosity, and zest are more correlated to all PERMA's dimensions [17]. On account of this, there have been many studies that have created interventions that aimed to develop or enhance character strengths, in order to increase wellbeing [24,25].

Character strengths can be defined as positive traits which are reflected in thoughts, feelings and behavior and have been linked with subjective wellbeing (SWB) [26]. SWB is reported as the different ways in which individuals appraise their lives' quality, and is about an interaction between cognitive and emotional elements [26]. Main components of SWB are life

satisfaction, higher levels of positive affect and lower levels of negative affect in everyday experiences [27,28]. Accordingly, there is a correlation between character strengths and SWB, in terms of life satisfaction as a cognitive aspect of wellbeing [29,30]. The more strongly the strength is valued, the more life satisfaction is reported [30]. Some researchers have indicated that some character strengths are more related with SWB. Moreover, character strengths play a significant role in depression, through the mediation of dysfunctional attitudes, negative affect and happiness [25].

It has been noted, that character strengths have negative effect on dysfunctional attitudes and positive effect on happiness [25]. Also, negative affect is the only element which had found to have a direct impact on depressive symptoms [25] that quarantine can cause. People with high levels of character strengths have high levels of happiness too [25]. Happiness has an immediate effect on negative affect, and as a result an indirect effect on depressive symptoms, either by increasing people's resilience against the noxious effects of early adversities and stressors or by reducing the negative emotions on depression [25,28]. In contrast, people with low levels of character strengths, are cultivating maladaptive attitudes toward the self, and as a result produce dysfunctional attitudes to average out these not suitable statements for theirselves [25]. Dysfunctional attitudes have an indirect effect on depression, by increasing negative affect. It seems that character strengths can reduce depressive symptoms, without a significant inverse effect. However, positive and negative affect is two distinguishable elements. Hence, by increasing positive affect, negative affect does not decrease necessarily [28]. According to Positive Psychopathology, psychosocial factors can attenuate everyone's inherent ability for growth, fulfillment and wellbeing. Furthermore, pre-treatment character strengths are related to post-treatment recovery from depression [25].

In this context, the purpose of this study was to analyze the relationship between character strengths and both hedonic and eudaimonic SWB in a quarantine context. We wanted to examine which character strengths are more related with SWB, and the differences in this relationship according to age and gender. Finally, we would like to look into the moderating role of keep working out of home and living with beloved ones during quarantine.

The present study

The purpose of the study was to examine which character strengths potentially contribute to eudaimonic and hedonic wellbeing in people who have been quarantined for at least two weeks due to the coronavirus pandemic. In particular, we would like to examine whether character strengths contribute to high levels of subjective wellbeing in the Greek population in conditions of forced quarantine, despite the negative psychological effects that it may cause. As positive psychology and more specifically, character strengths seem to positively correlate with SWB in conditions of normality, we wanted to study whether the same is true in this particular condition of pandemic and subsequent quarantine. We also wanted study the moderating role of individual-demographic factors (age, gender, work out of the house, living alone) in this relationship.

It was expected that at least some character strengths would predict positively SWB, similarly to what is reported in the literature under normal conditions (Hypothesis 1). Also, there was a research question regarding the extent in which this relationship would be positively or negatively moderated by demographic factors, i.e., gender, age, education, living with a close person, work outside the home.

2. Materials and Methods

2.1 Participants

The sample of the study was Greek adults (N = 354) aged from 18 to 72 years, participated in the present study. The mean age of the total sample was 32.08 years ($SD = 10.94$). There were 263 women (74,3%) and 91 men (25,7%). Thus, female gender was overrepresented in the sample. Regarding the educational level, the majority of the participants had 13 or more years of education (n=335, 94,6%). Hence, almost all participants were of high educational level. Regarding the duration of their quarantine, when the study was taken place, the average was 2.76 weeks ($SD = 1.05$). Additionally, 285 (80,5%) of the participants, stated that they live with another person, while 69 (19,5%) stated that they live alone. When they asked if they still work outside the home during quarantine, 71 people answered in the affirmative (20,1%).

2.2 Measures

Demographics: Participants were asked to report demographic information including gender, age, education, weeks of quarantine, if they were living alone and still working out of home during quarantine.

The Positive and Negative Affect Schedule (PANAS) [31, Greek adaptation: 32]. The questionnaire consists of 20 items – 10 representing negative affect and 10 positive affect. The scale measures positive emotions, such as proud and active, and negative emotions, such as guiltiness and fear. A study in the Greek population confirmed the existence of two factors in the structure of the scale, the positive and the negative affect, each of which includes ten emotions [32]. Responses are given to a 5-point Likert-type scale from '*1-very few times or not at all*' to '*5*

too many times'. Participants answered to what extent they felt what was described by each item the last two weeks. So, state affect was measured via PANAS administration. The developers report high levels of internal reliability in all measurements taken (as state or trait affect), with Cronbach's alpha ranging from .86 to .90 for the positive affect subscale and from .84 to .87 for the negative affect subscale [31]. In the Greek adaptation, Cronbach's alpha was $\alpha = .84$ for positive affect, and $\alpha = .82$ for negative affect. In the present study, Cronbach's α was .88 for state negative affect and .85 for state positive affect.

PERMA Profiler [33, Greek version: 19]. This multidimensional questionnaire consists of 23 items, which measure the five pillars of subjective (hedonic and mainly eudaimonic) wellbeing. According to Seligman's theory, 2011 [15] these pillars are: Positive emotions, Engagement, positive Relationships, Meaning in life and Accomplishments. It also includes eighth additional items: a single item for satisfaction with life and for loneliness and three items for negative emotions and for physical health. There is also an overall score for all items of PERMA and the single item for satisfaction with life. Responses are given to an 11-point Likert-type scale anchored by '*0-Never/Not at all/Terrible*' to '*10-Always/Completely/Excellent*' to answer each item. The Greek validation of the PERMA Profiler confirmed the five-factor structure of the instrument and revealed acceptable internal consistency, and adequate convergent and discriminant validity. More specifically, Cronbach's α for every one of the five pillars of wellbeing was; for positive emotions: $\alpha = .83$, for engagement: $\alpha = .56$, for positive relationships: $\alpha = .74$, for meaning in life: $\alpha = .78$, and for accomplishment: $\alpha = .72$. Hence, the five PERMA subscales are characterized by adequate levels of reliability apart from the engagement subscale which shows a low level of internal consistency. Same results are showed in the present study. Cronbach's α was .87 for positive emotions, .58 for engagement, .76 for positive relationships, .81 for meaning in life and .76 for

accomplishment. Internal consistency of the total PERMA in the present study was found to be: α =.91.

Values In Action – 114GR [VIA-120: 16, Greek translation: 34, VIA-114GR conceptual framework in Greek culture: 17]. The VIA-114GR is the Greek version of the VIA-120, conceptualized in the framework of Greek culture. VIA-114GR contains 114 items and measures five virtues and 24 character strengths according to the classification of Peterson and Seligman, 2004 [16]. Responses are given to a 5-point Likert-type scale '*0-Very much like me* to *4-Very much unlike me*', and the participant has to report the extent to which each item describes them. The VIA-114GR demonstrated good internal reliability, convergent validity as regards wellbeing indices and discriminant validity regarding negative experiences. The internal consistency of the total VIA-114GR was found to be: α=.96 [17]. Internal consistency of the 24 character strengths was tested and the results showed adequate reliability for almost all strengths ranged from α = .70 to α = .82 for the 20 strengths. However, four strengths, open-mindedness (α = .62), fairness (α = .66), modesty (α = .60) and self-regulation (α = .65) showed marginal reliability coefficient values. Cronbach's α for the five virtues was .92 for the interpersonal virtue, .91 for the virtue of intellect, .86 for the virtue of restraint, .89 for the virtue of transcendence and .81 for the virtue of knowledge [17]. Similar results were found in the present study. More specifically, 18 out of 24 character strengths showed adequate to very good reliability ranged from α= .72 to α= .87. However, honesty (α= .68), social intelligence (α=.66), forgiveness (α= .60), fairness (α= .62), modesty (α= .58) and open-mindedness (α= .59) showed marginal to low reliability coefficient values. Cronbach's α for the five virtues was .82 for the interpersonal virtue, .81 for the virtue of intellect, .71 for the virtue of restraint, .86 for the virtue of transcendence and .77 for the virtue of knowledge. The internal consistency of the total VIA-114GR in the present research was found to be α=.90.

2.3 Procedure

We initially constructed an electronic questionnaire included the information and consent form, and next all the above measurements. This questionnaire was accessible to any device with internet connection. Accordingly, the questionnaire was posted on social media (e.g., facebook) to university and cultural groups. Participation in the study was anonymous and voluntary. The only exclusion criteria were age (only adults over 18 years were permitted to participate) and quarantine weeks (2 weeks and over). The study was conducted during the period of quarantine, March to May 2020. This study is approved by Scientific Research Ethics Committee, Aristotle University of Thessaloniki, School of Psychology.

2.4 Ethical Standards

The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008. All participants participated voluntarily in the study. They were informed about the procedure and the aim of the study, and subsequently they provided their written consent for participation. The study was approved by the Scientific Ethics Committee of the School of Psychology of the Aristotle University of Thessaloniki and was fully in line with the European Union Regulation on sensitive personal data (28 May 2018).

3. Results

The statistical data analysis package for social sciences SPSS v.22.0 [35] and the statistical program of structural equation modeling EQS 6.1 [36] were used for the analysis. Twenty-nine variables were created as the sum of the items that were found to constitute the respective psychological quality in previous structural – factorial analyses (see the section Measures), for character strengths and virtues (twenty-four character strengths and five virtues) and seven for subjective wellbeing components (five PERMA factors, state positive affect and state negative affect). For these variables, descriptive statistics (average, standard deviation, minimum and maximum values) were calculated. Subsequently, a series of path analyses was performed to examine whether the variables of character strengths could affect the components of subjective wellbeing, and secondarily, whether individual demographic characteristics affect both character strengths and SWB. Due to the sample size constrictions, we decided to examine whether each group of character strengths that constitute a specific virtue could predict the level of every component of SWB. Hence, we finally confirmed five path models, each one for the strengths of every virtue. Another model in which we entered the five virtues as predictors of wellbeing, and demographic factors as predictors of both virtues and wellbeing components was finally confirmed. The five virtue variables were created by summing the scores of the strengths that constitute each virtue respectively.

Before presenting the confirmed path models, it is important to mention the model fit indicators. To support the goodness of fit of a path model to the data, the level of statistical significance for the Goodness of Fit Index χ^2 should be $p > .05$. In addition, the Root Mean Square Error of Approximation (RMSEA) value must be less than .05 to indicate approximately good fit of the model to the data, while values of the RMSEA index between .06 and .08 indicate a

reasonable, and therefore acceptable, error of approximate fit. Regarding the Comparative Fit Index (CFI), which evaluates the fit of the proposed model in relation to a limited, basic model, values greater than .90 indicate a sufficient fit of the model to the data [37].

The path model indices, which was confirmed for the strengths of the 1st virtue, namely, the interpersonal virtue (Figure 1), indicate a satisfactory model fit to the data, $\chi^2(47) = 72.95$, $p = .009$, CFI = .98, SRMR = .04, RMSEA = .04 (90% CI: .02 - .06). According to the 1st model, *'love' is the character strength which predicts all of the components of both hedonic and eudaimonic wellbeing*. 'Love' predicts negatively only 'meaning in life'. The highest positive relationship of love is with 'positive relationships' and the lowest with 'state negative affect'. 'Appreciation of beauty' positively predicts 'state positive affect', 'engagement', 'meaning in life' and negatively 'positive relationships'. 'Forgiveness', positively predicts 'positive relationships' and negatively 'meaning in life'. 'Modesty', negatively predicts 'engagement' while 'kindness' positively predicts 'state negative affect'. 'Teamwork' predicts positively 'engagement'. 'Leadership' positively predicts both 'meaning in life' and 'accomplishment' (see Figure 1). There are also reasonable correlations between the components of wellbeing with each other and between character strengths with each other (see Table 2)

The path model indices, which was confirmed for the strengths of the 2nd virtue, namely, the virtue of intellect (Figure 2), indicate satisfactory model fit to the data, $\chi^2(48) = 79.56$, $p = .002$, CFI = .98, SRMR = .04, RMSEA = .04 (90% CI: .02 - .06). According to the 2nd model, *'curiosity' is the character strength which predicts positively almost all of the components of both hedonic and eudaimonic wellbeing*. 'Creativity' predicts positively 'state positive affect' and 'engagement', meanwhile 'perspective' predicts positively 'accomplishment', and 'social intelligence' predicts positively 'positive relationships' (see Figure 2). There are reasonable

correlations between components of wellbeing and between character strengths with each other (see Table 3).

The path model indices, which was confirmed for the strengths of the 3rd virtue, namely, the virtue of restraint (Figure 3), indicate a particularly satisfactory model fit to the data, $\chi^2(26) = 34.14$, $p = .131$, CFI = .99, SRMR = .04, RMSEA = .03 (90% CI: .00 - .06). According to the 3rd model, *'persistence' is the character strength which predicts positively almost all of the components of both hedonic and eudaimonic wellbeing*. 'Prudence', negatively predicts 'engagement' and 'self-regulation' positively predicts 'accomplishment' (see Figure 3). There are reasonable correlations between components of wellbeing and between character strengths with each other (see Table 4).

The path model indices, which was confirmed for the strengths of the 4th virtue, namely, the transcendent virtue (Figure 4), indicate a particularly satisfactory model fit to the data, $\chi^2(16) = 15.95$, $p = .456$, CFI = 1.00, SRMR = .021, RMSEA = .00 (90% CI: .00 - .05). According to the 4th model, *'hope', 'spirituality' and 'zest', predict almost all of the components of subjective wellbeing*. Namely, 'hope' predicts negatively 'state negative affect', 'spirituality' predicts negatively 'positive emotions', 'engagement', 'positive relationships' and 'accomplishments'. 'Zest' has the highest positive relationship with 'engagement' and the lowest with 'state negative affect'. In addition, 'gratitude' predicts positively 'positive emotions' and 'positive relationships' (see Figure 4). There are reasonable correlations between components of wellbeing and between character strengths with each other (see Table 5).

The path model indices, which was confirmed for the strength of the 5th virtue, namely, the virtue of knowledge (Figure 5), indicate a particularly satisfactory model fit to the data, $\chi^2(7) =$

10.6, p = .156, CFI = .99, SRMR = .03, RMSEA = .03 (90% CI: .00 - .08). According to the 5th model, *'love of learning' predicts positively 'state positive affect', 'positive emotions', 'engagement' and 'accomplishment'* (see Figure 5). There are reasonable correlations between components of subjective wellbeing with each other (see Table 6).

Also, as above mentioned, there was a research question regarding the extent in which these relationships would be positively or negatively moderated by demographic factors, i.e., gender, age, education, living with a close person, work outside the home. Due to sample size restrictions these relationships were examined with virtue variables instead of human strength variables. The path model indices, which was confirmed for the five virtues, demographics and wellbeing components (Figure 6), indicate satisfactory model fit to the data, $\chi^2(31)$ = 44.6, p = .053, CFI = .99, SRMR = .04, RMSEA = .03 (90% CI: .00 - .06). According to the 6th model, 'age' predicts positively the following virtues: 'interpersonal virtue', 'virtue of restraint', 'transcendent virtue' and 'virtue of knowledge'. On the other hand, 'age' correlates negatively with some wellbeing components, namely 'positive emotions' and 'positive relationships', but 'age' has potentially positive relationship with wellbeing indirectly, through these virtues which correlated with, as they described below. Almost all virtues, except the 'virtue of knowledge', have both positive and negative relationships with wellbeing components. Specifically, the 'virtue of transcendence' predicts all of the components of wellbeing positively, except 'state positive affect' and 'meaning in life', these correlations are negative. 'Interpersonal virtue' predicts positively 'state negative affect', 'positive relationships' and 'meaning in life', and also has negative correlation with 'state positive affect' and 'accomplishment'. 'Virtue of intellect' predicts positively 'state positive affect', 'positive emotions', 'engagement' and 'accomplishment'. 'Virtue

of restraint' predicts positively only 'accomplishment'. There are reasonable correlations between wellbeing components with each other and between virtues with each other (see Table 7).

4. Discussion

The purpose of this study was to investigate the relationships between character strengths and both hedonic and eudaimonic wellbeing in the Greek population, during pandemic due to COVID-19, in the middle of quarantine. More specifically, the study investigated whether character strengths can predict SWB and which ones have the highest role in enhancing SWB levels. The findings showed that the character strengths that higher and mostly predict both hedonic and eudaimonic wellbeing positively are love, curiosity, persistence, hope, and zest. These findings are consistent with the extant literature according to which love, hope, zest, curiosity have the strongest effect on wellbeing [22,26,38] in general.

4.1 The Relationships Between Human Strengths and Affect as Positive Emotions, State Positive Affect and State Negative Affect (Hedonic Wellbeing)

Under these specific situation of quarantine, positive emotions, as a specific component of wellbeing was positively predicted by love, curiosity, persistence, gratitude, hope, zest and love of learning. There was also a negative correlation with spirituality.

In relation to state positive affect, as measured by the PANAS, it was predicted positively by appreciation of beauty, love, curiosity, creativity, persistence, zest and love of learning. As for state negative affect, there were both positive and negative correlations. It was predicted positively by spirituality, zest, kindness, love and negatively by hope. In the literature, all character strengths are usually positively or zero correlated to other wellbeing components (eudaimonic aspect) and zero or negatively correlated to negative affect [17,22].

Broaden and build theory [39] describes the form and function of positive emotions, such as interest and love. First, these positive emotions expand a person's momentary thought-action repertoire, for example interest triggers the desire to explore and love triggers close relationships (and the rest character strengths trigger behaviors as they were described below). Second, by expanding a person's momentary thought-action repertoire positive emotions promote the discovery of new and creative actions, ideas and social bonds that lead to the construction of personal resources, physical, spiritual, social and psychological resources. It is important that these resources act as reserves that can be used later to improve the chances of successful treatment and survival. This reaction to positive emotions is completely different from the reaction to negative emotions which is very limited reaction, usually is fight or flight.

However, pandemic and quarantine, was a very new and unknown situation [7,40], so people might not be able to use their already made personal resources for all of their character strengths due to the new circumstances, but they also may had not developed broaden behaviors for every positive emotion they had. This may be the reason why, some character strengths predicted positively state negative affect, in contrast with the literature [17,22].

Finally, Lu et al., 2020 [41] suggested that attitudes can contribute to higher levels of wellbeing. More specifically, propitious attitudes such as reduced perceived severity of the

situation, trust to what is said by media, and perceived control of the situation, can increase happiness and reduce depressive symptoms. Also, another crucial factor was found to be that the quarantine was at a community level. This fact could increase the psychological impact of quarantine, because people perceived the situation as out of control and enforced, not their choice. In the end, although relationships with family and friends are playing an important role in wellbeing this was a period that relationships were limited so they were tested.

4.2 The Relationships Between Character Strengths and the Engagement Component of Wellbeing

Under the specific conditions of quarantine, Engagement as specific component of wellbeing was found to be positively predicted the highest by zest but also by hope, persistence, teamwork, creativity, curiosity, appreciation of beauty, love and love of learning. Engagement is more a state of mind rather than experiences and is about positivity and fulfillment. Also, engagement is about the effort that people make for a common good or achievement. Hence, engagement motivates people to work emotionally, behaviorally and cognitively in order to achieve or create something [19].

Zest gives people the strength to work even under harsh conditions [19] such quarantine, where people had to adapt in a new reality [42]. Hope predicted positively engagement as it is a strength which gives people motivation for the future [43] because hope makes people stronger to copy with losses of their loved ones and generally to copy with disappointment and difficulties [44]. Persistence enhances engagement through the effort it applies on overcoming cognitive challenges [45] and finishing every activity one's start [15], which is more difficult in quarantine

with all these restrictions [42]. Teamwork predicted positively engagement because it promotes working harmonically together for achieving a common goal [15,19]. This strength is very important through quarantine, as people were confronted with new ways of working, studying, communicating [42]. Creativity may predict engagement by thinking new and productive ways to do things and curiosity by making ongoing experiences more interesting [15]. Especially, in a new, unexpected and crucial period such as pandemics and quarantine, strengths like creativity and curiosity were found to be extremely useful for people to cope with their new everyday life, because they had to come up new ways of living, working, entertain [43]. Appreciation of beauty is correlated to engagement by noticing skilled performance in all domains of life [15], as engagement is correlated to fulfillment, a strength like appreciation of beauty, could facilitate a much better adjustment to the requests of the environment. During this lockdown period, the population has required to learn different ways of working, examining, relaxing and getting at the side their nearest and dearest, among other day by day propensities, the better they adapt the higher wellbeing levels [43]. Commitment is a crucial component of love, as it promotes familiarity and similarity, which can increase engagement among people, a very important element of people relationships, because in this way relationships are more unfading during years [46], and during quarantine relationships were tested [42]. Love of learning is about mastering abilities which is the key component of engagement [15,22], and for a lot of people quarantine was a period that was exploited to gain new knowledge and skills but also to set new goals [42].

However, there were also found negative relationships with modesty, prudence and spirituality. According to Wagner et al., 2019 [22] modesty and prudence are the character strengths that have not been related positively to wellbeing, in contrast, it has been noted small negative relationships of these with some components of wellbeing. Modesty was found, as one

of the bottom strengths in a Greek sample too [17]. Probably these two character strengths do not help people to have high levels of wellbeing, but to avoid negative experiences and also contribute for people to help others to have high levels of wellbeing [22]. So, it was not expected to be found a high positive correlation between these character strengths and some of wellbeing components.

Based on the literature, spirituality can promote mental health, mainly through the reduction of stress levels in the body, through the power of faith. It can also lead to increased levels of altruism, happiness, and life satisfaction. It is suggested that by increasing the levels of spirituality, the levels of wellbeing are increasing too [47,48]. However, in a Greek sample, spirituality was one of the bottom strengths [17] which maybe explain partially the findings of the present study. Particularly, spirituality predicted negatively positive emotions, engagement, positive relationships, accomplishment, meaning in life, and positively only state negative affect.

Spirituality brings believers closer to their faith. However, in order for people to have high levels of spirituality, some processes are required, such as expressions of admiration, devotion, exchange of beliefs and worship. So, it seems that religion is a very important component of spirituality [49]. Although, it is not fully studied, it seems that spiritual health contributes to the prevention and promotion of mental health [49].

In Greece, the majority of believers are Orthodox Christians, whose way of life, which offers them high levels of spiritual health, includes faith to their religion, contact with God through the sign of the Cross and pray. Also, includes physical and spiritual fasting, the Sacrament of Confession and the Sacrament of Holy Communication [50]. Nevertheless, pandemic affected many of the religious practices, due to the measures were taken in order to prevent the spread of COVID-19 and to preserve public health. More specifically, entry to churches, monasteries, shrines, as well as public worship, contact with other believers and religious tourism was

prohibited. All these restrictions in religious ceremonies were devastating as they used to establish social ties and a sense of belonging, a necessary component of wellbeing. Also, believers no longer had the opportunity to pray in religious places as they did before, except at home [49]. All these changes in the way that people express their religiousness, are also the reason why spirituality did not predict positively wellbeing components in this study.

4.3 The Relationships Between Human Strengths and the Wellbeing Component of Positive Relationships

Under the particular conditions of quarantine, Positive Relationships as a particular component of wellbeing was found to be positively predicted the highest by love and hope but also by social intelligence, gratitude, persistence, curiosity and forgiveness.

Positive relationships are creating feelings of belonging, security [19] and connection, which is one of the core factors of love. Connecting is about familiarity and caregiving [46]. It has been suggested that the higher levels of love people are demonstrating, the higher levels of love interactions with others will receive and this relationship predicts positively positive relationships [22]. In addition, this character strength seems to play a key role in starting and maintaining relationships [22]. Loneliness has been associated positively to depressive and anxious symptoms while hope has been liked negatively to these symptoms. Hope can help people to set goals, to make thoughts about how to achieve them and to have less negative thoughts, which can be harmful [51]. In this way, individuals are able to create and maintain positive relationships, especially in such a difficult time like quarantine, where is very important for all to keep their hope levels high.

As can be seen from what was mentioned above, people wellbeing levels depend on wellbeing levels of people they connect [19]. In this way, people with high levels of social intelligence, this means people with the ability to understand the feelings and motivations both of themselves and others [15], can keep their positive relationships, which can lead them to higher levels of wellbeing. Gratitude, may give individuals the chance to recognize every positive element of their relationships, and increase relationships' vigor, as gratitude means to be aware of and thankful for the good things that happen [15]. Concerning persistence, this character strength is about finishing what one starts and overcoming difficulties [15,45]. Assuming that quarantine is a situation characterized by social isolation [7,40], the strength of persistence seems to be crucial in maintaining positive relationships. Curiosity is about exploring, take interest on experiences [15] and desire to acquire new knowledge. The positive relationship between curiosity and positive relationships in the present study might be social curiosity. This means the desire to explore and understand the motivations, behaviors and feelings of the others [52]. In a new situation like this of quarantine, was probably important to understand how the others perceive what is happening, how the others spend their time and how they cope with the difficulties. Social curiosity, conceivably, brought people closer, even under these conditions. Forgiveness, means to forgive the wrong that other people have done [15] predicted positively positive relationships, perhaps via the way that some people found quarantine as an opportunity to care about their personal relationships [42].

On the other hand, there were found negative correlations with appreciation of beauty and spirituality. Appreciation of beauty has not ever been strong correlated to positive relationships [17,22]. Maybe this negative relationship can be explained by the fact that this character strength is about noticing the excellent performance and during quarantine, due to the isolation [7,40], it

was difficult to recognize both the other's performance and the beauty of their close and positive relationships, so this strength could not lead to positive relationships. About spirituality an explanation was given above.

4.4 The Relationships Between Human Strengths and the Meaning in Life Component of Wellbeing

Again, under these particular conditions of quarantine, Meaning in Life, as a particular component of wellbeing was found to be positively predicted the highest by appreciation of beauty, leadership and zest.

Meaning in life creates motivation and passion to people in their lives, but also fulfills them and correlates to experience of positive emotions. Another relation between meaning and positive emotions is the procedures of anticipating future pleasant occurrences, appreciating current positive events, or reminiscing about past pleasant occurrences. Individuals' sense of meaning in positive events in their lives is enhanced by these strategies. As one's life is enhanced, more good emotions are felt, and psychological flourishing is taking place [19].

Appreciation of beauty is related to observing and appreciating beauty, excellence and gifted execution in all spaces of life [15]. It might be an important source of meaning in people life [22], because taking note and appreciating the positive in life, despite the crisis around [53], can lead people to higher levels of meaning in their life and consequently to higher levels of wellbeing.

Leadership is about organizing and ensuring the success of group activities [15]. This positive relationship between leadership and meaning in life can probably be explained by the fact that in quarantine people were isolated in their homes apart from every activity, hobby, work they

had before [7,40]. Therefore, even the small goals and activities that managed to implement in this period, gave them a sense of meaning and fulfillment.

Zest, is about approaching life with fervor and vitality [15] and is one of the highest strengths which predicted wellbeing during quarantine. People with zest, are searching the meaning of life and the reasons to live and trying to create their future in the best way [54], no matter the difficulties are.

The findings showed negative correlations between hope, love, and forgiveness, and meaning in life. According to the literature, hope is usually positively correlated to meaning in life. As regards love and forgiveness, no significant positive correlation to meaning in life but also not a negative correlation was found [17,22]. At this point it should be mentioned that according to the *positive activity model* [55], there are some conditions under which character strengths, and their followed positive activities, can lead to happiness and wellbeing. Particularly, to achieve wellbeing, people need to perform positive activities. These positive activities increase the levels of wellbeing through some mediators, namely positive emotions, positive thoughts, positive behaviors, and need satisfaction. However, performing positive activities has some features. First, there are features of the activity: *dosage:* the more the better but it is up to every activity and every person, sometimes it's easy to exaggerate and have negative consequences. *Variety:* the literature supports that two to four positive activities concurrently may lead to higher levels of wellbeing. *Sequence:* is about which positive activity is the starter and *social support*. Second, there are features of the person. To reach higher levels of wellbeing, people need to perform positive activities based on their character strengths with effort and high motivation. In the end, person-activity fit, that is how much the features of the activity are close to the features of every personality, predicts further the levels of wellbeing.

In this study, because people were in quarantine conditions, not all the features could be utilized, so people even though they generally have and use the specific character strengths, could not apply them by performing positive activities in order to have higher levels of wellbeing due to the specific conditions. People in quarantine, are isolated in their homes, without social interactions, with a lot of restrictions, so they have fewer opportunities to perform all of the positive activities they used to [7,40], for example use humor by making jokes or love by expressing their feeling and have time with family and friends.

4.5 The Relationships Between Human Strengths and Wellbeing as Accomplishment

Accomplishment, as a specific component of wellbeing, under these specific conditions of quarantine was found to be positively predicted the highest by persistence but also by perspective, zest, love, leadership, curiosity, hope, love of learning and self-regulation.

Accomplishment motivates people to set goals and achieve them. This process is achieved through the desire to succeed. The best possible performance is rewarded both by oneself and by society. Of course, judging one's success is completely subjective. Subsequently, accomplishment can increase wellbeing and reduce anxiety and depression levels. An important factor in the accomplishment process is social support, as it helps people set and achieve more difficult goals [19].

It has been found [22] that accomplishment, has been predicted the strongest and most consistent by perspective, persistence and zest. In accordance in what it was mentioned above about people and accomplishment in quarantine, perspective, is required in arrange to set

appropriate long-term goals, while persistence and zest are vital in arrange to preserve goal pursuit and encourage objective fulfillment [22].

In this way love can play an important role as it contributes to the value of close interpersonal relationships [15]. During the quarantine people had the opportunity to strengthen their relationships with their loved ones either by living in the same house or by communicating through technology, which helped more than ever. At the same time, during the quarantine many people either continued to work in the same or different way they did before or found new job opportunities and setting new goals [42]. In all these circumstances social support, which is often achieved through love, plays an important role. In the process of starting new activities and succeeding, leadership seemed to help, because leadership has exactly this role [15] and seemed to predict positively accomplishment, likewise curiosity, makes ongoing experiences more interesting [15] and this character strength might help people in quarantine to find their new -or in a new way- activities more interesting, and for this reason they carried them off. As long as accomplishment motivates people to set and achieve goals, even in quarantine period, hope, makes people to anticipate the best and hoping to achieve it, while, at the same time love of learning creates in people the tendency to perfect new skills and acquire new knowledge [15], indeed many people found quarantine as a period to achieve these [42]. Self-regulation is about regulating the feelings and behaviors [15], therefore it is useful for humans to reduce stress levels so as not to negatively affect them in order to achieve the goals they set.

However, a negative correlation with spirituality has been found. Again, spirituality can promote mental health through the power of faith [47,48]. Religiousness, as an integral and crucial component of spirituality [2], provides believers support, confidence and hope [56]. Additionally, spirituality is an important source of support for dealing with difficulties [56]. Many people, in

order to connect with God and feel supported, need to visit churches, shrines, come in contact with other believers and show public worship. However, all these practices, which are a source of strength for believers, were prohibited during quarantine, as people were isolated, in order to ensure public health [49].

4.6 The Relationships Between Virtues and Subjective Wellbeing Components

It was found that interpersonal virtue was positively predicted state negative affect and negatively predicted state positive affect. This finding is in contrast with the literature [17,43] where seems to be found the opposite relationship. It has been proposed that quarantine was a period where interpersonal relationships were tested, people had to find new ways to communicate and be adapted to them, as well as a period that caused intense anxiety about the health of people close to them [42].

Maybe these findings can be explained by the fact that the period which was studied in the present study was the first days of the fist quarantine, where people were for the first time isolated in this way and might had not been adapted to the new situation yet. Also, another explanation can be given by the "broaden and build theory" which described above [39]. Additionally, it was found that interpersonal virtue predicted negatively accomplishment. Accomplishment includes effort and success and social support plays an important role [19], which in the specific period studied here, could not exist as it was needed for the reasons described above about social relationships, because of the isolation. However, interpersonal virtue predicted positively positive relationships and meaning in life. Although quarantine was a period that interpersonal relationships were tested,

some relationships became stronger and people find new ways to communicate [42]. Consequently, the distance and the isolation may created negative emotions to people due to the lack of face-to-face interaction, but close relationships tested, got stronger and more meaningful.

Intellectual virtue found to predict positively state positive affect, positive emotions, engagement and accomplishment. These relationships might occur due to the strong prerequisites of having to adapt to a new way of life. Intellectual virtue seems to help people to have a higher adjustment to the requests of the environment. During this lockdown period, the population has required to learn diverse ways of working, studying, communicating, exercising and the strengths of this virtue played a key role for people to copy the new reality [43].

Virtue of restraint positively predicted accomplishment. Some people found the period of quarantine as a chance to set goals or trying to achieve goals they already had [42]. However, quarantine was a very stressful condition, in which people needed to be adapted in a new reality, in a new way of achieving their goals. This process was too difficult, especially for those with low in restraint strengths because the situation demanded self-control. So, people high in restraint strengths were more easily to copy stress and difficulties, to have self-efficacy and finally to achieve their goals [43].

Virtue of transcendent was found to positively predict state positive affect, positive emotions, engagement, positive relationships and accomplishment. It was also found to negatively predict state negative affect and meaning in life. This virtue increases positive emotions and reduces negative emotions, through the power of faith and in this way promotes wellbeing [47,48]. Also, it enhances engagement because it motivates people for the future and makes them more capable to copy with difficulties, such as quarantine and the consequent security measures, and accomplish their goals [43,44]. Nevertheless, due to quarantine and the isolation, people were

restricted and not able to do the activities they did before [43], such as going to the church, so this may be the reason why transcendent virtue negatively predicted meaning in life.

4.7 The Relationship Between Individual Demographic Characteristics, Virtues and Subjective Wellbeing

In the present study demographic characteristics, except age, did not find to correlate with any virtue and with any wellbeing component. Age predicted positively all virtues apart from the intellect virtue, where there was not found any correlation. These findings are in line with the literature, according to which in the age-group 45 plus the virtues of transcendence, restraint, knowledge, and the interpersonal virtue were found to reach higher levels, as compared to younger adults [17].

However, in the present study, age was shown to predict negatively positive emotions and positive relationships. According to the literature, it has been proven, that older adults have more positive emotions compared to younger adults [57-60]. Older adults are using more effective emotion-regulation strategies and they are oriented to experiencing more positive emotions. They are aware of the limited future, so they are focused on having positive experiences and positive emotions, in contrast with younger adults who are oriented to acquire knowledge [57,59]. Nevertheless, in extremely negative and changeable situations, older adults are more vulnerable and present more consequences and difficulties in copying with them [59,61].

Generally speaking, in this study, the sample was consisted, mainly, of younger and middle-aged adults, so the negative effect of age on positive emotions and positive relationships,

may reflect, the lower levels of positive emotions and relationships in these populations, in lack of older adults.

5. Conclusions

In sum, it seems that Hypothesis 1 has been partially confirmed. The findings showed that the character strengths that higher and mostly predict subjective wellbeing in quarantine are love, curiosity, persistence, hope, zest, in accordance with the extant literature [22,26,38]. Thus, under the specific condition of quarantine, human strengths are "able to act" to maintain or enhance subjective wellbeing, as usually. This finding is very important in terms of developing easy and effective interventions in order for adults to cope with this adverse situation. However, it was also found that some character strengths have a negative correlation with specific wellbeing components, during quarantine perhaps as a result of the extreme and unknown condition. In any case, this "differentiation" is not able to neutralize the general positive role of human strengths in wellbeing enhancement.

Regarding to the research question about demographics, no significant correlation between demographics and subjective wellbeing was found, except for the negative relationship between age, positive emotions and positive relationships.

Theoretical and practical implications

The results of the present study seem to be important for promoting wellbeing in Greek people, especially in critical and unpredictable situations such as the pandemics and subsequent quarantine. It seemed in which way a part of the Greek population reacted to an unprecedented

and threatening to the health situation, during which, enforced quarantine was applied as a preventive measure by the government. Also, it was found which character strengths helped the residents to maintain or increase their levels of wellbeing but also which character strengths, in this case and under these specific conditions, did not predict positively wellbeing. Furthermore, it was studied how the deprivation of the daily routine affected the relationship between character strengths and well-being.

In addition, according to the data obtained, it would be useful to design interventions in order to prevent and deal critical and uncertain situations based on the character strengths of each individual. Positive psychology is an emerging field of psychology, which, contrary to the current prevailing tactics of psychopathology and the cure of weaknesses, promotes wellbeing through the strengthening of one's character strengths. Finally, the results of the research can be an indicator for the government, on how the pandemic and quarantine affected Greek population and how government should act preventively through such interventions of positive psychology, in order to increase wellbeing levels of the citizens, especially in such conditions.

Limitations and Recommendations for Future Research

The present study, despite the significant findings, had some limitations. The sample was convenient. The results were based on self-report questionnaires. The whole procedure was done online, which means that some participants may have made some mistakes due to lack of familiarity or haste. Also, the researchers studied the whole spectrum of 24 character strengths and 5 virtues of positive psychology, so it was very difficult the exact causal relationships of every character strength to be studied.

It is proposed for future research to be studied in more detail the relationship of each of the 24 character strengths with wellbeing via a longitudinal design, a wider age range and a more representative of the Greek population sample, under psycho-stressful and unprecedented conditions such as the pandemic and the subsequent quarantine, to determine the exact relationship between virtues and character strengths with subjective wellbeing components in such situations.

References

1. WHO Coronavirus Disease (COVID-19) Dashboard. *Bangladesh Physiotherapy Journal* 2020, *10*.

2. Huang, C.; Wang, Y.; Li, X.; Ren, L.; Zhao, J.; Hu, Y.; Zhang, L.; Fan, G.; Xu, J.; Gu, X.; Cheng, Z.; Yu, T.; Xia, J.; Wei, Y.; Wu, W.; Xie, X.; Yin, W.; Li, H.; Liu, M.; Xiao, Y.; Gao, H.; Guo, L.; Xie, J.; Wang, G.; Jiang, R.; Gao, Z.; Jin, Q.; Wang, J.; Cao, B. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *The Lancet* 2020, *395*, 497-506.

3. Haleem, A.; Javaid, M.; Vaishya, R. Effects of COVID-19 pandemic in daily life. *Current Medicine Research and Practice* 2020, *10*, 78-79.

4. Spinelli, A.; Pellino, G. COVID-19 pandemic: perspectives on an unfolding crisis. *British Journal of Surgery* 2020, *107*, 785-787.

5. Wang, Y.; Xu, B.; Zhao, G.; Cao, R.; He, X.; Fu, S. Is quarantine related to immediate negative psychological consequences during the 2009 H1N1 epidemic?. *General Hospital Psychiatry* 2011, *33*, 75-77.

6. Wang, Y.; Di, Y.; Ye, J.; Wei, W. Study on the public psychological states and its related factors during the outbreak of coronavirus disease 2019 (COVID-19) in some regions of China. *Psychology, Health & Medicine* 2020, *26*, 13-22.

7. Brooks, S.; Webster, R.; Smith, L.; Woodland, L.; Wessely, S.; Greenberg, N.; Rubin, G. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *The Lancet* 2020, *395*, 912-920.

8. Wheaton, M.; Abramowitz, J.; Berman, N.; Fabricant, L.; Olatunji, B. Psychological Predictors of Anxiety in Response to the H1N1 (Swine Flu) Pandemic. *Cognitive Therapy and Research* 2011, *36*, 210-218.

9. Hawryluck, L.; Gold, W.; Robinson, S.; Pogorski, S.; Galea, S.; Styra, R. SARS Control and Psychological Effects of Quarantine, Toronto, Canada. *Emerging Infectious Diseases* 2004, *10*, 1206-1212.

10. REYNOLDS, D.; GARAY, J.; DEAMOND, S.; MORAN, M.; GOLD, W.; STYRA, R. Understanding, compliance and psychological impact of the SARS quarantine experience. *Epidemiology and Infection* 2007, *136*, 997-1007.

11. Ho, C.; Chee, C.; Ho, R. Mental Health Strategies to Combat the Psychological Impact of CoronavirusDisease 2019 (COVID-19) Beyond Paranoia and Panic. *Annals of the Academy of Medicine, Singapore* 2020, *49*, 155-160.

12. Lee, S.; Kang, W.; Cho, A.; Kim, T.; Park, J. Psychological impact of the 2015 MERS outbreak on hospital workers and quarantined hemodialysis patients. *Comprehensive Psychiatry* 2018, *87*, 123-127.

13. Seligman, M.; Csikszentmihalyi, M. Positive psychology: An introduction. *American Psychologist* 2000, *55*, 5-14.

14. Park, N.; Peterson, C.; Seligman, M. Strengths of Character and Well-Being. *Journal of Social and Clinical Psychology* 2004, *23*, 603-619.

15. Seligman, M.; Steen, T.; Park, N.; Peterson, C. Positive Psychology Progress: Empirical Validation of Interventions. *American Psychologist* 2005, *60*, 410-421.

16. Character strengths and virtues: a handbook and classification. *Choice Reviews Online* 2004, *42*, 42-0624-42-0624.

17. Pezirkianidis, C.; Karakasidou, E.; Stalikas, A.; Moraitou, D.; Charalambous, V. Character strengths and virtues in the Greek cultural context. *Psychology: the Journal of the Hellenic Psychological Society* 2020, *25*, 35.

18. Flourish: a visionary new understanding of happiness and well-being. *Choice Reviews Online* 2011, *48*, 48-7217-48-7217.

19. Pezirkianidis, C.; Stalikas, A.; Lakioti, A.; Yotsidi, V. Validating a multidimensional measure of wellbeing in Greece: Translation, factor structure, and measurement invariance of the PERMA Profiler. *Current Psychology* 2019, *40*, 3030-3047.

20. Ryan, R.; Deci, E. On Happiness and Human Potentials: A Review of Research on Hedonic and Eudaimonic Well-Being. *Annual Review of Psychology* 2001, *52*, 141-166.

21. Huta, V. Eudaimonic and Hedonic Orientations: Theoretical Considerations and Research Findings (accessed Jun 28, 2021).

22. Wagner, L.; Gander, F.; Proyer, R.; Ruch, W. Character Strengths and PERMA: Investigating the Relationships of Character Strengths with a Multidimensional Framework of Well-Being. *Applied Research in Quality of Life* 2019, *15*, 307-328.

23. Goodman, F.; Disabato, D.; Kashdan, T.; Kauffman, S. Measuring well-being: A comparison of subjective well-being and PERMA. *The Journal of Positive Psychology* 2017, *13*, 321-332.

24. Proyer, R.; Gander, F.; Wellenzohn, S.; Ruch, W. Strengths-based positive psychology interventions: a randomized placebo-controlled online trial on long-term effects for a signature strengths- vs. a lesser strengths-intervention. *Frontiers in Psychology* 2015, *06*.

25. Tehranchi, A.; Neshat Doost, H.; Amiri, S.; Power, M. The Role of Character Strengths in Depression: A Structural Equation Model. *Frontiers in Psychology* 2018, *9*.

26. Leontopoulou, S.; Triliva, S. Explorations of subjective wellbeing and character strengths among a Greek University student sample. *International Journal of Wellbeing* 2012, *2*, 251-270.

27. Diener, E. (2009). Subjective Well-Being. In E. Diener (Ed), The Science of Well-Being (Vol. 37, pp. 11-58). New York. NY Springer. - References - Scientific Research Publishing https://www.scirp.org/reference/ReferencesPapers.aspx?ReferenceID=2312296 (accessed Jun 28, 2021).

28. Macaskill, A.; Denovan, A. Assessing psychological health: the contribution of psychological strengths. *British Journal of Guidance & Counselling* 2014, *42*, 320-337.

29. https://files.eric.ed.gov/fulltext/EJ1130201.pdf (accessed Jun 28, 2021).

30. Park, N.; Peterson, C.; Seligman, M. Strengths of Character and Well-Being. *Journal of Social and Clinical Psychology* 2004, *23*, 603-619.

31. Watson, D.; Clark, L.; Tellegen, A. Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology* 1988, *54*, 1063-1070.

32. Moraitou, D.; Efklides, A. The Blank in the Mind Questionnaire (BIMQ). *European Journal of Psychological Assessment* 2009, *25*, 115-122.

33. Butler, J.; Kern, M. The PERMA-Profiler: A brief multidimensional measure of flourishing. *International Journal of Wellbeing* 2016, *6*, 1-48.

34. Dimitriadou, D.; Stalikas, A. *Values In Action Inventory of Strengths (VIA-IS). In A. Stalikas, S. Triliva, & P. Roussi (Eds.),*; 2nd ed.; Pedio, 2012; p. 543.

35. IBM Corp. (2013) IBM SPSS Statistics for Windows, Version 22.0. IBM Corp., Armonk, NY. - References - Scientific Research Publishing https://www.scirp.org/(S(i43dyn45teexjx455qlt3d2q))/reference/ReferencesPapers.aspx?ReferenceID=2010524 (accessed Jun 28, 2021).

36. Bentler, P. M. (2006). EQS 6, Structural Equations Program Manual. Encino, CA Multivariate Software Inc. - References - Scientific Research Publishing https://www.scirp.org/(S(351jmbntvnsjt1aadkposzje))/reference/ReferencesPapers.aspx?ReferenceID=1673220 (accessed Jun 28, 2021).

37. Brown, T. *Confirmatory Factor Analysis for Applied Research, First Edition (Methodology in the Social Sciences)*; 1st ed.; The Guilford Press, 2006.

38. Proyer, R.; Ruch, W.; Buschor, C. Testing Strengths-Based Interventions: A Preliminary Study on the Effectiveness of a Program Targeting Curiosity, Gratitude, Hope, Humor, and Zest for Enhancing Life Satisfaction. *Journal of Happiness Studies* 2012, *14*, 275-292.

39. Fredrickson, B. The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist* 2001, *56*, 218-226.

40. Serafini, G.; Parmigiani, B.; Amerio, A.; Aguglia, A.; Sher, L.; Amore, M. The psychological impact of COVID-19 on the mental health in the general population. *QJM: An International Journal of Medicine* 2020, *113*, 531-537.

41. Lu, H.; Nie, P.; Qian, L. Do Quarantine Experiences and Attitudes Towards COVID-19 Affect the Distribution of Mental Health in China? A Quantile Regression Analysis. *Applied Research in Quality of Life* 2020.

42. Durosini, I.; Triberti, S.; Savioni, L.; Pravettoni, G. In the eye of a quiet storm: A critical incident study on the quarantine experience during the coronavirus pandemic. *PLOS ONE* 2021, *16*, e0247121.

43. Martínez-Martí, M.; Theirs, C.; Pascual, D.; Corradi, G. Character Strengths Predict an Increase in Mental Health and Subjective Well-Being Over a One-Month Period During the COVID-19 Pandemic Lockdown. *Frontiers in Psychology* 2020, *11*.

44. Mayerson, N. The Character Strengths Response: An Urgent Call to Action. *Frontiers in Psychology* 2020, *11*.

45. Teubner-Rhodes, S.; Vaden, K.; Dubno, J.; Eckert, M. Cognitive persistence: Development and validation of a novel measure from the Wisconsin Card Sorting Test. *Neuropsychologia* 2017, *102*, 95-108.

46. Tobore, T. Towards a Comprehensive Theory of Love: The Quadruple Theory. *Frontiers in Psychology* 2020, *11*.

47. Niemiec, R. *Character Strengths Interventions: A Field Guide for Practitioners*; 1st ed.; Hogrefe Publishing., 2017.

48. Rias, Y.; Rosyad, Y.; Chipojola, R.; Wiratama, B.; Safitri, C.; Weng, S.; Yang, C.; Tsai, H. Effects of Spirituality, Knowledge, Attitudes, and Practices toward Anxiety Regarding COVID-19 among the General Population in INDONESIA: A Cross-Sectional Study. *Journal of Clinical Medicine* 2020, *9*, 3798.

49. Papazoglou, A.; Moysidis, D.; Tsagkaris, C.; Dorosh, M.; Karagiannidis, E.; Mazin, R. Spiritual Health and the COVID-19 Pandemic: Impacts on Orthodox Christianity Devotion Practices, Rituals, and Religious Pilgrimages. *Journal of Religion and Health* 2021.

50. Chliaoutakis, J.; Drakou, I.; Gnardellis, C.; Galariotou, S.; Carra, H.; Chliaoutaki, M. Greek Christian Orthodox Ecclesiastical Lifestyle: Could It Become a Pattern of Health-Related Behavior?. *Preventive Medicine* 2002, *34*, 428-435.

51. Chang, E.; Chang, O.; Martos, T.; Sallay, V.; Zettler, I.; Steca, P.; D'Addario, M.; Boniwell, I.; Pop, A.; Tarragona, M.; Slemp, G.; Shin, J.; de la Fuente, A.; Cardeñoso, O. The positive role of hope on the relationship between loneliness and unhappy conditions in Hungarian young adults: How pathways thinking matters!. *The Journal of Positive Psychology* 2018, *14*, 724-733.

52. Hartung, F.; Renner, B. Social Curiosity and Gossip: Related but Different Drives of Social Functioning. *PLoS ONE* 2013, *8*, e69996.

53. Büssing, A.; Wirth, A.; Reiser, F.; Zahn, A.; Humbroich, K.; Gerbershagen, K.; Schimrigk, S.; Haupts, M.; Hvidt, N.; Baumann, K. Experience of gratitude, awe and beauty in life among patients with multiple sclerosis and psychiatric disorders. *Health and Quality of Life Outcomes* 2014, *12*, 63.

54. Shahram, S.; Smith, M.; Ben-David, S.; Feddersen, M.; Kemp, T.; Plamondon, K. Promoting "Zest for Life": A Systematic Literature Review of Resiliency Factors to Prevent Youth Suicide. *Journal of Research on Adolescence* 2021, *31*, 4-24.

55. Lyubomirsky, S.; Layous, K. How Do Simple Positive Activities Increase Well-Being?. *Current Directions in Psychological Science* 2013, *22*, 57-62.

56. Watkins, Y.; Quinn, L.; Ruggiero, L.; Quinn, M.; Choi, Y. Spiritual and Religious Beliefs and Practices and Social Support's Relationship to Diabetes Self-Care Activities in African Americans. *The Diabetes Educator* 2013, *39*, 231-239.

57. Canet-Juric, L.; Andrés, M.; del Valle, M.; López-Morales, H.; Poó, F.; Galli, J.; Yerro, M.; Urquijo, S. A Longitudinal Study on the Emotional Impact Cause by the COVID-19 Pandemic Quarantine on General Population. *Frontiers in Psychology* 2020, *11*.

58. Charles, S.; Carstensen, L. Social and Emotional Aging. *Annual Review of Psychology* 2010, *61*, 383-409.

59. Fernández-Aguilar, L.; Ricarte, J.; Ros, L.; Latorre, J. Emotional Differences in Young and Older Adults: Films as Mood Induction Procedure. *Frontiers in Psychology* 2018, *9*.

60. Ross, C.; Mirowsky, J. Age and the balance of emotions. *Social Science & Medicine* 2008, *66*, 2391-2400.

61. Charles, S.; Luong, G. Emotional Experience Across Adulthood. *Current Directions in Psychological Science* 2013, *22*, 443-448.

Figure 1. The relationships between interpersonal virtue dimensions and subjective wellbeing components

	Negative Affect - State	Positive Affect - State	P	E	R	M	A	Forgiveness	Modesty	Appreciation of Beauty	Kindness	Love	Teamwork	Fairness	Leadership
Negative Affect - State															
Positive Affect - State															
P	-.175														
E		.170	.494												
R			.404	.280											
M	.395		-.182												
A	-.176	.154	.539	.370	.177										
Forgiveness															
Modesty								.352							
Appreciation of Beauty								.277	.218						
Kindness								.400	.355	.319					
Love								.282	.227	.273	.399				
Teamwork								.432	.463	.305	.571	.346			
Fairness								.534	.359	.255	.573	.303	.630		
Leadership								.350	.408	.296	.474	.282	.624	.531	

Table 2. Correlations between interpersonal virtue dimensions and subjective wellbeing components
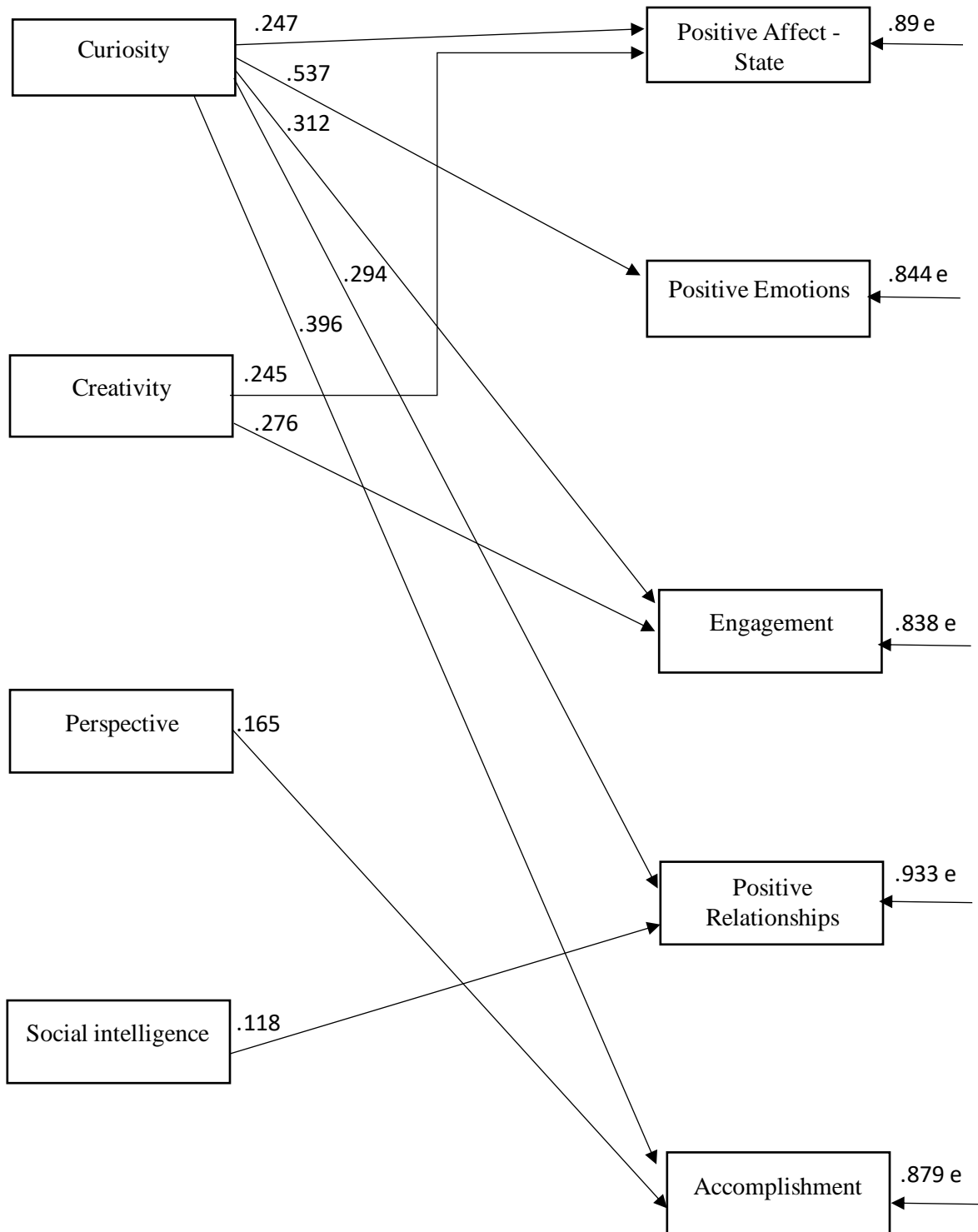
Figure 2. The relationships between virtue of intellect dimensions and subjective wellbeing component

	Positive Affect - State	Negative Affect - State	Positive Emotions	Engagement	Positive Relationships	Meaning in Life	Accomplishment	Curiosity	Open Mindedness	Creativity	Perspective	Bravery	Social intelligence	Humor
Positive Affect-State														
Negative Affect – State														
Positive Emotions		-.269				-.243								
Engagement		-.109	.489											
Positive Relationships		-.151	.546	.288		-.121								
Meaning in Life		.429												
Accomplishment		-.238	.508	.334	.201									
Curiosity														
Open Mindedness								.324						
Creativity								.721	.392					
Perspective								.333	.552	.455				
Bravery								.240	.325	.378	.407			
Social Intelligence														

.434	.381	.450	.454	.280	

Humor

.474	.205	.381	.266	.185	.418

Table 3. Correlations between virtue of intellect dimensions and subjective wellbeing components
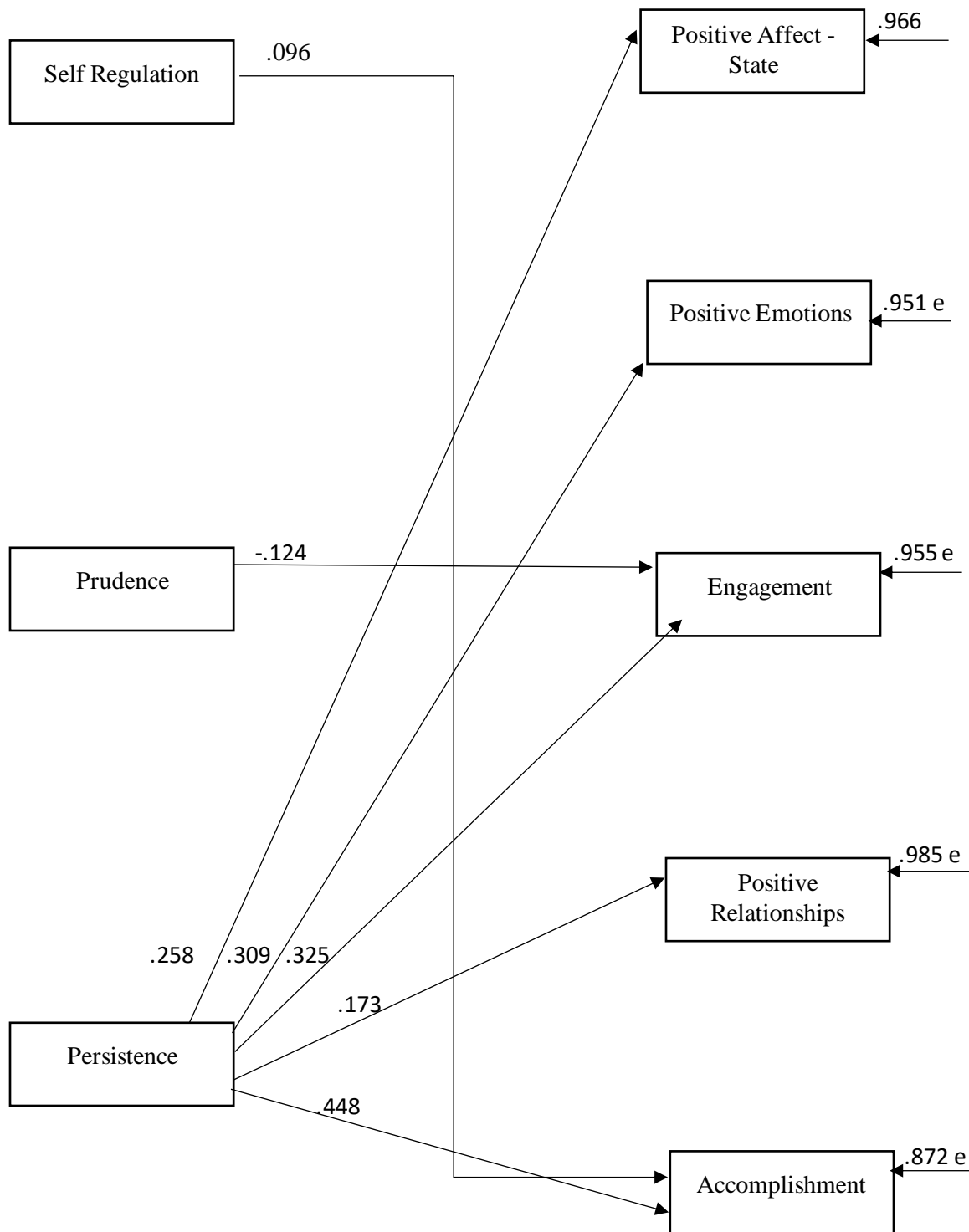
Figure 3. The relationships between virtue of restraint dimensions and subjective wellbeing components

	Positive Affect - State	Negative Affect - State	Positive Emotions	Engagement	Positive Relationships	Meaning in Life	Accomplishment	Self Regulation	Prudence	Persistence	Honesty
Positive Affect - State											
Negative Affect - State											
Positive Emotions	.290	-.255				-.175					
Engagement	.336	-.115	.599								
Positive Relationships	.132	-.119	.595	.384							
Meaning in Life		.409									
Accomplishment	.268	-.259	.586	.447	.310						
Self Regulation											
Prudence								.401			
Persistence								.359	.408		
Honesty								.287	.448	.509	

Table 4. Correlations between virtue of restraint dimensions and subjective wellbeing components
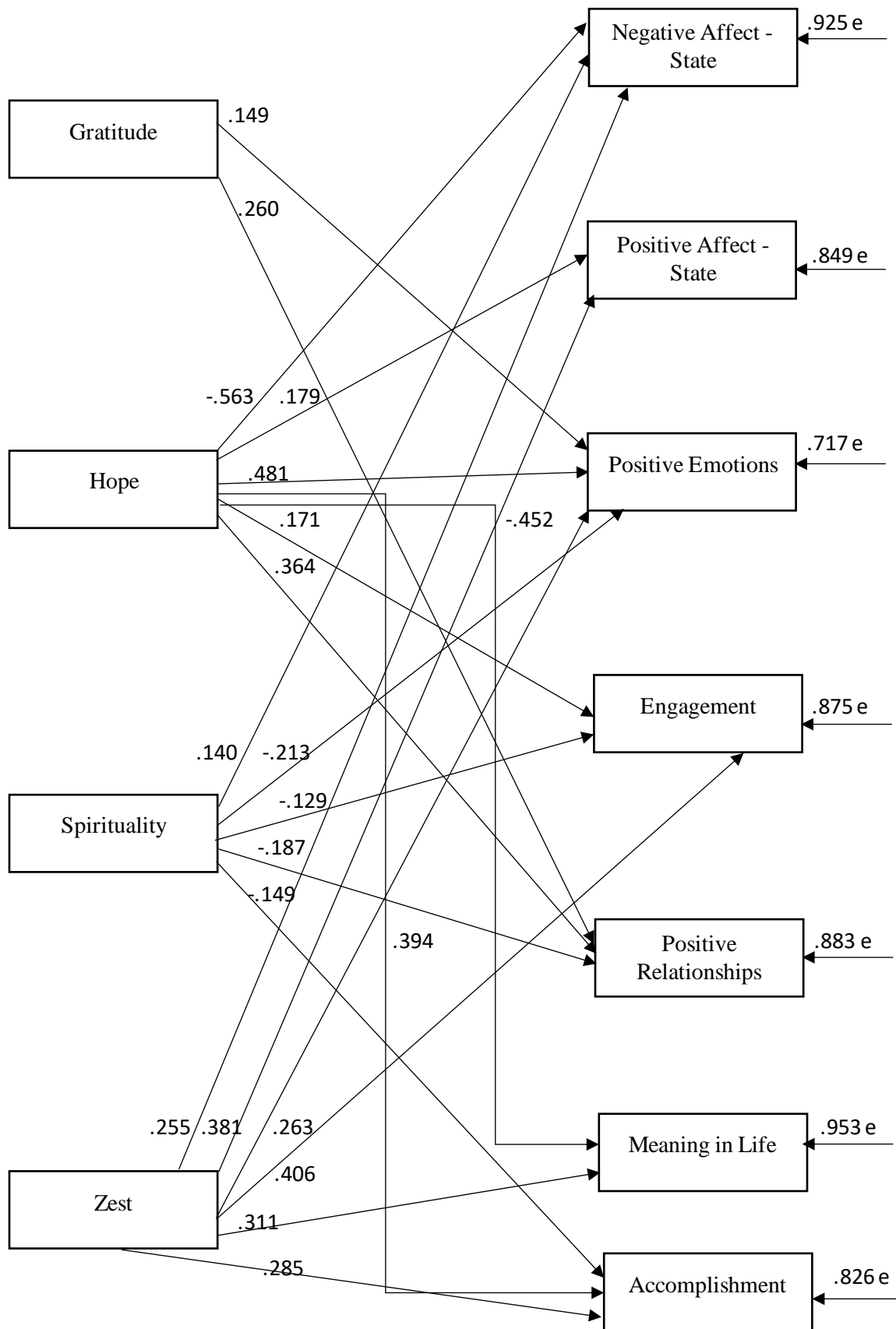
Figure 4. The relationships between transcendent virtue dimensions and subjective wellbeing components

	Positive Affect - State	Negative Affect - State	Positive Emotions	Engagement	Positive Relationships	Meaning in Life	Accomplishment	Gratitude	Hope	Spirituality	Zest
Positive Affect - State											
Negative Affect - State											
Positive Emotions		-.121									
Engagement	.171		.479								
Positive Relationships			.470	.266							
Meaning in Life	.091	.353	-.167								
Accomplishment	.103	-.164	.430	.317	.137						
Gratitude											
Hope								.622			
Spirituality								.637	.527		
Zest								.621	.747	.551	

Table 5. Correlations between transcendent virtue dimensions and subjective wellbeing components
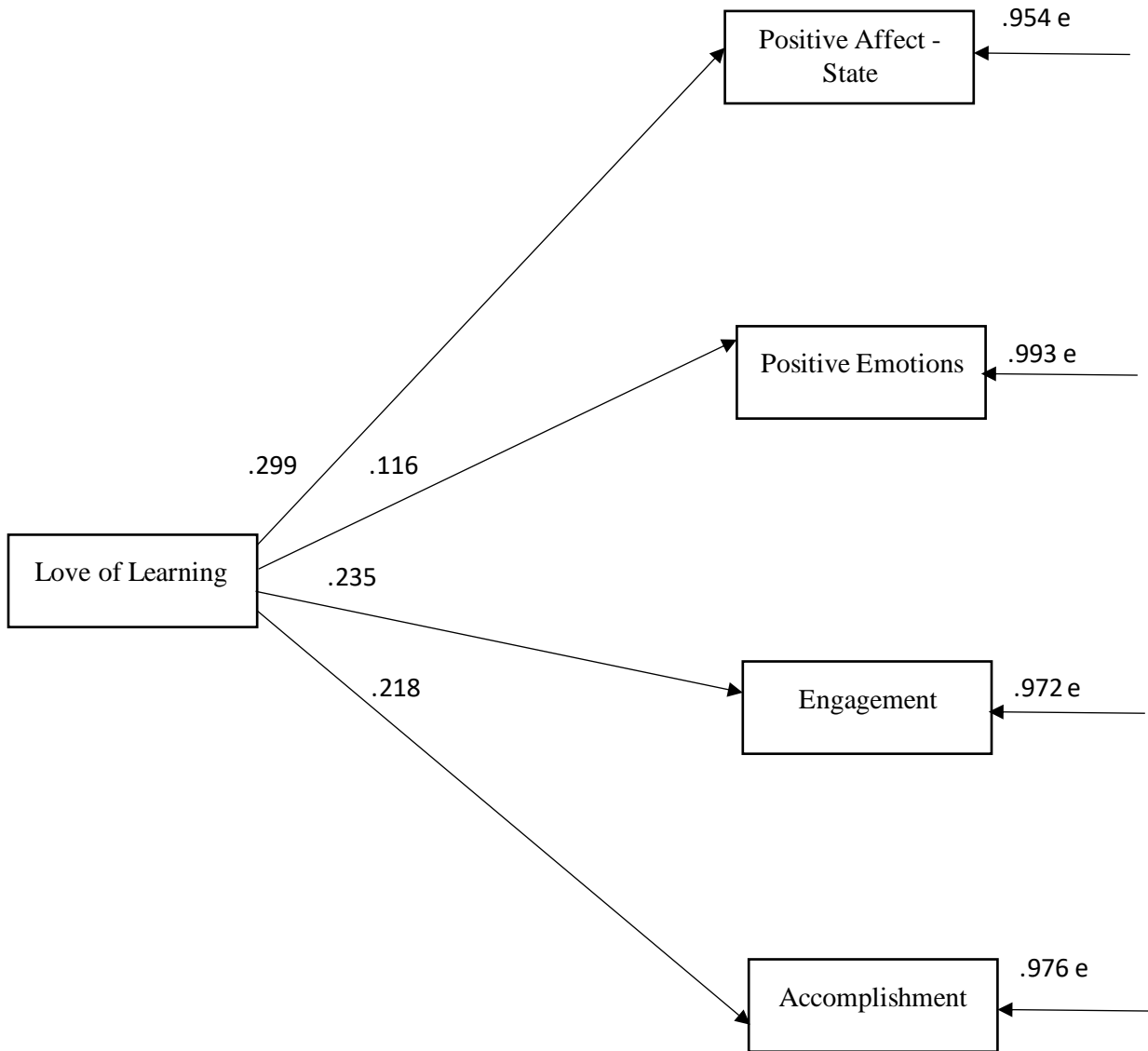
Figure 5. The relationships between virtue of knowledge dimensions and subjective wellbeing components

	Positive Affect - State	Negative Affect - State	Positive Emotions	Engagement	Positive Relationships	Meaning in Life	Accomplishment	Love of Learning
Positive Affect - State					.147			
Negative Affect - State								
Positive Emotions	.307	-.265			.621	-.213		
Engagement	.322	-.126	.606		.397			
Positive Relationships		-.173						
Meaning in Life		.414			-.125			
Accomplishment	.294	-.236	.619	.469	.337			
Love of Learning								

Table 6. Correlations between virtue of knowledge dimensions and subjective wellbeing components
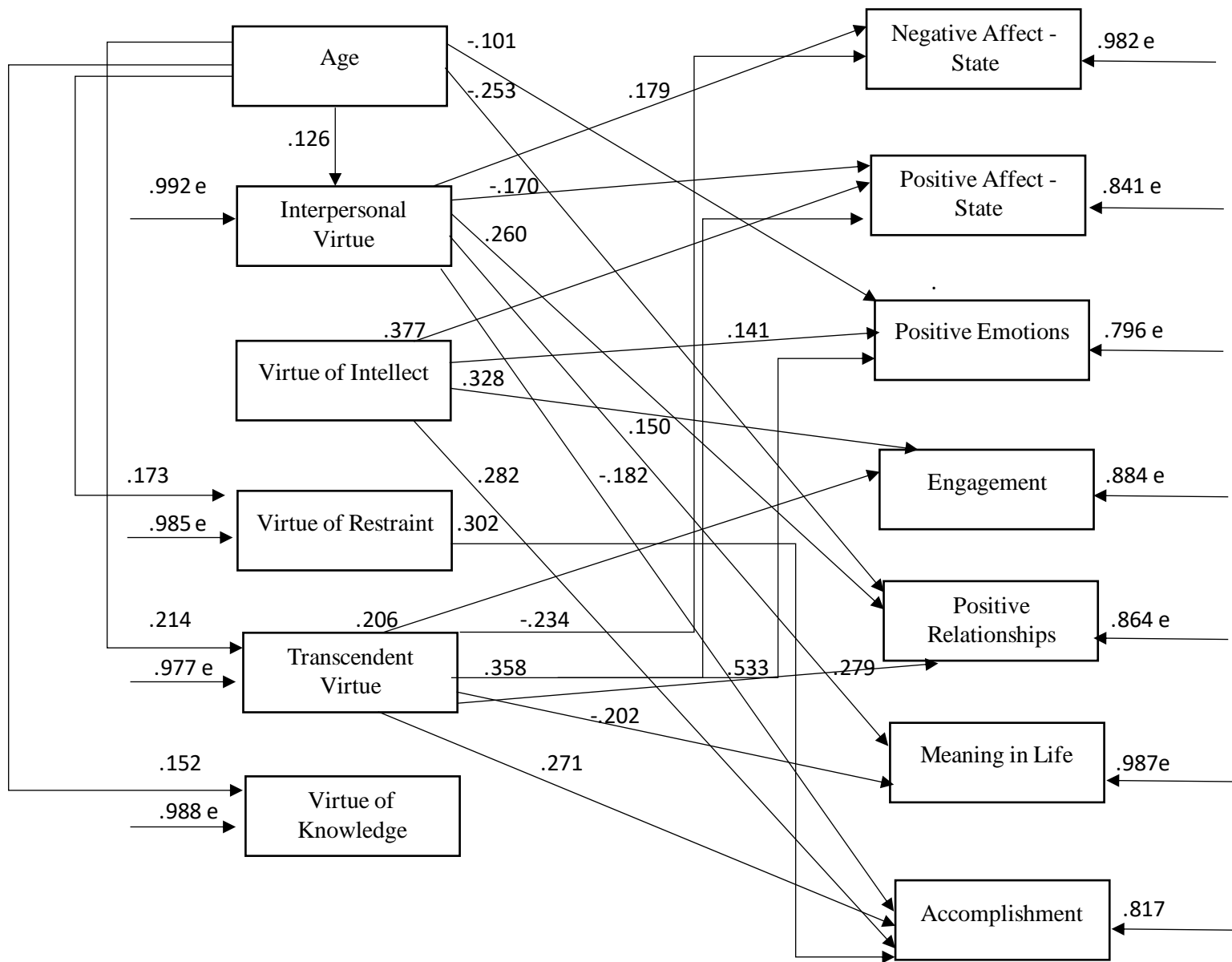
Figure 6. The relationships between demographics, virtues and subjective wellbeing components

	Positive Affect - State	Negative Affect - State	Positive Emotions	Engagement	Positive Relationships	Meaning in Life	Accomplishment	Interpersonal Virtue	Virtue of Intellect	Virtue of Restraint	Transcendent Virtue	Virtue of Knowledge
Positive Affect – State												
Negative Affect – State												
Positive Emotions		-.217										
Engagement	.134		.491									
Positive Relationships		-.195	.533	.218								
Meaning in Life		.409	-.212		-.160							
Accomplishment	.110	-.217	.513	.358	.250							
Interpersonal Virtue									.524			.181
Virtue of Intellect												
Virtue of Restraint								.475	.381			.145
Transcendent Virtue								.613	.515	.479		.221
Virtue of Knowledge									.359			

Table 7. Correlations between demographics, virtues and subjective wellbeing components