



Research Article

Gratitude and Well-being during COVID-19 Pandemic in Iran: The Moderating Role of Resilience

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Abstract

The global pandemic has caused a great problem to the psychological well-being of people around the world. Iran is one of the most affected countries in pandemic situation. Resilience is the most common outcome after life-threatening events. In fact, studies have proven that positive emotions such as gratitude and resilience were able to improve well-being. This study used the theory of broaden-and-build to explore the association of gratitude, resilience, and well-being among Iranian adults during the pandemic. The convenience sampling method was utilized to recruit 441 Iranian adults aged between 18 to 35 years. The data was analyzed using Structural Equation Modelling using SmartPLS. The results supported the role of gratitude and resilience in improving the well-being of Iranian adults. Besides, the results supported the role of resilience as the moderator for the effect of gratitude on well-being. The findings of this study may have implications for mental health professionals and policymakers to promote gratitude and resilience intervention to increase positive emotions and well-being in young adults in this time of need and help society to be prepared for challenging times of adversity in the future.

Keywords: Gratitude; Iran, moderator; positive psychology; resilience; well-being.

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Psychological Thought, 2023, Vol. 16(2), 309-329, <https://doi.org/10.37708/psyct.v16i2.778>

Received: 2022-09-21. Accepted: 2023-06-17. Published (VoR): 2023-10-31.

Handling Editor: Marius Drugaș, University of Oradea, Romania.

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The sudden outbreak of the pandemic provided highlighted the need for enhancing individuals' psychological skills and capabilities to face adversity situations while keeping their well-being at the highest possible level. In fact, well-being is considered one of the important factors in building and maintaining a healthy and productive community (Das et al., 2020). According to Aristotle's view, well-being can be divided into two different components which are the eudemonic and hedonistic views (Das et al., 2020). Eudemonic well-being concentrates on the attainment of a person's full potential and includes behaving in a way that is productive, helpful to society, and subsequently promote personal growth. On the contrary, hedonic well-being includes the feeling of momentary pleasure, positive emotions, and life satisfaction, without the feeling of negative emotions (Diener et al., 2018).

In the social sciences, psychological and social well-being has been linked to eudemonic well-being, which is often associated with quality of life and lifestyle. Eudemonic well-being can positively influence an individual's capability, for example, having a positive and meaningful connection with people, constructive and autonomous (Arnout & Almoied, 2020). Furthermore, with the emergence of positive psychology as a discipline that focuses on improving well-being by using the instigation of human strengths (Wood et al., 2008b), gratitude and resilience were seen as a popular attribute with the capability to improve life. Indeed, studies have also found that psychological well-being was able to increase resilience (Arnout & Almoied, 2020; Garg & Sarkar, 2020; Khodabakhsh & Ooi, 2022; Zautra et al., 2010), and improve the feeling of gratitude (Arnout & Almoied, 2020; Wood et al., 2008a).

Gratitude

Gratitude represents a person's emotional responses when gaining favor and the tendency to undergo a positive affective condition when receiving kindness (Khodabakhsh & Ooi, 2022). Research has shown that a simple expression of gratitude can improve an individual's overall well-being, and a high level of gratitude can be a protective factor against stress (Cain et al.,

2019). Furthermore, Tsang et al. (2014) discovered that gratitude is associated with multiple aspects of well-being such as a lower rate of depression (Fredrickson et al., 2003; Toepfer et al., 2012), favourable life evaluation (Emmons & McCullough, 2003), perceived purpose of life (Lambert et al., 2009), religion and spirituality (Al-Seheel & Noor, 2016), and satisfaction with life (Wood et al., 2008a).

According to Emmons (2012), there are five ways that gratitude will affect well-being. First, gratitude can increase spiritual awareness. For example, for religious people that believe all positivity comes from God, being grateful to other people will be seen as a positive trait. Alternatively, gratitude improves biological health by removing physical complaints, improving quality of sleep, and encourages exercise. Moreover, gratitude optimizes happiness by increasing the appreciation of good and constructive life circumstances. Next, gratitude can minimize the negative emotions such as regret, jealousy, or hatred, making grateful individuals more satisfied with life in general. Lastly, gratitude improves and enlarge the social circle, increasing connection between people and gratifying the desire for acceptance.

The broaden-and-build theory proposed that positive emotions such as gratitude are developed adaptations that can create permanent resources (Fredrickson, 2013). Previous studies have also discovered that grateful individuals showed an increased number of positive emotions like resilience, happiness, and life satisfaction (Hwei & Abdullah, 2017; McCullough et al., 2002). Further, Alkozei et al. (2017) proposed a cognitive model based on the broaden-and-build theory which explains how gratitude can influence an individual's well-being. According to the model, gratitude is capable of expanding an individual's intellect to overcome unfortunate circumstances in a better way. Thus, it is hypothesized that H1: Gratitude is positively associated with well-being.

Resilience is defined as the ability to withstand adversity and bounce back and grow despite life's downturns (Aboalshamat et al., 2018). This means that individuals who have resilience can encounter through their hardship (Loke & Mohd-Zaharim, 2019). In recent years, even before the outbreak of the COVID-19 pandemic, resilience is considered a popular topic that was widely studied (Babić et al., 2020; Chen et al., 2020). Factors that are often associated with healthy coping with stress has been termed as "resilience". Resilience is a complex phenomenon that will change through time and situations (Havnen et al., 2020). Resilience is a complex concept since the term for older adults and gerontology represents the capability to recuperate from sickness and disruptions. While in psychology, resilience is usually defined as

the capability to overcome traumatic situations (Babić et al., 2020; Montoya-Williams et al., 2020; Serrão et al., 2021), protective factor against different types of stressors including work stress and burnout (West et al., 2020), when facing international virus outbreaks or pandemic (Bonanno et al., 2008; Havnen et al., 2020; Hines et al., 2021), and guide students to achieve educational goals when the students face difficulties and stress (Khampirat, 2020; Sagone & De Caroli, 2014).

Research by Mehta et al. (2018) among 198 American students discovered that resilience has a significant correlation with well-being. These results also showed that resilience can help to increase self-esteem and positive feeling about the self that can subsequently lead to increased well-being, even in a stressful situation. Sagone and De Caroli (2014) conducted a study among 183 Italian students also discovered that resilience and psychological well-being is positively correlated. Another study showed that resilience was able to indirectly affect well-being through the mediating effect of hope (Mak et al., 2011). Resilience is associated with life satisfaction and positive affect, and a negative associated with negative affect (Liu et al., 2012).

Fredrickson (2004) proposed that positive emotions can lead to psychological resilience. Psychological resilience is defined as one's capability to cope while facing calamity, hardship, and loss (Tugade & Fredrickson, 2004). Positive emotions can motivate an individual to find creative and innovative ways and thoughts to cope during times of stress and anxiety (Fredrickson, 2001). Tugade and Fredrickson (2004) investigated the cognitive, physiological, and subjective perspective of psychological resilience, and discovered that individuals with resilience can efficiently deal with challenging circumstances, whereas individuals without resilience are could not handle the circumstances as effectively. Accordingly, it is hypothesized that H2: Gratitude is positively associated with resilience; and H3: Resilience is positively associated with well-being.

The Moderating Role of Resilience

Bonanno et al. (2008) researched survivors of the Severe Acute Respiratory Syndrome (SARS) virus and discovered that patients with higher resilience had lower levels of worry that are related to SARS. The study also discovered that male patients showed a higher level of resilience compared to female patients. A review study conducted by Masten and Obradović (2008) on how communities should prepare for major calamity found out that resilience is one of the important factors that should be considered. The study also proposed that steps should be taken by policymakers to promote resilience during the outbreak of calamity. A recent study

regarding COVID-19 also highlighted the importance of resilience as an important instrument to improve an individual's coping ability against the COVID-19 pandemic (Rosenberg, 2020).

Resilience has been studied as a moderator to clarify the association between negative emotions such as pain and stress (Li et al., 2019), chronic stress (García-Izquierdo et al., 2018), cyberbullying and fatalism (Navarro et al., 2018) and negative life events (Li et al., 2020). Nevertheless, there are limited studies that use resilience to explain the association of positive emotions such as gratitude and positive outcome such as well-being. Khodabaksh and Ahmadi (2020) reported that resilience showed a moderating role in the effect between subjective happiness and the usage of social media during COVID-19. Therefore, as a crucial protective factor, resilience is predicted to be a moderator for the relationship between gratitude and well-being. Thus, it is expected that: H4: Resilience moderates the effects of gratitude on well-being. Figure 1 is the proposed conceptual framework of this research based on the theory of broaden-and-build (Fredrickson, 1998).

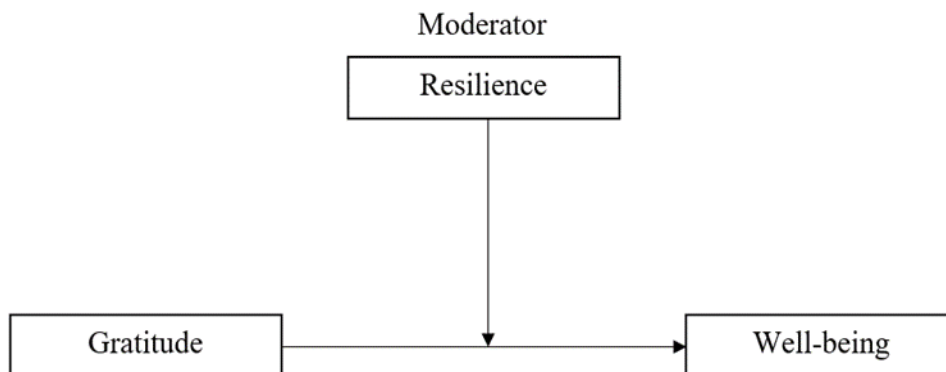


Figure 1. *Conceptual Framework*

Method

Participants and Sampling

The suggested sample size required to fulfil the criteria as suggested by Hair et al., (2017) is larger of ten times than the biggest number of formative items applied to a construct. There are six items in the resilience construct which will add up to 60 sample size. Data of 441 participants were collected by convenience sampling method. The inclusion criteria for the sample were being Iranian in the age range of 18 to 35 years old. The sample consisted of 280 (63.5%) female, 154 (34.9%) male and 7 (1.6%) did not report their gender. The participants

were from different parts of Iran including Tehran and Karaj. The sample's age is 18 to 35 years and the mean age of 24.75 (SD=4). Most of the participants were single (90.9%, n = 401), and educated at the level of bachelor's degree (50.8%, n = 224).

Research Procedure

Before the data collection, the proposed research method and questionnaires of this study were assessed and authorized by the Scientific and Ethical Review Committee of the university. The first page of the online survey was to inform the participants about the aim of the research and permission was granted by all participants. The participants were informed about the fact that involvement in this study is voluntary and does not involve any risks. The participants were also aware that all data obtained will be anonymous and confidential. The questionnaires were collected using the paper and pencil method from various colleges and community centres in Iran. The data collection period is from September 2020 until March 2021.

Instruments

Self-administrated questionnaires were used in this research. The instrument used is the questionnaires that contain sociodemographic information, well-being index, gratitude questionnaire and brief resilience scale.

Sociodemographic information.

The sociodemographic information included particulars like age, gender, marital status, occupation, and location of residency.

WHO-5 Well-Being Index (WHO-5).

The WHO-5 is a self-administered questionnaire to measure individual well-being over the last two weeks that was developed in 1998 (Bech et al., 2003). WHO-5 has five positively written items that are measured on a 6-point Likert scale that range of 0 (at no the time) to 5 (all of the time). The scores were added and then multiplied by four to obtain a total amount between 0 showing the worst well-being and 100 showing the best possible well-being. A score lower than 50 shows poor well-being and it is suggested that the participants be examine for symptoms of depression. A total score of twenty-eight or below signifies depression. A study by Dadfar et al. (2018) reported the internal consistency of the Persian version of WHO-5 is .90.

Gratitude Questionnaire (GQ-6).

Gratitude Questionnaire- Six Item Form was created by McCullough et al. (2002) to measure individual's tendency to experience gratitude. GQ-6 item form is a 7-point scale that ranges from "1 = strongly disagree" to "7= strongly agree". The scale has reliability and validity of 0.80 and 0.77 respectively. Question 3 and 6 need to be reverse scored because they are negatively worded. A low amount of score showed a lower degree of gratitude and vice versa (McCullough et al., 2002). In Iran, Kashani et al. (2014, as cited in Valikhani et al., 2019) reported the internal consistency Cronbach's alpha of GQ-6 in the Persian version is .71.

Brief Resilience Scale (BRS-6).

Smith et al. (2008) created the Brief Resilience Scale (BRS-6) to measure the capability of an individual to recover from psychological distress. BRS has six questions in a 5-point Likert scale that range from "1 = strongly disagree" to "5 = strongly agree". Questions 2, 4 and 6 need to be reverse scored to prevent response bias. The total score of BRS can be obtained by adding up the items and divided by 6. The Cronbach's alpha of BRS is .93 (Rodríguez-Rey et al., 2016) The respondent is indicated as a resilient person when he or she is having a higher mean score in the Brief Resilience Scale (Kyriazos et al., 2018). Kashani and Najafi (2016) reported the internal consistency Cronbach's alpha of Brief Resilience Scale in Persian version is .76.

Data Analysis

The raw scores were compiled using Excel and were subsequently examined using Statistical Package for the Social Sciences (SPSS) version 26 and Partial Least Square Structural Equation Modeling (PLS-SEM) using the SmartPLS.

Results

Measurement Model

The items GQ3 and GQ6 from the gratitude construct and BRS2, BRS4, and BRS6 from the resilience construct were removed due to low outer loading values. Table 1 displayed the composite reliability of the scales ranged from .86 to .94, which were higher than 0.6 which is recommended by Hair et al., (2017). According to Diamantopoulos et al. (2012), values that are higher than 0.95 problematic, as it indicates that the items are redundant, thus reducing the construct validity. The composite reliability is a substitute for Cronbach's alpha to test the convergent validity (Hair et al., 2017). The Average Variance Extracted (AVE) ranged from .68

to .80 (see Table 1), which is within the recommended value of above .50 (Hair et al., 2017). The AVE display the average commonality for each latent factor in a reflective model. Hair et al., (2017) proposed that variables with AVE greater than .50 can explain at least half of the variance of the respective indicators. The results showed that the construct reliability and discriminant validities of all scales are acceptable.

Heterotrait-monotrait (HTMT) ratio is used to measure discriminant validity. To obtain a well-fitting model, the HTMT ratio should be below 1 (Hair et al., 2017). The results showed that all the HTMT ratios ranged from 0.59 to .74 and were below the value of 1 as suggested by Hair et al. (2017).

Table 1.
Reliability, Validity, and Collinearity Assessment (VIF = <5)

Construct	Items	Loadings	Composite Reliability	Average Variance Extracted (AVE)	VIF
Resilience	BRS1	0.87	0.86	0.68	1.44
	BRS3	0.86			
	BRS5	0.74			
Gratitude	GQ1	0.91	0.94	0.80	1.44
	GQ2	0.91			
	GQ4	0.88			
	GQ5	0.88			
Well-being	WB1	0.87	0.93	0.73	
	WB2	0.9			
	WB3	0.85			
	WB4	0.81			
	WB5	0.83			

The coefficient of determination (r^2), effect size (f^2), assessment of collinearity (VIF) and predictive relevance (Q^2).

The VIF of resilience and gratitude were 1.44. The results showed that there was no multicollinearity issue in all measurements since all the values of the Variance inflation factor (VIF) were below 5 (Hair et al., 2017). Multicollinearity exists when the VIF coefficient is greater than 5 (Hair et al., 2017). The coefficient of determination (r^2) is the overall effect size measure of the model (Hair et al., 2017). The coefficient of determination was in the range of 0.30 to 0.44. This showed that the effect size of the measurement model was medium, $r = > 0.30$ (Hair et al., 2017).

The effect size (f^2) measure is a different term for the r^2 change effect ($r^2 - 1 = f^2$). The f-square equation shows how big the amount of unexplained variance is accounted for by r^2 change (Hair

et al., 2017). The f-square values of .02, .15, and .35 represent weak, moderate, and substantial effects. The results indicate that moderate and high coefficients of determination were found in all dependent variables as the range of the f-square values were 0.11 to 0.44. In addition, substantial effect sizes were found on the effect of resilience on gratitude ($f^2 = 0.44$), while moderate effect size was found on resilience on well-being ($f^2 = 0.26$) and weak to moderate effect size was found on the gratitude on well-being ($f^2 = 0.11$). Blindfolding was also conducted to measure the predictive relevance (Q^2) of the measurement model. The results showed the predictive relevance of the model which is well above the recommended value of Q^2 larger than zero (Hair et al., 2017), at 0.30 and 0.44. A Q^2 value bigger than zero showed that the PLS model contains predictive relevance for the construct.

Meanwhile, a complete bootstrapping was conducted to ensure the significance of the moderation effect (Hair et al., 2017). In the bootstrapping analysis, 5000 bootstrap samples were created to form a bias-corrected 95% confidence interval. The path coefficient shows the direct effects, and the specific indirect effect shows the effect (Hair et al., 2017). The results of bootstrapping with 5000 samples were shown in Table 2 and Figure 2. Firstly, gratitude is found positively associated with resilience, $p < .001$. Secondly, gratitude is positively associated with well-being, $p < .001$. Thirdly, resilience is positively associated with well-being, $p < .001$. Therefore, hypotheses one to three were accepted.

Table 2.

Hypotheses Testing

Hypotheses	Description	Beta Value	Standard Error	T-Value	P-Value	CI=2.5%	CI=97.5%	Decision
H1	Gratitude -> Resilience	0.551	0.035	15.662	0.001	0.481	0.619	Accepted
H2	Gratitude -> Well-being	0.342	0.052	6.600	0.001	0.240	0.443	Accepted
H3	Resilience -> Well-being	0.448	0.046	9.793	0.001	0.357	0.538	Accepted
H4	Resilience X Gratitude	0.098	0.039	2.539	0.011	N/A	N/A	Supported

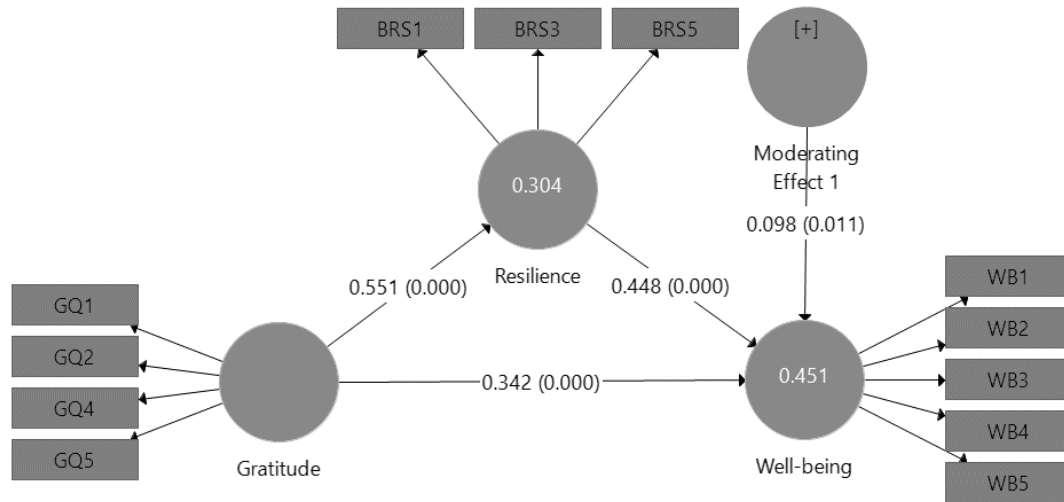


Figure 2. *Structural Model of Measurement*

Discussion

Study on well-being during the outbreak of the pandemic will have an important impact on the society, given that the Iran administration has implemented strict guidelines to prevent the pandemic that has both long- and short-term. Considering this, the current study aims to measure the gratitude, resilience, and well-being of Iranian adults to show the importance of positive psychology and positive emotions like gratitude and resilience in improving their well-being.

Like past research (Khodabakhsh & Ooi, 2022; Mak et al., 2011; Mehta et al., 2018; Sagone & De Caroli, 2014), the outcome of this research revealed a significant link between resilience and well-being. Indeed, resilience positively associated with well-being among Iranian adults. A study conducted by Borji et al. (2020) among Iranian university students also discovered that resilience is a vital protective factor of well-being. This proved that Iranian adults with higher resilience have higher well-being compared to Iranian adults who do not have resilience. Resilient individuals tend to recover from stressful experiences swiftly and effortlessly (Fredrickson, 2004), which could explain the reason for individuals with high resilience tend to report better well-being. Further, resilience can be an important trait to cultivate to protect the mental health of Iranian during such trying times as the world is still recovering from the impact of the pandemic.

Similarly, the results of this study also found consistency with past studies that proved that there is a significant association between gratitude and well-being (Froh et al., 2009; Rash et al., 2011). A study conducted by Behzadipour et al. (2018) in Iran also discovered that gratitude is positively associated with every domain of psychological well-being. The results also proved that gratitude is a positive predictor of well-being among Iranian adults. This showed that positive emotions such as gratitude could improve an individual's well-being. A study by Tian et al. (2015) also discovered that people that shows more gratitude experience greater positive effects like higher satisfaction with life, hope, and happiness, in addition to lesser gloomy effects such as depression and jealousy. When an individual has gratitude, it will also encourage the acknowledgement and concentration on the good perspective of everyday life (Aghababaei et al., 2018).

The results of this research also showed a significant link between gratitude and resilience. The results are the same as the research done by Hwei and Abdullah (2017) among 162 Malaysian undergraduate students who discovered that gratitude was an important predictor of resilience. Arnout and Almoied (2020) discovered that gratitude has an indirect effect on resilience when well-being act as a mediator. Studies that were conducted on university students in India found out that gratitude is a significant predictor of resilience (Garg & Sarkar, 2020; Kumar & Dixit, 2014). These results also showed that gratitude can cultivate resilience as individuals with higher gratitude showed higher resilience. The experience of gratitude might happen at the same time with good evaluation of life problems and provide the individual with a better resilience towards the challenges and difficulties that comes after the COVID-19 pandemic (Khodabakhsh & Ooi, 2022).

This research also clarifies the causal mechanism of the association between gratitude and well-being. The outcome of this research supports the hypothesis of resilience is the moderator for the relationship between gratitude and well-being. The results proved that resilience as a moderator that can explain the association of another positive emotion which is gratitude and a positive outcome, such as well-being, similar to the studies that proved resilience could be the moderator to clarify the association between negative emotions such as pain and stress (Li et al., 2019), chronic stress (García-Izquierdo et al., 2018), cyberbullying and fatalism (Navarro et al., 2018) and negative life events (Li et al., 2020) with well-being. The findings also support the theory of broaden-and-build which states that positive emotions able to expand a person's momentary thought-action repertoires and create an enduring individual resource, which is

resilience and well-being could be explained in the term of broadening from gratitude (Fredrickson, 2001).

The findings of this study offer several crucial inferences to an adult's well-being. In terms of theoretical contribution, the results highlight the importance of gratitude in helping to improve well-being. Adults who have higher gratitude tend to cultivate resilience and subsequently well-being. Furthermore, this study support the notion that childhood is the best time to develop resilience and gratitude so that they will be better equipped to deal with calamity (Mohammadinia et al., 2018). When individuals are grateful, they are more likely to be more optimistic and become more resilient in their life.

On the practical implication, our results show that gratitude and resilience are crucial to the well-being of adults. Their positive emotions are useful to promote well-being especially when the community are facing the difficulties caused by the COVID-19 pandemic. Therefore, the government should promote these positive emotions by providing gratitude intervention for individuals that face mental health challenges. Without gratitude and resilience intervention, there are high risks those psychological symptoms will develop into severe mental health problems such as depression and anxiety (Shaygan et al., 2021). Besides, parents should also cultivate gratitude and resilience in their children since they are young. This is because resilience and gratitude an important tool to maintain well-being and to face future calamity since Iran is a country with a high probability of natural disasters (Mohammadinia et al., 2018). Therefore, people need to be equipped with the tools and capabilities to face future calamities.

Limitations and future research suggestions

There are a few limitations that should be identified in this research. Particularly, this research is entirely based on an adult's perspective. Moreover, the interpretation of this study needs to be handled with caution as the cause and effect of this study were explained based on a statistical model and a cross-sectional study. Accordingly, gratitude intervention program would be deemed helpful to further examine the relationships. This research also used a convenience sampling method to find participants as it is difficult to get a sampling frame during the pandemic, future studies may consider recruiting different samples to examine the robustness of the results. The next limitations are this study only concentrate on a small number of adult groups, although the samples are taken from various parts of Iran. Therefore, the generalization of these results to all Iranian adults should proceed with caution. Besides that, to have a better

understanding of how gratitude and resilience can affect well-being, it is better to use a longitudinal type of study in obtaining data in the future. Longitudinal type of study will be able to directly inspect the underlying relationship and development of gratitude and resilience; and see how it affects the well-being of the participants over time a period.

Conclusion

This research indicates that gratitude and resilience can improve and the well-being of Iranian adults. Furthermore, gratitude is positively and indirectly associated with well-being with the moderating effect of resilience. The discovery not only provides further backup to the positive outcome of gratitude and resilience on Iranian's adults' well-being but also provide details into the causal effects of this association. This discovery shed light on the need for persistent promotion and developing positive values such as resilience and gratitude among adults to increase well-being.

Funding/Financial Support

This study is funded by University Tunku Abdul Rahman (UTAR Research Fund, vote number 6200/SC1) in Malaysia.

Other Support/Acknowledgement

The authors have no support to report.

Competing Interests

The authors have declared that no competing interests exist.

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