

Conference Paper

The Role of Extraversion Personality on Posttraumatic Growth in Victims With Disabilities Due to Earthquakes

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Abstract.

The Yogyakarta earthquake in 2006 left many problems, especially for those with disabilities the aftermath earthquake. Posttraumatic growth is an individual's positive interpretation of negative experiences or feelings. The personality type that is often associated with stress, trauma, and growth events is the extraversion type. The extraversion personality dominates in dealing with traumatic events. This research aimed to find out the roles of extraversion in the posttraumatic growth of survivors with disabilities aftermath earthquake. The subjects were survivors of the Yogyakarta earthquake 2006 (N=51) that suffered upper and lower limbs disability in arms and feet and spinal cord disability. Data were collected using the posttraumatic growth scale and extraversion scale. This study's data analysis method was simple regression. The results show that extraversion contributes to posttraumatic growth with disabilities aftermath earthquake.

Keywords: Extraversion, Posttraumatic growth, Earthquakes

1. Introduction

Indonesia is the largest archipelagic country and is located along the equator. Geographically, its territory is the meeting point of several world lithospheric plates, making Indonesia a country prone to natural disasters such as earthquakes, volcanoes, and tsunamis [1].

Badan Meteorologi Klimatologi dan Geofisika (BMKG) and Badan Nasional Penanggulangan Bencana (BNPB) recorded one of the most significant earthquake events that caused thousands of casualties and property losses, namely the Yogyakarta earthquake of May 26, 2006 [2]. The impact caused by the earthquake is still felt today by Yogyakarta residents, especially survivors who were seriously injured and disabled or disabled.

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Based on observations in the field, researchers found that several types of physical disabilities in earthquake victims include the feet, hands, and spine. Spinal cord injuries are the most dominant, resulting in victims having difficulty carrying out daily activities and becoming dependent on others. Spinal cord injury itself consists of two, namely paraplegia and paraplegia.

The "new" self-acceptance of the victims is undoubtedly not easy. Accepting that the limbs are no longer perfect and experiencing limitations in activity becomes a conflict among the victims. The dispute arises not only from self-acceptance but also from acceptance of the environment. The father's role, who experienced a disability after the earthquake, was a heavy blow for him because he would encounter obstacles in providing for the family. The same thing is also felt by mothers who experienced disabilities after the earthquake and have limitations in providing for the needs of their husbands and children.

[3] surveyed groups of women with disabilities victims of the earthquake in the Bantul area, namely Jetis and Bambanglipuro sub-districts, related to the development of motivation and self-acceptance. It was found that as many as 50 respondents (60%) of women with disabilities victims of the earthquake still did not accept that they were disabled. The average respondent is still embarrassed to leave the house, feels inferior, sad about the conditions experienced, lacks family support, and does not dare to express his opinion. The conflict that arises causes its trauma.

Trauma is an emotional response to a horrific event such as an accident, rape, or natural disaster. Immediately after the incident, it will cause a characteristic shock and rejection. The DSM-IV-TR [4] defines trauma as only perceivable by those who experienced, witnessed, or faced actual threats of death or death, severe injury, or threats to the physical integrity of oneself or others. This is accompanied by responses in the form of intense fear, a sense of helplessness, or horror.

[5] Found two individual responses when facing traumatic events: negative and positive. This form of adverse reaction is described by stress and depression called *post-traumatic stress disorder* (PTSD). Meanwhile, the positive posttraumatic response is called resilience and has recently been known as *posttraumatic growth* [6, 7].

[7] Mention factors that influence posttraumatic growth, such as individual characteristics, characteristics of surrounding circumstances, emotional management of complex events, automatic or deliberate cognitive rumination processes, *self-disclosure*, personality, optimism, expectations, social influences (social support) and culture, coping, *narrative development*, and wisdom.

The earthquake disaster became one of the traumatic events of interest, especially for survivors who experienced disabilities due to earthquakes. Several recent researchers have researched posttraumatic growth in earthquake survivors [8, 9, 10, 11]. In previous studies, the research referred to the role of social influence, namely social support, on posttraumatic growth. The results showed that social support significantly contributed to posttraumatic growth among survivors with disabilities of the Yogyakarta earthquake (12). Other researchers, such as [6], found that the best predictor of posttraumatic growth was personality (such as extraversion).

The personality types that are often associated with stress, trauma, and *growth* events are the *Big Five Personality* type [6, 7, 13]. The prominent five personalities comprise five dimensions: *extraversion*, *agreeableness*, *conscientiousness*, *neuroticism*, and *openness to experience*. Low-to-moderate relationship variation between top-five personalities and traumatic events is inevitable.

Based on the description that has been described, researchers are interested in knowing the role of extraversion personality on posttraumatic growth in disabled survivors after the Yogyakarta earthquake.

2. Literature Review

2.1. Posttraumatic growth

2.1.1. Definition

Posttraumatic growth was first introduced by [6]. The popularity of *posttraumatic* growth in this study is called posttraumatic growth, along with the emergence of other psychological terms related to growth, *such as* stress-related growth, benefit-finding, and adversarial growth. The different terms used by experts to describe growth stem from one common idea regarding the reorganization of cognitive structures as a result of experiences of stress and trauma [14].

[7] Also, add that growth does not occur directly as a result of trauma but rather from the individual's struggle with the new posttraumatic reality, which is crucial in determining the extent to which posttraumatic growth occurs. Posttraumatic growth does not compare life's pre-or after-circumstances by judging that one state is better than the other. However, post-traumatic growth is more about a different acceptance of questions that show differences in the individual that can later be used to determine positive qualities from within the individual.

Posttraumatic growth is conceptually described through three things [7, 15, 16]. first, individuals feel an improvement in relationships with several people, such as being more able to value friends and family, feeling an increase in affection, and having the desire to help others. Second, individuals can better change their view of themselves after surviving a traumatic event, such as accepting their limitations or limitations after the traumatic event. In addition, individuals also become more resilient and have greater strength than before going through a traumatic event. Third, the individual feels a change in his life philosophy, such as finding new meaning and renegotiating what is essential for him to be realized immediately because life is only limited.

2.1.2. Domain

[6] divide posttraumatic growth into five domains, namely:

The first domain is to relate to others. Some people report being closer to their immediate and extended family, feeling a closer friendship with people who were known/still strangers/neighbors before the event occurred. However, many trauma victims also reported that some friends left and were not supportive during difficult times.

The second domain is new possibilities, including the individual's desire to change their life goals, enroll in a new school environment, gain a new degree/nickname, or acquire a new skill. Overall, they have a "*here and now*" focus accompanied by an appreciation of new life and time.

The third domain is personal power or perceived change within oneself. Change occurs when trauma victims express that they become more assertive, profound, authentic, confident, open, empathetic, creative, alive, mature, human, unique, humble, and go according to plan. Many describe themselves as 'better people' now.

The fourth domain is spiritual change, where people can return to their previous faith. They start with actively participating in attending places of worship, praying, and believing in becoming a higher being through gratitude.

The fifth domain is lifetime rewards. Many victims report that trauma allows them to 'see clearly' what is essential in life and to prioritize change, from how and with whom they make decisions to spend the day with importance to nature, health, essential or unimportant physical appearance, and belongings.

2.1.3. Influencing Factors

Factors that affect posttraumatic growth include:

Demographic characteristics. Demographic characteristics of gender, age, education, marital status, length of marriage, and occupation are predictors of post-traumatic growth. [10] found significant post-traumatic growth differences based on age, education, severity, and length of marriage. However, no posttraumatic growth differences were found in sex, income, marital status, and type of occupation.

Personality. [6] found that optimism, extraversion, positive activity and emotions, and openness to feelings are associated with posttraumatic growth.

Optimism. [7] found that optimism influences people who experience traumatic events. Optimism can predict an individual's ability to regulate matters related to traumatic events [17].

Hope. Hope can be a positive coping when faced with *stressful* situations and play a role in developing posttraumatic growth. Hope is different from optimism. Hope is an expectation that the goal can be achieved and the individual's capacity to imagine a way to achieve that goal [18].

Spirituality. The role of spirituality in coping carried out by [19] survivors of the eruption of Mount Merapi in 2010 proves that spirituality is a significant predictor of post-traumatic growth.

Social support. [20] found that social support increases an individual's closeness to his family and social environment. An environment that views individuals positively and can get closer can support individuals out of traumatic events toward positive change. This is because individuals who experience traumatic events require emotional support from their environment.

Time Range. One factor affecting post-traumatic growth is the interval or period between traumatic events and circumstances. However, the time interval until the individual experiences growth differs for each individual. Some can *grow* immediately after a *stressful event*, but some do not. This is influenced by the type of traumatic event or the characteristics of the individual who experiences it [18].

Characteristics of traumatic events. Different traumatic events can affect the development of further posttraumatic growth. [6] found that individuals who experienced great traumatic experiences experienced a better likelihood of post-traumatic growth development than those who did not experience traumatic experiences.

2.2. Extraversion

Extraversion is the most popular personality trait compared to other personality traits. Extraversion is often connoted by the approach shown by energetic individuals towards social and material life, such as being sociable, liking to engage in activities, being assertive in speaking, having positive emotions characterized by sociable, assertive, active like to make new friends and warm [21].

The early development of extraversion refers to the frame of mind proposed by Jung. Jung developed a personality theory and discovered two concepts: extraversion personality (extraverted personality type) and introversion personality (introverted personality type). Jung saw individuals with extraversion personality types as having an objective or impersonal view of the world, while individuals with introversion personality types had an essential subjective or individualized view of looking at things [22].

[23] conducted investigations related to introversion and extraversion of theoretical concepts that Jung had formulated. Introversion shows a tendency to develop symptoms of fear and depression, characterized by a tendency toward obsession, irritability, apathy, and autonomic nerves to be unstable. Introversion also has feelings of being easily hurt, easily nervous, inferior, daydreaming, and likes to sleep. Extraversion is known for engaging with people around. Extraversion individuals are delightful, full of vigor, enthusiastic, and energetic and experience more positive emotions in times of crowd. His pleasure in seeking stimuli from the environment makes extraversion individuals fall into the category of challenge-loving. When in groups, they talk a lot, do not hesitate to express ideas, and like to be the center of attention from those around them.

In Golberg's collection of research on personality, it is argued that extraversion is the most researched and discussed personality trait [24]. Almost every personality inventory lists extraversion as one of the revealed characteristics. Linkages with other variables, such as posttraumatic growth, also support other features of extraversion.

3. Method

This study uses quantitative research to obtain data in quantification, namely numbers [25]. The research design used is simple linear regression, a study that predicts the relationship of one dependent variable with one or more independent variables [26]. The variables in this study were posttraumatic growth as the dependent variable and extraversion as the independent variable.

The study subjects were earthquake survivors who experienced disabilities after the 2006 earthquake in the Bantul region, especially physical disabilities in the limbs, such as hands, feet, and spinal cord, young adult age range (≥ 20 years), and willing to be research subjects.

Research instruments in the form of posttraumatic growth scales and extraversion personality scales. The posttraumatic growth scale used is compiled by [6] and modified by [10] into Indonesian totaling 26 items. Aspects of posttraumatic growth consist of improved relationships with others, identification of new possibilities or opportunities, increased personal strength, positive spiritual changes, and increased appreciation of life.

The extraversion scale is revealed by the Extraversion Personality Traits (EC) scale, which is compiled by modifying *the extraversion* traits of the *Big Five Inventory* (BFI) translated into Indonesian by [27]. The Indonesian version of the extraversion personality scale derived from the top five personality scales consists of eight items. Furthermore, in this study, researchers added the number of items on the extraversion personality scale to 18 items.

The posttraumatic growth scale and extraversion personality scale have four alternative answers: Very Inappropriate (STS), Non-Conforming (TS), Conforming (S), and Very Conforming (SS). A score of 4 is given for the Very Appropriate answer (SS), a Score of 3 for the Matched answer (S), a Score of 2 for the Highly Inappropriate answer (TS), and a score of 1 for the Very Inappropriate answer (STS).

The data collection procedure is carried out by distributing research instruments to research subjects who meet the criteria. This study used trial data due to the limited number of participants. Data analysis uses simple regression analysis techniques. The data obtained in this study were analyzed using the *SPSS 25.0 for the window program*.

4. Result and Discussion

The study was conducted in Bantul District through preliminary data from the DIY Provincial Integrated Rehabilitation Center for People with Disabilities. Researchers individually visited the subjects' homes based on data from the Rehabilitation Center. In its development, data sources were also obtained from the community institution Paguyuban Penyandang Paraplegia Yogyakarta (P3Y) at Sultan Agung Bantul Stadium as a weekly training ground for tennis sports under the auspices of the Komite Olahraga Nasional Indonesia (KONI). Description characteristics of subjects according to gender, age, education, and living place can be seen in Table 1.

TABLE 1: Description Characteristics of Subjects.

| Description Subject | Frequency | Percentage |
|--------------------------------|-----------|------------|
| Gender | | |
| Male | 20 | 39,22% |
| Female | 31 | 60,78% |
| Age | | |
| Early adulthood (20-35 years) | 10 | 19,61% |
| Middle adulthood (36-60 years) | 41 | 80,39% |
| Education | | |
| Primary school graduates | 22 | 43,14% |
| Secondary school graduates | 8 | 15,69% |
| High school graduates | 20 | 39,21% |
| Vocational school graduates | 1 | 1,96% |
| Living Place | | |
| Bantul | 3 | 5,88% |
| Jetis | 14 | 27,45% |
| Imogiri | 5 | 9,80% |
| Pleret | 5 | 9,80% |
| Bambanglipuro | 6 | 11,76% |
| Sewon | 7 | 13,73% |
| Pajangan | 1 | 1,96% |
| Pundong | 4 | 7,84% |
| Kasihlan | 2 | 3,92% |
| Sleman | 4 | 7,84% |

Based on Table 1, it can be concluded that the majority of research subjects were 31 women (60.78%) in middle adulthood with the age of 36-60 years 41 people (80.39%) with the education level of elementary school graduates were 22 people (43.14%) and living place in Jetis, Bantul 14 people (27.45%).

The hypothesis test results stating that extraversion personality plays a significant role in posttraumatic growth were analyzed by simple regression ($F = 38.947$; $p > 0.05$). The practical contribution of extraversion personality prediction was about 0.673 (67.3%). This shows that extraversion personality significantly affects posttraumatic growth in disabled survivors after the Yogyakarta earthquake.

The results are by the theory put forward by [6] that of the top five personalities, only the extraversion personality dimension is most consistent with supporting posttraumatic growth. Research conducted by [28] reinforces the findings of this study that personality extraversion is significant to be a predictor of posttraumatic growth in heart disease patients. Individuals with extraversion personalities who are sociable, assertive, active,

or energetic and like to seek new and warm experiences can quickly deal with traumatic events and have a high potential for posttraumatic growth.

In this study, extraversion personality correlates with aspects of posttraumatic growth consisting of connecting with others, new opportunities, personal strengths, positive spiritual changes, and appreciation of life. Extraversion personality is highly correlated with relationships with others, with a value of $r = 0.718$ ($p < 0.01$). This finding is reinforced by previous research conducted by [7], that extraversion correlates strongly with personal strength and relating to others.

[29] examined the degree of personality pathology among people with clinical disorders such as social anxiety similar to personality disorders, finding that personality is positively correlated with neuroticism and negatively correlated with extraversion. [30] found similarities in personality dimensions of optimism and extraversion associated with posttraumatic growth in people with arthritis and *multiple sclerosis* but not significant in personality neurosis.

References

- [1] Nurhidayat. Habis Bencana, Terbitlah Hikmah. Media Pusat Pendidikan dan Pelatihan Media Edukasi dan Informasi Kediklatan BMKG. 2018;4:51-53. https://cdn.bmkg.go.id/Web/Media-Pusdiklat-BMKG-4-2018_Rev8.pdf
- [2] Setiyono U, Gunawan I, Priyobudi, Yatimantoro T, Imananta RT, Ramadhan M, Hidayanti, et al. Katalog Gempa bumi Signifikan dan Merusak 1821-2018. Jakarta: Pusat Gempabumi dan Tsunami Kedeputusan Bidang Geofisika Badan Meteorologi Klimatologi dan Geofisika. 2019.
- [3] Djati TR. Penerimaan diri sebagai kunci kesuksesan. Ditemu kembali dari. <http://sapdajogja.org/wp-content/uploads/2016/02/buletin-difabel-sapda-jogja-edisi-7.pdf>
- [4] American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4th ed. Washington (DC): Author; 2000.
- [5] Bensimon M. Elaboration on the association between trauma, PTSD, and posttraumatic growth: the role of trait resilience. *Pers Individ Dif*. 2012;52(7):782–7.
- [6] Tedeschi RG, Calhoun LG. The Posttraumatic Growth Inventory: measuring the positive legacy of trauma. *J Trauma Stress*. 1996 Jul;9(3):455–71.
- [7] Tedeschi RG, Calhoun LG. Posttraumatic growth: conceptual foundations and empirical evidence. *Psychol Inq*. 2004;15(1):1–18.

- [8] Tang CS. Positive and negative postdisaster psychological adjustment among adult survivors of the Southeast Asian earthquake-tsunami. *J Psychosom Res.* 2006 Nov;61(5):699–705.
- [9] Yu XN, Lau JT, Zhang J, Mak WW, Choi KC, Lui WW, et al. Posttraumatic growth and reduced suicidal ideation among adolescents at month 1 after the Sichuan Earthquake. *J Affect Disord.* 2010 Jun;123(1-3):327–31.
- [10] Urbayatun S. Peran dukungan sosial, koping religius-islami dan stress terhadap pertumbuhan pasca trauma (posttraumatic growth) pada penyintas gempa yang mengalami cacat fisik (Disertasi doktor tidak diterbitkan). Yogyakarta: Universitas Gadjah Mada; 2012.
- [11] He L, Xu J, Wu Z. Coping strategies as a mediator of posttraumatic growth among adult survivors of the Wenchuan earthquake [PLOS One]. *PLoS One.* 2013 Dec;8(12):e84164.
- [12] Harsono YT, Nurmalitasari F, Retnowati S. The role of social support in promoting post traumatic growth of natural disaster survivors with permanent disability. *Jurnal Psikologi Ulayat.* 2021;8(1):59–68.
- [13] Wang Y, Wang H, Wang J, Wu J, Liu X. Prevalence and predictors of posttraumatic growth in accidentally injured patients. *J Clin Psychol Med Settings.* 2013 Mar;20(1):3–12.
- [14] Werdel MB, Wicks RJ. Primer on posttraumatic growth an introduction and guide. Canada: John Wiley & Sons; 2012.
- [15] Linley PA, Joseph S. Positive change following trauma and adversity: a review. *J Trauma Stress.* 2004 Feb;17(1):11–21.
- [16] Shaw A, Joseph S, Linley PA. Religion, spirituality, and posttraumatic growth: A systematic review. *Ment Health Relig Cult.* 2005;8(1):1–11.
- [17] Mahleda IPM, Hartini N. Posttraumatic growth pada pasien kanker payudara pasca mastektomi usia dewasa madya. *Jurnal Psikologi Klinis dan Kesehatan Mental.* 2012;1(2):67-71.
- [18] Subandi MA, Achmad T, Kurniati H, Febri R. Spirituality, gratitude, hope and post-traumatic growth among the survivors of the 2010 eruption of mount Merapi in Java, Indonesia. *Australas J Disaster Trauma Stud.* 2014;18(1):19–16.
- [19] Swickert R, Hittner J. Social support coping mediates the relationship between gender and posttraumatic growth. *J Health Psychol.* 2009 Apr;14(3):387–93.
- [20] Costa PT Jr, McCrae RR, Dye DA. Facet scale for agreeableness and conscientiousness: A revision of the NEO Personality Inventory. *Pers Individ Dif.* 1991;12(9):887–98.

- [21] Feist J, Feist GJ. *Theories of personality*. 6th ed. New York: McGraw-Hill; 2006.
- [22] Suryabrata S. *Psikologi kepribadian*. Jakarta: Rajawali Press; 2012.
- [23] De Raad B, Perugini M. Big five factor assessment: Introduction. Dalam B. De Raad, M. Perugini (Eds.), *Big five assessment*. 2002:1-26.
- [24] Sugiyono. *Metode penelitian kualitatif, kuantitatif, dan R&D*. Bandung: Alfabeta. 2012
- [25] Priyatno D. *Analisis korelasi, regresi dan multivariate dengan SPSS*. Yogyakarta: Gava Media; 2013.
- [26] Ramdhani N. *Model teoritis perilaku penggunaan surat elektronik (Disertasi doktor tidak diterbitkan)*. Yogyakarta: Universitas Gadjah Mada; 2009.
- [27] Sheikh AI. A model of posttraumatic growth: Personality, social support, and coping. Diunduh dari ProQuest Dissertations and Theses database. (UMI No. 3085553). 2003
- [28] Glinski K, Page AC. Modifiability of neuroticism, extraversion, and agreeableness by group cognitive behavior therapy for social anxiety disorder. *Behav Change*. 2010;27(1):42–52.
- [29] Evers AW, Kraaimaat FW, van Lankveld W, Jongen PJ, Jacobs JW, Bijlsma JW. Beyond unfavorable thinking: the illness cognition questionnaire for chronic diseases. *J Consult Clin Psychol*. 2001 Dec;69(6):1026–36.
- [30] Zopiatis A, Constanti P. Extraversion, openness, and conscientiousness the route to transformational leadership in the hotel industry. *Leadersh Organ Dev J*. 2012;33(1):86–104.