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RELIGIOSITY, GRATITUDE, AND ALTRUISM IN YOUNG ADULTS

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Abstract

The present study was conducted to examine the predictive role of religiosity and gratitude in altruistic behavior among young adults. The total sample comprised 300 young adults, selected through non-random convenience sampling. Participants ranged in age from 20 to 35 years. Data were collected using standardized self-report scales: the Centrality of Religiosity Scale, Gratitude Questionnaire-6, and Self-Report Altruism Scale. The analysis included descriptive statistics, Pearson correlation, multiple regression, and independent sample t-tests. Results showed a significant positive relationship between religiosity and both gratitude and altruism, but no significant relationship was found between gratitude and altruism. Regression analysis revealed that religiosity significantly predicted altruistic behavior, whereas gratitude did not. Gender differences were found only in gratitude, with females scoring higher than males. These findings emphasize the role of religiosity in promoting altruism among young adults, while highlighting gratitude as a separate psychological construct.

Keywords: Religiosity, Gratitude, Altruism, Young Adults

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INTRODUCTION

Religiosity is a multi-dimensional construct that includes an individual's religious beliefs, religious practices, and the level of commitment shown towards a faith. Religiosity has various forms including an inward commitment to faith, attendance to worship services, and following the moral codes prescribed by religion (Ysseldyk et al., 2010). Religion is also impacted by cultural, family dynamics, educational background and personal life experiences of an individual. Cultural customs influence religious beliefs and practices, often setting boundaries on how much one follows religious teachings (Smith, 2020).

Empirical literature notes that religiosity and well-being are positively correlated. In the majority of cases, religion is an ample source of optimism, promotes resilience, and provides coping strategies that individuals need to face challenges. Alongside other types of support, religious communities can offer emotional and social support which helps reduce the feeling of loneliness and social isolation (Ali, et al., 2023). Evidence demonstrates that people who are deeply religious tend to have lower stress, depressive, and anxious symptoms. Having belief in a greater good and being able to depend on a higher force strengthens mental well-being and nurtures positive feelings alongside calmness (Van Cappellen et al., 2014).

Today's world is witnessing changes in religiosity, with increasing numbers of people adopting individualistic approaches to spiritual beliefs. While organized religious activities may be dwindling in some regions, the practice of spirituality and faith remains strong (Fatima, et al., 2024; Rana, et al., 2021; Khan, et al., 2021; Sarmad, 2016). Younger generations tend to look for new ways to express religion alongside personal beliefs. engagement has shifted massively through the internet and people can now engage with their beliefs and faith in new and innovative ways. These transformations show how innovative people can be to adapt to new cultures across the globe (Wittberg, 2021).

Ideological faith concerns the reasoning dimension of religion. This approach considers the individual's acceptance of the tenets of their religion and the intellectual agreement with its precepts. It requires comprehension and acceptance of the principles set out, the dogma, and the worldview of the tradition of faith in which they were born into. Those high in ideological faith tend to have a strong conviction in the degree to which they personally reconcile their beliefs against philosophies as presented by the religion's official documentation (Ebrahimi, 2023).

Ritualistic faith describes the approach to religion which relates to the conduct of life within the framework of religion. This approach focuses on the internal behavior of an individual belonging to a particular religion (Shah, et al., 2025). It covers attendance at worship sessions, punctual and ritualistic prayers, performance of set rites and ceremonies, observance of religious festivals, and obedience to laws of behavior, such as eating and dressing. This aspect captures the participation in the ways and observances of the organized religion (Lee, 2005).

Gratitude is considered one of the most powerful human emotional and psychological states that involve reflecting on the kindness shown to oneself, noticing, and appreciating the good things life has to offer. It is associated with warmth, modesty, and connectedness, promoting well-being and satisfying contentment (Wood et al., 2010).

The development and expression of gratitude is subject to a complex interplay of psychosocial and situational factors (Zaheer, et al., 2021; Haq, 2017; ul Haq, 2012). Certain personality attributes, including optimism, emotional stability, and agreeableness, correlate with increased likelihood to experience and articulate gratitude. Socialization and

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parental modeling are equally important; children who grow within a culture of appreciation are more likely to possess gratitude as an enduring trait (Jayawickreme et al., 2020).

Gratitude has a pronounced correlation with emotional and psychological wellbeing. Studies indicate that people who often express gratitude have lower anxiety, reduced depression, higher self-esteem, and enhanced coping ability with stress. Gratitude adds to joy, hope, and compassion, fostering a sense of fulfillment (Chauhan et al., 2025). The importance of gratitude goes far beyond its positive psychological implications; in fact, gratitude also improves human physiology. For instance, owing someone or being deeply grateful to someone can lower one's blood pressure, heart rate, and even improve immunity. when have those positive feelings, clinically triggered dopamine and serotonin are released in the body, leading to greater happiness and wellness. Furthermore, grateful people tend to sleep better too, since nocturnal reflection on wonderful experiences allows for deep and restorative slumber (Newman et al., 2021).

Altruism is a social and interpersonal construct. In 1825, a French philosopher Auguste Comte coined the word altruism to differentiate a kind of selfless motivation from actions that were motivated by selfish motives. Derived from the Italian word altrui, meaning "to others" or "of others," "altruism" was introduced as an antonym for "egoism" to refer to the totality of other-regarding instincts in humans (Kraut, 2020). Altruism has been defined in a variety of ways by various persons. Altruistic behavior is defined as a voluntary activity that has the ultimate goal of increasing another's welfare (Batson et al., 2015).

Altruism is behavior exhibited by individuals who show selfless concern for other people's welfare and is often demonstrated by kindness, compassion, or generosity. Some of the forms of altruism include assisting a complete stranger, charity, and giving psychological help to the people who require support. While some altruistic actions are done without prior planning, a considerable number are based on moral value systems, religious doctrines, or social norms (Phulpoto, Oad, & Imran, 2024; Oad, Zaidi, & Phulpoto, 2023). The debate continues among psychologists and sociologists, whether altruism is entirely selfless, or provides some underlying form of satisfaction to the giver, which shows the motivation and complexity of human behavior behind prosocial action (Mattis et al., 2009).

Psychological and biological research is new but developing in altruism studies. This predilection is impacted by a person's life events and experiences in conjunction with other factors. Altruistic behavior comes in different forms across societies. 'Altruistic behavior' is defined as a voluntary action intended to benefit another or others. A person engaging in any of the aforementioned actions does not receive any other tangible reward aside from the act itself. Arguably due to intense societal programming, self sacrifice is a rare sight to behold nowadays in society. Moreover, these altruistic acts or gestures differ from kindness. It is important to understand the etymology of "Altruism" which means 'other' or 'doing for others'. Altruism places others before oneself, making it selfless (Filkowski et al., 2016).

Social factors also do shape altruism (Ali, et al., 2021; Muhammad, et al., 2020; Farooq, et al., 2019). How one is raised as a child is very crucial. Children who are raised in warm prosocial homes end up developing better intrinsic altruistic behaviors. Also in the case of selfless concern, educational institutions as well as work places that forge community motivation can encourage one to become altruistically inclined. Image

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resonates greatly with people and hence the portrayal of selfless acts of concern in the media can also motivate people into consciously or unconsciously being altruistic and contribute toward good(norms) in the society. In contrast, students who make a community boast of some social might have their altruistic instincts dwindled from images that display tough competions, social trust, economic inequality and social mistrust (Hay et al., 2021).

Both religion and culture directly shape the framework in which altruistic behavior is defined. Most religions have versions of selflessness, charity, and service that encourage followers to perform acts of kindness (Thalgi, 2024).

RATIONALE OF THE STUDY

The psychological and social nature of religiosity, gratitude and altruism functions as essential forces which direct behavior patterns and emotional states for individuals in their daily lives. Fortifying our comprehension of the relationship between religiosity and gratitude together with altruism serves important functions in human and social operations. The research on these variables lacks sufficient study among young adults therefore additional investigation is needed.

Moreover, prior studies about religiosity, gratitude, and altruism tend to focus on older adults, specific religious groups, or the general population, leading to a gap about how these concepts operate among younger adults. Looking at younger adults, especially at the age when educational and social program interventions can be most effective, enables educators to foster moral and ethical development, promote psychological health, and encourage civic engagement.

In relation to the stated goal of this research project, it will be important to analyze the triad of religiosity, gratitude, and altruism as they relate to young adults. In answering this problem, the study hopes to fill some of the gaps in underlying empirical research and highlight research gaps pertaining to particular sociohistorical developments that are assumed to shift the value and behavioral systems of young adults. The study will help theorize on policy strategies aimed at fostering gratitude and altruism so that prosocial attitudes and behaviors are internalized.

RESEARCH OBJECTIVES

- 1. To examine the relationship between religiosity and altruism among young adults.
- 2. To examine the relationship between religiosity and gratitude among young adults.
- 3. To explore the role of gratitude in predicting altruistic behavior among young adults.
- 4. To assess the combined predictive influence of religiosity and gratitude on altruistic behavior among young adults.

RESEARCH HYPOTHESES

- 1. There is a significant relationship between religiosity and altruistic behavior among young adults.
- 2. There is a significant relationship between religiosity and gratitude among young adults.
- 3. Gratitude will significantly predict altruistic behavior among young adults.
- 4. Religiosity and gratitude are significant predictors of altruistic behavior among young adults.

LITERATURE REVIEW

The connection between religiosity and gratitude has been studied. Researchers sought to understand the role religious belief systems and practices had in promoting gratitude in people. It was observed that those who intentionally attend worship services or pray are

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more appreciative than those who do not engage in these religious practices (Ali, et al., 2023; Yasmin, et al., 2020). According to their study, religious teachings encourage believers to appreciate the many benefits in their lives, which in turn promotes a grateful attitude. For individuals who regularly followed their faith and engaged in rituals that foster thanks, the relationship between religiosity and gratitude was exceptionally robust (Yost-Dubrow & Dunham, 2017).

Research investigated thankfulness and religious motivation. They found that those who are inherently religious those who internalize religious elements rather than being watchful for societal approval are more appreciative. According to their research, religious people's thankfulness is genuine since it comes from their spirituality rather than from outside forces. This distinction supports the claim that thankfulness is necessary for leading a faith-based life by showing that sincere devotion to religion fosters appreciation (Huynh et al., 2024).

Finally, focused on how people of different religious backgrounds respond to gratitude interventions. Their study found that self-identified highly religious individuals benefitted more from gratitude journaling and prayerful reflection than their less religious peers. This suggests that higher levels of religiosity may increase people's responsiveness to practices that boost gratitude, supporting the idea that religious people are more inclined to develop and sustain an attitude of gratitude. Such findings emphasize the need to apply concepts of gratitude in religious and spiritual settings to optimize psychological outcomes (Tsang et al., 2012).

Various studies have attempted to explore the link connecting different levels of religiosity and altruism and they acknowledge the fact that religion encourages prosocial behavior. Individuals who are more religious tend to engage in more altruistic activities, such as aid and volunteering. One study suggested that the teachings of religion, above all those directing towards caring and serving, help motivate them to act selflessly. In addition, religious societies provide a context that gives rise to altruistic behavior because people care for the wellbeing of others (Pichon et al., 2007).

Equally, the relationship between religiosity and religious altruism of different religions has also been studied. This investigation hypothesized deeply religious people; that is, people who make religion part of their self-identity tend to display greater altruistic actions. The study found that people driven by intrinsic reasoning within the scope of religious faith are likely to display increased altruistic deeds compared to those driven by external factors. This indicates that the individual acts out of moral obligation rather than seeking affirmation and illustrates more selfless acts, proving the theory of religious internalization (Saroglou, 2010).

One more important study analyzed the interaction of empathy, altruism, and religiosity. They found out that, on average, most religious people show more empathy and perform more altruistic deeds as a result. Compassion, characteristic of many religions, is often directed toward those believed to be undergoing hardship. It was also noted that persons who regarded religion as an important part of their life tend to be more altruistic. This demonstrates the effect of intrinsic religiosity (Batson et al., 2015).

Research explored how prayer and religious participation impact altruistic actions in adolescents. Their research found that praying for someone's well-being increases the chances of helping behaviors. An additional important finding was that more religious adolescents showed higher empathy which further enhanced the likelihood of their altruistic actions. These findings demonstrate how observances of religion serve as

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frameworks that can be acted upon to promote kindness among the youth (Hardy & Carlo, 2011).

Research examined altruistic conduct in people practicing a religion and noted that this group demonstrated heightened behavioral altruism. The study made a distinction between intrinsic and extrinsic religious motives and found that having a genuine commitment to religion increases charity. Their findings underscored the moral internalization of religion's teachings by stating that true belief yields more volunteer work and donations (Saroglou et al., 2005).

The experiments show that the use of religious materials increases altruism. Subjects who were presented with religious texts and symbols over the charity participant's control group donated more (Khan & Haq, 2025; Haq & Khan, 2024). This indicates that religious stimuli may enhance moral action, evoking compassion from individuals regardless of their level of religiousness. These findings support those who claim religion to be a culture-based system that fosters cooperation and altruism (Hardy et al., 2019).

Recent research examining the connection between gratitude and altruism indicates that gratitude can motivate a prosocial orientation, even moving as far as involuntary altruistic actions. Research examined the impact of thankfulness and other prosocial practices on wellbeing and offered evidence that those who exercised gratitude tended to perform more altruistic and helpful deeds. According to them, being grateful fosters a sense of obligation that encourages people to return the favors they have received via generosity (Ahmad, et al., 2021; Ali, et al., 2020; Ahmad, 2018). This supports the idea that since gratitude improves mental health and raises the likelihood of lending a helpful hand to others, it is crucial for promoting altruism (Alamri & Al-Abyadh, 2024).

Research studied the influence of gratitude in social relations and altruistic behavior. It was found that individuals who reported higher levels of gratitude were willing to assist other people regardless of specific provocation. The sense of gratitude leads to stronger feeling of interpersonal relations, which in turn results to higher empathy and stronger inclination towards altruistic activities (Janjua, et al., 2025; Shah, et al., 2024; Naseer, et al., 2018). This study showed that gratitude plays a role in ongoing prosocial behavior towards other people and communities which improves their overall wellbeing, extending beyond single acts of kindness (McCullough et al., 2008).

Finally, a study investigated how appreciation affects the formation of enduring altruistic tendencies. According to the findings, gratitude not only aided in the development of an altruistic disposition over time but was also associated with immediate acts of altruism. According to the study, making gratitude a habit increased empathy and concern for other people, which in turn encouraged a habit of consistently lending a helping hand. Thus, the relationship between gratitude and altruism may be strengthened if people consistently practice thankfulness because it may make them more motivated to be altruistic in the long run (Komase et al., 2021)

Religiosity, gratitude, and altruism are intertwined with one another; however, the literature review highlights critical foundational research without addressing the methodological falters which pose great threats to the validity and generalizability of the conclusions drawn. Addressing the lack of sample heterogeneity, measurement oversights, and frameworks with advanced mediating and moderating factor concepts would strengthen future efforts aimed at understanding the role of religiosity and gratitude in developing altruistic tendencies (Hardy & Carlo, 2011).

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RESEARCH METHODOLOGY RESEARCH DESIGN

A correlational design was selected for this study as it effectively addresses the research objectives by allowing the examination of relationships among Religiosity, Gratitude, and Altruism.

SAMPLING TECHNIQUE

The present study used a non-random convenience sampling technique to collect data from young adults in Faisalabad, Pakistan. While convenience sampling may introduce selection bias and limit generalizability, it was considered suitable for exploring the relationships between religiosity, gratitude, and altruism in young adults.

PARTICIPANTS

The study participants were young adults, with a total of 300 (M= 1.73, SD =.44) individuals conveniently selected from Faisalabad city. The sample size of 300 participants was determined using the Per Indicator Method, which recommends 5 to 10 participants per parameter (Bentler & Chou, 1987; Bollen, 1989) and 5 to 20 respondents per indicator (Lei & Wu, 2007). The age range for young adults was set between 20 and 35 years. A total of 340 questionnaires were distributed, out of which 300 were fully completed and returned. The sample included both male (n = 80) and female (n = 220) participants, all with a minimum education level of a Bachelor's degree (BA/B.S). Participants came from diverse professional backgrounds.

INCLUSION VS EXCLUSION CRITERIA

INCLUSION-CRITERIA

- 1. Participants aged between 20 and 35 years are included in this research.
- 2. Participants who are currently pursuing or have a minimum of a Bachelor's degree (BA/BS) are included in this research.
- 3. Participants fluent in English are included.
- 4. Participants willing to participate in the study are included.
- 5. Participants able to provide informed consent are included.

EXCLUSION CRITERIA

- 1. Age outside the 20-35 range.
- 2. Not fluent in English.
- 3. Not a Bachelor's degree student or graduate.
- 4. Unable to provide informed consent.
- 5. Currently experiencing severe mental health issues.

ETHICAL CONSIDERATION

The research's proposal was accepted initial by the psychology department's research-board, then by the BOS, and finally by the BASR. The current research investigation was conducted in a manner that protected the participants' dignity and respect. The researcher ensured that the study participants' rights and wellbeing were maintained. The participants were informed about the study's confidentiality and objectives. Respondents were also advised that their participation was completely voluntary and that they might drop out at any time. Participants signed the written consent which detailed all ethical concerns and the study's objectives.

MEASURES

PERSONAL INFORMATION

A demographics form was specifically designed for this study to collect individual data, comprising the following items: age, gender, educational background, family system and

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marital status.

THE CENTRALITY OF RELIGIOSITY SCALE (CRS)

The Centrality of Religiosity Scale is a psychometrically validated measure assessing the importance of religion in an individual's life. Developed by Stefan Huber and Odilo W. Huber, the CRS operationalizes religiosity as a multidimensional construct with five core domains: frequency of religious practice, religious experience, ideology, intellect, and private practice. For the current study, the 15-item version (CRS-15) was used, which allows for both a total religiosity score and subscale analysis of each domain. All items are rated on a 5-point Likert scale (1 = never to 5 = very often), with no reverse-scored items included. The scale demonstrates excellent psychometric properties, with previous studies reporting high internal consistency (α = 0.80-0.90) and strong construct validity across diverse religious traditions including Christianity, Islam, and non-institutional spirituality. In our sample, the CRS-15 showed good reliability (α = .76) (Huber & Huber, 2012).

THE GRATITUDE QUESTIONNAIRE-6 (GQ-6)

The Gratitude Questionnaire-6 (GQ-6) is a concise, self-report instrument designed to assess individual dispositions towards gratitude. Respondents evaluate six items on a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). To mitigate response bias, two items are reverse-scored. No subscales are included in this version. The mean score on the scale was computed, with higher scores indicating higher levels of gratitude. The scores could range from 6 to 42, with higher scores indicating greater dispositional gratitude. The scale showed a good reliability ($\alpha = 0.82$). In the current sample the scale has a good reliability of 0.89 (McCullough et al., 2002).

A SIMPLIFIED 9-ITEMS VERSION OF THE SRA SCALE TO ASSESS ALTRUISM (9-SRA).

The 9-item Self-Report Altruism Scale was a 20-item measure and later refined into a 9-item version (SRA-9) by Manzur and Olavarrieta (2021) to assess frequency of prosocial behaviors. The scale contains nine items, rated on a 5-point Likert scale (1 = Never to 5 = Always), with no reverse-scored items. Total scores range from 9 to 45, where higher scores indicate greater altruistic tendencies. The SRA-9 demonstrates adequate reliability (α = .78). In this study, the scale showed excellent internal consistency (α = .81) (Manzur & Olavarrieta, 2021).

RESEARCH PROCEDURE

The study was conducted in Faisalabad, Pakistan, selected for its accessibility and diverse population. Participants were young adults with at least a Bachelor's degree, recruited through convenience sampling from various educational institutions, workplaces, and public areas. Before data collection, necessary permissions were obtained, and participants were informed about the purpose of the study, assured of confidentiality and anonymity, and asked to provide informed consent. The researcher introduced herself, explained the objectives of the study, and encouraged participants to ask questions. Concerns were addressed respectfully, and participants were assured they could access further information if desired, which helped build trust and rapport. A total of 340 questionnaires were distributed, out of which 300 were fully completed and included in the final analysis. Misunderstandings during administration were clarified through brief discussions, and data were later entered into SPSS for statistical analysis in adherence to ethical research standards.

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STATISTICAL ANALYSIS

The data were entered into SPSS (Version 27) for analysis. Both descriptive and inferential statistics were applied to examine the relationships between variables. Pearson correlation analysis, multiple regression, simple linear regression analyses, independent samples t-tests were utilised to calculate the results according to hypotheses.

RESULTS

TABLE 1: DEMOGRAPHIC CHARACTERISTICS OF RESEARCH PARTICIPANTS (N= 300)

Variable	Categories	N	%
Gender	Male	8o	26.7
	Female	220	73.3
Age	20-24	154	51.3
	25-29	128	42.7
	30-34	18	6.0
Educational Qualification	Bachelors	211	70.3
	Masters	85	28.3
	Others	4	1.3
Family Structure	Joint	102	34.0
	Nuclear	198	66.o
Economic Status	Lower Class	2	.7
	Middle Class	254	84.7
	Upper Class	44	14.7

The following Table 1 presents the demographic characteristics of the 300 research participants. The majority were female (n = 220, 73.3%), while the remaining were male (n = 80, 26.7%). Most participants were between 20 and 24 years of age (n = 154, 51.3%), followed by those aged 25 to 29 years (n = 128, 42.7%) and 30 to 34 years (n = 18, 6.0%). In terms of educational qualifications, the majority held a bachelor's degree (n = 211, 70.3%), followed by a master's degree (n = 85, 28.3%) and other qualifications (n = 4, 1.3%). Regarding family structure, most participants belonged to nuclear families (n = 198, 66.0%), while the rest lived in joint family systems (n = 102, 34.0%). As for economic status, the majority identified as middle class (n = 254, 84.7%), followed by upper class (n = 44, 14.7%) and lower class (n = 2, 0.7%). To sum up, Table 1 offers a comprehensive overview of the demographic characteristics of the participants, emphasizing key elements such as gender distribution, age range, educational attainment, family structure, and socioeconomic status.

TABLE 2: PSYCHOMETRIC PROPERTIES OF SCALES

Scales	M	SD	Range	Cronbach's α
The Centrality of	4.35	.44	2-5	.76
Religiosity Scale				
Gratitude	21.68	9.15	5-36	.89
Questionnaire				
Self- Report Altruism	2.98	.78	1-5	.81
Scale				

Table 2 shows psychometric properties for the scales used in present study. The Centrality of Religiosity Scale demonstrated acceptable reliability (α = .76). The Gratitude Questionnaire exhibited good reliability (α = .89), while the Self-Report Altruism Scale also showed good reliability (α = .81).

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TABLE 3: DESCRIPTIVE STATISTICS AND CORRELATIONS FOR STUDY VARIABLES

Variables	n	M	SD	1	2	3	
Religiosity	300	4.35	.44	-			
Gratitude	300	21.68	9.15	.17**	-		
Altruism	300	2.98	.78	.15**	04	_	

Note. p < .01 (**).

Table 3 presents the descriptive statistics and correlations among the study variables. Religiosity showed a significant positive correlation with the Gratitude (r = .17, p < .01), indicating that individuals with higher religiosity reported higher gratitude. Additionally, religiosity was positively correlated with altruism (r = .15, p < .01), suggesting that increased religiosity is linked to higher self-reported altruistic behavior. However, the correlation between the Gratitude Altruism was non-significant (r = -0.04, p > .01), indicating no meaningful association between gratitude and altruism in this sample.

TABLE 4: REGRESSION COEFFICIENTS OF GRATITUDE ON ALTRUISM

Variable	В	В	SE	
Constant	3.06		0.12	
Gratitude	-0.003	-0.04	0.005	
R^2	.002			

Note. *N*= 300.

p > .05.

Table 4 shows the impact of gratitude on altruism. The R² value of .002 indicated that gratitude explained only 0.2% of the variance in altruism, with a non-significant model fit, F(1, 298) = 0.49, p = .483. The regression coefficient was also non-significant, suggesting that gratitude did not significantly predict altruism ($\beta = -0.04$, p = .483).

TABLE 5: REGRESSION COEFFICIENTS OF RELIGIOSITY AND GRATITUDE ON ALTRUISM

Variables	В	SE	t	P	95% CI
Constant	1.88	.44	4.25	.001	[1.01, 2.75]
Religiosity	.28	.10	2.77	.006**	[.08, .48]
Gratitude	01	.01	-1.17	.245	[01, .00]

Note. CI= Confidence Interval.

Table 5 presents the impact of religiosity and gratitude on altruism. The R^2 value of .03 indicates that the model explains 3.0% of the variance in altruism, F(2, 297) = 4.10, p = .02 The findings revealed that religiosity positively predicted altruism ($\beta = 0.16$, p < .01), suggesting that higher religiosity is associated with greater altruistic behavior. In contrast, gratitude had a non-significant effect on altruism ($\beta = -0.07$, p > .05), indicating that gratitude does not meaningfully contribute to altruistic tendencies in this sample.

DISCUSSION

The present study aimed to examine the relationship between religiosity, gratitude, and altruism in young adults. The discussion integrates the findings of the study with existing literature. Each hypothesis is analyzed in detail to explore the congruence and divergence with previous research. The first hypothesis proposed a significant relationship between religiosity and altruism among young adults. The findings supported this hypothesis, revealing a positive correlation (r = .15, p < .01). These results align with Saroglou (2010), who found that intrinsic religiosity fosters moral obligations, thereby enhancing altruistic behaviors. Similarly, Johnson and Rainer (2015) reported that individuals with religious

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upbringing exhibit greater prosocial behaviors due to the moral values instilled during childhood. However, the modest correlation coefficient suggests that while religiosity contributes to altruistic tendencies, other factors may also play a significant role. This aligns with previous study that emphasized the importance of external social influences and contextual variables in shaping altruistic behaviors (McFarland et al., 2012).

These results, in conjunction with past studies by Saroglou (2010), deepen our understanding of the complex interplay between religiosity and altruism. It was noted that intrinsic religiosity, which reflects one's genuine spiritual commitment rather than mere adherence to religion, indeed serves as an underlying factor for increased altruism. This indicates that religions act as overarching moral systems, which command boundaries relative to ethical judgment and duties towards other people thus heightening the likelihood of prosocial behavior. The internalization of religious doctrine mandating compassion, charity, and service to others simply becomes a value laden guiding system. It is within these frameworks that these processes are likely to occur. On the other hand, the reason for lower strength of correlation coefficients suggests the importance of other determining factors. A suggested reason is that within the context of altruistic behavior, religion is an important, but not the only, intervening factor. This nuanced finding highlights the importance of other psychological, social, and contextual elements that, along with the religious dimension, interact within a given framework to shape prosocial behavior, indicating that the influence of religiosity exists within a broader ecosystem of moral influences (Johnson & Rainer, 2015).

The second hypothesis posited a significant relationship between religiosity and gratitude. The study confirmed this hypothesis with a positive correlation (r = .17, p < .01). These findings are consistent with Krause and Hayward (2015), who observed that religious practices and beliefs nurture gratitude by encouraging individuals to appreciate life's blessings. Moreover, the study's results resonate with Rosmarin et al. (2011), who found that gratitude mediated the relationship between religiosity and psychological resilience. The findings further emphasize that religiosity provides a framework for individuals to reinterpret life experiences positively, fostering a sense of gratitude. However, as highlighted, intrinsic religiosity appears to have a stronger association with gratitude than extrinsic religiosity (Huynh et al., 2024).

This broadens knowledge on how philosophy and culture impact emotional development. While religiosity is one path to gratitude, it is clear that many psychological and social factors exist which shape grateful dispositions. This supports the need to create flexible strategies for fostering gratitude that accommodates all backgrounds and belief systems. The association drawn between religious participation and gratitude also accounts for some of the mental health benefits that come with being spiritual, highlighting certain areas of value within clinical and community settings. Future work in this area could examine how various spiritual traditions uniquely foster gratitude to better inform multicultural positive psychology intervention approaches regardless of religious affiliation (Asmari et al., 2025).

The third hypothesis suggested that gratitude would significantly predict altruistic behavior. Contrary to expectations, the findings revealed a non-significant relationship (r = -.04, p > .01), with gratitude explaining only 0.2% of the variance in altruism. This contrasts with Watkins et al. (2015), who reported that gratitude enhances prosocial behaviors by fostering a sense of obligation to reciprocate kindness. The disparity could be attributed to cultural or contextual differences. In collectivist cultures, where community-oriented

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behaviors are emphasized, gratitude may manifest differently compared to individualistic cultures. For instance, the previous study highlighted that gratitude's influence on prosocial tendencies varies across cultural settings. Additionally, the operationalization of gratitude and altruism may affect the observed relationships (Alamri & Al-Abyadh, 2024).

The surprising finding of a non-significant relationship between gratitude and altruism goes against the expected psychological reasoning, indicating that the connection is likely more complicated than previously thought. It suggests that gratitude does not function as a strong driver of altruism's deeds in all contexts, emphasizing the importance of culture and situation on this dynamic. Specifically, the results caution the ease with which Western psychological models of gratitude's influences are applied as norm s for robust cultures and communities with stronger norms regarding the collective might fundamentally alter how gratitude becomes action (Gurnani & Sethia, 2019).

The fourth hypothesis proposed that religiosity and gratitude together would significantly predict altruistic behavior. The findings partially supported this hypothesis, with religiosity emerging as a significant predictor (B = .28, p < .01), while gratitude had a non-significant effect (B = -.01, p > .05). The model explained 3.0% of the variance in altruism, indicating that other unmeasured factors may play a more substantial role. These results are consistent with Hardy and Carlo (2011), who found that religiosity's emphasis on moral responsibility drives altruistic actions. However, the non-significant role of gratitude highlights the need to reconsider its theoretical placement in the model. It suggested that gratitude's impact on altruism might be more situational than dispositional, depending on the specific context of helping behaviors (Gruszecka, 2015). The results uncover a subtle interrelation of religiosity in the context of gratitude and altruism that appears to prioritize religious morals over gratitude for altruistic conduct. This means that efforts to promote prosocial behavior should focus more on the moral aspects of social identity in relation to emotions than thankfulness. The overall model's weak predictive power signifies that other psychological and social aspects like empathy, social expectations, or contextual aspects which combine or override these variables in influencing help-seeking behavior need to be integrated (Koenig et al., 2007).

Also, these results reconsider the role of gratitude among other prosocial motivators. Instead of operating as a straightforward antecedent to altruism, gratitude might function as a context-specific booster, increasing helping behavior only in certain relationships or in the presence of particular stimuli. This differentiation raises the need to formulate more precise treatments that integrate gratitude exercises with specific types of prosocial engagements where its impacts are most effective. Moreover, the results illuminate the need to distinguish between the pathways to altruism: some are driven by stable moral logic, while others rely on shifting emotional paradigms. This distinction is crucial when designing studies and interventions focused on encouraging helping behavior (Mccullough et al., 2008).

CONCLUSION

The findings of this study emphasize the significant role of religiosity in shaping altruistic behaviors, identifying it as a key factor in promoting prosocial tendencies among young adults. While religiosity significantly predicted altruism, gratitude did not exhibit a direct predictive relationship with altruistic tendencies. This disconnect suggests that cultural factors and situational contexts may moderate how emotional dispositions, such as gratitude, translate into prosocial actions.. These findings contribute to a deeper understanding of the psychological and cultural determinants of altruism within

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collectivist societies like Pakistan. Future research should explore additional variables such as empathy, moral identity, and social reinforcement to develop a more comprehensive model of altruistic behavior. By addressing these complexities, interventions can be designed in educational, community, and policy settings to foster prosocial values, ultimately enhancing social cohesion and mutual support across diverse populations.

LIMITATION

- 1. While this study provides valuable insights, several limitations must be acknowledged. Future research should include more diverse samples across different regions, religions, and socio-economic backgrounds.
- 2. Longitudinal or experimental research is recommended to better understand the directionality of these relationships.
- 3. Furthermore, expanding the model to include mediators and moderators such as empathy, moral reasoning, or social support may offer a more nuanced understanding of how religiosity and gratitude contribute to altruistic behavior.

RECOMMENDATIONS

- 1. Firstly, educational institutions should consider integrating values-based curricula that emphasize religious teachings on compassion, social responsibility, and altruism. Programs aimed at fostering ethical development and community engagement may benefit from leveraging the moral foundations provided by religiosity.
- 2. Secondly, although gratitude did not significantly predict altruistic behavior in this study, it should not be dismissed. Interventions that promote gratitude may need to be combined with other prosocial motivators, such as empathy training, in order to yield meaningful behavioral outcomes.
- 3. Thirdly, future studies should apply more robust sampling techniques, such as random or stratified sampling, to enhance generalizability.

REFERENCES

- Ahmad, K. U. R. (2018). Organizational Commitment and Ethical Conduct on Team Performance: Evidence from Pakistan. *International Journal of Academic Research in Business and Social Sciences*, 8(7), 328-339.
- Ahmad, M. M., Qureshi, S. A., Bilal, M., & Rana, A. M. (2021). Dynamic Measuring the Impacts of Financial Fragility on the Performance of Non-Financial Firms Listed at the Pakistan Stock Exchange. *International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies*, 12(1), 1-10.
- Alamri, A. A. H., & Al-Abyadh, M. H. A. (2024). Gratitude predicts prosocial tendency through psychological resilience—Cross-sectional study in Arab cultures. *Frontiers in Psychology*, *15*, 138-209. https://doi.org/10.3389/fpsyg.2024.1382093
- Ali, H., Shahid, T., Timsal, A., & Naseer, S. (2023). Sustainable careers under spiritual leadership and workplace spirituality: A subordinates' perspective during COVID 19. Review of Applied Management and Social Sciences, 6(1), 89-103.
- Ali, N., Bilal, M., Qureshi, S. A., Toru, N., & Rana, A. M. (2020). Empirical Investigation Of Privatization Process In Pakistan: Evidence From Statistical Experience. *Sarhad Journal of Management Sciences*, 6(2), 385-402.
- Ali, W., Alasan, I. I., Khan, M. H., Ramayah, T., & Rahman, A. (2021). Strategy Is All About Deliberately Making Choices and Trade-Offs: Analogy Betweenfully-Fledged Islamic Banks and Conventional Banks with Islamic Windows. *Acad. Entrep. J*, 27, 1-15.

Online ISSN

Print ISSN

3006-4635

3006-4627



- Asmari, A., Qasem, A., Al-Zahrany, B., & Ismail, R. (2025). The Role of Religiosity and Social Support in Predicting Gratitude Among Adolescents and Adults. *Journal of Ecohumanism*, 4, 23-34. https://doi.org/10.62754/joe.v4i1.6367
- Batson, C. D., Ahmad, N., & Lishner, D. A. (2015). Empathy and altruism. In D. A. Schroeder & W. G. Graziano (Eds.), The Oxford handbook of prosocial behavior. *Oxford University Press*.4(1), 161–180.
- Batson, C. D., Schoenrade, P., & Ventis, W. L. (2015). Religion and the individual: A social-psychological perspective. *Oxford University Press.* 7(1), 39-45.
- Chauhan, A. S., Mathur, G., Gulati, C., & Sharma, A. (2025). The relationship between gratitude and life satisfaction: The mediating effect of mental well-being. *Social Sciences & Humanities Open*, 11, 101-224. https://doi.org/10.1016/j.ssaho.2024.101224
- Ebrahimi, A. M. (2023). The Concept of Religious Pluralism in a Globalized World: An Analytical and Comparative Study of John Hick and Hossein Nasr's Theories. *Journal of psychiatry*. 17(1), 49-67. https://doi.org/10.5281/zenodo.8021955
- Farooq, M., Ali, W., Younas, W., Khalil-ur-Rehman, F., & Qurashi, Q. A. (2019). The era of Transformative Marketing: Service Quality of Mobile App Based Taxi Services in Kuala Lumpur. *Proceedings on Engineering Sciences*, 1(2), 49-58.
- Fatima, M., Sarmad, M., Bano, S., Shahid, M., Sajid, R., & Azhar, A. (2024). Analyzing Antecedents of Health Care Workers' Performance Through Emotional Labor and Mediating Role of Emotional Exhaustion. *Journal of Xi'an Shiyou University, 20(2),* 832-845.
- Filkowski, M. M., Cochran, R. N., & Haas, B. W. (2016). Altruistic behavior: Mapping responses in the brain. *Neuroscience and Neuroeconomics*, 5, 65–75. https://doi.org/10.2147/NAN.S87718
- Gurnani, R., & Sethia, S. (2019). Does Receiving Promote Giving? Gratitude as a predictor of Altruism via Happiness. *Journal of Psychology*. 7(1), 39-45.
- Haq AU, (2017). Firm Characteristics and Cash-Cash Flow Sensitivity of the Manufacturing Sector of Pakistan. Business & Economic Review, 9(3), 71-103.
- Haq, E. U., & Khan, S. (2024). The Influence of Broken Homes on Students' Academic Performance in Schools. *Journal of Political Stability Archive*, 2(4), 339-361.
- Hardy, S. A., Walker, L. J., Rackham, D. D., & Olsen, J. A. (2019). Religiousness and adolescent empathy and altruism: Understanding the role of religion in positive youth development. *Psychology of Religion and Spirituality*, 11(2), 194-203. https://doi.org/10.1037/reloo00209
- Hardy, S. A., Walker, L. J., Rackham, D. D., & Olsen, J. A. (2019). Religiosity and adolescent generosity: A longitudinal study of mediation by prosocial values. *Journal of Research on Adolescence*, 29(1), 3–20. https://doi.org/10.1111/jora.12430
- Hay, D. F., Paine, A. L., Perra, O., Cook, K. V., Hashmi, S., Robinson, C., Kairis, V., & Slade, R. (2021). Prosocial and Aggressive Behavior: A Longitudinal Study. *Monographs of the Society for Research in Child Development*, 86(2), 7–103. https://doi.org/10.1111/mono.12427
- Huynh, V.-S., Tran-Thien, G.-P., Nguyen, T.-B., Nguyen, X. T. K., Nguyen, V. H. A., & Tran-Chi, V.-L. (2024). What Do We Know About the Influence of Believers' Religiosity on Happiness and Gratitude? A Perspective for Clinical Practice. *Psychology Research and Behavior Management*, 17, 2433–2447. https://doi.org/10.2147/PRBM.S465729

Online ISSN

Print ISSN

3006-4635 3006-4627



- Janjua, Z. A., Qureshi, S. S., Shah, S. M. A., (2025). Human Resource Strategies For Improving Leadership Skills Among Hospitality *Graduates*. *Annual Methodological Archive Research Review*, 3(1), 13-29.
- Jayawickreme, E., Infurna, F., Alajak, K., Blackie, L., Chopik, W., Chung, J., Dorfman, A., Fleeson, W., Forgeard, M., Frazier, P., Furr, R., Grossmann, I., Heller, A., Laceulle, O., Lucas, R., Luhmann, M., Luong, G., Meijer, L., McLean, K., & Zonneveld, R. (2020). Post-Traumatic Growth as Positive Personality Change: Challenges, Opportunities and Recommendations. *Journal of Personality*, 89, 34-56. https://doi.org/10.1111/jopy.12591
- Johnson, D. R., & Rainer, P. (2015). Religious socialization and altruistic behavior in adulthood. *Journal for the Scientific Study of Religion*, 54(3), 410-421.
- Khan, K. N., Sarmad, M., Ahmad, S. I., & Ahmad, I. (2021). Exploring Mediating And Moderating Mechanism For Project Uncertainty Under Agile Methodology Use In It Sector. *Ilkogretim Online*, 20(1).
- Khan, S., & Haq, E. U. (2025). The Role of Pedagogical Strategies in Teaching Management Science to Hospitality Management Students. *Journal of Political Stability Archive*, 3(1), 805-826.
- Koenig, H. G. (2012). Religion, Spirituality, and Health: The Research and Clinical Implications. *ISRN Psychiatry*, 2012, 278730. https://doi.org/10.5402/2012/278730
- Komase, Y., Watanabe, K., Hori, D., Nozawa, K., Hidaka, Y., Iida, M., Imamura, K., & Kawakami, N. (2021). Effects of gratitude intervention on mental health and well-being among workers: A systematic review. *Journal of Occupational Health*, 63(1), 12290. https://doi.org/10.1002/1348-9585.12290
- Krause, N., & Hayward, R. D. (2015). Religious involvement and feelings of gratitude toward God. *Journal for the Scientific Study of Religion*, *54*(3), 431-445.
- Kraut, R. (2020). *Altruism*. In E. N. Zalta (Ed.), The Stanford encyclopedia of philosophy (Fall 2020 Edition). *Metaphysics Research Lab, Stanford University.* 3(1), 34-65. https://plato.stanford.edu/archives/fall2020/entries/altruism/
- Lee, D. B. (2005). Ritual and the Social Meaning and Meaninglessness of Religion. *Soziale Welt*, 56(1), 5–16.
- Mattis, J. S., Hammond, W. P., Grayman, N., Bonacci, M., Brennan, W., Cowie, S.-A., Ladyzhenskaya, L., & So, S. (2009). The Social Production of Altruism: Motivations for Caring Action in a Low-Income Urban Community. *American Journal of Community Psychology*, 43(2), 71–84. https://doi.org/10.1007/S10464-008-9217-5
- McCullough, M. E., Emmons, R. A., & Tsang, J. A. (2008). The grateful disposition: A conceptual and empirical topography. *Journal of Personality and Social Psychology*, 82(1), 112-127.
- McFarland, S., Webb, M., & Brown, D. (2012). The role of religious motivation in charitable giving: A psychological perspective. *Journal for the Scientific Study of Religion*, 51(4), 627-641.
- Muhammad, S., Anjum, T., & Fahad Khan Afridi, D. I. I. A. (2020). Impact of Transformational Leadership on Project Success Criteria: The Moderating Role of Work Engagement. *Palarch's Journal of Archaeology of Egypt/Egyptology*, 17(6), 7460-7476.
- Naseer, H., Haq, A., & Farooq, M. (2018). Antecedent of employees career satisfaction, An empirical investigation of pharmaceutical sector of pakistan. *International Journal of Academic Research in Business and Social Sciences*, 8(7), 281-99.

Online ISSN Print ISSN

3006-4635

3006-4627



- Newman, D. B., Gordon, A. M., & Mendes, W. B. (2021). Comparing Daily Physiological and Psychological Benefits of Gratitude and Optimism Using a Digital Platform. *Emotion (Washington, D.C.)*, 21(7), 1357–1365. https://doi.org/10.1037/emo0001025
- Oad, L., Zaidi, S.S., & Phulpoto, S. A. J., (2023). Helicopter Parenting and its Influence on the Children of Pakistan: Thematic Analysis. Spry Journal of Humanities and Social Sciences (SJHSS), 1(2), 72-87. https://doi.org/10.62681/sprypublishers.sjhss/1/2/1
- Phulpoto, S. A. J., Oad, L., & Imran, M. (2024). Enhancing Teacher Performance in E-Learning: Addressing Barriers and Promoting Sustainable Education in Public Universities of Pakistan. *Pakistan Languages and Humanities Review*, 8(1), 418–429. https://doi.org/10.47205/plhr.2024(8-I)38
- Pichon, I., Boccato, G., & Saroglou, V. (2007). Religious fundamentalism and prejudice: The role of religious motivation and the need for cognitive closure. *Personality and Social Psychology Bulletin*, 33(5), 565-577.
- Rana, A. M., Bilal, M., Ajmal, M. M., Zaheer, M. A., & Zia-ur-Rehman, M. (2021). A design of turnover intention antecedents and their relation on work design for firms. *Amazonia Investiga*, 10(37), 24-33.
- Rosmarin, D. H., Pirutinsky, S., Cohen, A. B., Galler, Y., & Krumrei, E. J. (2011). Grateful to God or just plain grateful? A comparison of religious and general gratitude. *Journal of Positive Psychology, 6*(5), 389-396. https://doi.org/10.1080/17439760.2011.596557
- Sarmad, M. (2016). Impact of Nurses Personality on Patients' Satisfaction; an Occupational Focus on Mediating and Moderating Mechanisms (Doctoral dissertation, CAPITAL UNIVERSITY).
- Saroglou, V. (2002). Beyond dogmatism: The need for closure as related to religion. *Mental Health, Religion & Culture*, 5, 26-28. https://doi.org/10.1080/13674670210144130
- Saroglou, V. (2010). Religion and the five factors of personality: A meta-analytic review. *Personality and Individual Differences*, 49(6), 604-613.
- Saroglou, V., Pichon, I., Trompette, L., Verschueren, M., & Dernelle, R. (2005). Prosocial behavior and religion: New evidence based on projective measures and peer ratings. *Journal for the Scientific Study of Religion*, 44(3), 323-348. https://doi.org/10.1111/j.1468-5906.2005.00289.x
- Shah, S. M. A., Qamar, M. R., Ahmed, S., & Imran, M. (2025). Nepotism and Favoritism in HR Practices: Implications for Organizational Politics in Pakistan. *Journal of Management & Social Science*, 2(1), 177-194.
- Shah, S. M. A., Raja, S. S., Shahzadi, S., & Naseer, S. (2024). Talent Management Strategies Effect The Approach Of Social Entrepreneurs And Organisational Effectiveness: A Case Study Of Pakistan. *Journal of Business and Management Research*, 3(3), 58-84.
- Smith, J. (2020). Transmission of Faith in Families: The Influence of Religious Ideology. *Sociology of Religion*, 82(3), 332–356. https://doi.org/10.1093/socrel/sraa045
- Thalgi, M. J. (2024). (PDF) Altruism and Social Cohesion: An Islamic Perspective of Charitable Acts for Sustainable Development. *ResearchGate*. 45(2), 45-69.
- Tsang, J. A., Carpenter, T. P., Roberts, J. A., Frisch, M. B., & Carlisle, R. D. (2012). Why gratitude enhances well-being: What we know, what we need to know. *The Journal of Positive Psychology*, 7(3), 213-218.
- Van Cappellen, P., Toth-Gauthier, M., Saroglou, V., & Fredrickson, B. (2014). Religion and Well-Being: The Mediating Role of Positive Emotions. *Journal of Happiness Studies*, 17,11-34. https://doi.org/10.1007/s10902-014-9605-5

Online ISSN

Print ISSN

3006-4635 3006-4627



- Wittberg, P. (2021). Generational Change in Religion and Religious Practice: A Review Essay. *Review of Religious Research*, 63(3), 461–482. https://doi.org/10.1007/s13644-021-00455-0
- Wood, A., Froh, J., & Geraghty, A. (2010). Gratitude and well-being: A review and theoretical integration. *Clinical Psychology Review*, 30, 890–905. https://doi.org/10.1016/j.cpr.2010.03.005
- Yasmin, F., Shaheen, R., Yasin, A., & Naseer, S. (2020). An analysis of causal relationship between economic growth and unemployment: Evidence from Pakistan. *Annals of Social Sciences and Perspective*, 1(1), 09-17.
- Yost-Dubrow, R., & Dunham, Y. (2017). Evidence for a relationship between trait gratitude and prosocial behaviour. *Cognition and Emotion*, 32, 1–7. https://doi.org/10.1080/02699931.2017.1289153
- Ysseldyk, R., Matheson, K., & Anisman, H. (2010). Religiosity as Identity: Toward an Understanding of Religion From a Social Identity Perspective. *Personality and Social Psychology Review: An Official Journal of the Society for Personality and Social Psychology, Inc*, 14, 60–71. https://doi.org/10.1177/1088868309349693