RELATIONSHIP BETWEEN GRATITUDE, BIRTH ORDER AND PERSONAL GROWTH INITIATIVE: OPTIMISM MEDIATION AND AGE MODERATION

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Abstract

The study examined the influence of gratitude, optimism, age, and birth order on personal growth initiative (PGI) among adolescents. The objectives were to determine whether age moderates the relationship between gratitude and PGI, whether optimism mediates the effect of gratitude on PGI, and whether birth order significantly influences PGI. A quantitative cross-sectional research design was employed, with a sample of 150 adolescents aged 10 to 17 years drawn from diverse backgrounds. Standardized instruments were used to measure gratitude, optimism, and PGI. Data were analysed using regression, mediation, and analysis of variance (ANOVA) techniques. The findings revealed that gratitude significantly predicted PGI across both younger (10–13 years) and older (14–17 years) adolescents, with the relationship being stronger among older participants. Regression analyses indicated that gratitude accounted for 11% of the variance in PGI for younger adolescents and 52% for older adolescents. Although gratitude relates positively to optimism and personal growth, optimism does not explain this link; instead, gratitude directly drives individuals' motivation and deliberate efforts toward self-improvement. Furthermore, ANOVA results demonstrated significant birth order differences, with firstborns reporting higher PGI scores compared to middle-born and last-born adolescents. The study concludes that gratitude is a significant predictor of psychological growth, particularly in older adolescents, and that birth order plays a meaningful role in shaping PGI. These findings contribute to knowledge by clarifying the role of gratitude and birth order in fostering personal growth. It is recommended that interventions aiming to strengthen PGI should emphasize gratitude cultivation, particularly among younger adolescents.

Keyword: Positive psychology, Adolescents, Psychological growth, Gratitude, Optimism

Introduction

In recent decades, psychologists have increasingly recognised the importance of understanding not only mental illness but also the factors that promote thriving and life satisfaction. This shift in focus has paved the way for positive psychology a branch of psychology that emphasises the study of

human strengths, well-being, and optimal functioning, aiming to understand what makes life meaningful and fulfilling (Seligman & Csikszentmihalyi, 2000). Emerging as a response to the traditional deficit-focused approach in psychology, which primarily concentrated on pathology, positive psychology seeks to balance the study of human weaknesses with an equal emphasis on strengths, resilience, and potential (Gable & Haidt, 2005; Freitas et al., 2018).

A central construct in positive psychology research is Personal Growth Initiative (PGI), defined as an individual's active and intentional involvement in personal development (Robitschek, 1998). Unlike passive experiences of growth, PGI reflects deliberate, proactive efforts to improve oneself. It can be operationalized through measurable components, including readiness for change, planfulness, using resources, and intentional behavior (Robitschek, 1998). PGI is particularly critical during adolescence, a developmental period characterized by identity formation, autonomy, and the establishment of coping strategies (Luyckx & Robitschek, 2014). Adolescents who actively engage in personal growth are more likely to navigate life challenges effectively and build resilience.

For many young people, the pursuit of growth is intricately tied to the structural and social conditions that define their everyday experiences. In rapidly urbanizing areas such as Nyanya, a densely populated suburb of Abuja, adolescents face unique socio-economic, educational, and psychosocial challenges that may shape their personal development trajectories (Abubakar, 2013). These challenges include congestion, crime, drug trafficking, and adolescent substance use (Alhassan, Ajodo, Hezekiah, & Osishepo, 2019), which can negatively influence adolescents' ability to take initiative in personal . Despite the global relevance of PGI, limited research has examined these constructs among adolescents in Nyanya, revealing a clear gap in the local literature. Failure to foster PGI during adolescence among adolescents in Nyanya may result in lasting negative outcomes, including reduced resilience, despair, low achievement, social isolation, and engagement in risky behaviours (Laksono & Saraswati, 2024).

Empirical evidence suggests that gratitude and optimism are positively associated with personal development and proactive growth behaviours (Palani & Jayasurya, 2023). Empirical evidence also indicates that positive traits such as gratitude can influence outcomes indirectly through optimism, as studies have shown a significant positive effect of gratitude on a specific domain of satisfaction mediated by optimism (Saeidi, Mohamadzadeh Ebrahimi, & Soleimanian, 2019). Moreover, family dynamics may further influence adolescents' personal growth trajectories. The order in which a child is born in the family may influence identity formation and adjustment, as each position can present unique roles, expectations, and experiences. For instance, second-borns often demonstrate higher commitment, third-borns show greater exploration, and first-borns exhibit stronger social adjustment, although overall differences are sometimes not statistically

significant (Sardana, Ganesh, & Sharma, 2023). These findings provide preliminary support for considering birth order as a factor influencing personal development. This study therefore aims to explore the factors influencing personal growth initiative (PGI) among adolescents, with a focus on the roles of gratitude, optimism, age, and birth order.

Gratitude has been defined as a positive emotional response that occurs when individuals recognize that they have received a benefit from another person, circumstance, or higher power. According to Emmons and McCullough (2003), gratitude is both an emotional state and a trait that reflects appreciation for life's benefits and the acknowledgment of their external sources. McCullough, Kilpatrick, Emmons, and Larson (2001) further conceptualized gratitude as a moral emotion because it motivates prosocial behavior and reinforces social bonds. From another perspective, Watkins (2014) described gratitude as a cognitive-affective disposition involving the recognition of goodness and the acknowledgment that this goodness is often due to the actions of others. These definitions demonstrate that gratitude is not merely a fleeting feeling but also a dispositional tendency that shapes how individuals perceive and interpret experiences.

Scholars have distinguished between different types of gratitude. Wood, Froh, and Geraghty (2010) differentiated between state gratitude, which refers to the temporary emotional response to receiving a specific benefit, and trait gratitude, which represents a more stable disposition to notice and appreciate the positive aspects of life. Lambert, Graham, and Fincham (2009) noted another form ; existential or generalized gratitude which refers to a broader sense of thankfulness for life itself, regardless of specific benefactors. Emmons (2004) also described interpersonal gratitude, directed toward specific people, and transpersonal gratitude, directed toward nonhuman entities such as nature or God. Across these classifications, gratitude carries meanings of acknowledgement, humility, and appreciation, making it a multidimensional construct central to psychological well-being.

Optimism is commonly defined as a generalized expectation that good things will happen in the future. Scheier and Carver (1985) introduced the concept of dispositional optimism as a stable personality trait reflecting positive expectations across a wide range of situations. Peterson (2000) similarly described optimism as a cognitive orientation characterized by the belief that desirable outcomes are more likely than undesirable ones. In a complementary view, Tiger (1979) referred to optimism as a biological and evolutionary phenomenon that motivates individuals to pursue goals and persist despite setbacks. These definitions emphasize optimism as both a cognitive expectation and a motivational force.

Different types of optimism have also been identified in the literature. Scheier, Carver, and Bridges (2001) distinguished between dispositional optimism, which reflects general expectations about the future, and situational or explanatory optimism, which relates to how individuals interpret causes of

events. Seligman (1990) introduced the explanatory style model, differentiating between optimistic individuals, who attribute positive events to internal, stable, and global causes, and pessimistic individuals, who view negative events through those same lenses. Chang (2001) also noted realistic versus unrealistic optimism, where the former involves hopeful expectations grounded in evidence and the latter reflects excessively positive expectations that may not align with reality. Thus, optimism can be understood as both a generalized disposition and a situational explanatory tendency, shaping the meanings people attach to future-oriented thinking.

Personal Growth Initiative (PGI) has been defined as a person's active and intentional involvement in changing and developing as an individual. Robitschek (1998) originally conceptualized PGI as a cognitive-behavioral construct reflecting awareness of the need for growth and deliberate actions taken to facilitate it. Robitschek and Cook (1999) later refined the definition, describing PGI as the readiness for personal development across different life domains. Similarly, Ayub and Iqbal (2012) defined PGI as a person's proactive stance toward self-improvement, emphasizing intentionality and conscious effort. This distinguishes PGI from passive forms of development, framing it as an active and self-directed process.

Researchers have described types and dimensions of PGI in more detail. Robitschek et al. (2012) developed the Personal Growth Initiative Scale–II, identifying four components: readiness for change, planfulness, using resources, and intentional behavior. Readiness for change reflects awareness of the need for personal development, while planfulness refers to organizing specific strategies for growth. The use of resources demonstrates seeking external support to aid development, and intentional behavior captures deliberate actions taken toward self-change. Weigold, Porfeli, and Weigold (2013) described PGI as both a dispositional tendency and a set of skills that can be cultivated, suggesting state and trait forms parallel to gratitude

The Broaden-and-Build Theory of Positive Emotions, developed by Fredrickson (2001), posits that while negative emotions narrow individuals' thought–action repertoires to immediate survival responses, positive emotions such as joy, gratitude, and optimism broaden cognitive and behavioral tendencies, encouraging creativity, flexibility, and exploration. Over time, this broadening process allows individuals to build enduring psychological, social, and cognitive resources that contribute to resilience and long-term well-being. Gratitude, as a positive emotional state, can broaden adolescents' perspectives by shifting attention from limitations to opportunities, encouraging adaptive coping strategies, and fostering stronger interpersonal relationships. This broadened mindset, in turn, facilitates the building of psychological resources such as optimism which nurtures future-oriented thinking and proactive behavior, enabling adolescents to perceive challenges not as insurmountable barriers but as opportunities for growth.

Several scholars have provided empirical support for this framework. For example,

Cohn, Fredrickson, Brown, Mikels, and Conway (2009) demonstrated that daily experiences of positive emotions broaden momentary thought–action repertoires and predict greater life satisfaction.

Similarly, Lyubomirsky, King, and Diener (2005) suggested that positive affect enhances creativity, coping, and resilience, while Garland et al. (2010) affirmed that positive emotions cultivate psychological resources such as mindfulness and emotional resilience. Despite its influence, the theory has also been critiqued. Moskowitz (2010) noted that the broadening effect may not consistently occur in high-stress and clinical populations, while Kashdan and Ciarrochi (2013) cautioned against overemphasising positivity at the expense of acknowledging the functional role of negative emotions. Despite these criticisms, the theory remains a robust framework for understanding the role of gratitude and optimism in fostering self-directed growth. It explains how gratitude and optimism function as positive resources that broaden adolescents' perspectives and coping strategies, enabling them to actively engage in intentional self-growth.

Research in positive psychology emphasizes gratitude and optimism as vital predictors of personal growth initiative (PGI). Gratitude nurtures positive emotions and strengthens cognitive resources that facilitate self-improvement.Existing literature establishes that gratitude has been linked to prosocial behavior and meaning in life (Zhang, 2022) and well-being (Bernabé-Valero et al., 2021), Additionally, optimism has been identified as a mediator of positive outcomes (Palani & Jayasurya, 2023 Bernabé-Valero et al. (2021) found that comparative thinking moderated the relationship between gratitude and affect, showing how individual appraisal styles shape gratitude's influence on well-being. Similarly, Zhang (2022) demonstrated that gratitude promoted prosocial behavior via meaning in life, pointing to the role of internal psychological processes in translating gratitude into adaptive behaviors.

These findings suggests that gratitude influences broader psychological outcomes through intermediate mechanisms such as optimism. Drawing on Bernabé-Valero et al. (2021) and the Broaden-and-Build Theory, it appears that gratitude does not directly drive Personal Growth Initiative (PGI). Rather, its effect is likely mediated by another positive trait , which channels gratitude's positive emotions into future-oriented motivation and intentional growth behavior. This indirecly support optimism as a psychological mechanism through which gratitude may enhance growth outcomes.

More direct evidence is provided by Palani and Jayasurya (2023), who identified significant correlations among gratitude, optimism, and PGI in young adults. Their findings suggest that optimism not only emerges from gratitude but also strengthens personal growth by fostering positive expectations for the future. Complementary research by Nagar et al. (2021) further confirmed a positive link between gratitude and PGI, while cautioning that excessive self-esteem could hinder progress. Taken together, these studies suggest that optimism functions as a bridge between gratitude and PGI, emphasizing the importance of fostering gratitude to promote optimism and

sustained personal development.

Age could also be identified as a potential moderator in the relationship between gratitude, optimism, and personal growth initiative (PGI). Arora, Dabas, and Mittal (2023) investigated adults in India across early and middle adulthood, finding age-based differences in the effects of gratitude and optimism on psychological well-being. Among younger adults (18–27), optimism correlated positively with well-being, while gratitude showed a negative relationship. In contrast, among older adults (30–60), optimism maintained a strong positive link with well-being, whereas the role of gratitude was less consistent. These findings suggest that optimism becomes increasingly important for sustaining well-being as individuals' age.

Similarly, Freitas et al. (2018) examined PGI, meaning in life (MIL), and subjective well-being (SWB) among Brazilian adults aged 18–88. Results indicated that PGI and MIL increased with age, even though SWB remained stable across the lifespan. Older adults reported greater PGI and MIL, reinforcing the notion that age strengthens capacities for growth and meaning.. In contrast, Oosterwijk (2018) found no moderating effect of age on the relationship between strength awareness and PGI among employees, though younger participants reported higher PGI than older ones. Collectively, these studies suggest that age is complex inconsistent.

Birth order has long been studied as a potential factor influencing developmental outcomes, with implications for personal growth initiative (PGI). Black (2017) reported that firstborns often enjoy advantages in educational attainment, IQ, occupational status, and parental investment. These differences may translate into greater opportunities for leadership and structured growth, while later-borns, though disadvantaged in academic and cognitive outcomes, are more likely to pursue entrepreneurial or creative paths, suggesting alternative routes to PGI. Rohrer, Egloff, and Schmukle (2015), however, challenged traditional theories by showing that while firstborns scored slightly higher on intelligence, birth order did not significantly predict Big Five personality traits. This indicates that while intellectual outcomes may differ, PGI which relies heavily on motivation, openness, and self-directed development may not be strongly shaped by sibling order.

Zavala (2023) emphasised that firstborns tend to be achievement-oriented, middle children act as mediators, and youngest siblings display creativity and rebellion, all traits that could foster PGI in distinct ways depending on family context. Similarly, Delbianco, Fioravanti, and Tohmé (2020) found behavioral differences in sports linked to sibling order, suggesting that competitiveness and discipline may also be influenced by birth position. Collectively, findings imply that birth order affects pathways to PGI, but not uniformly. Age moderates links between optimism, gratitude, and well-being (Arora et al., 2023; Freitas et al., 2018), yet adolescent populations remain understudied. Birth order influences intelligence and career outcomes (Black, 2017; Rohrer et al., 2015; Zavala,

2023) but its impact on PGI is largely overlooked.

In Nigeria, the investigation of birth order and its impact on motivational and developmental outcomes among adolescents remains an under-explored domain. For instance, Elegbeleye, Idada, and Ipinmoye (2024) found significant differences in academic motivation across birth-order categories among secondary-school students in Lagos, revealing that firstborns demonstrated higher motivation than their siblings. Complementing this, Busari and Muraina (2015) reported that birth order significantly predicted academic performance, in a sample of secondary-school students in Oyo State. Aremu and Adio-Moses (2019) found optimism predicts psychological well-being in Nigerian adolescents, enhancing resilience and problem-solving. (Babangida & Gurjiya, 2023) linked optimism to academic adjustment.

However, no Nigerian study has examined how optimism mediates the relationship between gratitude and PGI, a gap this research aims to fill. In the light of these gaps, this study aims to understand the psychological and demographic factors that may influence the relationship between gratitude and PGI. Specifically, this study focuses on the following objectives:

Research Questions

i. What is the mediating effect of optimism on the relationship between gratitude and Personal Growth Initiative (PGI)?
ii. What is the moderating role of age in the relationship between gratitude and Personal Growth Initiative (PGI)?
iii. What is the influence of birth order on Personal Growth Initiative (PGI)?

Research Hypotheses

i. Optimism will significantly mediate the relationship between gratitude and Personal Growth Initiative (PGI).
ii. Age will significantly moderate the relationship between gratitude and Personal Growth Initiative (PGI), such that the strength of the relationship varies across age groups.
iii. Birth order will have a significant influence on Personal Growth Initiative (PGI).

Methods

To achieve the study's objectives, a quantitative research design was employed, incorporating standardized measures to assess gratitude, optimism, personal growth initiative, and relevant demographic variables.

A) Design

The study adopted a cross-sectional survey design to examine personality traits as predictors of depression among JSS2 adolescents in Nyanya, Abuja. This design was chosen as no variables were manipulated; the study reported existing conditions by questioning students in their natural environment.

B) Sampling

Questionnaires were administered by the researcher with teachers' assistance, ensuring clear explanations for accurate responses. All 150 JSS2 students were approached through

total population sampling. Ethical approval and informed consent were obtained before data collection.

C. Participants

The participants were JSS2 adolescents aged approximately 12–14 years from schools in Nyanya, Abuja. Ethical approval was obtained prior to data collection, and informed consent was secured from both school authorities and parents/guardians.

Instruments

The GQ-6 was developed by McCullough, Emmons, and Tsang (2002) to measure respondents' levels of gratitude. It is a brief, 6-item version of the original 39-item Gratitude Questionnaire. The GQ-6 assesses how frequently and intensely participants experience gratitude using a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Sample items include statements such as, "I am grateful to a wide variety of people," and "I feel thankful for what I have received in life." Two items are negatively worded (Item 3: "When I look at the world, I do not see much to be grateful for," and Item 6: "Long periods of time can go by before I feel grateful to something or someone") and are reverse scored. After scoring, the responses are summed to produce a total score ranging from 6 to 42, where higher scores indicate greater levels of gratitude. The GQ-6 has demonstrated good psychometric properties and has been validated against other measures, with reported Cronbach's alpha coefficients ranging from 0.76 to 0.84(Konchoson, Alhassan, & Doka, 2023).

Optimism was assessed using the Revised Life Orientation Test (LOT-R) developed by Scheier, Carver, and Bridges (1994). The LOT-R consists of six Likert-type items focused on optimism, along with four filler items that are excluded from scoring. Each item is rated on a scale from 1 to 5, producing total scores ranging from 6 to 30. Notably, lower scores on the LOT-R indicate higher levels of optimism. The scale has demonstrated acceptable internal consistency, with a Cronbach's alpha of 0.78, as well as test-retest reliability, with correlations ranging from 0.56 to 0.79 (Scheier, Carver, & Bridges, 1994). Additionally, Scheier and Carver (1985) reported that the LOT shows meaningful correlations with measures of locus of control, depression, hopelessness, alienation, self-esteem, and perceived stress, while appropriately diverging from measures of self-consciousness and social desirability.(Oluwole, 2014).The internal consistency of the scale was established in Nigeria and it returned a Cronbach coefficient alpha of 0.85.(Odedokun, 2017)

The Personal Growth Initiative Scale (PGIS), developed by Robitschek (1998), is designed to measure the degree of personal growth initiative within the general population. The scale comprises nine positively worded items, each rated on a 4-point Likert scale ranging from 1 (Strongly disagree) to 4 (Strongly agree). Sample items include statements such as, "I can choose the role that I want to have in a group," and "I have a specific action plan to help me reach my goals." Robitschek (1998) reported a satisfactory internal consistency with a Cronbach's alpha of .75, alongside a significant test-retest reliability coefficient

over a one-month interval ($r = .506$, $p < .05$), indicating that the scale is both reliable and stable over time. The PGIS was further validated through cross-validation with the Career Success Scale (CSS) (Sevine, 2001) in a sample of 460 manufacturing employees, showing strong convergent validity ($r = .79$). In Nigeria, the scale demonstrated good reliability with a Cronbach's alpha of .78 (Ogunyemi, 2019).

Procedure:

The researcher obtained an identification letter from the Department of Psychology, Nasarawa State University, Keffi. Subsequently, permission was sought and granted by the school management to conduct the research and collect data on the premises. Informed consent was obtained from all participants before data collection, ensuring that they were fully aware of the study's purpose and their right to withdraw at any time without penalty. As pointed out by Mitchell and Jolley (2001), self-report questionnaires are often the most practical and efficient method for collecting data in such studies. Furthermore, surveys are advantageous in capturing participants' perceptions and experiences in a standardized way, thereby enhancing the reliability of the data collected.

Data Analysis

The responses obtained from the questionnaires were systematically collected and analyzed to ensure accurate and meaningful results. Specifically, regression analysis was employed to examine hypotheses one and two, assessing predictive relationships and mediation effects. For hypothesis three, a one-way ANOVA was conducted to compare differences across groups. These statistical methods facilitated a comprehensive understanding of the data and supported the formulation of valid conclusions. All analysis was done using Python.

Table 1: Frequency Distribution and Percentage for Demographic Data

Variable	Category	n	%
Gender	Female	88	58.7%
	Male	62	41.3%
Birth Order	Middle	70	46.7%
	First	56	37.3%
	Last	24	16.0%
Age Group		76	50.7%
	14–17	58	38.7%
Religion	Christianity	122	81.3%
	Islam	18	12.0%
	Others	2	1.3%

The sample consisted of 150 participants. Regarding gender, 58.7% were female (n = 88) and 41.3% were male (n = 62). Birth order distribution showed that 46.7% were middle-born (n = 70), 37.3% were firstborns (n = 56), and 16.0% were last-born (n = 24).

In terms of age groups, 50.7% of participants were aged 10–13 years (n = 76), and 38.7% were aged 14–17 years (n = 58). With respect to religious affiliation, the majority identified as Christians (81.3%, n = 122), followed by Muslims (12.0%, n = 18), and a small percentage reported other religions (1.3%, n = 2).

Results

Hypothesis 1: Optimism will mediate the relationship between gratitude and personal growth initiative (PGI).

A mediation analysis was conducted to examine whether optimism mediated the relationship between gratitude and personal growth initiative (PGI).

Table 2

Regression Analysis Predicting PGI from Gratitude Across Age Groups (10–13 vs. 14–17 Years)

Path	Relationship	B	SE	t	p	R^2
a	Gratitude →Optimism	0.12	0.04	3.11	.002	.07
b	Optimism → PGI (controlling)	0.15	0.17	0.91	.367	–
c	Gratitude → PGI (total)	0.59	0.08	7.71	<.001	.31
c'	Gratitude → PGI (direct)	0.57	0.08	7.21	<.001	.31

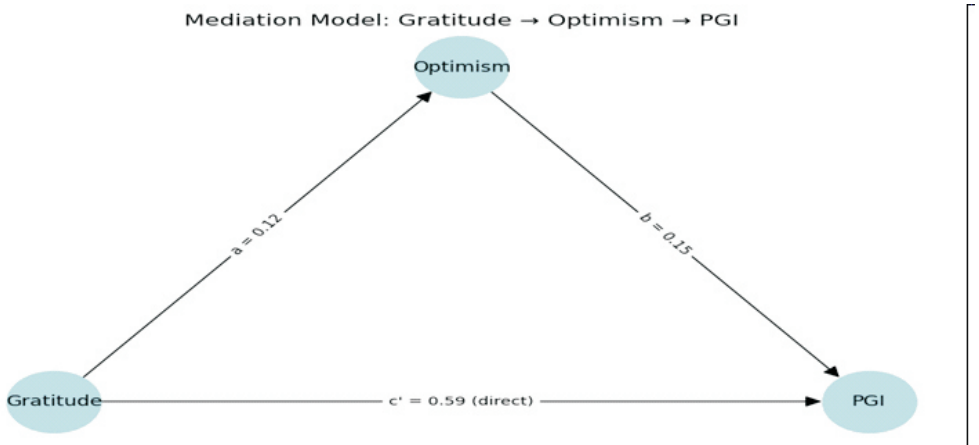

Figure 1 : Path Diagram of the Mediation Model: The Role of Optimism in the Relationship Between Gratitude and PGI

Results indicated that gratitude significantly predicted optimism (b = 0.12, t(134) = 3.11, p = .002), showing that individuals with higher gratitude also reported greater optimism (Path a). Gratitude was also a strong predictor of PGI both in the total model (b = 0.59, t(134) = 7.71, p < .001; Path c) and in the model controlling for optimism (b = 0.57, t(133) = 7.21, p < .001; Path c'). However, optimism did not significantly predict PGI when gratitude was included (b = 0.15, t(133) = 0.91, p = .367; Path b). This pattern suggests that while gratitude positively predicts both optimism and PGI, optimism does not account for the relationship between gratitude and PGI. Therefore, optimism does not mediate the effect of gratitude on PGI; instead, the influence of gratitude on PGI

appears to be direct.

Hypothesis 2: The relationship between gratitude and psychological growth (PGI) would be moderated by age group.

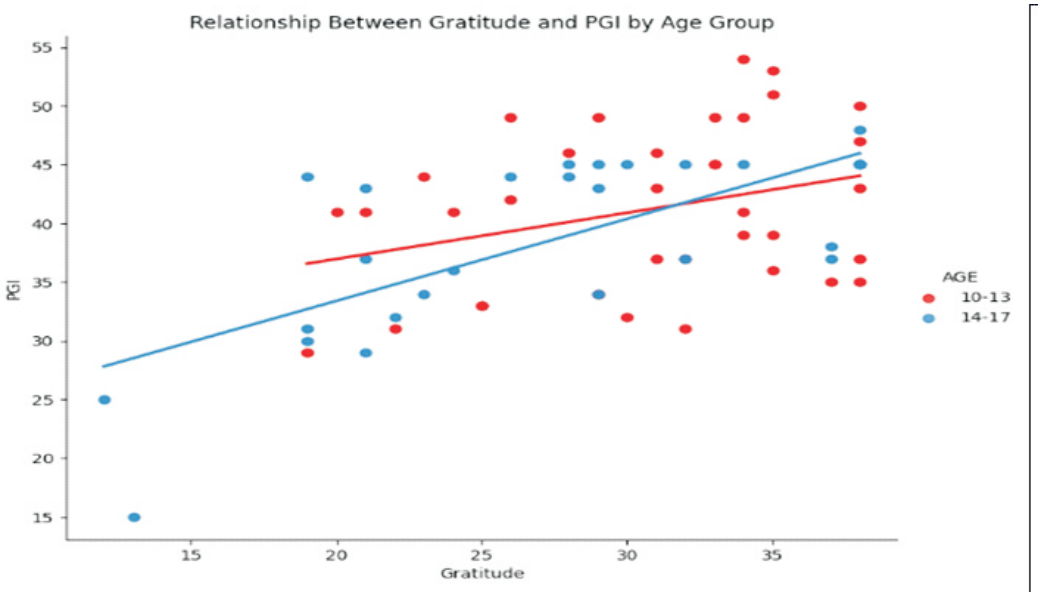

Figure 2: Scatterplot Showing the Relationship Between Gratitude and Psychological Growth (PGI) by Age Group (10–13 and 14–17 Years)

The scatter plot shows a positive association between Gratitude and PGI, indicating that higher gratitude is associated with greater psychological growth. Notably, the slope for the 14–17 age group is steeper than that for the 10–13 age group, suggesting that the relationship between gratitude and PGI is stronger in older adolescents. This pattern implies that gratitude may have a more pronounced impact on the psychological growth of a person's age from early to middle adolescence.

Table 3
Regression Results Predicting PGI from Gratitude by Age Group

Age Group	Predictor	B	95% CI (LL, UL)	SE	t	p	R^2
10–13	Gratitude	0.39	[0.14, 0.65]	0.13	3.03	.003	.11
14–17	Gratitude	0.70	[0.52, 0.88]	0.09	7.75	<.001	.52

A series of simple linear regressions were conducted to examine whether gratitude predicted personal growth initiative (PGI) separately for adolescents aged 10–13 and 14–17. For the younger group (10–13 years), gratitude was found to be a significant positive predictor of PGI, $b = 0.39$, $t(76) = 3.03$, $p = .003$, accounting for approximately 10.8% of the variance in PGI, $R^2 = .11$. For the older group (14–17 years), gratitude was also a significant positive predictor of PGI, $b = 0.70$, $t(56) = 7.75$, $p < .001$, accounting for a substantial 51.7% of the variance, $R^2 = .52$. Taken together, these findings suggest that gratitude is positively associated with PGI across both age groups, but the strength of the relationship appears much stronger among older adolescents compared to younger

adolescents.

Hypothesis 3: There will be a significant difference in personal growth initiative (PGI) scores across birth order groups

Table 4 presents the descriptive statistics and results of a one-way ANOVA examining differences in Personal Growth Initiative (PGI) scores across three birth order groups: first-born, middle-born, and last-born. The table shows the mean PGI scores, standard deviations, and sample sizes for each group, as well as the ANOVA test statistics including the sum of squares, degrees of freedom, mean squares, F-value, and significance level.

Table 4

Means, Standard Deviations, and ANOVA Summary for PGI by Birth Order

Birth Order	N	M	SD
First	56	43.21	5.12
Middle	70	39.94	7.84
Last	24	38.33	7.77

Source	SS	df	MS	F	p
Between Groups	1257.47	2	628.74	5.43	.005
Within Groups	15343.21	147	104.39		
Total	16600.68	149			

A one-way ANOVA was conducted to assess the effect of birth order on Psychological Growth Initiative (PGI). The results showed a significant difference in PGI across birth order groups, $F(2, 147) = 5.43$, $p = .005$. Specifically, firstborn participants ($M = 43.21$, $SD = 5.12$) reported significantly higher PGI scores than middle-born ($M = 39.94$, $SD = 7.84$) and last-born participants ($M = 38.33$, $SD = 7.77$). These findings suggest that birth order is associated with variations in psychological growth initiative.

Discussion

This study found that gratitude was a significant predictor of personal growth initiative (PGI) across both younger (10–13) and older (14–17) adolescents, with a stronger effect in the older group. This suggests that as individuals mature, gratitude becomes a more powerful driver of growth-oriented behavior. These results are consistent with Freitas et al. (2018), who reported higher PGI and meaning in life among older adults, and with Arora et al. (2023), who showed that optimism's influence on well-being strengthened with age. Collectively, these findings reinforce the idea that age moderates the impact of positive psychological traits, demonstrating the developmental trajectory of gratitude's role in fostering growth.

The study also examined whether optimism mediated the relationship between gratitude and PGI. While gratitude predicted both optimism and PGI, optimism did not significantly predict PGI when controlling for gratitude, suggesting a direct relationship. This diverges from Palani and Jayasurya (2023), who found positive associations among gratitude, optimism, and PGI,

implying a mediating role for optimism. Instead, the present findings align more closely with Nagar et al. (2021), who emphasized gratitude's direct influence on personal growth, suggesting that optimism may not always function as an intermediary.

Finally, the results revealed significant differences in PGI across birth order groups, with firstborns reporting higher PGI than middle- and last-born participants. This supports Black's (2017) conclusion that firstborns often demonstrate greater academic achievement, leadership, and conscientiousness, as well as Zavala's (2023) description of firstborns as achievement-oriented and responsible. However, the findings contrast with Rohrer et al. (2015), who found no meaningful birth order effects on personality traits relevant to growth. Thus, while personality differences may be minimal, the advantages typically afforded to firstborns appear to translate into greater initiative for personal development.

Conclusion

This study concludes that gratitude is a key driver of personal growth initiative (PGI), with its effects not explained by optimism. The absence of a mediating effect of optimism indicates that gratitude contributes directly to PGI, reinforcing its central role in personal development. The stronger influence of gratitude among older adolescents suggests that as individuals mature, they are better able to channel gratitude into intentional self-development. The finding that firstborns reported higher PGI than middle- and last-born participants reflects the advantages of early family responsibilities.

Recommendation

I. Schools and counseling programs should integrate gratitude practices, such as journaling and reflection, to directly enhance adolescents' personal growth initiative.
II. Programs for older adolescents should emphasize gratitude-driven growth behaviors, while younger adolescents focus on developing foundational gratitude awareness.
III. Parents, teachers, and mentors should provide later-born children with encouragement, structured opportunities, and leadership development to strengthen PGI.
IV. Psychologists working with adolescents should incorporate gratitude-focused cognitive-behavioral interventions such as gratitude letters and guided reflection in therapy to enhance clients' motivation for personal growth, especially for those struggling with self-direction since optimism did not significantly mediate the relationship between gratitude and PGI.
V. Family-based initiatives should address sibling order influences, ensuring equal opportunities for all children to develop strong personal growth
VI. Clinical assessments by psychologists should consider birth order as a factor influencing PGI, especially when designing personalized growth or leadership interventions.

Limitation

The cross-sectional design limits causal conclusions; longitudinal studies are needed

to capture developmental changes over time.

I. The relatively small and less diverse sample restricts generalizability

II. Reliance on self-report measures introduces possible bias, including social desirability and subjective interpretation of questionnaire items.

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