The Influence of Agreeableness on Perceived Social Support: The Mediating Role of Empathy

Shokouh. Navabinejad[1*]

[1] Department of Psychology and Counseling, KMAN Research Institute, Richmond Hill, Ontario, Canada

* Corresponding author email address: sh.navabinejad@kmanresce.ca

A r t i c l e   I n f o

A B S T R A C T

This study aimed to investigate the influence of agreeableness on perceived social support, with a specific focus on the mediating role of empathy among Indonesian adults. A descriptive correlational research design was used, involving 400 participants selected through stratified random sampling based on Krejcie and Morgan's sample size determination table. Participants completed standardized self-report instruments: the NEO Five-Factor Inventory (Agreeableness), the Interpersonal Reactivity Index (Empathy), and the Multidimensional Scale of Perceived Social Support. Pearson correlation analysis was performed using SPSS-27 to examine bivariate relationships among the variables. Structural Equation Modeling (SEM) was conducted using AMOS-21 to assess the hypothesized mediational model, with model fit indices evaluated and path coefficients estimated for both direct and indirect effects. Pearson correlations indicated that agreeableness was significantly associated with both empathy ($r = .53$, $p < .01$) and perceived social support ($r = .41$, $p < .01$), while empathy was also significantly correlated with perceived social support ($r = .59$, $p < .01$). The SEM analysis demonstrated good model fit ($\chi^2/df = 2.04$, GFI = 0.94, CFI = 0.96, RMSEA = 0.051). Direct effects were significant from agreeableness to empathy ($\beta = .53$, $p < .001$), empathy to perceived social support ($\beta = .47$, $p < .001$), and agreeableness to perceived social support ($\beta = .22$, $p < .001$). The indirect effect of agreeableness on perceived social support via empathy was also significant ($\beta = .25$, $p < .001$), confirming the mediation model. Empathy plays a critical mediating role in the relationship between agreeableness and perceived social support. These findings highlight the importance of both personality traits and socio-emotional competencies in shaping individuals' perceptions of their social networks, especially in collectivist cultures like Indonesia.
Keywords: Agreeableness; Empathy; Perceived Social Support; Personality Traits

1. Introduction

In contemporary personality psychology, agreeableness—one of the Big Five dimensions—has emerged as a consistent predictor of positive social functioning. Defined by characteristics such as altruism, trust, cooperation, and concern for others, agreeableness fosters prosocial behavior and enhances interpersonal relationships (Jones, 2022). Individuals high in agreeableness are more inclined to form and maintain harmonious social ties and are likely to experience greater levels of perceived social support. Perceived social support—the subjective judgment that one is cared for and has access to supportive resources—plays a protective role in psychological well-being and mental health outcomes across cultures and populations (Kallianou, 2024; Yang & Tu, 2020).

A growing body of literature suggests that the relationship between agreeableness and perceived social support may be more complex than a simple direct association. Empathy—broadly defined as the ability to understand and feel what others experience emotionally—has been proposed as a key mediator that explains how personality traits like agreeableness translate into social outcomes (Abdullah et al., 2020; Fido & Richardson, 2018). Highly agreeable individuals tend to score higher in empathy, which in turn enhances their sensitivity to others' emotional cues and increases their likelihood of forming supportive and reciprocal social bonds (Ayhan & Tatar, 2024; Sun et al., 2024).

Empathy is a multidimensional construct, typically divided into cognitive empathy (e.g., perspective-taking) and affective empathy (e.g., emotional responsiveness), both of which are strongly influenced by personality traits such as agreeableness (Lachance et al., 2024; Simon & Nader-Grosbois, 2021). Research demonstrates that empathy not only facilitates interpersonal understanding but also reinforces one's perception of available social support (Bętkowska-Korpała et al., 2022; Buljan & Mlačić, 2024). For instance, individuals who are able to empathize are more likely to interpret others' actions as supportive, even when that support is implicit or nonverbal (Bamford & Davidson, 2017; Pal, 2024).

There is robust empirical support for the association between agreeableness and empathy. Several studies have confirmed that agreeable individuals exhibit stronger empathic traits and behaviors, regardless of cultural or contextual variations (Melchers et al., 2016; Yeganeh, 2022). In a cross-cultural analysis, it was found that similar patterns of personality-empathy correlations exist in countries with very different social norms, reinforcing the generalizability of the trait-empathy link (Melchers et al., 2016). Further, this pattern has been documented across life domains, including academic settings (Jugović et al., 2023), healthcare education (Bętkowska-Korpała et al., 2021), and workplace dynamics (Fuente et al., 2025).

The educational context offers particularly rich insight into the mediating role of empathy. In a study on medical students, empathy was found to bridge the relationship between personality traits and professional adaptability, particularly among students scoring high in agreeableness (Bętkowska-Korpała et al., 2021). Similarly, in a study involving Saudi medical students, agreeableness was significantly correlated with empathy, suggesting that personality-based variations in emotional response styles may be crucial for professional development and interpersonal success (Yasien & Almuzaini, 2022).

Further supporting the mediating role of empathy is evidence from digital behavior studies. Ling et al. found that adolescents with high agreeableness were less likely to engage in cyberbullying, with empathy serving as a key mediator in this relationship (Ling et al., 2023). In the same vein, Hudson and Uenal reported that the expression of counter-empathic emotions—such as Schadenfreude or resentment—was influenced by the interplay between personality dimensions (like agreeableness) and the sociopolitical identity of the target, further highlighting empathy's context-sensitive mediating function (Hudson & Uenal, 2022, 2023).

Moreover, empathy has been shown to predict interpersonal sensitivity, moral reasoning, and social cohesion, all of which are tightly linked to perceived social support. Topić demonstrated that even exposure to fiction can elevate empathic engagement in agreeable individuals, thus reinforcing social cognitive functions related to support perception (Topić, 2021). This is consistent with studies on prosocial ideation and behavior, such as those by Kearns et al., who reported that prosocial daydreaming is strongly tied to agreeableness and mediated by empathic concern (Kearns et al., 2020). These findings highlight the recursive nature of personality-empathy-support pathways.

The strength of the agreeableness-empathy link has also been found in clinical psychology. For example, Simon and Nader-Grosbois studied preschoolers and identified distinct empathy profiles associated with early social adjustment, suggesting a developmental trajectory that begins in

childhood and carries forward into adult relational patterns (Simon & Nader-Grosbois, 2021). Similarly, Syrnyk and McArthur explored volunteer motivations and found that personality traits such as agreeableness were directly tied to empathetic engagement in animal-assisted interventions, a domain where perceived support and emotional connection are core outcomes (Syrnyk & McArthur, 2021).

In organizational contexts, both agreeableness and empathy have been linked with better communication, leadership, and lower instances of workplace aggression. For instance, Men and Sung found that symmetrical communication—rooted in empathy and transparency—shaped organizational culture and promoted positive employee–organization relationships, especially among agreeable employees (Men & Sung, 2019). Likewise, Ayhan and Tatar reported that empathetic, agreeable employees were less susceptible to psychological risks and mobbing in high-stress environments (Ayhan & Tatar, 2024).

These findings are mirrored in the therapeutic domain, where Lachance and colleagues conducted a latent profile analysis of therapists and concluded that dispositional empathy plays a significant role in perceived therapeutic alliance—a dynamic that parallels perceptions of social support in broader interpersonal contexts (Lachance et al., 2024). Furthermore, Suciu et al. argue that empathy and agreeableness interact synergistically in enhancing adaptability and interpersonal effectiveness in professional education (Suciu et al., 2021).

In addition to its practical relevance, the agreeableness–empathy–support triad has theoretical implications. Research by Fido and Richardson has demonstrated that empathy mediates the relationship between environmental connectedness and diminished callous traits, a finding that supports empathy's regulatory role in translating personality traits into prosocial outcomes (Fido & Richardson, 2018). These dynamics align with models of social emotional functioning in which empathy acts as a psychological bridge between internal dispositions and external perceptions (Fuente et al., 2025).

While the agreeableness-empathy-support association is well-established in Western contexts, there is a need for culturally diverse research. Indonesia, as a collectivist society, provides an ideal setting to explore how these variables interact in a culture that values harmony, interdependence, and emotional restraint. In collectivist cultures, social support is not only a protective factor for mental health but also a core relational currency that governs

daily interaction patterns (Sun et al., 2024; Yang & Tu, 2020).

This study, therefore, aims to examine the mediating role of empathy in the relationship between agreeableness and perceived social support in a sample of Indonesian adults.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a descriptive correlational research design to examine the influence of agreeableness on perceived social support with the mediating role of empathy among Indonesian adults. A total of 400 participants were selected using stratified random sampling, based on the sample size determination table proposed by Krejcie and Morgan (1970). Inclusion criteria included being over 18 years of age, having the ability to read and understand Bahasa Indonesia, and consenting to participate voluntarily. The sample comprised individuals from diverse socioeconomic backgrounds across urban and semi-urban regions in Indonesia, ensuring sufficient representation for generalizability. The study adhered to ethical research principles, and informed consent was obtained from all participants prior to data collection.

2.2. Measures

2.2.1. Perceived Social Support

The Multidimensional Scale of Perceived Social Support (MSPSS) was developed by Zimet et al. (1988) to assess perceived social support from three distinct sources: Family, Friends, and Significant Others. The scale contains 12 items rated on a 7-point Likert scale ranging from 1 (Very Strongly Disagree) to 7 (Very Strongly Agree), with higher scores indicating greater perceived support. The three subscales each consist of 4 items, making it possible to analyze support from each source separately or compute a total score for overall perceived social support. The MSPSS has demonstrated strong internal consistency (Cronbach's alpha ranging from .85 to .91 across subscales) and test-retest reliability. Numerous studies across different populations and cultures have confirmed its construct validity and reliability, establishing it as a widely used and psychometrically sound tool for measuring perceived social support.

2.2.2. Empathy

The Interpersonal Reactivity Index (IRI), developed by Davis (1980), is a widely used self-report instrument designed to assess multidimensional aspects of empathy. The IRI consists of 28 items divided into four subscales: Perspective Taking (the tendency to adopt others' viewpoints), Empathic Concern (feelings of sympathy and concern for others), Personal Distress (self-oriented anxiety in response to others' distress), and Fantasy (tendency to identify with fictional characters). Each item is rated on a 5-point Likert scale from 0 (Does not describe me well) to 4 (Describes me very well). The IRI provides both subscale scores and an overall empathy profile. The tool has shown strong psychometric properties, with good internal consistency (Cronbach's alphas typically above .70 for each subscale) and substantial support for its factorial validity in various cultural and age groups.

2.2.3. Agreeableness

Agreeableness is typically measured as one of the five major personality traits in the NEO Five-Factor Inventory (NEO-FFI), developed by Costa and McCrae (1992). The NEO-FFI is a 60-item short-form version of the NEO Personality Inventory-Revised (NEO-PI-R), with 12 items dedicated to each of the five traits: Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness. Items are rated on a 5-point Likert scale from 0 (Strongly Disagree) to 4 (Strongly Agree). The Agreeableness subscale assesses traits such as trust, altruism, cooperation, and modesty. The NEO-FFI has been validated in a wide range of populations and languages, showing excellent reliability (e.g., Cronbach's alpha for Agreeableness typically > .75) and strong construct and concurrent validity, making it one of the most robust instruments for personality assessment.

2.3. Data Analysis

Data were analyzed using SPSS version 27 and AMOS version 21. Descriptive statistics were used to report demographic characteristics and the central tendencies of study variables. Pearson correlation analysis was conducted to examine the bivariate relationships between agreeableness, empathy, and perceived social support. Subsequently, Structural Equation Modeling (SEM) was employed to test the hypothesized mediation model. The SEM analysis included measurement model validation, model fit indices (e.g., CFI, RMSEA, TLI, and χ^2/df), and path analysis to assess direct and indirect effects. Significance levels were set at $p < .05$ for all inferential analyses.

3. Findings and Results

The final sample consisted of 400 Indonesian participants, of which 233 (58.25%) were female and 167 (41.75%) were male. Regarding age, 154 participants (38.50%) were aged between 18–25 years, 132 (33.00%) were aged between 26–35 years, 68 (17.00%) were between 36–45 years, and 46 (11.50%) were over 45 years old. In terms of education level, 108 (27.00%) had completed high school, 209 (52.25%) held a bachelor's degree, and 83 (20.75%) had postgraduate qualifications. Most participants were single (61.50%), while 38.50% were married. The demographic distribution indicated a diverse and balanced representation of the adult Indonesian population.

Table 1

Descriptive Statistics for Study Variables (N = 400)

Variable	Mean (M)	Standard Deviation (SD)
Agreeableness	42.76	6.84
Empathy	85.32	10.51
Perceived Social Support	60.47	8.16

The descriptive statistics show that the mean score for agreeableness was 42.76 (SD = 6.84), for empathy was 85.32 (SD = 10.51), and for perceived social support was 60.47 (SD = 8.16), indicating that participants, on average, reported high levels of each variable (Table 1).

Prior to conducting inferential analyses, the assumptions for Pearson correlation and SEM were tested and confirmed. Normality was assessed through skewness and kurtosis values, which ranged from -0.76 to 0.89 and -0.91 to 1.04 respectively, falling within the acceptable range of ±2. Multicollinearity was evaluated using the Variance Inflation Factor (VIF), and all predictors had VIF values between 1.04 and 1.31, indicating no multicollinearity concerns. The Durbin-Watson statistic was 1.94, confirming the

independence of residuals. Additionally, Mahalanobis distance was used to screen for multivariate outliers, and no cases exceeded the critical chi-square value for p < .001. Linearity and homoscedasticity were visually confirmed

through scatterplots. These results confirmed that the dataset met the assumptions required for both correlation and SEM analyses.

Table 2

Pearson Correlation Matrix Among Variables

Variable	1	2	3
1. Agreeableness	—		
2. Empathy	.53**	—	
3. Perceived Social Support	.41**	.59**	—

As shown in Table 2, agreeableness was significantly correlated with empathy (r = .53, p < .01) and perceived social support (r = .41, p < .01). Empathy was also

significantly correlated with perceived social support (r = .59, p < .01), supporting the hypothesis of a mediating relationship.

Table 3

Fit Indices of the Structural Equation Model

Fit Index	Value	Recommended Threshold
χ^2	124.56	—
df	61	—
χ^2/df	2.04	< 3.00
GFI	0.94	> 0.90
AGFI	0.91	> 0.90
CFI	0.96	> 0.95
TLI	0.95	> 0.95
RMSEA	0.051	< 0.08

The model demonstrated good fit: χ^2/df = 2.04, GFI = 0.94, AGFI = 0.91, CFI = 0.96, TLI = 0.95, and RMSEA = 0.051. These values meet or exceed commonly accepted

thresholds, indicating that the hypothesized model fits the data well (Table 3).

Table 4

*Standardized Path Coefficients in the Structural Model*

Path	b	S.E	Beta	p
Agreeableness → Empathy	1.28	0.15	.53	< .001
Empathy → Perceived Social Support	0.42	0.06	.47	< .001
Agreeableness → Perceived Social Support (direct)	0.31	0.08	.22	< .001
Agreeableness → Empathy → Perceived Social Support (indirect)	0.54	0.07	.25	< .001
Total effect of Agreeableness on Perceived Social Support	0.85	0.09	.47	< .001

As seen in Table 4, the direct path from agreeableness to empathy (β = .53, p < .001), and from empathy to perceived social support (β = .47, p < .001) were both significant. Additionally, agreeableness had a significant direct effect on perceived social support (β = .22, p < .001). The indirect

effect of agreeableness on perceived social support via empathy was also significant (β = .25, p < .001), confirming the mediation hypothesis. The total effect (direct + indirect) of agreeableness on perceived social support was β = .47.

Figure 1

Model with Beta Coefficients

Structural Model of Agreeableness, Empathy, and Perceived Social Support
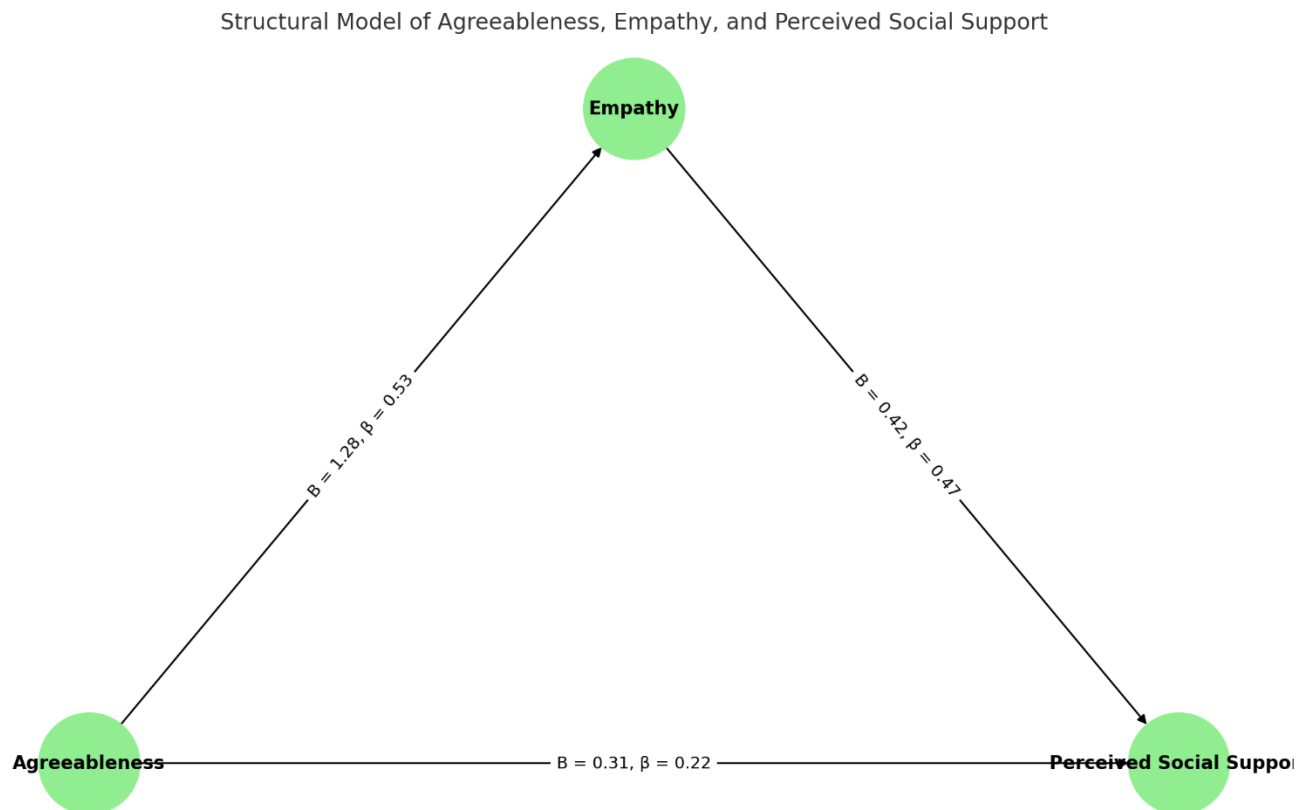
4.   Discussion and Conclusion

The findings of the present study provide empirical support for the proposed model in which empathy mediates the relationship between agreeableness and perceived social support. Specifically, agreeableness was positively correlated with both empathy and perceived social support, and empathy itself was positively associated with perceived social support. Structural Equation Modeling confirmed the full mediation effect, indicating that individuals high in agreeableness experience greater perceived social support because of their elevated levels of empathy. This result supports the theoretical claim that personality traits influence social outcomes through psychological processes like emotional understanding and interpersonal responsiveness.

These results align with previous research demonstrating the strong association between agreeableness and empathic traits. Agreeable individuals tend to be cooperative, compassionate, and interpersonally sensitive, qualities that enhance their empathic tendencies (Bamford & Davidson, 2017; Jones, 2022). This empathic responsiveness, in turn,

appears to increase their capacity to both offer and perceive social support. As empathy facilitates greater sensitivity to others' emotions and intentions, it reinforces mutual understanding and relational closeness, both of which contribute to the perception of being socially supported (Abdullah et al., 2020; Pal, 2024). The present study adds to this body of knowledge by confirming these mechanisms within an Indonesian context, thus offering cross-cultural validation of the personality–empathy–support model.

Our findings also echo the work of Bętkowska-Korpała et al., who found that empathy is not merely a dispositional trait but also a relational tool that links individual personality with prosocial outcomes in academic and medical settings (Bętkowska-Korpała et al., 2021; Bętkowska-Korpała et al., 2022). Medical students high in agreeableness were found to express greater empathic concern, which contributed to better interpersonal interactions and more favorable perceptions of their social environment. Similarly, Lachance et al. observed that therapists with higher dispositional empathy were more successful in building therapeutic alliances, suggesting that empathic sensitivity improves not

just support provision but the reciprocal feeling of being supported (Lachance et al., 2024).

Furthermore, the mediating role of empathy identified in this study resonates with the model proposed by Hudson and Uenal, who found that agreeableness predicted both empathic and counter-empathic emotional responses depending on the target of social interaction (Hudson & Uenal, 2022, 2023). This supports the idea that empathy not only amplifies positive social experiences but also moderates reactions to social complexities, thereby enhancing overall social functioning and the subjective sense of support.

The present study's emphasis on perceived social support is especially relevant given that subjective support is often more predictive of psychological well-being than actual received support. Kearns et al. found that individuals with a disposition toward prosocial thinking and agreeableness were more likely to daydream about supportive interactions, which positively influenced their perception of social connections (Kearns et al., 2020). Similarly, Ling et al. demonstrated that agreeableness reduced the likelihood of antisocial behaviors (like cyberbullying), mediated by empathy and moral disengagement, thus supporting the broader claim that empathy is a key mechanism through which agreeable individuals create and maintain social harmony (Ling et al., 2023).

Moreover, this study contributes to the growing literature recognizing empathy as a central mechanism in a wide range of interpersonal processes. For instance, Fido and Richardson showed that empathy mediates the relationship between nature connectedness and reductions in callousness and uncaring traits, highlighting empathy's capacity to translate internal traits into prosocial behaviors (Fido & Richardson, 2018). Likewise, Simon and Nader-Grosbois found that preschoolers with higher empathy profiles had better social adjustment, suggesting that empathy exerts its mediational influence across developmental stages and contexts (Simon & Nader-Grosbois, 2021).

Cultural considerations are also key. The Indonesian context provides a fertile ground for examining how collectivist values interact with personality and empathy. In such societies, the emphasis on group harmony and interdependence may amplify the expression and social value of empathy and agreeableness (Sun et al., 2024; Yang & Tu, 2020). The current findings suggest that the interpersonal traits of agreeableness are well-matched to cultural expectations, and empathy serves as the psychological vehicle that enables individuals to meet those

expectations effectively. Syrnyk and McArthur, in their study of volunteers, similarly observed that agreeable individuals in communal roles were more empathetic and attuned to the emotional needs of others, enhancing social cohesion and perceived support (Syrnyk & McArthur, 2021).

Our results also have implications for organizational and educational settings. Fuente et al. emphasized that personality traits such as agreeableness, when coupled with emotional intelligence and empathy, contribute significantly to ethical leadership and supportive workplace climates (Fuente et al., 2025). Ayhan and Tatar's work on psychosocial risk factors showed that agreeable, empathetic employees were less vulnerable to mobbing and more resilient to organizational stressors, reinforcing the buffering role of empathy in complex social environments (Ayhan & Tatar, 2024). In educational contexts, Suciu et al. stressed the value of fostering empathy and emotional responsiveness in students to enhance professional adaptability and academic success (Suciu et al., 2021).

Another contribution of this study is the use of a structural model, which supports the theoretical framework suggesting that personality traits influence perceptions of social support indirectly through mediating variables like empathy. This is consistent with the findings of Men and Sung, who demonstrated that symmetrical communication in organizations—often driven by empathetic leadership—promotes positive relationships and enhances perceived organizational support (Men & Sung, 2019). Topić also demonstrated that agreeable individuals exposed to emotionally engaging narratives showed increased empathy, reinforcing the trait's role in emotional and cognitive receptivity (Topić, 2021).

Finally, it is worth highlighting that empathy, as revealed in this study, is not merely an emotional resonance but a cognitive mechanism that modulates the way social cues are interpreted. When filtered through an empathic lens, even ambiguous or indirect social interactions are likely to be interpreted as supportive. This is supported by findings from Jugović et al., who showed that empathy mediates the effects of gender roles and personality on prosocial orientation and relational satisfaction (Jugović et al., 2023). Thus, the present study affirms empathy's central role in transforming dispositional tendencies like agreeableness into the felt experience of social connectedness.

Despite its contributions, the study is not without limitations. First, the cross-sectional design precludes any causal interpretation of the relationships among

agreeableness, empathy, and perceived social support. Although structural equation modeling supports the mediational hypothesis, longitudinal or experimental designs are necessary to establish causal directionality. Second, the use of self-report measures introduces the potential for response bias, including social desirability and common method variance. Although validated tools were used, participants may have overestimated their own agreeableness or empathy due to cultural expectations or personal bias. Third, while the sample size was sufficient, it was drawn exclusively from an Indonesian adult population, which limits the generalizability of the findings to other cultural contexts or age groups.

Future studies should adopt longitudinal designs to examine the developmental trajectories of agreeableness, empathy, and social support perception across time. Such designs would help clarify whether increases in empathy mediate changes in social connectedness as personality traits evolve or stabilize. Additionally, incorporating behavioral measures of empathy—such as physiological reactivity, facial expression decoding, or observational data—could provide a more comprehensive assessment of empathic capacity. Future research should also investigate other potential mediators or moderators in the personality–support link, such as emotional intelligence, communication style, or cultural orientation, to build a more holistic model of social functioning. Finally, comparative cross-cultural studies could elucidate how cultural values modulate these psychological pathways and whether the mediation model holds universally.

In practical terms, the findings suggest that interventions aimed at enhancing perceived social support could benefit from targeting empathic skills, particularly among individuals with agreeable personality traits. Empathy training programs in schools, universities, and workplaces could amplify the social benefits of agreeableness and foster more supportive environments. In counseling and clinical settings, practitioners may consider assessing personality traits to tailor interventions that strengthen social bonds through empathic engagement. Organizations and educational institutions could also integrate personality and empathy assessments into training and development programs to enhance interpersonal communication, team dynamics, and leadership potential.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

Declaration of Interest

The author report no conflict of interest.

Ethics Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

References

Abdullah, A. A., Hamsan, H. H., & Ma'rof, A. A. (2020). How Do Personality Factors Associate With Prosocial Behavior? The Mediating Role of Empathy. *International Journal of Academic Research in Business and Social Sciences*, *10*(16). https://doi.org/10.6007/ijarbss/v10-i16/8303

Ayhan, D., & Tatar, A. (2024). Psychosocial Risk Factors in Employees as Predictors of Mobbing. *Yönetim Ve Ekonomi Araştırmaları Dergisi*, *21*(4), 133-151. https://doi.org/10.11611/yead.1360828

Bamford, J. S., & Davidson, J. W. (2017). Trait Empathy Associated With Agreeableness and Rhythmic Entrainment in a Spontaneous Movement to Music Task: Preliminary Exploratory Investigations. *Musicae Scientiae*, *23*(1), 5-24. https://doi.org/10.1177/1029864917701536

Bętkowska-Korpała, B., Epa, R., Sikora-Zych, K., Olszewska-Turek, K., Pastuszak-Draxler, A., Rajtar-Zembaty, A., & Starowicz–Filip, A. (2021). Differences in Personality Related Determinants of Empathetic Sensibility in Female and Male Students of Medicine. *PLoS One*, *16*(7), e0254458. https://doi.org/10.1371/journal.pone.0254458

Bętkowska-Korpała, B., Pastuszak-Draxler, A., Olszewska-Turek, K., Sikora-Zych, K., Epa, R., & Starowicz–Filip, A. (2022). Personality Characteristics of Empathy Profiles – Practical Implications for Education of Medicine Students. *BMC Medical Education*, *22*(1). https://doi.org/10.1186/s12909-022-03432-5

Buljan, T., & Mlačić, B. (2024). Relationship Between Personality Traits, Reading Tendencies, and Empathy. *International Journal of Personality Psychology*, *10*, 41-48. https://doi.org/10.21827/ijpp.10.41425

Fido, D., & Richardson, M. (2018). Empathy Mediates the Relationship Between Nature Connectedness and Both Callous and Uncaring Traits. https://doi.org/10.31234/osf.io/dtc42

Fuente, C. B. l., Núñez-Rodríguez, S., Raquel de la Fuente, A., & González-Bernal, J. J. (2025). Relationship Between Leadership, Personality, and the Dark Triad in Workplace: A Systematic Review. *Behavioral Sciences*, *15*(3), 297. https://doi.org/10.3390/bs15030297

Hudson, S. k. T. J., & Uenal, F. (2022). The Connections Between Personality, Ideology and (Counter-)Empathic Emotions Depend on the Target. https://doi.org/10.31234/osf.io/t2wnp

Hudson, S. k. T. J., & Uenal, F. (2023). The Connections Between Personality, Ideology and (Counter-)empathic Emotions Depend on the Target. *Journal of personality*, *92*(3), 883-906. https://doi.org/10.1111/jopy.12860

Jones, C. (2022). Five Factor Model: Insights Into a College Population. *Curr Res Psychol Behav Sc*, *3*(6), 1-6. https://doi.org/10.54026/crpbs/1062

Jugović, I., Petrović, D., & Marušić, I. (2023). The Mediating Role of Personality and Gender Roles on the Relationship Between Gender and Empathy: A Study on Preservice Teachers. *Sociologija I Prostor*. https://doi.org/10.5673/sip.61.1.3

Kallianou, M. N. (2024). Agreeableness and Conflict Management in Daily Life: The Impact of Prosocial Traits on Psychological Adaptation. *Studies in Psychological Science*, *2*(3), 56-65. https://doi.org/10.56397/sps.2024.09.06

Kearns, P. O., Tyler, J., & Graziano, W. G. (2020). More Than Fantasy: Prosocial Daydreams Relate to Prosocial Dispositions and Behaviour. *International journal of psychology*, *56*(1), 85-94. https://doi.org/10.1002/ijop.12673

Lachance, V., Laverdière, O., Kealy, D., & Ogrodniczuk, J. S. (2024). Dispositional Empathy Among Psychotherapists: A Latent Profile Analysis. *Clinical Psychology & Psychotherapy*, *31*(3). https://doi.org/10.1002/cpp.3016

Ling, G., Li, X., & Wang, X. (2023). Agreeableness and Adolescents' Cyberbullying Perpetration: A Longitudinal Moderated Mediation Model of Moral Disengagement and Empathy. *Journal of personality*, *91*(6), 1461-1477. https://doi.org/10.1111/jopy.12823

Melchers, M., Li, M., Haas, B. W., Reuter, M., Bischoff, L., & Montag, C. (2016). Similar Personality Patterns Are Associated With Empathy in Four Different Countries. *Frontiers in psychology*, *7*. https://doi.org/10.3389/fpsyg.2016.00290

Men, L. R., & Sung, Y. (2019). Shaping Corporate Character Through Symmetrical Communication: The Effects on Employee-Organization Relationships. *International Journal of Business Communication*, *59*(3), 427-449. https://doi.org/10.1177/2329488418824989

Pal, R. (2024). To Explore the Associations Between Different Personality Pattern and Empathy Among Adults: A Correlational Study. https://doi.org/10.31234/osf.io/k6fjv

Simon, P., & Nader-Grosbois, N. (2021). Preschoolers' Empathy Profiles and Their Social Adjustment. *Frontiers in psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.782500

Suciu, N., Meliţ, L. E., & Mărginean, C. O. (2021). A Holistic Approach of Personality Traits in Medical Students: An Integrative Review. *International journal of environmental research and public health*, *18*(23), 12822. https://doi.org/10.3390/ijerph182312822

Sun, Y., Chen, S., Miao, L., Chen, S., Piao, Z., & Tong, C. (2024). The Relationship Between Personality, Resilience, and Empathy in Dental Students: A Cross-Sectional Study (Preprint). https://doi.org/10.2196/preprints.56133

Syrnyk, C., & McArthur, A. D. (2021). The Characteristics and Motivations of Human Volunteers of Animal-Assisted Interventions. *Human-Animal Interaction Bulletin*. https://doi.org/10.1079/hai.2021.0017

Topić, M. K. (2021). Emotional Engagement, but Not Transportation Leads to Higher Empathy After Reading a Fictional Story, in More Agreeable Participants. *Primenjena Psihologija*, *14*(2), 211-227. https://doi.org/10.19090/pp.2021.2.211-227

Yang, D., & Tu, C. C. (2020). Influence of College Students' Agreeableness on Interpersonal Relationships: Moderating Role of Empathy. *Education and Urban Society*, *53*(4), 383-401. https://doi.org/10.1177/0013124520928609

Yasien, S., & Almuzaini, F. (2022). The Relationship Between Empathy and Personality Traits in Saudi Medical Students. *Journal of education and health promotion*, *11*(1), 150. https://doi.org/10.4103/jehp.jehp_851_21

Yeganeh, N. (2022). Structural Relationships of Big Five Personality Factors With Symptoms of Sadistic Personality Due to the Role of Schadenfreude in Students. *Journal of Applied Psychology*, *16*(1), 159-135. https://doi.org/10.52547/apsy.2021.223890.1161