

Exploring the Role of Extroversion and Openness in Shaping the Link between Intellectual Humility and Religious Orientation: A Study among Teachers in Pakistan

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Abstract

Background: Intellectual humility, defined as the recognition of one's knowledge limitations and openness to learning, is essential for fostering inclusivity, particularly in education. Teachers' religious orientation, shaped by their beliefs and attitudes towards religion, impacts their pedagogy and approach to inclusivity. Personality traits such as extroversion and openness to experience may further influence how intellectual humility interacts with religious orientation, especially in culturally rich contexts like Pakistan. **Objective:** This study aimed to examine the relationship between intellectual humility and religious orientation among teachers in Pakistan and assess whether personality traits—specifically extroversion and openness—moderate this relationship. **Methodology:** A cross-sectional quantitative design was applied, sampling 332 primary and elementary school teachers from Punjab, Pakistan, via convenience sampling. Key variables were measured using the Comprehensive Intellectual Humility Scale, Age Universal Religious Orientation Scale, and Big Five Inventory (assessing extroversion and openness). Data were analyzed using Pearson correlation and moderation analysis with the PROCESS Macro in SPSS. **Results: Findings revealed a significant positive relationship between intellectual humility and religious orientation ($r = .42, p < .01$). Extroversion ($\beta = 0.18, p < .01$) and openness ($\beta = 0.22, p < .01$) moderated this relationship, with teachers high in both traits exhibiting the highest degree of inclusive religious orientation. **Conclusion:** The study demonstrates a positive association between intellectual humility and religious orientation, enhanced by high levels of extroversion and openness. These findings highlight the role of personality traits in fostering inclusive educational environments and underscore the need to integrate intellectual humility and personality development into teacher training to promote tolerance and respect for diversity.**

Keywords: Personality Trait, Religious Orientation, Punjab, Teachers

Introduction

In the evolving educational landscape, teachers play a critical role not only in imparting knowledge but also in fostering intellectual growth, critical thinking, and openness to diverse

perspectives. One attribute that increasingly stands out in promoting these qualities is intellectual humility—the ability to recognize one’s limitations in knowledge, remain open to new ideas, and demonstrate a readiness to revise beliefs in the face of new evidence. Research has shown that intellectual humility fosters an environment conducive to learning and promotes a collaborative classroom culture, as it encourages educators to approach teaching with flexibility and openness (Leary et al., 2017; Porter et al., 2019). Intellectual humility is particularly significant in educational contexts, where teachers profoundly influence students’ worldviews and shape the intellectual climate of their classrooms. In addition to intellectual humility, religious orientation significantly impacts the values and attitudes that teachers bring to their profession. Religious orientation refers to individuals’ approaches and attitudes toward religion, which can range from intrinsic, where religion is valued for its own sake, to extrinsic, where religion is seen as a means to an end (Allport & Ross, 1967). Teachers’ religious orientation may influence their teaching styles, interactions with students, and ability to embrace diverse perspectives (Hill et al., 2013; Saroglou, 2014). This relationship between intellectual humility and religious orientation can be complex, as both characteristics are tied to deeply held beliefs and values. Examining the interplay between intellectual humility and religious orientation is essential for understanding teachers’ roles in creating inclusive learning environments that encourage inquiry, respect, and tolerance (Hassan et al., 2022).

Personality traits, particularly extroversion and openness to experience, may act as moderators in this relationship. Extroversion, defined by sociability, enthusiasm, and an outward-focused disposition, influences an individual’s engagement with others and may affect their willingness to discuss personal beliefs, including religious views (McCrae & Costa, 2008; Ashton & Lee, 2007). Openness to experience, a trait associated with curiosity, imaginative thinking, and a preference for novelty, is thought to enhance intellectual flexibility and adaptability (John et al., 2008; DeYoung et al., 2012). These traits can play a vital role in shaping how teachers integrate intellectual humility with their religious beliefs, impacting their attitudes toward both learning and religious expression (Silvia & Sanders, 2010).

In Pakistan, where religion is deeply woven into the social and cultural fabric, understanding the relationship between intellectual humility and religious orientation among teachers is particularly important. Teachers in Pakistani educational institutions not only deliver academic knowledge but also often serve as moral exemplars and community leaders (Mushtaque et al., 2021). Previous research highlights the significant influence of teachers’ religious orientation on their educational roles in predominantly religious societies (Ahmed & Riaz, 2015; Khan & Farooq, 2018). Thus, this study aims to investigate the interplay between intellectual humility and religious orientation among teachers in Pakistan and to explore the moderating effects of extroversion and openness to experience on this relationship.

By focusing on a sample of teachers from primary and elementary schools across Punjab, Pakistan, this research contributes to our understanding of the complex ways in which personality traits influence educational and social outcomes. These findings offer valuable insights for educators, policymakers, and curriculum developers working to cultivate intellectual openness and religious tolerance in educational contexts. Ultimately, the study’s implications extend to shaping professional development programs that promote inclusivity, critical thinking, and respect for diversity within the teaching profession (Shah & Ahmed, 2020; Rafiq & Malik, 2021).

Literature Review

Intellectual Humility and Its Impact on Education

Intellectual humility is an emerging area of interest in psychology and education, defined as the recognition and acceptance of the limitations of one's knowledge and beliefs (Leary et al., 2017). Scholars argue that intellectual humility plays a critical role in fostering an open-minded and inclusive environment in educational settings. For teachers, this trait encourages a flexible approach to learning and teaching, promoting an atmosphere where students feel free to express their ideas without fear of judgment or dismissal (Porter et al., 2019). Additionally, intellectual humility has been linked to effective communication and conflict resolution, as individuals who exhibit intellectual humility tend to listen to others' perspectives, leading to more constructive discussions (Krumrei-Mancuso et al., 2020). In this context, intellectual humility is seen as an essential characteristic for educators, especially those working in culturally and religiously diverse environments (Davis et al., 2016).

Research has further suggested that intellectual humility is not just beneficial on an individual level but also enhances classroom dynamics. By modeling intellectual humility, teachers can foster a learning environment that values curiosity and tolerance (Lilienfeld, 2017). In diverse cultural contexts like Pakistan, where social and religious values strongly influence education, intellectual humility may serve as a bridge between different belief systems, promoting mutual respect and understanding among students from various backgrounds (Ahmed & Riaz, 2015).

Religious Orientation and Its Influence on Teaching

Religious orientation, defined as an individual's approach and attitude toward religious beliefs, has a significant impact on teachers' values, behaviors, and approaches to pedagogy. Allport and Ross (1967) introduced the concepts of intrinsic and extrinsic religious orientations, distinguishing between individuals who view religion as an end in itself and those who use religion for personal gain or social acceptance. This framework has been widely applied in studies examining the influence of religious orientation on personal and professional conduct (Hill & Hood, 2013).

In educational contexts, teachers' religious orientations can shape their teaching philosophies and their approaches to handling diverse perspectives (Saroglou, 2014). For instance, teachers with a strong intrinsic religious orientation may prioritize moral and ethical development alongside academic instruction, while those with an extrinsic orientation may demonstrate a more pragmatic approach to religious issues in education (Khan & Farooq, 2018). In societies like Pakistan, where religious beliefs play a central role in daily life, understanding the influence of religious orientation on teachers' behavior and attitudes is crucial (Malik et al., 2023). Research has shown that religious orientation can either promote inclusivity or foster rigidity, depending on how it aligns with personal humility and openness to other beliefs (Shah & Ahmed, 2020).

The Role of Personality Traits: Extroversion and Openness to Experience

Personality traits are foundational in understanding individual differences in behavior and attitudes, with **extroversion** and **openness to experience** being particularly relevant in educational settings. Extroversion, a trait associated with sociability, assertiveness, and enthusiasm, often influences individuals' interactions and their approach to teaching (McCrae & Costa, 2008). Teachers with high levels of extroversion may be more engaging in the classroom, actively encouraging discussions and participation among students (DeYoung et al., 2012). Furthermore, extroverted individuals may be more comfortable discussing and exploring topics related to religion, which can affect how they navigate religious orientation in a classroom setting (Ashton & Lee, 2007).

Openness to experience, characterized by intellectual curiosity, creativity, and a preference for novelty, is another trait with significant implications for educators. Teachers high in openness tend to approach learning with curiosity and a willingness to explore diverse perspectives, making them more adaptable to different viewpoints, including religious beliefs (Silvia & Sanders, 2010). Research has shown that individuals high in openness are often more intellectually humble, as they value learning and growth over the preservation of existing beliefs (John et al., 2008). This trait is particularly important in religiously diverse environments, as openness can facilitate tolerance and acceptance of different beliefs, promoting a more inclusive educational environment (Rafiq & Malik, 2021).

The Moderating Role of Personality Traits in the Relationship Between Intellectual Humility and Religious Orientation

Several studies have investigated the interaction between personality traits and religious beliefs, noting that traits like extroversion and openness can moderate how individuals express their religious orientation (Davis et al., 2016; DeYoung et al., 2012). Extroversion, for example, has been associated with a more active engagement in religious activities, which can reinforce religious beliefs and practices (Ashton & Lee, 2007). This trait could potentially amplify the relationship between intellectual humility and religious orientation, as extroverted teachers may be more likely to express their beliefs openly and engage in religious discussions, both of which could impact their teaching practices.

Openness to experience may also play a significant moderating role by enhancing an individual's willingness to reconcile intellectual humility with religious beliefs. Studies have shown that openness is positively correlated with intellectual humility, suggesting that open individuals are more likely to value learning from others, including those with differing religious perspectives (Silvia & Sanders, 2010; McElroy et al., 2014). In educational contexts, teachers with high levels of openness may find it easier to balance their religious orientation with intellectual humility, fostering a learning environment that values diverse perspectives and encourages critical thinking (Shah & Ahmed, 2020).

In Pakistan's context, understanding these moderating effects is essential (Salman Chughtai et al., 2022). The cultural emphasis on religion, combined with the distinct roles of teachers in shaping both academic and moral education, creates a unique environment in which personality traits may significantly influence the interplay between intellectual humility and religious orientation (Ahmed & Riaz, 2015). This study seeks to address this gap by examining how extroversion and openness to experience moderate the relationship between intellectual humility and religious orientation among teachers in Pakistan, contributing to a deeper understanding of how personality affects educational practices in a religiously oriented society.

Purpose of the study

The purpose of this study is to examine the relationship between intellectual humility and religious orientation among teachers in Pakistan, with a particular focus on how personality traits—specifically extroversion and openness to experience—moderate this relationship. Given the cultural context of Pakistan, where religion plays a central role in both personal and professional spheres, understanding how intellectual humility interacts with religious orientation in the teaching profession is crucial for fostering inclusive and tolerant educational environments. By investigating the moderating effects of extroversion and openness, this study aims to provide insights into how personality influences teachers' ability to balance intellectual humility with religious beliefs. Ultimately, the findings of this study will contribute to the broader understanding of the complex interplay between intellectual humility, personality, and religious orientation, offering valuable implications for educators, policymakers, and training

programs seeking to promote intellectual openness, diversity, and respect within educational settings.

Hypothesis of the study

Based on the purpose of the study and existing literature, the following hypotheses are proposed:

1. **H1:** There is a significant positive relationship between intellectual humility and religious orientation among teachers in Pakistan.
2. **H2:** Extroversion moderates the relationship between intellectual humility and religious orientation, such that the relationship is stronger for teachers with higher levels of extroversion.
3. **H3:** Openness to experience moderates the relationship between intellectual humility and religious orientation, such that the relationship is stronger for teachers with higher levels of openness to experience.

Methodology

Research Design

This study employed a quantitative, cross-sectional research design to examine the relationship between intellectual humility and religious orientation among teachers in Pakistan and to test the moderating effects of extroversion and openness to experience on this relationship. The cross-sectional design was chosen to gather data at a single point in time, allowing for an efficient analysis of the relationships and interactions among the key variables.

Sample and Sampling Technique

The study sample consisted of 332 teachers from primary and elementary schools across various divisions of Punjab, Pakistan. Participants were selected through a convenient sampling technique, enabling the researcher to access a representative sample of teachers within the region. The sample included both male and female teachers, aged between 23 and 60 years, reflecting a diverse range of experiences and backgrounds in the educational sector.

Measures

To assess the key variables, validated psychometric scales were used, ensuring the reliability and validity of the measurements.

1. **Intellectual Humility:** Intellectual humility was measured using the Comprehensive Intellectual Humility Scale (CIHS) (Krumrei-Mancuso & Rouse, 2016). This scale assesses an individual's willingness to recognize the limitations of their knowledge and openness to new ideas. It includes items on intellectual openness, respect for others' viewpoints, and a willingness to revise one's beliefs. Participants responded to items on a 5-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).
2. **Religious Orientation:** Religious orientation was measured using the Age Universal Religious Orientation Scale (AUROS) (Gorsuch & Venable, 1983), which assesses intrinsic and extrinsic aspects of religious orientation. This scale captures an individual's approach to religion as either an end in itself (intrinsic) or as a means to other ends (extrinsic). Responses were rated on a 5-point Likert scale, where higher scores indicated a stronger orientation in each dimension.
3. **Personality Traits:** Extroversion and openness to experience, two dimensions of the Big Five personality traits, were assessed using the Big Five Inventory (BFI) (John & Srivastava, 1999). The BFI includes subscales specifically designed to measure

extroversion (e.g., sociability, enthusiasm) and openness to experience (e.g., curiosity, creativity). Each item was rated on a 5-point Likert scale from 1 (Disagree Strongly) to 5 (Agree Strongly).

Data Collection Procedure

Data were collected through a **self-administered survey** distributed to participants at their respective schools. To ensure accuracy and consistency, the researcher provided detailed instructions on how to complete the survey. Participation was **voluntary**, and confidentiality was assured to encourage honest responses. Informed consent was obtained from all participants prior to their involvement in the study. Additionally, participants were assured that their responses would be used solely for research purposes.

Data Analysis

The data analysis was conducted using **SPSS (Statistical Package for the Social Sciences)**. The following statistical methods were used to test the hypotheses:

1. **Descriptive Statistics:** Descriptive statistics, including mean, standard deviation, and frequency distributions, were calculated for all demographic and key study variables to provide an overview of the sample characteristics.
2. **Pearson Correlation Analysis:** Pearson correlation analysis was used to examine the relationships between intellectual humility, religious orientation, extroversion, and openness to experience. This analysis helped determine the strength and direction of associations among the variables.
3. **Moderation Analysis:** To test the moderating effects of extroversion and openness to experience on the relationship between intellectual humility and religious orientation, **moderation analysis** was conducted using **PROCESS Macro for SPSS** (Hayes, 2013). In this analysis, intellectual humility was treated as the independent variable, religious orientation as the dependent variable, and extroversion and openness as the moderating variables. Interaction terms were created to assess whether the effect of intellectual humility on religious orientation varied according to levels of extroversion and openness.
4. **Hierarchical Regression Analysis:** Hierarchical regression was also employed to examine the incremental effects of the moderating variables. The analysis was conducted in two steps: the first step included the main effects of intellectual humility, extroversion, and openness, and the second step included the interaction terms between intellectual humility and each moderating variable (extroversion and openness).

Ethical Considerations

This study adhered to ethical guidelines to ensure the protection and privacy of participants. Informed consent was obtained from each participant, and they were informed of their right to withdraw from the study at any time without any consequences. All responses were treated as confidential and were only accessible to the research team. No identifying information was collected to maintain participants' anonymity.

Results

Table 1 Demographic Information of Participants

Table 2 Correlation Analysis

Variables	1	2	3	4
1. Intellectual Humility	-			
2. Religious Orientation	.42**	-		
3. Extroversion	.25**	.21**	-	
4. Openness to Experience	.30**	.24**	.27**	-

Note: $p < .01$

The results (table 2) reveal a significant positive correlation between intellectual humility and religious orientation ($r = .42, p < .01$), supporting Hypothesis 1. This finding suggests that teachers with higher levels of intellectual humility are more likely to exhibit a positive religious orientation. Additionally, both extroversion ($r = .25, p < .01$) and openness to experience ($r = .30, p < .01$) were positively correlated with intellectual humility, indicating that teachers who score high in these personality traits are more likely to display intellectual humility.

Table 3 Moderating effects of Extroversion

Predictor	B	SE	T	p
Intellectual Humility	0.45	0.07	6.43	< .001
Extroversion	0.28	0.06	4.67	< .001
Intellectual Humility * Extroversion	0.18	0.05	3.56	< .001

Note: B = unstandardized coefficient; SE = standard error

The results of the moderation analysis for extroversion are presented in Table 3. The interaction term between intellectual humility and extroversion was significant ($\beta = 0.18, p < .01$), suggesting that extroversion moderates the relationship between intellectual humility and religious orientation. This finding supports Hypothesis 2, indicating that the positive relationship between intellectual humility and religious orientation is stronger for teachers with higher levels of extroversion.

Table 4 Moderating Effect of Openness to Experience

Predictor	B	SE	T	p
Intellectual Humility	0.43	0.08	5.85	< .001
Openness to Experience	0.32	0.07	4.45	< .001
Intellectual Humility * Openness to Experience	0.22	0.06	3.89	< .001

The results of the moderation analysis for openness to experience are shown in Table 4. The interaction term between intellectual humility and openness to experience was also significant ($\beta = 0.22, p < .01$), indicating that openness to experience moderates the relationship between intellectual humility and religious orientation. This supports Hypothesis 3, suggesting that the positive relationship between intellectual humility and religious orientation is stronger for teachers with higher levels of openness to experience.

Discussion

This study sought to examine the relationship between intellectual humility and religious orientation among teachers in Pakistan, focusing on the moderating effects of personality traits—specifically extroversion and openness to experience. The results revealed several significant findings that contribute to a deeper understanding of how intellectual humility and personality

influence religious orientation in educational settings. This discussion will interpret the findings in light of current research, drawing comparisons and implications for educational practice and teacher development in culturally and religiously diverse contexts.

Relationship between Intellectual Humility and Religious Orientation

The study found a positive relationship between intellectual humility and religious orientation among teachers, suggesting that teachers who exhibit higher intellectual humility are more likely to hold an inclusive religious orientation. This finding aligns with previous research, which suggests that intellectual humility fosters a balanced approach to personal beliefs, allowing individuals to integrate religious faith with openness to diverse perspectives (Leary et al., 2017; Krumrei-Mancuso et al., 2020). Intellectual humility has been associated with traits such as open-mindedness and respect for differing viewpoints, which can enhance tolerance and inclusivity in religious attitudes (Hook et al., 2017).

In the Pakistani context, where religion plays a prominent role in both social and educational spheres, intellectual humility may serve as an essential characteristic for teachers. By fostering humility and respect, teachers can help bridge cultural and religious divides within the classroom, contributing to an environment of mutual respect and understanding (Ahmed & Riaz, 2015). This finding emphasizes the importance of developing intellectual humility within teacher training programs, as it can positively influence educators' approach to religious diversity and inclusivity.

Moderating Role of Extroversion

The moderation analysis revealed that extroversion significantly strengthens the relationship between intellectual humility and religious orientation. Teachers with higher levels of extroversion who also exhibit intellectual humility tend to demonstrate a more inclusive religious orientation. This result supports the findings of Davis et al. (2016), who noted that extroverted individuals are more likely to engage in social interactions that expose them to diverse viewpoints, potentially reinforcing their humility and inclusive orientation.

Extroverted teachers often engage more actively in discussions and social interactions, which may allow them to express and refine their beliefs in a way that aligns with intellectual humility (McCrae & Costa, 2008). In educational settings, extroverted teachers who balance intellectual humility with their natural sociability may be more effective in creating inclusive classroom environments that welcome diverse perspectives (Ashton & Lee, 2007). This finding has practical implications for teacher training, suggesting that programs should emphasize both intellectual humility and interpersonal skills, as their combination appears to foster a more inclusive religious orientation.

Moderating Role of Openness to Experience

Openness to experience also moderated the relationship between intellectual humility and religious orientation, such that teachers with high openness displayed a stronger association between these variables. This finding is consistent with studies indicating that openness to experience promotes cognitive flexibility, curiosity, and a willingness to consider alternative perspectives (Silvia & Sanders, 2010; DeYoung et al., 2012). Research suggests that open individuals are more likely to value growth and learning, which aligns well with the characteristics of intellectual humility, thus leading to a more inclusive religious orientation (John et al., 2008).

In the context of Pakistani teachers, this finding highlights the potential role of openness in enhancing tolerance toward religious diversity. Teachers who are open to experience are likely to appreciate the richness of diverse cultural and religious viewpoints, fostering a more inclusive

approach to religious beliefs in the classroom. This reinforces the importance of including modules on cultural and religious diversity in teacher education programs, especially in societies where religious values are deeply embedded in the social fabric (Shah & Ahmed, 2020). By cultivating openness, educators can be better equipped to manage and appreciate religious diversity, ultimately benefiting the classroom environment.

Interaction of High Intellectual Humility and Personality Traits

The study also confirmed that teachers who score high on both intellectual humility and personality traits (extroversion and openness) exhibit the highest degree of inclusive religious orientation. This finding is in line with the interactionist perspective in psychology, which suggests that personality traits can amplify the effects of other characteristics, such as intellectual humility (Davis et al., 2016). For instance, teachers who are both intellectually humble and extroverted are likely to engage actively in discussions on religious matters, but in a manner that reflects tolerance and openness. Similarly, intellectually humble teachers high in openness are likely to be curious about various religious perspectives, contributing to a balanced and inclusive orientation (Porter et al., 2019).

This combination of intellectual humility and specific personality traits supports a holistic approach to teacher development. By encouraging both humility and the cultivation of personality traits like extroversion and openness, teacher training programs can help educators become more effective in handling diverse religious views and creating inclusive classroom environments. Such training is particularly relevant in Pakistan, where religious diversity may present challenges in educational settings. Developing these qualities in teachers can enable them to manage diverse perspectives with respect and empathy, contributing to a more harmonious learning environment (Rafiq & Malik, 2021).

Implications for Educational Practice

These findings carry significant implications for educational practices and policies in Pakistan and similar religiously oriented contexts. First, intellectual humility should be considered a key component of teacher professional development, as it fosters open-mindedness and an inclusive approach to religious and cultural diversity. Second, teacher training programs should incorporate personality assessments and activities designed to develop traits such as extroversion and openness to experience, which, as this study suggests, enhance teachers' capacity for inclusivity.

Furthermore, educational policymakers should consider these findings when developing curricula and instructional strategies for teacher training institutions. Integrating modules on intellectual humility, personality development, and religious tolerance can help prepare teachers to meet the challenges of a diverse classroom environment. Future research could explore the effectiveness of such training programs in improving inclusive attitudes and behaviors among teachers, providing further support for these educational initiatives.

Limitations and Future Directions

While this study provides valuable insights, it is important to acknowledge certain limitations. The cross-sectional design limits the ability to infer causation, as the data reflect relationships at a single point in time. Additionally, the use of convenient sampling may affect the generalizability of the findings to the broader population of teachers in Pakistan. Future research could employ a longitudinal design to examine changes in intellectual humility, personality, and religious orientation over time. Moreover, exploring other personality traits, such as agreeableness and conscientiousness, could provide a more comprehensive understanding of how individual differences influence religious orientation in educational settings.

Conclusion

In conclusion, this study highlights the complex interplay between intellectual humility, personality traits, and religious orientation among teachers in Pakistan. By demonstrating the moderating effects of extroversion and openness, these findings offer a nuanced perspective on how personality traits enhance teachers' inclusive religious orientation. The results underscore the importance of fostering intellectual humility and personality development in teacher training programs to promote inclusive and tolerant educational environments. As Pakistan continues to navigate its rich cultural and religious diversity, equipping teachers with these skills will be essential in preparing future generations for a more inclusive and harmonious society.

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