

Staying Connected or Withdrawing: Personality, Gender, and Online Social Support in Hikikomori Tendencies among Emerging Adults of Pakistan

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Abstract

Hikikomori, characterized by prolonged social withdrawal and avoidance of occupational, academic, and interpersonal roles, has become an emerging psychosocial concern beyond its Japanese origins. The present study investigated the relationships between personality traits (HEXACO model), online social support, and hikikomori tendencies among Pakistani emerging adults, while also examining gender differences. A total of 407 participants (55% female; $M = 20.88$, $SD = 1.87$) aged 18–25 years were recruited through convenience sampling. Participants completed the HEXACO Personality Inventory (Ashton & Lee, 2007), the Hikikomori Questionnaire (Teo et al., 2018), and the Online Social Support Scale (Nick et al., 2018). Regression analyses revealed that Extraversion, Conscientiousness, and Openness to Experience were significant negative predictors of hikikomori tendencies, indicating that individuals who are less sociable, organized, or open to new experiences are more likely to exhibit withdrawal behaviors. Moderation analysis further showed that online social support buffered the effects of low Extraversion and Conscientiousness, suggesting that higher perceived online support mitigated withdrawal among individuals with less adaptive personality profiles. Gender differences emerged for Emotionality, Openness to experience, and Emotional Support, with females scoring higher on these dimensions, while no significant gender differences were found in overall hikikomori symptoms. These findings underscore the complex interaction between personality and digital social environments in shaping social withdrawal among youth. The study highlights the protective role of online social support and calls for culturally informed, gender-sensitive interventions promoting balanced digital engagement and psychological well-being among emerging adults in collectivistic societies like Pakistan.

Keywords: Hikikomori, personality traits, HEXACO, online social support, gender differences, emerging adulthood, and Pakistan.

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INTRODUCTION

Hikikomori, characterized by long-term social withdrawal and isolation, is increasingly recognized as a significant mental health issue worldwide (Teo & Gaw, 2010; Kato et al., 2019). Originating in Japan, the term refers to individuals who voluntarily retreat from education, work, and social interactions for extended periods, often enduring months or years of seclusion. This withdrawal is often accompanied by intense loneliness and psychological distress (Kato et al., 2020; Nonaka & Sakai, 2021). Initially thought to be a culture-specific phenomenon rooted in Japan's collectivist society and high societal pressure, studies now show that similar behaviors occur across diverse cultures, including South Korea, Italy, Spain, and South Asia (Lee et al., 2022; Malagón-Amor et al., 2018; Nazim, 2023). This suggests that hikikomori is not confined to Japan, but is part of broader global dynamics, shaped by globalization, digital connectivity, and evolving norms of youth socialization (Koyama et al., 2020; Nonaka & Sakai, 2021).

Emerging adulthood, typically between ages 18 and 25, is a critical period of identity exploration, emotional sensitivity, and instability (Arnett, 2000; Arnett & Mitra, 2020). During this phase, individuals face academic, career, and relationship transitions while seeking to establish a sense of self. This stage is often exacerbated by social pressures, expectations, and comparisons, which can contribute to feelings of inadequacy and isolation (Schwartz et al., 2013; Arnett, 2021). While online platforms provide opportunities for interaction, self-expression, and emotional support, they can also foster avoidance behaviors, replacing face-to-face relationships (Kardefelt-Winther, 2014; Dokuka et al., 2021). Online social support (OSS), which refers to perceived emotional, informational, and social support via digital platforms, can be especially beneficial for socially anxious or introverted individuals (Nick et al., 2018; Oh et al., 2014; Pang, 2021; Kawa & Shioiri, 2022). However, the benefits of OSS depend on the quality and reciprocity of interactions. Genuine engagement can alleviate loneliness and improve well-being, while superficial contact may reinforce withdrawal from in-person relationships (Nowland et al., 2018; Wiederhold, 2020).

Personality traits shape how individuals respond to social and emotional challenges, influencing whether they engage with others or withdraw. The HEXACO model (Ashton & Lee, 2007; Lee & Ashton, 2008) highlights six key dimensions: Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience. Low Extraversion, often linked to introversion, is associated with social avoidance (Marcinko et al., 2020; Montag et al., 2021), while low Conscientiousness, reflecting difficulties with self-discipline and goal-setting, may increase withdrawal from academic or work-related tasks (Luo & Cooper, 2022). Conversely, high Openness to Experience can serve as a protective factor against prolonged social isolation (Ashton et al., 2024; Moscardino et al., 2023).

High Emotionality, characterized by sensitivity to stress and fear of rejection, may heighten vulnerability to social withdrawal (Lee & Ashton, 2013; Teo et al., 2021). Meanwhile, traits such as Agreeableness and Honesty-Humility, which foster empathy and trust, can mitigate the effects of isolation by supporting positive relationships (Ashton & Lee, 2020). These personality dimensions do not operate in isolation; their effects are shaped by contextual factors like online social support and cultural norms, highlighting the importance of studying these interactions.

Gender differences also affect hikikomori tendencies. Males tend to exhibit overt withdrawal, disengaging from work or education, while females may internalize isolation, presenting as anxiety or emotional distress (Kato et al., 2019; Teo & Gaw, 2010). Gender norms shape emotional expression, coping strategies, and help-seeking behaviors, with females

generally seeking support more readily, while males may hide their vulnerabilities due to societal expectations of independence (Mahapatra & Sharma, 2022; Addis & Mahalik, 2003).

In collectivist societies like Pakistan, where identity is deeply tied to family honor and social norms, withdrawal behaviors may be perceived as privacy or respect for authority, rather than a sign of psychological distress (Nazim, 2023; Riaz & Bukhari, 2022). Thus, hikikomori-like behaviors may go unnoticed or misunderstood, delaying intervention. Digital communication in Pakistan may exacerbate internal struggles related to autonomy, conformity, and emotional expression, highlighting the need for research that considers personality traits, online social support, and cultural context to understand these behaviors (Triandis, 1995; Arnett & Mitra, 2020).

Problem Statement

Although hikikomori is recognized globally, research on this phenomenon in Pakistan is limited (Kato et al., 2019; Nonaka & Sakai, 2021). In Pakistan, social withdrawal may be seen as culturally acceptable privacy, complicating early recognition and intervention for those at risk of isolation. Moreover, the impact of personality traits on hikikomori behaviors in societies experiencing rapid digital transformation remains underexplored. Digital communication may either mitigate or intensify withdrawal behaviors, depending on personal traits, cultural context, and the nature of online interactions. Gender expectations further shape how isolation and distress are experienced, influencing the manifestation of withdrawal behaviors.

This study aims to examine the interaction of personality traits, online social support, and cultural factors in predicting hikikomori behaviors among Pakistani youth. The study will also explore gender differences and contribute to the growing field of digital mental health and cross-cultural research on social withdrawal. Findings may inform the development of interventions that promote adaptive social engagement and mental well-being.

Research Objectives

1. To examine the predictive role of personality traits (HEXACO) in explaining hikikomori tendencies among emerging adults in Pakistan.
2. To identify specific personality dimensions positively or negatively associated with hikikomori tendencies.
3. To investigate the moderating role of online social support in the relationship between personality traits and hikikomori tendencies.
4. To explore gender differences in personality traits, online social support, and hikikomori tendencies among emerging adults in Pakistan.

Research Questions

1. To what extent do personality traits (HEXACO) predict hikikomori tendencies among emerging adults in Pakistan?
2. What specific personality traits are positively or negatively associated with hikikomori tendencies?
3. What role does online social support play as a moderator in the relationship between personality traits and hikikomori tendencies?
4. What significant gender differences exist in personality traits, online social support, and hikikomori tendencies among emerging adults in Pakistan?

Significance of the Study

Pakistan's unique cultural context offers valuable insights into the relationship between personality, online social support, and hikikomori behaviors. As a collectivist society undergoing rapid digital transformation, Pakistani youth navigate complex pressures from traditional family expectations and modern, individualized online lifestyles (Hassan et al.,

2023; Khalid & Ahmed, 2022). Digital communication may supplement or replace in-person interactions, impacting autonomy, conformity, and emotional expression (Rashid & Abbas, 2021). Understanding these dynamics can guide the development of culturally sensitive interventions aimed at reducing social withdrawal and enhancing psychological well-being.

LITERATURE REVIEW

Hikikomori as a Global and Developmental Phenomenon

Hikikomori is characterized by prolonged social withdrawal, lasting at least six months, during which individuals avoid academic, occupational, and social activities (Teo & Gaw, 2010). Initially identified in Japan, this phenomenon is now recognized across various cultural contexts, influenced by local societal pressures, economic factors, and family structures (Kato et al., 2019; Nonaka & Sakai, 2021). Factors such as intense academic competition, unstable labor markets, and reliance on family support have been linked to the development of withdrawal behaviors, particularly among young adults transitioning into adulthood (Liu et al., 2019; Malagón-Amor et al., 2018).

Emerging adulthood, spanning ages 18 to 25, is a time of identity exploration and increased autonomy (Arnett, 2000; Arnett & Mitra, 2020). This period, marked by societal pressures, heightens vulnerability to withdrawal behaviors. The COVID-19 pandemic exacerbated hikikomori tendencies, with increased reliance on digital communication and social isolation (Kato et al., 2024). Research in South Asia also indicates the presence of hikikomori-like behaviors, underlining the need to understand these patterns in diverse socio-cultural settings (Nazim, 2023; Ahmed & Khan, 2021).

Personality Dispositions and Social Withdrawal: The HEXACO Framework

Personality traits, such as those in the HEXACO model (Ashton & Lee, 2007), significantly influence social behaviors and coping mechanisms. The six dimensions: Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience, are linked to social withdrawal tendencies.

Low Extraversion, characterized by social inhibition, is associated with increased loneliness and withdrawal (Lee et al., 2013; Oshima et al., 2022). Low Conscientiousness, related to poor goal-setting and self-regulation, is also linked to withdrawal, as individuals with low Conscientiousness often disengage from academic or work responsibilities (McCrae et al., 2001; Hengartner, 2020). Emotionality, marked by stress sensitivity and fear of rejection, fosters avoidance coping strategies and internalization of distress, further contributing to withdrawal (Ebstrup et al., 2011; Park & Kim, 2021). High Openness to Experience, however, is protective against prolonged withdrawal, as it encourages engagement with new social contexts (Graziano et al., 2022).

Honesty-Humility and Agreeableness may promote interpersonal harmony in collectivistic cultures, but excessive conformity can mask psychological distress (Mushtaq & de Visser, 2023). Research suggests that low Extraversion and Conscientiousness, combined with high Emotionality, increase vulnerability to hikikomori-like behaviors (Saito et al., 2023; Zhao et al., 2022).

Online Social Support as a Buffer or Reinforcement

Online social support (OSS) refers to receiving emotional, informational, or companionship support via digital platforms (Nick et al., 2018). For individuals who struggle with face-to-face interactions, OSS provides an alternative, less pressured space for connection (Pang, 2021). When offline support is scarce, online interactions can alleviate loneliness and enhance a sense of belonging (Naslund et al., 2016; Suzuki et al., 2022). However, excessive reliance on



OSS may exacerbate withdrawal, replacing face-to-face engagement with digital isolation (Nowland et al., 2018; Gao et al., 2019).

Mixed-method studies suggest that while some individuals use OSS as a bridge to offline relationships, others withdraw further into online spaces, reinforcing isolation (De Luca et al., 2023; Seki & Kato, 2023). Thus, the impact of OSS depends on the quality and nature of interactions, as well as individual and contextual factors.

Cultural Techno social Context of Pakistan

Pakistan's rapid digital transformation, marked by widespread smartphone use and social media engagement, has altered communication patterns among youth (Hassan et al., 2023). Digital platforms offer spaces for self-expression that might be constrained by cultural norms of modesty, gender segregation, and family surveillance (Mushtaq & de Visser, 2023).

However, Pakistan's collectivistic culture, which emphasizes obedience, conformity, and family reputation, may heighten the risks associated with social withdrawal. Youth navigating tensions between personal autonomy and familial or societal expectations may be more prone to withdrawal when faced with identity conflict or emotional distress (Shah & Khalid, 2022). Preliminary studies suggest that Pakistani youth increasingly seek social support online, but excessive digital reliance may hinder offline engagement and blur the lines between adaptive coping and social withdrawal (Rashid & Abbas, 2021; Javed & Khan, 2023).

Integrative Summary and Rationale

The literature reveals that personality traits, particularly low Extraversion, low Conscientiousness, and high Emotionality, are significant predictors of hikikomori-like behaviors. Online social support can either buffer against isolation or reinforce withdrawal, depending on its use. In Pakistan's collectivistic and rapidly digitalizing society, the interplay between personality traits, OSS, and cultural norms has yet to be fully explored. Understanding this interaction is crucial for identifying the psychological and environmental factors that contribute to hikikomori tendencies.

This review underscores the need for research that integrates personality, digital environments, and cultural context. Such research could lead to the development of culturally sensitive interventions to address social withdrawal and promote digital well-being among Pakistani youth.

THEORETICAL FRAMEWORK

This study is grounded in three interrelated theoretical perspectives that explain how stable personality characteristics interact with social and digital environments to influence tendencies toward social withdrawal among emerging adults in Pakistan.

Trait Theory of Personality and the HEXACO Model

Trait Theory suggests that individuals display consistent patterns of thinking, feeling, and behaving across different situations and over time (McCrae & Costa, 1996). Personality traits, therefore, can help explain why some people are socially active while others tend toward withdrawal. The HEXACO model builds on this framework, outlining six broad traits: Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience (Ashton & Lee, 2007). Validated across cultures, this model provides a reliable lens for understanding social behavior. Extraversion, reflecting sociability and assertiveness, is linked to higher engagement and lower risk of prolonged withdrawal (Ashton & Lee, 2007; Wilt & Revelle, 2019). Conscientiousness and Agreeableness, associated with responsibility and interpersonal harmony, also protect against withdrawal, whereas lower levels may foster disorganization, avoidance, and strained relationships (Lee & Ashton, 2008;

van der Linden et al., 2017). Emotionality, capturing stress sensitivity and fear of rejection, can increase social avoidance, heightening vulnerability to withdrawal behaviors (Marino et al., 2020). Meanwhile, Openness to Experience and Honesty–Humility support adaptability, cognitive flexibility, and authentic connections, potentially buffering against isolation (Ashton & Lee, 2020; Zhang & Ziegler, 2022).

Social Compensation and Social Buffering Frameworks

The Social Compensation Framework proposes that individuals struggling with in-person interactions, such as those who are introverted or socially anxious, may use digital platforms to seek connection and support (Kardefelt-Winther, 2014). The Social Buffering Hypothesis further suggests that social support, online or offline, can reduce the psychological impact of stress and isolation (Cohen & Wills, 1985). Online social support (OSS) can therefore moderate the effects of vulnerable personality traits by maintaining social ties and providing emotional reassurance. However, reliance solely on digital interactions may reinforce social withdrawal, potentially contributing to hikikomori tendencies (Frison & Eggermont, 2020; Best et al., 2022). In Pakistan and other South Asian contexts, young adults increasingly use online spaces for emotional regulation and identity expression, making OSS a relevant factor in understanding social withdrawal behaviors (Khan & Khalid, 2023; Uchida & Norasakkunkit, 2020).

Gender and Cultural Context

In Pakistan, gender norms strongly shape personality expression and social support behaviors. Young men are often encouraged to be independent, assertive, and emotionally reserved, whereas young women are socialized toward relational interdependence, emotional expressiveness, and modesty (Ali & Begum, 2021; Haque & Ahmad, 2020). These norms affect help-seeking and withdrawal patterns: women are more likely to seek emotional support, including online, while men may avoid help due to stigma around vulnerability, sometimes leading to hidden or overt social withdrawal (Nasir et al., 2022; Zafar et al., 2023). Consequently, the emergence and visibility of hikikomori behaviors may differ by gender, underscoring the importance of gender-sensitive approaches in research and interventions.

Proposed Model of Theoretical Framework

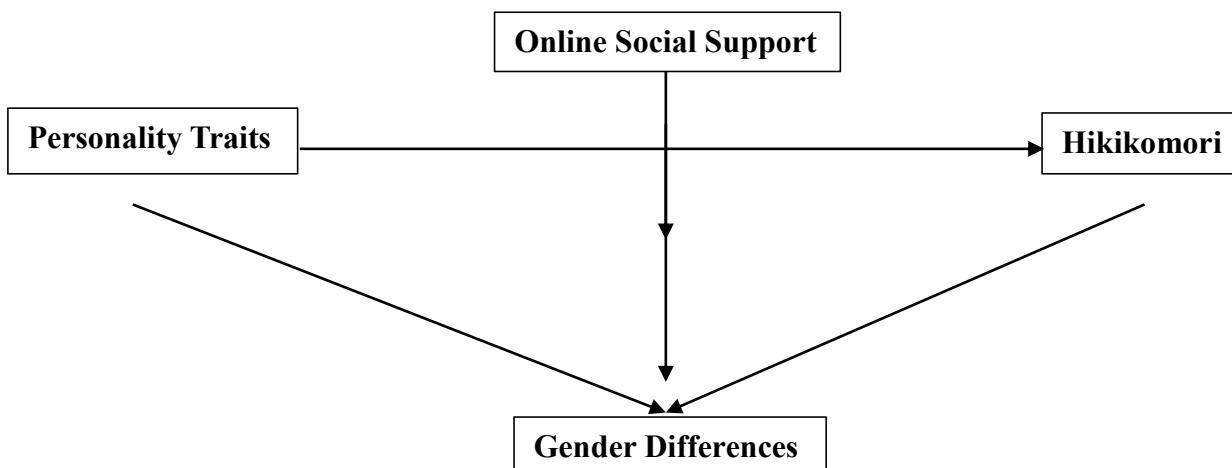


Figure: Proposed Model of Theoretical Framework

Hypotheses

The study proposes the following hypotheses:

H1. HEXACO personality traits will significantly predict hikikomori tendencies among emerging adults in Pakistan.

H2. Extraversion, Conscientiousness, Agreeableness, Openness to Experience, and Honesty-Humility will be negatively associated with hikikomori tendencies, whereas Emotionality will be positively associated.

H3. Online social support will moderate the association between personality traits and hikikomori tendencies.

H4. There will be significant gender differences in personality traits, online social support, and hikikomori tendencies.

METHODOLOGY

Research Design and Participants

This study employed a quantitative, cross-sectional design, using structured surveys to ensure consistency and comparability across participants. A total of 407 emerging adults were recruited from universities, workplaces, and home settings using convenience sampling to maximize participation and achieve gender balance. All participants voluntarily provided informed consent, and data collection was conducted in controlled environments to ensure accuracy and reliability. This design was well-suited for examining hikikomori-like behaviors, which are often underreported or difficult to access in certain populations.

Inclusion Criteria and Exclusion Criteria

Participants were included if they were 18–25 years old, had completed at least a 10th-grade education, provided voluntary informed consent, and had no severe psychological or physical health conditions or ongoing psychological treatment. Individuals outside the age range, with incomplete education, serious health conditions, or undergoing therapy, as well as those unable or unwilling to consent, were excluded.

Measures

Informed Consent Form

Participants received a detailed consent form explaining the study's purpose, procedures, potential risks, and voluntary nature. They were informed that participation could be withdrawn at any time without consequences and that their data would remain confidential.

Demographic Form

Basic demographic information was collected, including age, gender, education, family structure, social media use, and relationship status. This information ensured eligibility and provided context for analysis.

HEXACO Personality Inventory (HEXACO-PI)

The HEXACO-PI (Ashton & Lee, 2004) assessed six personality traits: Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience. The 60-item inventory used a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree) and has demonstrated good reliability and validity across cultures (Cronbach's $\alpha = .60-.78$). Trait scores were averaged across items.

Hikikomori Questionnaire (HQ-25)

The HQ-25 (Teo, 2018) measured social withdrawal and avoidance behaviors associated with hikikomori. Items were rated on a 4-point Likert scale (1 = never to 4 = always), with higher scores reflecting greater withdrawal tendencies. The scale has shown strong reliability and validity, and permission was obtained from the author.

Online Social Support Scale (OSSS)

The OSSS (Nick et al., 2018) evaluated perceived social support from digital platforms, focusing on emotional, informational, and instrumental support. Responses were recorded on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). The scale demonstrated excellent internal consistency ($\alpha = .91$), and permission was obtained from the authors.

Procedure

Data were collected in person at universities, workplaces, and participants' homes. Participants were first informed about the study's purpose, procedures, and potential risks before providing consent. After consenting, they completed the demographic form, followed by the HQ-25, HEXACO-PI, and OSS questionnaires. Adequate time was given for responses, and clarifications were provided as needed. All data were collected securely, ensuring confidentiality, and only aggregated, anonymized data were used for analysis.

Ethical Considerations

The study followed APA (2020) ethical standards and institutional guidelines. Informed consent was obtained, participation was voluntary, and participants were fully briefed on the study's purpose, procedures, and potential risks. They were reminded of their right to withdraw at any time. Confidentiality and anonymity were maintained, and only aggregated data were analyzed. Participant welfare was prioritized, with no physical or psychological harm resulting from participation.

RESULTS

The obtained data was coded and analyzed by the help of Statistical Package of Social Science (SPSS). The following tables indicate the result along with their respective interpretations of current research. Descriptive, Reliability, Correlation, and Regression analysis was conducted to test the hypotheses.

Table 5.1: Frequency and Percentage Table of the Demographic Variables (N=407)

Variable	f	%	M	SD
Age			20.88	1.87
Gender				
Female	224	55.0		
Male	183	45.0		
Marital Status				
Single	390	95.8		
Married	17	4.2		
Family Structure				
Nuclear	292	71.7		
Joint	115	28.3		
Education Level				
Matric	15	3.7		
Intermediate	122	30.0		
Bachelor's	231	56.8		
Master's	39	9.6		
Socioeconomic Status				
<30,000 PKR	87	21.4		
30,000–50,000 PKR	38	9.3		
50,001–70,000 PKR	49	12.0		
70,001–100,000 PKR	65	16.0		
>100,000 PKR	168	41.3		

Table 5.1 presents the demographic characteristics of the participants. The sample mainly consisted of young adults in their early twenties, with females making up the majority. Most participants were single, from nuclear families, and held a bachelor's degree. A notable portion reported a monthly family income above 100,000 PKR, reflecting a relatively higher socioeconomic status. Overall, the sample represents a well-educated, predominantly urban youth population.

Table 5.2: Descriptive Statistics for Social Media Use Patterns (N = 407)

Variable	f	%
Social Media Apps Used		
1-3 Apps	211	51.8
4-6 Apps	165	40.5
7-9 Apps	31	7.6
Primary Purpose of Social Media Use		
Connecting with friends/family	187	45.9
Entertainment	120	29.5
Professional work	26	6.4
News & updates	33	8.1
Sharing content	9	2.2
Educational purpose	22	5.4
Other	10	2.5
Social Media Usage Time		
Less than 1 hour	42	10.3
1-3 hours	131	32.2
4-6 hours	151	37.1
More than 6 hours	83	20.4

Table 5.2 outlines participants' social media use. Most reported engaging with one to six platforms, primarily to connect with friends and family, followed by entertainment. Fewer used social media for work, news, education, or content sharing. Daily usage mostly ranged from one to six hours, though a notable portion exceeded six hours, indicating generally high engagement with digital platforms.

Table 5.3: Descriptive Statistics and Alpha Reliability Coefficients, Univariate Normality of Study Variables (N = 407)

Variables	Items	α	M	SD	Skewness	Kurtosis	Range	
							Actual	Potential
HKM	25	.822	47.69	15.81	-0.14	-0.51	11-83	25-125
ISO	8	.597	15.73	5.89	0.05	-0.47	2-32	8-40
ES	6	.417	10.83	4.46	0.25	-0.50	1-23	6-30
SOC	11	.780	20.97	8.70	-0.06	-0.24	1-42	11-55
OSS	40	.914	84.35	27.53	0.02	1.18	5-175	40-200
EOS	10	.793	22.73	8.94	0.26	1.69	0-71	10-50
SC	10	.813	21.50	8.09	-0.12	0.00	0-40	10-50
INFO	10	.740	21.25	8.43	0.74	4.50	0-69	10-50
INST	10	.839	18.87	8.60	-0.01	0.15	0-40	10-50
HH	10	.368	3.12	0.52	0.18	0.26	1.8-4.9	1-5
EMO	10	.373	3.16	0.61	1.79	15.38	1.2-7.7	1-5

EXT	10	.325	3.15	0.53	1.30	11.07	1.6–7.5	1–5
AGR	10	.380	3.08	0.59	1.60	15.65	1.1–8.3	1–5
CON	10	.319	2.63	0.55	1.72	15.00	1.4–7.5	1–5
OTE	10	.355	3.17	0.51	-0.02	-0.03	1.7–5.0	1–5

Note: *HKM* = Hikikomori, *ISO* = Isolation, *ES* = Emotional Support, *SOC* = Socialization, *PSS* = Perceived Stress Scale, *OSS* = Online Social Support, *EOS* = Emotional Online Support, *SC* = Social Companionship, *INFO* = Informational Support, *INST* = Instrumental Support, *HH* = Honesty–Humility, *EMO* = Emotionality, *EXT* = Extraversion, *AGR* = Agreeableness, *CON* = Conscientiousness, *OTE* = Openness to Experience, *AGE* = Age, *SK* = Skewness, *K* = Kurtosis.

Table 5.3 shows that most study variables had acceptable reliability and met normality criteria, with skewness and kurtosis within recommended ranges (Gravetter & Wallnau, 2014). Key constructs like hikikomori tendencies and online social support demonstrated solid internal consistency (Nunnally & Bernstein, 1994). However, the HEXACO-60 personality subscales showed relatively low reliability ($\alpha = .31\text{--}.38$), consistent with prior research using short personality measures, where fewer items per domain can reduce alpha without undermining validity (Ashton & Lee, 2009; Credé et al., 2012). Elevated kurtosis for Emotionality, Extraversion, Agreeableness, and Conscientiousness suggests clustering around moderate responses, likely influenced by social desirability and collectivist norms (Rao et al., 2021; Bleidorn et al., 2022). Despite these limitations, the HEXACO-60 provides a useful framework for assessing broad personality traits, and results are interpreted cautiously.

Table 5.4: Correlations among Hikikomori and HEXACO Personality Traits (N = 407)

Variables	1	2	3	4	5	6	7
1. THIK	–	.069	-.030	-.255**	-.038	-.214**	-.139**
2. Honesty		–	.103*	-.063	.120*	.123*	.150**
3. Emotionality			–	-.011	.142**	.025	.163**
4. Extraversion				–	-.020	.161**	.191**
5. Agreeableness					–	.112*	.083
6. Conscientiousness						–	.214**
7. Openness to Exp.							–

Note. * $p < 0.01$, ** $p < 0.05$

Table 5.4 presents the correlations among study variables. Hikikomori tendencies (THIK) showed moderate negative correlations with Extraversion, Conscientiousness, and Openness to Experience, suggesting that individuals with higher withdrawal scores tend to be less outgoing, less organized, and less open to new experiences. Honesty–Humility exhibited weak but significant positive correlations with Emotionality, Agreeableness, and Conscientiousness. Emotionality was positively associated with both Agreeableness and Openness to Experience, while Extraversion correlated positively with Conscientiousness and Agreeableness. Additionally, Agreeableness was positively linked with Conscientiousness. Overall, most associations were weak to moderate but statistically significant, reflecting meaningful interrelationships among personality traits and social withdrawal tendencies.

Table 5.5: Simple Linear Regression Analysis Showing HEXACO Personality Traits as Predictors of Hikikomori Tendencies (N = 407)

Predictor	R	R ²	ΔR ²	β	p	95% CI	
						LL	UL
Honesty	.069	.005	.002	.069	.169	-	2.126
						0.910	

Emotionality	.030	.001	-.002	-.030	.550	-	1.793
Extroversion	.255	.065	.063	-.255	.000**	3.360	-4.838
Agreeableness	.038	.001	-.001	-.038	.443	10.537	1.620
Conscientiousness	.214	.046	.043	-.214	.000**	3.696	-6.224
Openness to Experience	.139	.019	.017	-.139	.005**	9.005	-1.338
						7.470	

Note. β = Standardized Beta, R^2 = R-squared, ΔR^2 = Adjusted R-squared, CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit. $p < .01$

Table 5.5 presents simple linear regression analyses examining each of the six HEXACO personality traits as predictors of Hikikomori tendencies. The results indicate Extraversion, Conscientiousness, and Openness to Experience significantly predicted Hikikomori, each with negative associations. Moreover, the strongest predictor is Extraversion with 6.4% of change. On the other hand, Honesty, Emotionality, and Agreeableness were not significant predictors.

Table 5.6: Moderating Role of Online Social Support between Personality Traits (OP, EX, Con) and Hikikomori.

Predictor	Estimate (B)	SE	95% CI		p
			LL	UL	
Constant	47.7269	0.7705	46.2121	49.2417	.0000
OP	-3.5191	1.5193	-6.5058	-0.5324	.0210
TOSSS	-0.1083	0.0286	-0.1644	-0.0521	.0002
OP × TOSSS	-0.0192	0.0469	-0.1113	0.0729	.6818
Constant	47.37	0.75	45.89	48.85	.000
EX	-7.60	1.45	-10.45	-4.74	.000
TOSSS	-0.09	0.03	-0.15	-0.04	.001
EX × TOSSS	0.13	0.05	0.03	0.24	.014
Constant	46.97	0.79	45.40	48.53	.000
Con	-5.53	1.69	-8.86	-2.20	.001
TOSSS	-0.07	0.03	-0.13	-0.00	.038
Con × TOSSS	0.09	0.03	0.03	0.15	.004

The table shows that the Perceived stress significantly moderates the relationship between extraversion and conscientiousness with hikikomori tendencies. Individuals low in these traits are more likely to withdraw socially under high stress. However, no such moderation was found for openness to experience. This suggests that stress amplifies certain personality vulnerabilities but not all. This means perceived stress intensifies the effect of low extraversion and low conscientiousness on hikikomori tendencies, but does not significantly influence the effect of openness to experience.

Figure 1: *Interaction effect among variables Personality Trait, Extroversion, Online Social support, Hikikomori.*

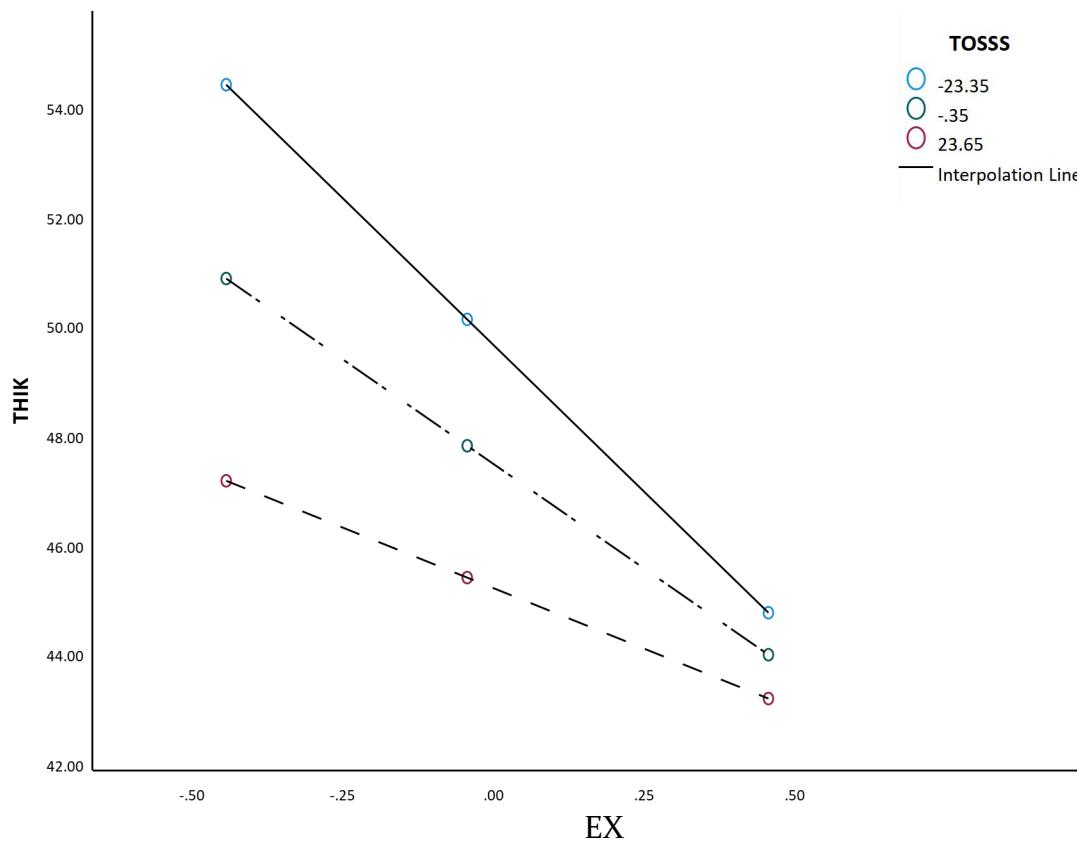


Figure 1 clearly shows that there is interaction effect among Extroversion, Online Social Support and Hikikomori

Figure 2: *Interaction effect among variables Personality Trait, Conscientiousness, Online Social support, Hikikomori.*

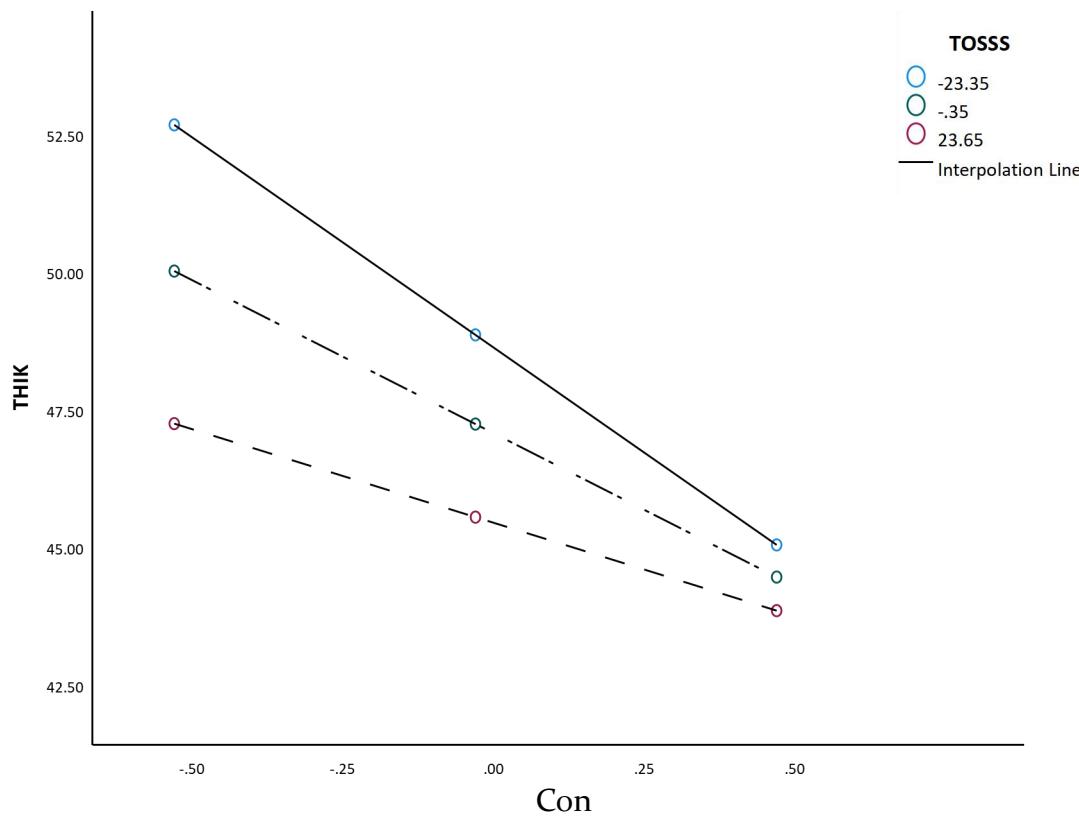


Figure 2 clearly shows that there is interaction effect among Conscientiousness, Online Social Support and Hikikomori

Table 5.7: Independent Samples t-Test for Gender Differences in Hikikomori Symptoms and Online Social Support (N = 407)

Variables	Groups		95% CI for Mean Difference							
	Male	Female	M	SD	M	SD	Lower	Upper	P	t
Hikikomori	48.95	15.58	46.66	15.97	-5.38	0.80	.147	-1.46		
Emotional Support	21.41	9.86	23.81	7.97	0.67	4.14	.007	2.72		
Social Support	21.12	8.17	21.81	8.03	-0.89	2.28	0.391	0.86		
Informational Support	20.56	7.83	21.80	8.87	-0.41	2.89	1.40	1.48		
Instrumental Support	19.04	8.68	18.73	8.54	-2.00	1.38	.717	-0.36		
Total Online Support	82.13	28.31	86.16	26.80	-1.36	9.41	.143	1.47		

Above table 5.7 shows that the significant gender differences were found in perceived stress and emotional support, with females reporting higher levels than males. No significant gender differences emerged in hikikomori, social support, informational support, instrumental support, or online support, indicating similar experiences across genders in these areas.

Table 5.8: Independent Samples t-Test for Gender Differences in HEXACO Personality Traits (N = 407)

Traits	Group		95% CI for Mean Difference							
	Male	Female	M	SD	M	SD	Lower	Upper	P	t
Honesty-Humility	3.10	0.51	3.16	0.49	-0.05	0.16	.280	1.08		
Emotionality	3.05	0.51	3.26	0.65	0.09	0.33	<.001	3.57		
Extraversion	3.04	0.56	3.11	0.60	-0.20	0.01	.072	-1.81		
Agreeableness	2.62	0.60	2.64	0.49	-0.01	0.06	.231	1.20		
Conscientiousness	3.10	0.50	3.24	0.50	-0.14	0.22	.674	0.42		
Openness to Experience	3.10	0.50	3.24	0.50	0.05	0.31	.005	2.80		

Table 5.9 shows that the significant gender differences were observed in emotionality and openness to experience, with females scoring higher than males on both traits. No significant gender differences were found for honesty-humility, extraversion, agreeableness, or conscientiousness, suggesting these personality traits are relatively consistent across genders.

DISCUSSION

The present study investigated how personality traits influence hikikomori tendencies among emerging adults in Pakistan, with a particular focus on the moderating roles of online social support (OSS) and gender. Emerging adulthood, a stage marked by identity exploration, academic pressures, and increasing autonomy, often makes individuals vulnerable to withdrawal as a coping mechanism (Arnett, 2000). Although hikikomori originated in Japan, similar withdrawal behaviors have been observed globally, including in South Asia (Kato et al., 2019; Teo et al., 2015). In Pakistan, the collectivistic culture emphasizes family interdependence and social conformity, influencing how withdrawal is expressed and psychological distress is managed (Triandis, 1995; Rao et al., 2021). Furthermore, the widespread use of digital communication complicates the boundary between adaptive solitude and maladaptive disengagement (Norasakkunkit et al., 2012).

The first hypothesis predicted that personality traits would significantly predict hikikomori tendencies, and regression analysis supported this. Extraversion, Conscientiousness, and Openness to Experience were found to negatively predict social withdrawal. Participants with low levels of these traits exhibited more hikikomori behaviors, consistent with previous research linking low extraversion and conscientiousness to social avoidance (Teo et al., 2018; Kim & Lee, 2019). Trait Activation Theory (Tett & Burnett, 2003) suggests that personality traits influence behavior depending on contextual factors. In Pakistan's collectivistic culture, individuals with higher Extraversion and Conscientiousness remain socially engaged and task-oriented, which reduces the likelihood of withdrawal. Openness to Experience, reflecting curiosity and adaptability, encourages social engagement rather than retreating into isolation (Lee & Ashton, 2018; Mercado et al., 2023). However, Honesty-Humility, Agreeableness, and Emotionality did not significantly predict hikikomori tendencies, possibly due to the buffering effects of family cohesion, communal support, and religious norms (Ashton & Lee, 2007; Akram & Malik, 2020).

The second hypothesis predicted that all personality traits, except Emotionality, would negatively correlate with hikikomori tendencies. This hypothesis was partially supported: Extraversion, Conscientiousness, and Openness to Experience showed negative associations with hikikomori, while Emotionality, Agreeableness, and Honesty-Humility were not

significant predictors. Extraversion, linked to sociability and positive affect, and Conscientiousness, associated with self-discipline and organization, were found to be particularly protective in collectivistic settings like Pakistan, where social connectedness and family obligations are emphasized (Qadir et al., 2013; Kim & Lee, 2019). Openness to Experience facilitates engagement with new opportunities, supporting social and academic participation (Lee & Ashton, 2018). The lack of significance for Emotionality suggests that strong family support and communal coping mechanisms buffer stress sensitivity, thus preventing emotional reactivity from leading to withdrawal (Triandis, 1995; Arshad & Aftab, 2020).

The third hypothesis proposed that OSS would moderate the relationship between personality traits and hikikomori tendencies. The results partially supported this: OSS significantly moderated the relationships between Extraversion and Conscientiousness with social withdrawal, but not Openness to Experience. Individuals low in Extraversion or Conscientiousness were less likely to withdraw when perceiving high levels of online support, which aligns with Compensatory Internet Use Theory (Kardfelt-Winther, 2014). OSS provides a socially safe environment, offering emotional support and structure that can buffer vulnerable traits. In Pakistan, where cultural norms may limit spontaneous socialization, online spaces offer meaningful alternatives for emotional connection (Arshad & Aftab, 2020; Lee et al., 2020). The lack of moderation for Openness to experience may indicate that individuals less inclined toward novelty or emotional exploration may not benefit as much from online interactions (Soytürk & Akdeniz, 2023).

The last hypothesis suggested gender differences in personality traits, OSS, and hikikomori tendencies. Partial support was found: females reported higher levels of Emotionality, Openness, and emotional online support, reflecting gendered socialization that emphasizes relational awareness, empathy, and curiosity (Eagly & Wood, 2013; Schmitt et al., 2017). However, no significant gender differences were found in overall hikikomori tendencies, total OSS, or other personality traits. This suggests that the risk of withdrawal is similar across genders in the current sociocultural context, contrasting with findings from East Asia and Europe, where males tend to exhibit higher levels of withdrawal (Kato et al., 2019). The buffering effects of family interdependence and shared academic and digital pressures may help mitigate extreme isolation across genders (Triandis, 1995; Mushtaq & de Visser, 2023).

CONCLUSION

This study examined how personality traits and online social support relate to hikikomori tendencies among emerging adults in Pakistan. Results indicated that lower Extraversion, Conscientiousness, and Openness to Experience were linked to higher social withdrawal, suggesting that reduced sociability, limited goal-directed behavior, and rigidity increase vulnerability to disengagement. Online social support helped buffer these effects, particularly for those with lower sociability or organization, highlighting the potential of digital networks to provide meaningful emotional connection. While gender differences appeared in personality traits and perceived emotional support, hikikomori tendencies were similar across males and females, indicating that withdrawal risks are shared in Pakistan's sociocultural context.

IMPLICATIONS

These findings highlight the role of stable personality traits in predisposing individuals to social withdrawal. Extraversion, Conscientiousness, and Openness to Experience emerged as protective traits, while online social support acted as a moderator. The study expands our

understanding of hikikomori as a global phenomenon, linking personality, digital access, and cultural context beyond East Asia.

Clinical practice could benefit from personality-informed interventions, such as structured social exposure, group-based activities, and gradual behavioral activation. Educational institutions should consider early screening for withdrawal tendencies, provide psychoeducation on digital well-being, and encourage meaningful in-person interactions. Policy initiatives should focus on creating youth-friendly online spaces, promoting mental health awareness, and integrating psychological support into educational settings. Gender-sensitive strategies are needed, as women may benefit more from emotional online support, while men may need encouragement to express distress and seek help.

The interplay between collectivistic family structures and the growing influence of digital communication shapes social behavior. Online platforms provide adaptive spaces for emotional expression, particularly where offline autonomy is limited. However, excessive reliance on digital connections may deepen withdrawal, highlighting the need for culturally sensitive interventions that foster relationships both online and offline.

LIMITATIONS

1. **Cross-sectional design:** Limits causal inference; longitudinal studies are needed to clarify directionality.
2. **Sample bias:** Primarily university students; findings may not generalize to employed, unemployed, or non-student young adults.
3. **Marital status:** Most participants were single; relational networks may influence withdrawal and support.
4. **Field representation:** Uneven distribution across academic disciplines may affect generalizability.
5. **Self-report bias:** Cultural stigma may have influenced responses; multi-method approaches could improve accuracy.
6. **Brief HEXACO inventory:** Certain subscales had lower reliability; culturally adapted tools may better capture personality expressions.

Recommendations for Future Research

- 1) Conduct longitudinal studies to track changes in personality, social support, and withdrawal tendencies over time.
- 2) Expand the sample to include individuals from diverse educational, occupational, and socio-economic backgrounds.
- 3) Examine the influence of marital and relationship status on withdrawal and online support reliance.
- 4) Investigate differences across academic or professional fields to identify context-specific vulnerabilities.
- 5) Employ mixed-method approaches to capture cultural, emotional, and experiential nuances.
- 6) Test personality-informed interventions, structured online peer support systems, and hybrid engagement programs to reduce withdrawal tendencies.

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