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Data Analysis Report on the Relationship Between MBTI and the Use of Adolescent Problematic Social Networks

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Abstract. This study uses 1,125 junior high school, high school, and university/vocational school teenagers as subjects for a questionnaire survey, complemented by in-depth interviews with 6 teenagers of different MBTI types. A scale was compiled based on the 5-point scoring method, the Social Media Disorder (SMD) scale, and the six-element model of Griffiths' addiction to explore the association between MBTI personality and the use of problematic social networks among teenagers. The report is developed from five aspects: the basic characteristics of the research sample, the current situation of problematic social network use, the relationship between MBTI personality and online social behaviour, core problem analysis, and solution strategies. The results indicate that the adolescents in this survey are generally in the range of normal use of online social networking; however, unconscious use and addiction that delays learning or sleep are prominent potential problems. Gender, school segment, and MBTI personality interaction significantly affect the use of problematic social networks, with female students, junior high school students, and introverted and emotional adolescents at higher risk. The four dimensions of MBTI have a significant impact on online social behaviour and problematic use tendency, and demographic variables further regulate the effect. The use of adolescent problematic social networks is the result of the joint role of personality, self-control, external inducers, and demographic characteristics, which necessitates accurate intervention strategies based on gender, school segment, and personality.

Keywords: MBTI personality, problematic social network use, adolescents, addiction, intervention strategy

1. Introduction

With the popularity of mobile Internet and social platforms, the use of social networks by teenagers continues to rise, and the use of problematic social networks has become a global public health problem. Problematic Social Media Use refers to the behavioural addiction tendency of individuals due to excessive and out-of-control use of social networks, resulting in negative consequences such as academic impairment, emotional disorder, and social withdrawal from reality. Teenagers' physical and mental development is immature, their self-control ability is weak, and they are more likely to fall into online social dependence, which leads to the risk of addiction [1].

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Personality traits are the core intrinsic factors that affect the behaviour of individuals in network use. Among them, MBTI personality theory divides personality types into four dimensions: introvert/extrovert (I/E), feeling/intuition (S/N), thinking/emotion (T/F), and judgement/perception (J/P), which are widely applied to research in social behaviour, behavioural decision-making, and other fields [2]. Existing research confirms that personality traits are significantly related to problematic network use, and there are obvious differences in network use motivations and behaviour patterns of different personality types [3].

Currently, the academic community is focusing more on the relationship between the Big Five personality traits and Internet addiction. There is a lack of localised empirical research on the use of MBTI personality and adolescent problem social networks, and there is a lack of systematic analysis combining quantitative data and qualitative interviews. Based on this, this study raises the core question: how do the four personality dimensions of MBTI affect the tendency of teenagers to use problematic social networks? What are the differences between the characteristics of online social behaviour and the risk of addiction for different personality types? It aims to reveal the correlation mechanism between personality traits and the use of problematic social networks and provide support for precise intervention.

2. Literature review

The SMD scale was developed by Lemmens and others, with a total of 9 questions and a one-dimensional structure, which is used to measure the tendency of teenagers to be addicted to social networks. The Chinese version has been verified cross-culturally, with Cronbach's $\alpha = 0.753$, demonstrating good credibility [4]. The six-element model is the core theory of behavioural addiction, which is widely used in the study of social network addiction [4]. Griffiths proposed a 'components' model of addiction within a biopsychosocial framework, identifying salience, mood modification, tolerance, withdrawal symptoms, conflict, and relapse as the six core components of behavioural addiction [5].

Previous studies have established that personality traits are significantly associated with problematic Internet and social media use [3, 6]. Andreassen et al. examined the relationship between addictive use of social media and video games and symptoms of psychiatric disorders in a large-scale cross-sectional study, finding that certain personality characteristics were associated with higher addiction risk [6]. However, the existing literature predominantly focuses on the Big Five personality model, with limited attention given to the MBTI framework in the context of adolescent social network use. This study seeks to address this gap by providing a systematic, mixed-methods analysis of MBTI personality dimensions and their relationship with problematic social network use among adolescents.

3. Methodology

3.1. Subjects

There is a total of 1,125 people in this effective survey sample. Among them, 628 are women, accounting for 55.82%; 497 are men, accounting for 44.18%. The sample includes 433 junior high school students (38.49%), 333 high school students (29.60%), and 359 college/vocational school students (31.91%).

DOI: 10.54254/2753-7048/2026.34588

3.2. Tools

3.2.1. MBTI personality scale

The MBTI was jointly developed by American psychologist Katharine Cook Briggs and her daughter Isabel Briggs Myers, based on Carl Jung's theory of psychological types. The Chinese version was translated and revised by Cai Huajian, Zhu Zhenwen, and Yang Zhiliang [2]. This study adopts a standardised MBTI personality scale to divide participants into four dimensions: introvert/extrovert (I/E), feeling/intuition (S/N), thinking/emotion (T/F), and judgement/perception (J/P), yielding 16 personality types. This study selects ISFP, ESTP, ESFJ, ISTJ, INFJ, and other typical types for analysis.

3.2.2. The usage scale of problematic social networks

Based on the SMD scale, this study combines the six-factor model of Griffiths addiction (salience, mood modification, tolerance, withdrawal symptoms, conflict, and relapse) to compile a scale [4, 5].

• Compilation basis: The SMD scale is developed by Lemmens and others, with a total of 9 questions and a one-dimensional structure, which is used to measure the tendency of teenagers to be addicted to social networks. The Chinese version has been verified cross-culturally. Cronbach's α=0.753, with good credibility(Griffiths,2005). The six-element model is the core theory of behavioural addiction, which is widely used in the study of social network addiction.

• Scale structure: there are 6 dimensions in total, which are addiction behaviour, unconscious use, withdrawal response, withdrawal failure, emotional dependence, and image camouflage, which correspond to the core connotation of the six elements of addiction.

• Scoring method: adopt the 1-5-point scoring method (1 = completely inconsistent, 5 = relatively consistent), the total score is 6-30 points; the higher the score, the more serious the tendency to problematic use.

• Grading criteria: 6-14 points = normal use; 15-22 points = tendency problem use; 23-30 points = highly problematic use.

• Reliability index: Cronbach's α=0.826 on the scale in this study has good internal consistency.

4. Results

4.1. MBTI personality descriptive analysis

In this survey of 1,125 teenagers, 628 were women (55.82%), and 497 were men (44.18%). The sample included 433 junior high school students (38.49%), 333 high school students (29.60%), and 359 college/vocational school students (31.91%), covering all 16 personality types of MBTI, of which the higher proportions are: ISFP, ISTJ, INFJ, ESTP, and ESFJ. Judging from the four dimensions, introvert (I) accounted for 52.1% (586 people), and extrovert (E) accounted for 47.9% (539 people). The distribution of sensory type (S) and intuition type (N), thinking type (T) and emotional type (F), and judgement type (J) and perception type (P) was relatively balanced. Figure 1: MBTI type percentage.

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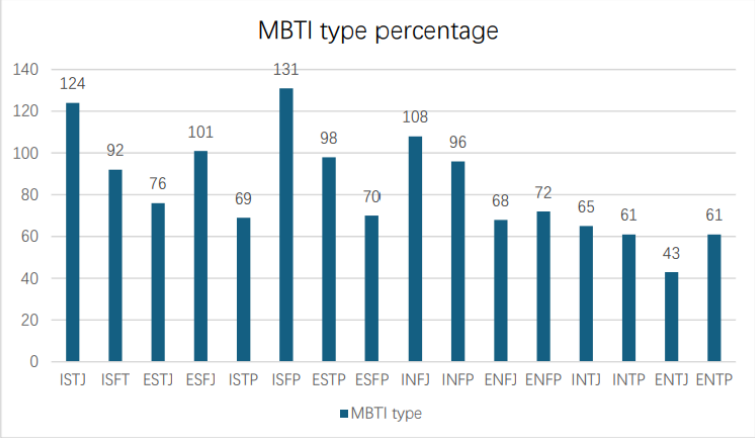

Figure 1. This chart presents the distribution of MBTI (Myers–Briggs Type Indicator) personality types among a sampled group. Each type is shown with its corresponding count (frequency), reflecting how many individuals in the sample fall into each of the 16 personality categories

4.2. Problematic social network usage score and grouping

The research uses the six dimensions of addiction behaviour, unconscious use, withdrawal reaction, withdrawal failure, emotional dependence, and image camouflage, using the 1-5 scoring method (1 = completely inconsistent, 5 = relatively consistent) to measure problematic use behaviour [7]. The average score of each dimension is in the range of 1-2 points. The overall score does not meet the standard for the use of tendency problems, but some dimensions show potential problems. The specific data are as follows:

- Normal use group (6-14 points): 962 people, accounting for 85.5%;
- Tendency problem uses group (15-22 points): 138 people, accounting for 12.3%;
- Highly problematic use group (23-30 points): 25 people, accounting for 2.2%. Figure 2. Percentage of users of problematic social networks

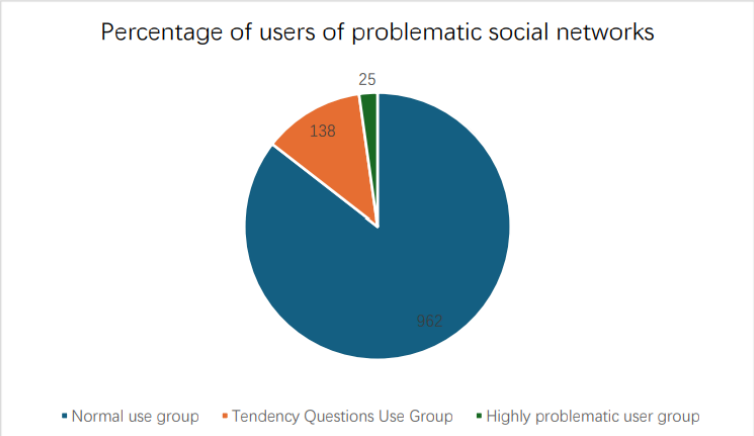

Figure 2. The percentage distribution of different user groups in the total sample (%). Normal users account for the absolute majority, while the proportion of highly problematic users is the lowest

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4.3. Comparison of problematic social network use in different MBTI groups

Table 1. Comparison of problematic social network use scores by MBTI dimension

Dimension	Type	Number	Average score	F value	p value
Energy dimension	Introverted	586	9.26	41.32	0.000
	Extroverted	539	7.68		
Cognitive dimension	Sense	572	8.53	0.69	0.406
	Intuition	553	8.42		
Decision-making dimension	Thinking	541	7.71	38.75	0.000
	Feeling	584	9.23		
Way of life	Judgement	563	8.51	0.21	0.647

The results of group comparison show:

1. The score of introverts (I) is significantly higher than that of extroverts (E). Type I is more prone to unconscious use, emotional dependence, and withdrawal anxiety, which is consistent with the conclusions of existing studies.

2. The emotional type (F) score is significantly higher than the thinking type (T). The F type is more sensitive to other people's evaluations and is more likely to have emotional consumption.

3. There is no significant difference in the total score of judgment (J) and perception (P), but J is more willing to make rules, which are difficult to implement, and anxiety is stronger after withdrawal.

4. There is no significant difference in the total score of the sensory type (S) and intuitive type (N). Type S is more likely to be addicted to instant entertainment content, and type N is more inclined to online self-expression.

4.4. Analysis of demographic variable differences and interactions

Table 2. Comparison of problematic social network use scores by demographic variables

Divided into groups	Number	Average score	Salience(P)
Gender			<0.05
Male	497	7.92	
Female	628	8.93	
School section			<0.01
Junior high school	433	9.15	
High school	333	8.36	
University/Vocational School	359	7.82	

1. Gender differences

The score of female teenagers' problem-related social network use is significantly higher than that of men. Women are more prone to emotional dependence, express anxiety, and engage in unconscious use. Because women's emotional type (F) accounts for a higher proportion, they are more sensitive to online social evaluation, and emotional consumption is stronger.

2. Differences in school sections

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Score: junior high school > senior high school > university / vocational school, the lower the grade, the higher the score, and the higher the risk of problematic use.

Reason: Junior high school students' self-control is weaker, and the demand for online social compensation is stronger; college students' independent management ability is improved, and real socialization is richer.

4.5. Interaction effect of MBTI personality and demographic variables

Table 3. Interaction effects between MBTI dimensions and demographic variables

Interactive items	F value	p value
Gender × I/E	8.61	0.003
School selection × J/P	6.34	0.012
Gender × T/F	10.27	0.001

1. Gender × I/E dimensional interaction

Introverted women have the highest score (9.78), and extroverted men have the lowest score (7.21); introverted women rely more on online emotional catharsis, and extroverted men's online social networking is more entertainment-oriented, and their withdrawal reaction is weaker.

2. Section × J/P dimensional interaction

The judgment (J) score of junior high school students is significantly higher than that of the perception type (P). Junior high school students have poor rule enforcement and a stronger sense of self-blame; there is no significant difference in the J/P score of college/vocational students.

3. Gender × T/F dimension interaction

Emotional women have the highest score (9.65), and thinking men have the lowest score (7.33); emotional women are more sensitive to online conflicts and other people's comments, and thinking men are more rational and less emotional.

4.6. Core summary of quantitative findings

The unconscious use behaviour of teenagers in online social networking has the highest score, which has become the most prominent potential problem, reflecting that some teenagers have formed an inertia in the use of social software and decreased behavioural autonomy. Addiction that delays learning or sleep and withdrawal anxiety followed closely, reflecting the interference of social networks on the rhythm of teenagers' daily life and the initial withdrawal reaction. The low scores for emotional dependence and image camouflage show that most teenagers have not yet used online social networking as the only emotional catharsis channel, and the difference between online image and real image is more acceptable, with a low degree of social anxiety.

Judging from the total score range of the scale (6–30 points), the overall average score of this survey sample is 8.48 points, which is in the normal use range of 6–14 points, but some individual scores are high, in the range of 15–22 points for tendency problems or even 23–30 points for serious problems.

In addition to the core questions, the questionnaire also investigated the preferences, conflict handling, expression habits, and core needs of teenagers' online social networking, providing behavioural support for the subsequent MBTI correlation analysis:

(1) Social content preferences: 51.29% of teenagers tend to explore small circles of interest in depth and communicate with like-minded individuals; 48.71% like to pay extensive attention to hot

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spots and watch short videos. Teenagers' online social networking presents the characteristics of "niche deep cultivation" and "popularization" coexisting.

(2) Conflict handling: 58.49% of teenagers care more about reason and logic; if they find something unreasonable, they will directly blacklist the other party; 41.51% care about the other party's emotions and relationships, and they are easily hurt.

(3) Expression habits: 71.38% of teenagers will repeatedly consider online expression, taking a long time to send it out; only 28.62% will publish quickly by feeling, which reflects that teenagers have obvious concerns about expression in online social networking and are highly sensitive to the evaluation of others.

(4) Core social needs: 53.96% of teenagers believe that the core role of social networks is to express unspeakable true ideas in reality, and 46.04% believe that it is to obtain external information and observe other people's lives, which shows that self-expression is the primary need of teenagers' online socialization, and the Internet has become a "supplement to the expression of reality" channel.

4.7. Analysis of qualitative results

This semi-structured interview includes a total of 6 teenagers, covering ISFP, ESTP, ESFJ, ISTJ, INFJ, and other typical MBTI types. Combined with the overall behavioural characteristics of teenagers' online socialization in the questionnaire, the MBTI personality dimensions have a significantly differentiated impact on teenagers' online social behaviour and problematic use tendencies. The specific correlation analysis is as follows:

(1) Introverted / Extraverted (I/E): Compensatory use vs. continuous use. Introverted (I) individuals are introverted and sensitive in reality, more open and confident on the Internet, using the Internet as an emotional outlet and expression compensation; they are more likely to unconsciously swipe the screen, rely on mobile phones at night, want to control but cannot control usage, and are more anxious and irritable after withdrawal. Extroverted (E) individuals view the Internet as an extension of real social networking, with small personality contrast; they prefer interactive content (chat, games), which makes it easy to delay time due to entertainment, but the negative emotions are weaker when they cannot use the Internet.

(2) Thinking / Emotion (T/F): Differences in conflict handling and expression habits. Thinking type (T) individuals deal with network conflicts focusing on logic, talking about right and wrong, are accustomed to blacklisting or cold handling, and are insensitive to external comments such as likes and comments, with less emotional consumption. Emotionally type (F) individuals care more about the relationship and the feelings of others, repeatedly consider the content when posting, are afraid of making mistakes, are anxious without receiving likes, and are more likely to get hurt when encountering conflicts.

(3) Feeling / Intuition (S/N): Difference in content preference. Feeling type (S) individuals like short videos, games, and other specific, instant, and enjoyable content, focus on small circles of interests, and do not like long expressions. Intuitive type (N) individuals like to express opinions, share feelings, shape the online image, and prefer to say things online that they dare not say.

(4) Judgement / Perception (J/P): Differences between rule awareness and self-control. Judgement type (J) individuals have a strong will to set rules, but execution is poor, and they are more likely to blame themselves and be irritable when they cannot adhere to the rules. Perception type (P) individuals do not like strict rules, use social media more casually, have higher acceptance of overtime use, and lower anxiety.

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5. Discussion

5.1. Analysis of the core problems of the use of problematic social networks among teenagers

(1) Mismatch between personality and behaviour. Because of the shyness and sensitivity of real socializing, introverted teenagers take the Internet as the only channel for expression and emotional catharsis, which can lead to form compensatory emotional dependence and behavioural addiction. Because of the interactive fun of online socializing, extroverted teenagers continue the enthusiasm of real socializing on the Internet, and it is easy to lose control of time management. Both personalities form different types of problematic usage tendencies due to the "functional adaptability of online social networking" [6].

(2) Self-control ability is generally weak, and it is difficult to implement the sense of rules. Regardless of the type of MBTI, teenagers show the characteristics of "poor self-control." Even if they have the will to set rules for the use of social networks, it is difficult to really adhere to them. This is related to the immature self-restraint ability of adolescents in the physical and mental development stage, and the MBTI personality only affects the "willingness to set rules" and does not change the result of the failure of the execution of the rule.

(3) Evaluation anxiety expressed on the Internet and double standardization of self-awareness. The questionnaire data showed that 71.38% of teenagers repeatedly considered online expression. Most teenagers in the interview (especially introverts) have "double standardization of online personality and real self." This double standardization can easily lead to confusion of teenagers' self-awareness, and the high sensitivity to online evaluation further aggravates the behavioural concerns of online socialization.

(4) The instant enjoyment of online social networking weakens the sense of participation in real life. Short videos, games, instant chats, and other instant enjoyment features of social software form a strong attraction for teenagers. For example, ESTP individuals reported "swiping mobile phones for half a day," and ESFJ individuals reported "swiping videos on social software," resulting in the weakening of teenagers' sense of participation in real life, and the normal rhythm of life, such as learning and routine, is disrupted. This is an external trigger for problematic use [4].

(5) The risk of amplifying demographic variables and personality superposition. Low school section (junior high school) combined with introverted and emotional personality characteristics represents the highest risk group for using problematic social networks; gender, school segment, and personality interaction significantly affect addiction tendency.

5.2. Strategies for solving the use of adolescent problematic social networks based on MBTI personality and demographic variables

5.2.1. Gender, school section, and MBTI personality differentiation intervention

(1) By gender: For women, the intervention should focus on guiding emotional dependence and evaluation anxiety and improving the decisiveness of online expression. For men, intervention should strengthen time management and reduce entertainment addiction.

(2) By school section: For junior high school students, the youth model should be strictly implemented, with high-frequency supervision by parents, to cultivate basic self-control. For high school students, the focus should be on balancing study and online socializing and guiding reasonable time planning. For college/vocational students, the approach should be primarily self-management, encouraging offline social expansion.

DOI: 10.54254/2753-7048/2026.34588

5.2.2. Differentiated guidance strategies for different MBTI personalities

(1) Introvert (I): Weaken "network compensatory socialization" and enhance the sense of security of real socializing. Encourage participation in offline niche interest socialization and reduce emotional dependence on the Internet; guide them to face the difference between the Internet and the real self and reduce evaluation anxiety; guide them to gradually transform online expression into real expression. Extrovert (E): Standardize the "continuity of online social networking" and strengthen the awareness of time management. Cultivate time management awareness through check-in challenges, small rewards, and other methods; guide them to transfer online social enthusiasm to offline collective activities; use mobile phone isolation, time reminders, and other methods to standardize network use behaviour.

(2) Thinking type (T) and emotional type (F): For the thinking type (T), guide them to increase emotional perception, learn the conflict handling method of "rational expression + moderate sympathy," and avoid the breakdown of interpersonal relationships. For the emotional type (F), guide them to accept the different opinions of others, reduce evaluation anxiety, improve the decisiveness of expression, and avoid social internal consumption.

(3) Judgement type (J) and perception type (P): For the judgement type (J), set clear and quantifiable network usage rules, with family/friends' check-in supervision, and improve the rule execution rate. For the perception type (P), set a vague and flexible usage bottom line, avoid strict rules causing resistance, and guide autonomous control through positive motivation.

5.2.3. Improve the overall self-control ability of teenagers and strengthen the sense of participation in real life

(1) The school should offer online social self-control training courses to teach practical skills of time management, emotional regulation, and online expression through scenario simulation and case analysis.

(2) In the family setting, parents should set an example to reduce the time spent using mobile phones, carry out more offline parent-child activities, give teenagers enough emotional companionship, and reduce their online emotional needs.

(3) Encourage teenagers to participate in offline interest classes, clubs, and volunteer activities, enrich real experiences, let them gain a sense of accomplishment and belonging, and weaken the attractiveness of the Internet.

5.2.4. Platform and social level: Optimize the network environment and protect teenagers

(1) Platform: Improve the youth mode, limit the usage time, block harmful content, and reduce the algorithmic recommendation of infinite scrolling features such as short videos and game pop-ups.

(2) Society: Promote the concept of "online social networking is a tool, not the whole of life" through media and public service advertisements, guide teenagers to establish a correct view of online social networking and clarify the complementary relationship between online and real social networking.

6. Conclusion

The adolescents in this survey are generally in the range of normal use of online social networking, but unconscious use and addiction that delays learning or sleep are prominent potential problems.

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Gender, school segment, and MBTI personality interaction significantly affect the use of problematic social networks, and women, junior high school students, and introverted and emotional adolescents are at higher risk. The four dimensions of MBTI have a significant impact on online social behaviour and problematic use tendency, and demographic variables further regulate the effect. The use of adolescent problematic social networks is the result of the joint role of personality, self-control, external inducers, and demographic characteristics, which necessitates accurate intervention strategies based on gender, school segment, and personality.

Future research should consider longitudinal designs to examine causal relationships between personality dimensions and problematic social network use over time. Additionally, larger and more diverse samples would enhance the generalizability of these findings.

References

[1] Van Den Eijnden, R. J., Lemmens, J. S., & Valkenburg, P. M. (2016). The social media disorder scale. Computers in Human Behavior, 61, 478–487.
[2] Cai Huajian, Zhu Zhenwen, & Yang Zhiliang. (2001). Preliminary revision of the Mental Type Scale (MBTI). Applied Psychology, 7(2), 33–37.
[3] Griffiths, M. D., Kuss, D. J., & Demetrovics, Z. (2014). Social networking addiction: An overview of preliminary findings. Behavioral Addictions, 119–141.
[4] Griffiths, M. (2005). A 'components' model of addiction within a biopsychosocial framework. Journal of Substance Use, 10(4), 191–197.
[5] Andreassen, C. S., Billieux, J., Griffiths, M. D., Kuss, D. J., Demetrovics, Z., Mazzoni, E., & Pallesen, S. (2016). The relationship between addictive use of social media and video games and symptoms of psychiatric disorders: A large-scale cross-sectional study. Psychology of Addictive Behaviors, 30(2), 252–262.
[6] Kuss, D. J., & Griffiths, M. D. (2017). Social networking sites and addiction: Ten lessons learned. International Journal of Environmental Research and Public Health, 14(3), 311.
[7] Lemmens, J. S., Valkenburg, P. M., & Gentile, D. A. (2015). The Internet Gaming Disorder Scale. Psychological Assessment, 27(2), 567–582.

Appendix

MBTI Personality Types Covered in This Study

The 16 personality types of MBTI are formed by the combination of the four dichotomous dimensions: Introversion/Extraversion (I/E), Sensing/Intuition (S/N), Thinking/Feeling (T/F), and Judging/Perceiving (J/P). The typical types selected for in-depth analysis in this study include ISFP, ESTP, ESFJ, ISTJ, and INFJ, which represent diverse combinations across the four dimensions.