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Understanding Second Language Performance: The Significance of Personality Type Among Learners

[1]Rizky Phalosa Ady, [1]*Zaqiatul Mardiah
[1]Department of Arabic Language and Culture, Al Azhar University of Indonesia, South Jakarta, Indonesia.

*Corresponding Author e-mail: zaqiah@uai.ac.id

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Abstract

According to studies, MBTI personality types exhibit different cognitive function preferences, where a strong inclination towards certain traits can influence how well individuals receive and process information. This is related to intelligence and problem-solving abilities, including the impact on foreign language learning. Understanding the role of personality traits in language learning can significantly enhance educational strategies. Despite growing interest in personalized education, the influence of personality on language acquisition remains underexplored, particularly for Arabic learners. Our research examines the impact of the MBTI personality dimensions of introversion and intuition on Arabic language performance as a second language among Indonesian students. We studied 53 college students majoring in Arabic language-related fields. Using the Myers-Briggs Type Indicator (MBTI) and an Arabic language proficiency test, we conducted data analysis through multiple linear regression, ensuring robustness with assumption tests for residual normality, multicollinearity, and heteroscedasticity. The results indicated that the introversion and intuition dimensions of the MBTI did not significantly affect Arabic language performance (F-test: Sig. 0.696 > 0.05 and t-test 0.411, 0.754 > 0.05). These findings suggest that introversion and intuition may not be critical factors in Arabic L2 proficiency. This research provides insights for the development of Arabic language teaching programs, emphasizing that factors other than personality may play a more significant role in language performance. However, the complex relationship between personality and language learning warrants further investigation to fully understand the dynamics at play.

Keywords: Introversion; Intuition; Cognitive function; Language learning; Arabic language performance

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INTRODUCTION

The correlation between personality, cognitive preferences, and language learning constitutes a fascinating intersection within psychological research. Previous studies have provided substantial evidence linking specific personality traits and cognitive functions to variations in language performance (Kaufman et al., 1996; Wenke et al., 2004). Kaufman et al.'s examination of MBTI types in relation to intelligence, particularly the intuitive (N) dimension, demonstrated a compelling association between cognitive preferences and higher composite IQ scores. This finding underscores the connection between cognitive processing styles, as outlined by the MBTI, and the cognitive demands inherent in language tasks. Furthermore, Wenke et al.'s study on problem-solving and intelligence supports the idea that how people process information, as determined by their cognitive preferences, has a substantial impact on their language-related abilities.

This web of connections between personality, cognitive preferences, and language unfolds against the backdrop of individual differences encapsulated in personality types. Myers-Briggs Type Indicator (MBTI) emerges as a key framework illuminating the specific personality traits and cognitive functions that contribute to the nuanced landscape of language performance. In personality typology, the MBTI (Myers-Briggs Type Indicator) is a tool designed to reveal someone's personality, which has sixteen types of personality. Each type has its own combination of traits about the way a person perceives and processes information.

Jung's cognitive function theory, which is the basis of the MBTI foundation, says that humans have different ways of receiving and processing information. C.G. Jung divided cognitive functions into four categories: thinking/feeling and sensing/intuition (Blutner & Hochnadel, 2010), and each of those is divided into two attitude categories: extrovert/introvert (Myers et al., 1998) MBTI proposed 16 personality types (INTJ. INTP. ENTJ. ENTP. INFJ. INFP. ENFJ. ENFP. ISTJ. ISFJ. ESTJ. ESFJ. ISTJ. ISFP. ESTP. ESFP.), which are composed of four-letter codes that sequentially represent attitude preferences: introversion (I)/extroversion (E), perception function preferences; sensing (S)/intuition (N), judgment function preferences; thinking (T)/feeling (F), and lifestyle preferences; judging (J)/perceiving (P).

Each of the MBTI types can be parsed by the four function stacks sequentially (Dominant, Auxiliary, Tertiary, and Inferior) made by John Beebe's on his eight cognitive function model (Mahoney, 2018): Fi (introverted feeling), Fe (extroverted feeling), Ti (introverted thinking), Te (extroverted thinking), Ni (introverted intuition), Ne (extroverted intuition), Si (introverted sensing), and Se (extroverted sensing). For example, an INTP has an arranged function stack of Ti (Dominant), Ne (Auxiliary), Fi (Tertiary), and Se (Inferior). The function stack sequentially describes the priority of how individuals use their cognitive functions, with dominant being the most natural and commonly used and inferior being the least used (Jung, 1971). The Function Stack is useful for helping to recognize personal characteristics in three dimensions, especially in terms of strengths and weaknesses, which then become the reason for the results of how a person accepts, processes and makes decisions about the situation at hand (Jingwen, 2019).

In the context of problem solving, differences in the arrangement of cognitive function preferences in each personality type will have an impact on differences in how quickly he analyzes information, how far he is in understanding a problem, and how well he solves the problem (Okike & Amoo, 2014). According to Wenke et al. (2004) in their scientific research in the field of cognitive psychology entitled Complex problem solving and intelligence: Empirical relation and causal direction, problem solving is closely related to the level of individual intelligence. Wenke reasoned that problem-solving ability is often associated with various definitions of intelligence, which means that problem-solving is part of intelligence, and intelligence is also often used to predict individual problem-solving ability.

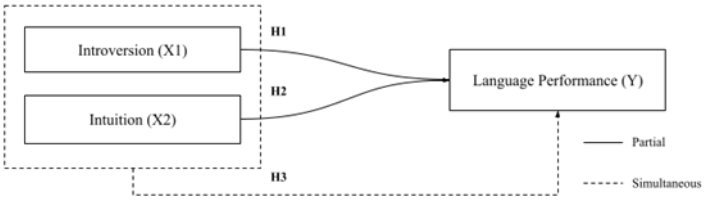
Numerous studies have explored the correlation between personality, cognitive preferences, and language (Chen et al., 2022; Dostálová, 2014; Esfandiari et al., 2017; Hassan & Hamid Abbas, 2020; Oki, 2019; Radić-Bojanić, 2020; Teimouri et al., 2022; Zirdum, 2018). One of the studies that provides strong evidence regarding the relationship between personality and intelligence is the observation conducted by analyzing MBTI types of 1,297 individuals in the United States using the standardized Kaufman Adolescent and Adult Intelligence Test (KAIT) (Kaufman et al., 1996). The results revealed that the N (intuitive) cognitive function in the MBTI sample showed a significantly higher composite IQ on the KAIT compared to the S (sensing) cognitive dimension. Similarly, studies in Pakistan have shown that individuals with preferences for introversion and

intuition tend to exhibit better performance in emotional intelligence (EI) compared to those with preferences for extroversion and sensing (Malik, 2014). Additionally, Sobkow et al. (2018a) also noted that Intuition is a multifaceted cognitive trait encompassing various processes, categorized into three types: Coherence & Insight, Implicit Learning, and Subjective Intuitive Abilities. Each type has distinct connections to intelligence and personality. The results of these studies raise questions about how the heightened intelligence associated with specific cognitive functions in MBTI can influence individuals' second language learning.

In line with the same hypothesis, as outlined in the book "Individual Differences in Second Language Learning" (Skehan, 2014), intelligence and personality are two of the five factors that influence language learning strategies and styles (talent, motivation, intelligence, personality, and age), which yield both linguistic (proficiency) and non-linguistic (affective) outcomes. A study conducted by Genesee (1976) on school students learning French as a second language showed a strong correlation between intelligence, language use, and reading in French as an L2. However, a study stated that listening and interpersonal skills had no correlation with intelligence. This research aligns with the findings of other studies in Uzbekistan, which indicate a close relationship between intelligence and language acquisition abilities that involve cognitive processes, including the learning of linguistic structures (Khamzayeva Fayzullayevna, 2021). Intelligence aids language learners in effectively and more rapidly mastering a language (Ellis, 2015). Similar studies conducted in Bangladesh have also proven that language communicative competence has a positive correlation with intelligence (Chowdhury, 2010). The relationship between intelligence and language proficiency in the context of specific personality types has also been observed and studied to demonstrate the existence of a correlation between the two. Another source indicating the tendency of higher intelligence in introversion over extroversion, as previously discussed in the introduction can also be seen from the findings of Altunel's et al. (2015) research, which suggests that introverts are more proficient than extroverts in the context of language learning by developing better cognitive academic ability. However, the correlation between MBTI personality types and language acquisition performance has, conversely, experienced challenges in substantiating their relationship in several other studies. A study conducted in Hong Kong, employing the MBTI and the SILL (Strategy Inventory for Language Learning) on a sample of 100 Hong Kong University students, failed to identify a direct influence between MBTI personality types, language learning strategies, and L2 acquisition ability (Sharp, 2009).

Previous research on the correlation between personality types and language performance in second language acquisition has primarily focused on English. However, there is a lack of specific observations exploring this correlation within the context of Arabic as a second language, particularly in Indonesia, where Arabic is widely studied as an international language after English in both formal and non-formal education settings.

Figure 1. Scheme of research variables relationship



In this study, it is assumed that introversion and intuitiveness have an influence on cognitive preference, and this cognitive preference, in turn, affects a person's language proficiency. By employing the same line of thinking, it can be hypothesized that introversion and intuitiveness have an indirect relationship with language performance. The illustration of this hypothesis is presented in Figure 1. Therefore, the hypotheses are as follows:

H1) Introversion partially has positive contributions to the Arabic language performance;

H2) Intuition has positive contributions to the Arabic language performance;

H3) Introversion and Intuition simultaneously contribute positively to the Arabic language performance.

Based on the three aforementioned hypotheses, the researcher has formulated the research questions in a more precise manner, as follows: Are there any significant partial effects of MBTI personality types, specifically introversion and intuition, on the performance of students in L2 Arabic? Additionally, are there any significant simultaneous effects of the combined MBTI personality type, introversion-intuition, on the performance of students in L2 Arabic? Finally, regardless of the significance, to what extent do the two variables influence L2 performance?

What makes this study new and unique is its specific focus on how the personality traits of introversion and intuition, as defined by the MBTI, affect learning Arabic as a second language. This area has not been studied much before. By exploring this, the research fills an important gap and offers new insights that can help develop better, more personalized Arabic language teaching methods for students.

RESEARCH METHOD

Research Design

In this study, we employed multiple linear regression analysis using IBM® SPSS® Statistics software with cross-sectional primary data, the questionnaire method, and the ordinary least squares technique to model the positive-negative correlation between two traits of MBTI personality types, namely introversion and intuition, on L2 Arabic language performance. The L2 Arabic language performance score served as the dependent variable, while the introversion type served as the first independent variable and the intuition type served as the second independent variable. The dependent variable was measured on an interval scale with a score scale of 70/70 of the language performance score, while the independent variables were numeric variables representing the tendency of the percentage spectrum between introversion-extroversion and intuition-sensing based on the data obtained from each respondent.

Research Participants

In this study, we included 53 male and female student volunteers from various year groups at Universitas Al Azhar Indonesia (UAI Jakarta) and State Islamic University Syarif Hidayatullah Jakarta (UIN Jakarta). All these students were studying in the Arabic Language Program at their respective universities. The population for our study comprised all students enrolled in the Arabic Language Program at UAI Jakarta and UIN Jakarta. These universities were selected because they have strong Arabic language programs and a diverse student body, making them ideal for studying how personality affects learning Arabic.

For our sample selection, we required that students be currently enrolled in the Arabic Language Program at either UAI Jakarta or UIN Jakarta. Additionally, we only included students who had complete data for both their personality traits and Arabic language scores. This was crucial to ensure that our analysis was accurate and reliable. Participation was voluntary, meaning the students who joined the study were willing and motivated to contribute.

Researcher used convenience sampling for this study, selecting students who were easy to reach, willing to participate, and who had all the necessary data. While this method isn't as random as others, it was the best choice for our study given the need for complete data. Due to the specific context of our study and the need for complete data, we focused on gathering all possible participants who met the criteria, rather than aiming for a statistically determined sample size. This study is also exploratory, aiming to identify potential trends and relationships that could inform future research. As an initial investigation, the sample size of 53 provides a foundation for understanding how personality traits might affect Arabic language performance. Future studies can build on these findings with larger, more statistically rigorous samples.

Instruments and Data Collecting Technique

The L2 Arabic language performance score served as the dependent variable, while the introversion type served as the first independent variable and the intuition type served as the second independent variable. The dependent variable was assessed on a scale ranging from 0 to 70, where higher scores indicated better language performance. On the other hand, the independent variables, introversion and intuition, were represented as numeric values reflecting a respondent's position on the introversion-extroversion and intuition-sensing spectrums. For instance, if a respondent received a 60% score for introversion, it indicated a strong leaning toward introversion, with 40% suggesting a tendency toward extroversion. A 40% score for intuition indicated a stronger preference for sensing over intuition, which was represented by a 60% score. In order to obtain highly accurate scores for language proficiency as well as MBTI types, and due to limited research funding, we aimed to find free tests that have the highest accuracy and are easily understood by the student participants in our research sample. For the MBTI test and Arabic performance test, the data collection techniques employed in this study were as follows:

MBTI Test

The data collection process for the MBTI test involved an online survey administered through a secure platform. Participants were provided with a link to access the MBTI personality test on Truity.com. The survey, designed based on the MBTI framework, comprised 130 Likert-scale questions. These questions prompted participants to express their level of agreement or disagreement with specific statements. Participants were instructed to respond honestly and to the best of their abilities. The completion time for the MBTI test ranged from 5 to 10 minutes. Upon completion, respondents received their MBTI type results and detailed information on the four tendencies, each presented on a percentage scale. These tendencies included introversion-extroversion, intuition-sensing, thinking-feeling, and judging-perceiving. For our analysis, we focused on the first two spectrums, namely introversion-extroversion and intuition-sensing.

Arabic Performance Test

To assess participants' proficiency in Arabic, an online Arabic performance test was utilized. The test was administered through a reputable online language assessment

platform, LanguageTrainers.com. The test consisted of 60 to 70 multiple-choice questions that assessed various aspects of Arabic language skills, including vocabulary, grammar, and reading comprehension. Participants were required to select the most appropriate response from the given options. The test was designed to measure participants' proficiency levels according to internationally recognized language proficiency standards, such as the Common European Framework of Reference for Languages (CEFR). The completion time for the Arabic performance test varied between 10 and 15 minutes.

Both data collection techniques ensured the anonymity and confidentiality of participants' responses. The use of online platforms allowed for convenient and asynchronous participation, enabling participants to complete the tests at their own convenience. The collected data from both tests served as valuable sources of information for the research analysis, providing insights into participants' personality traits and proficiency levels in Arabic language skills.

Analysis Method

Before proceeding with the analysis, the gathered data underwent sorting due to incomplete entries, both in terms of personality type and Arabic language test scores, resulting in a total of 41 samples. Some participants who completed the MBTI personality test received pie charts lacking clear quantitative percentage values, while others faced difficulties in obtaining Arabic language test results. The cause of these issues remains unclear, but it is likely related to unstable server connections for the online Arabic language test, leading to incomplete assessment processes. However, this sorting process yielded 53 eligible samples for further statistical analysis, all of which had complete data, including percentage breakdowns for each MBTI trait and Arabic language scores.

In this study, we utilized multiple linear regression analysis with IBM® SPSS® Statistics software, employing cross-sectional primary data and the ordinary least squares technique. This allowed us to model the correlation between introversion and intuition traits of MBTI personality types and L2 Arabic language performance.

A significance level of alpha 5% was employed, indicating a permissible error rate of 5% for the hypotheses tested. Prior to multiple linear regression analysis, classic assumption tests were conducted to ensure statistical requirements were met, including tests for residual normality, multicollinearity, and heteroscedasticity. Subsequently, t-tests, F-tests, the coefficient of determination, and the multiple regression model were utilized to determine the results.

There were no significant obstacles encountered during the analysis process, from pre-analysis procedures to assumption tests, F-tests, t-tests, and multiple regression analysis. The entire analysis process was deemed reliable to ensure accurate research outcomes. This comprehensive approach ensures the clarity and robustness of the data analysis methods employed, addressing potential issues of reliability and validity in the analysis process.

RESULTS AND DISCUSSION

Based on the earlier hypothesis, this section shows the answers and discusses the following questions: Are there any significant combined effects of MBTI personality types, specifically introversion and intuition, on students' L2 Arabic performance? Are there any significant individual effects of these MBTI personality traits on L2 Arabic performance? Regardless of significance, to what extent do these two traits influence L2 performance? These questions aim to determine if certain personality traits affect foreign language ability. The hypothesis suggests that individuals with high introversion and intuition may have better cognitive functions for processing information, which could enhance their

problem-solving skills and intelligence, potentially aiding their ability to learn a foreign language, specifically Arabic as a second language for students. In summary, this study did not find significant effects of the introversion and intuition traits on L2 performance, either simultaneously or partially. However, there was a minor positive effect of introversion and a minor negative effect of intuition on L2 performance.

However, before discussing the hypothesis results, it's important to understand the characteristics of the dataset related to the three variables. Therefore, we began the analysis using descriptive statistical techniques and frequency distribution. In this descriptive analysis, we examined the mean, median, mode, standard deviation, range, minimum value, and maximum value. Additionally, we conducted a statistical classic assumption test to ensure that the data met the necessary assumptions for further analysis. This included tests for normality, linearity, and homoscedasticity. These steps were essential to validate the reliability and accuracy of our findings regarding the influence of personality traits on L2 performance.

Characteristics of The Dataset

Our analysis kicked off with a deep dive into the data, employing basic statistical tools such as mean, median, and mode, alongside metrics like standard deviation, range, and the smallest and largest values. This approach provided us with a clear picture of the central tendencies and variations present within the dataset, laying a foundation for further exploration and insights.

Table 1. Descriptive Statistical Analysis

		Arabic Score	Intuition	Introversion
N	Valid	53	53	53
	Missing	0	0	0
Mean		387.358	600.755	522.075
Median		420.000	600.000	510.000
Mode		47.00	53.00[a]	48.00[a]
Std. Deviation		1.368.485	1.101.197	1.242.107
Range		58.00	55.00	60.00
Minimum		4.00	29.00	20.00
Maximum		62.00	84.00	80.00

a. Multiple modes exist. The smallest value is shown

From the table above, we can observe the characteristics of the Arabic score, intuition, and introversion variables. The average Arabic score is 38.7, within a range of 0 to 70, while intuition has an average of 60.0 and introversion has an average of 52.2. The averages for intuition and introversion are higher than those for extroversion and sensing.

Additionally, the median value for the Arabic score is 42.0, for intuition it is 60, and for introversion it is 52. The most frequently occurring value (mode) for the Arabic Score is 47, while intuition has a mode of 53 and introversion has a mode of 48. It is noteworthy that there are multiple modes for intuition and introversion, namely 53, 64, and 72 for intuition (each occurring five times) and 48, 51, and 60 for introversion (each occurring four times). However, the displayed values here are the lowest mode values, namely 53 for intuition and 48 for introversion.

The standard deviation for the Arabic score is 13.6, intuition has a standard deviation of 11.0, and introversion has a standard deviation of 12.4. The range of values is 58 for the Arabic score, 55 for intuition, and 60 for introversion. The lowest values for the Arabic Score, Intuition, and Introversion are 4, 29, and 20, respectively, and the highest values are 62, 84, and 80, respectively.

Considering the substantial amount of data, the author needed to categorize the data into groups or interval classes to simplify the frequency distribution of both introversion and intuition data. In determining the number of interval classes (K), there is no standard rule. However, in most cases, it is usually divided into 5–20 classes. The author used the H.A. Sturges formula for interval class division, with the formula as follows: K = 1 + 3.3 log N resulting K = 6,67 or 7 (rounded up). After obtaining the number of interval classes as 6.67, the author rounded it up to 7 to prevent data points from not fitting into the interval classes as per the Sturges formula. To determine the class length, the author needed to divide the range (R) obtained by subtracting the highest data point from the lowest data point by the number of interval classes (K). The calculations are as follows for both introversion and intuition:

$$(h_{introversion}) = \frac{X1max - X1min\ (R)}{1 + 3{,}3 \log N\ (K)} = \frac{60}{7} = 8{,}57\ or\ 9$$

$$(h_{intuition}) = \frac{X1max - X1min\ (R)}{1 + 3{,}3 \log N\ (K)} = \frac{55}{7} = 7{,}85\ or\ 8$$

Based on the calculations, the class length for introversion is 9, and the class length for intuition is 8, both rounded up according to the Sturges formula. Thus, the frequency distribution can be displayed in the tables below for introversion and intuition.

Table 2. Frequency Distribution

	Class	Freq.	Percent	Cum.		Class	Freq.	Percent	Cum.
Introversion	20 - 29	1	1.9	1.9	Intuition	29 - 37	1	1.9	1.9
	30 - 38	6	11.3	13.2		38 - 45	4	7.5	9.4
	39 - 47	10	18.9	32.1		46 - 53	13	24.5	34.0
	48 - 56	18	34.0	66.0		54 - 61	9	17.0	50.9
	57 - 65	13	24.5	90.6		62 - 69	15	28.3	79.2
	66 - 74	1	1.9	92.5		70 - 77	9	17.0	96.2
	75 - 83	4	7.5	100.0		78 - 85	2	3.8	100.0
	Total	53	100.0			Total	53	100.0	

Analyzing the frequency distribution tables reveals notable trends in introversion and intuition traits. Notably, the 48–56 interval for introversion stands out, representing the highest proportion at 34%, encompassing 18 instances within the dataset's total of 53 data points. Similarly, intuition peaks in the 62–69 interval, constituting 28.3% and accounting for 15 instances.

When we dig further, we will notice less common manifestations of these attributes. For introversion, the 20–29 and 66–74 intervals have the lowest percentages at 1.9%, occurring only once within their respective classes. Likewise, intuition manifests a rarity in the 29–37 interval, recording a 1.9% occurrence, singular within this range. This meticulous examination unveils the subtleties in trait distribution, contributing to a nuanced comprehension of introversion and intuition across varied interval classes.

Classic Assumption Test

The Kolmogorov-Smirnov test to assess the normality of residual data. The results of the one-sample Kolmogorov-Smirnov test indicate an asymptote. Sig value of 0.087 Based on the normality test of residuals using the parametric Kolmogorov-Smirnov (K-S) statistic, with the following criteria: H0: If the sig value > 0.05, then the residual data is

well-distributed and normal. Ha: If the sig value is ≤ 0.05, then the residual data is not normally distributed. It can be concluded that the normality test accepts H0, which means that the residual data in this study is normally distributed.

The analysis of the multicollinearity test begins by discussing the regression coefficients for the independent variables, introversion and intuition. Tolerance values and variance inflation factors (VIF) are then evaluated to determine if there is any multicollinearity issue. Conclusions are drawn based on the analysis results to ensure the reliability of the regression model without any unwanted interactions among the independent variables. From the statistical output, the independent variables, introversion and intuition exhibit collinearity tolerance values of 0.983, which are greater than 0.10, and VIF statistics of 1.017, which are less than 10.0. Therefore, it can be concluded that there is no multicollinearity among the independent variables in the regression model.

Next for the Glejser test, it is conducted to assess the potential presence of heteroscedasticity in the regression model. The analysis of coefficients and significance for each variable, introversion and intuition, is provided to understand whether there are indications of heteroscedasticity. The results indicate that there are no signs of heteroscedasticity issues, and emphasis is placed on the significance values supporting this conclusion. Based on the coefficients obtained from the significance values, the introversion variable has a significance value of 0.056, and the intuition variable has a significance value of 0.067. These values are greater than 0.05. Therefore, it can be concluded that there are no signs of heteroscedasticity issues.

Do Introversion & Intuition Simultanously Influence Arabic L2 Performance?

This section discusses the F-test as an evaluation of the overall significance of the regression model. The interpretation focuses on comparing the calculated F-value with the critical F-table value as well as considering the probability value (Sig.). Conclusions are drawn from this analysis to assess whether the independent variables collectively make a significant contribution to the dependent variable.

Table 3. F-Test Test

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	140.272	2	70.136	.365	.696[b]
	Residual	9598.030	50	191.961		
	Total	9738.302	52			

a. Dependent Variable: Arabic Score

b. Predictors: (Constant), Intuition, Introversion

Based on F-test on Table 3., it can be determined that the calculated F-value is 0.365, with degrees of freedom for introversion is 2 and intuition is 50, while the critical F-table value is 3.182. Consequently, Fcalculated < Ftable. Furthermore, the probability value Sig. is 0.696, which is greater than 0.05 (0.696 > 0.05). Therefore, the alternative hypothesis (Ha) is rejected, indicating that the variables "Introversion" and "Intuition," simultaneously do not have a significant influence on the "Arabic language performance" variable.

The F-test results indicate that personality traits do not significantly affect foreign language performance, at least in this study. This may be due to other more dominant internal factors, such as affective factors like self-esteem, self-confidence, anxiety, fear of failure, shyness, motivation, attitude, and empathy, which influence second language learning. For example, although individuals with introversion and intuition traits might

have high intelligence and problem-solving abilities that could help them learn a foreign language, their desire and motivation to learn may not be strong enough to maximize this potential. Even if their motivation is high, obstacles like anxiety can still hinder their ability to master a foreign language effectively.

Since this is the first study of its kind, the findings neither support nor contradict previous studies on the simultaneous significant effects of introversion and intuition on second language performance. When looking at the influence of personality types on second language performance in general, the findings contradict various previous studies (Chen et al., 2022; Dostálová, 2014; Esfandiari et al., 2017; Oki, 2019; Radić-Bojanić, 2020; Teimouri et al., 2022; Yun, 2022), which have shown that personality generally influences a person's ability to master a second language. For example, Hassan & Hamid Abbas (2020) found statistically significant differences between the correlations of extroversion and introversion personality traits and language proficiency, indicating a relationship between personality type and language proficiency. Additionally, Zirdum (2018) found a statistically significant correlation between introversion and success in learning English as a second language among 164 high school students in Croatia. However, several studies have found similar results, indicating that personality traits do not significantly influence second language abilities. These findings suggest that other factors may play a more crucial role in language acquisition. This topic will be explored in greater detail in the next section, where we will discuss and analyze these findings further.

Do Introversion & Intuition Partially Influence Arabic L2 Performance?

The t-test is conducted for each variable: introversion and intuition. The interpretation focuses on comparing the t-values with the critical t-table values. Conclusions are drawn based on the significance of each variable, assessing whether each variable has a significant impact on the dependent variable.

Table 4. t-Test

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	28.648	14.291		2.005	.050		
	Introversion	.129	.156	.117	.829	.411	.983	1.017
	Intuition	.056	.176	.045	.316	.754	.983	1.017

a. Dependent Variable: Arabic Score

Based on the t-test calculations above in Table 4, it can be observed that the t-value for introversion is 0.829 and the t-value for intuition is 0.316, both of which are less than the critical t-table value of 2.008. This condition indicates that neither of the variables has a significant influence on the dependent variable, "language performance." This observation is further supported by the sig. values for each variable, which are 0.411 and 0.754, respectively. Both of these values are greater than 0.05, signifying the absence of a significant impact on the dependent variable.

The lack of significant partial effects of intuition on language performance might be because high intelligence and problem-solving abilities, which are essential for mastering a language, are not always present in those with the intuition trait. While Kaufman et al. (1996) found that highly intelligent people often tend to have the intuition trait, and Sobkow et al. (2018b) noted that intuitive coherence and insight can be predicted by intelligence, this is not always the case. Similarly, the lack of significant partial effects

of introversion on language performance could be due to the fact that academic cognitive abilities are not always found in those with the introversion trait. Even if introverts have the potential for such abilities, they might not have fully developed them yet. Altunel et al. (2015) found that introverts tend to develop strong academic cognitive skills, especially in language learning, compared to extroverts.

The failure to substantiate the presented hypothesis, conversely, aligns with prior research, indicating that personality types do not correlate with language performance, encompassing speaking proficiency (Samand et al., 2019), personal error correction (Shokrpour & Moslehi, 2015), overall second language performance (Kim, 2022; Noviana & Oktaviani, 2022; Özbay et al., 2017; Paradilla et al., 2020; Taskeen & Ahmed, 2023), and even Alagić (2022) said that extroversion-introversion does not significantly impact second language acquisition, when she examined 50 high schooler students in Sarajevo, Bosnia and Herzegovina.

How Influential The Two Variables Are on L2 Performance?

This section started with discussing the coefficient of determination R^2 as a measure of how well the regression model can explain the variation in the dependent variable. Further interpretation is provided for the adjusted R^2 value, highlighting the extent to which independent variables can explain variability in the context of this study. Conclusions are drawn to provide a comprehensive overview of how well the model can explain the relationships among variables.

The obtained output reveals that the adjusted R^2 value is -0.025. This finding signifies that the independent variables, namely introversion and intuition, do not exert a significant influence on Arabic language performance. In fact, both variables collectively account for a negative 2.5% of the variance in Arabic language performance. This suggests that the remaining 97.5% of the variance is attributable to unexamined factors within the scope of this study.

In the multiple regression analysis with the equation $y_i = \beta_0 + \beta_1 x_{i1} + \beta_2 x_{i2}$ it provides an overview of the relationship between the independent variables, introversion and intuition, and the dependent variable, Arabic performance. The analysis results present regression coefficients indicating the extent of each variable's influence on Arabic performance.

Table 5. Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	28.648	14.291		2.005	.050		
	Introversion	.129	.156	.117	.829	.411	.983	1.017
	Intuition	.056	.176	.045	.316	.754	.983	1.017

Interpreting the coefficients and their constant values provides an understanding of the contribution of each factor to the proficiency level in the Arabic language. Thus, in the multiple regression equation, the research can be calculated through the regression model as follows:

$$y = 28{,}648 + 0{,}129x_1 + 0{,}056x_2$$

This equation holds several key interpretations: Firstly, the constant term of 28.648 indicates that when the independent variables remain constant, the average performance in the Arabic language is 68.271. In other words, this represents the baseline performance level when neither introversion nor intuition are taken into account. Secondly, the

regression coefficient (β_1) for introversion, which is 0.129, signifies that for every 1% increase in the value of introversion, there is a corresponding 12.9% increase in Arabic language performance. This suggests that higher levels of introversion are associated with improved Arabic language proficiency. Thirdly, the regression coefficient (β_2) for intuition, which is 0.056, implies that a 1% increase in the value of intuition corresponds to a minimal 0.05% increase in Arabic language performance.

The most reasonable explanation for why introversion has a greater impact on second language performance than intuition is that introverts, is that introverts prefer solitary activities (Zhang et al., 2020) and gain energy from spending time alone (Yuan & Grühn, 2020), are better suited to independent study. Introverted individuals are more comfortable dedicating long periods to studying alone, which is beneficial for language learning as it requires a lot of practice and concentration (Maslo, 2019). This independent learning style allows them to reflect and delve deeply into language concepts without needing external motivation, leading to better performance in a second language compared to those with lower introversion. This explanation aligns with a literature study performed by Cahaya Febrina & Rosalina (2022) that shows people who learn languages on their own do better than those who rely more on others.

On the other hand, intuition relates to how people perceive information. Intuitive individuals tend to focus on understanding the overall concepts. In language learning, especially for complex languages like Arabic, which has different grammar and alphabet from Indonesian, this can be challenging. While intuition can be helpful in grasping the nuances of a language, it's not as crucial as focus and perseverance. Language learning involves memorization, drilling grammar rules, and slogging through mistakes, as stated by Gu et al. (2023) that intuitive students focus more on the big picture and abstract concepts, while ensing students prioritize details and practical applications in language learning. This explains why intuition may not have as strong an influence on second language performance as introversion. Overall, this small impact might also mean that other factors influence second language performance in the current sample, such as how much exposure someone has to the second language and the total time spent learning (Jahrani & Listia, 2023; Saito et al., 2018), and their motivation (Zhang et al., 2020).

CONCLUSION

In summary, this study successfully addressed three questions based on the assumption that personality traits influence second language performance. It was found that introversion and intuition do not have a significant impact either simultaneously or individually. Despite the lack of significant influence, introversion was found to have a higher percentage of influence compared to intuition on language performance. This lack of significance is likely due to other factors that have a more substantial impact, both internally and externally. The higher percentage of influence from introversion compared to intuition may be due to the implications of these traits on unique learning styles, with introverts supporting independent learning and intuition tending towards perfectionism in understanding linguistic concepts, which can hinder practice.

Given these findings, it is recommended that educators and learners consider other factors, such as motivation, attitude, age, intelligence, talent, and cognitive style (Ellis, 2015), when seeking to enhance language performance through teaching and learning methods tailored to these variables. Additionally, the author concludes that in second language learning, it remains unclear which personality trait is more beneficial for overall second language proficiency, echoing the conclusion made by Kim (2022).

RECOMMENDATION

The author acknowledges that this research has a limited study sample size, which could impact the analysis results. Moreover, the utilization of online MBTI personality typology instruments without guidance from relevant experts and the potential for response bias due to a restricted comprehension of English questions in the MBTI test may lead to misclassification or errors in the system's determination of the participant's true personality type. On the other hand, with regard to other instruments, such as the Arabic language test in this case, despite languagetrainers.com featuring up to seventy questions, the limitation lies in the test's failure to assess language skills comprehensively, omitting listening, speaking, and writing proficiency. This limitation could contribute to the incomplete representation of language performance scores for each participant involved in this study. Therefore, the author recommends for future research within the same scope to employ language tests that encompass all language skills, or alternatively, focus on one specific skill if a comprehensive approach is not feasible. It is crucial to also emphasize the need for more comprehensive research that includes a larger sample size, representative assessment instruments involving active language skills (e.g., writing and speaking) and passive skills (e.g., listening and reading), as well as an investigation into the duration of language learning. These aspects are likely to play a vital role in improving foreign language learning.

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