"Personality traits and leadership styles of students: Evidence from Ecuador"

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PERSONALITY TRAITS AND LEADERSHIP STYLES OF STUDENTS: EVIDENCE FROM ECUADOR

Abstract

The study aims to evaluate how personality traits affect transformational, transactional, and passive-avoidant leadership styles. It uses the quantitative approach with a non-experimental research design; the data were collected cross-sectionally, with a correlational-causal scope. The sample included 418 professionals studying MBA at private universities in Ecuador and working in private companies. Personality traits were measured with the Revised NEO-PI-R Personality Inventory, while the Multifactor Leadership Questionnaire (MLQ) measured leadership styles through the survey. Data analysis included the use of correlations and multivariate regression models. The results show that openness to experience ($\beta = 0.100^*$), extraversion ($\beta = 0.217^{**}$), conscientiousness ($\beta = 0.239^{**}$), and work experience ($\beta = 0.086^*$) generated a positive and meaningful effect on transformational leadership. Neuroticism was also significant but with a negative standardized coefficient ($\beta = -0.445^{**}$). Also, extraversion ($\beta = 0.169^{**}$), conscientiousness ($\beta = 0.303^{**}$), and work experience ($\beta = 0.222^{**}$) had a positive and significant effect on transactional leadership; neuroticism was also significant but with a negative standardized coefficient ($\beta = -0.243^{**}$). Finally, extraversion ($\beta = -0.311^{**}$) and conscientiousness ($\beta = -0.192^{**}$) had a negative and significant effect, and neuroticism ($\beta = 0.451^{**}$) had a positive and significant effect on the passive-avoidant leadership style.

Keywords	leadership, personality, work experience, Big Five traits, regressions
JEL Classification	I21, J24, M12

INTRODUCTION

Determining an empirical relationship between personality and leadership continues to attract research attention in psychology and management. Most studies were reported in the United States of America and, to a lesser extent, in developed countries such as Australia, Norway, Canada, and Singapore (Bass, 2008; Bono & Judge, 2004; Crossan et al., 2012). On the other hand, few studies were carried out in developing countries. For example, D'Alessio (2008) researched personality and leadership for the Peruvian case, using a sample of 500 administrators pursuing a Master's Degree in Business Administration (MBA). The results proved that work experiences are crucial in developing leadership behaviors. Furthermore, the functional relationship between personality and leadership maintains certain similarities with research works previously carried out in developed countries.

The discussion regarding whether personality and leadership are related is still extensive, mainly due to the dilemma surrounding whether leadership is an individual's own trait or if it is a trait that can be developed (Bass, 2008; Elmuti et al., 2005; Lim & Ployhart, 2004). Defining certain characteristics of how leadership can manifest makes it difficult to directly resolve a primary question regarding what defines a

great leader (Alipio et al., 2023). For this reason, Judge et al. (2002) proposed to evaluate the relationship between the components of personality and leadership style, establishing a conceptual framework that allows predicting a leadership style based on personal traits of individuals. Thus, a relationship may exist between individuals' personality traits and the leadership styles they adopt (Bono & Judge, 2004; D'Alessio, 2008). To shed more light on this relationship, it is necessary to continue conducting research in different contexts, such as in the case of professionals working in private companies in a developing country.

1. LITERATURE REVIEW AND HYPOTHESES

Personality traits represent a topic of historical debate, beginning with Aristotle's classification of the temperaments (Judge & Bono, 2000). A person's most influential personality characteristics will likely become a component of daily communication. This lexical hypothesis recognizes five domains of personality, in which their descriptors were grouped after factor analysis. These domains were popularized as The Big Five in the early 1990s. This phenomenon was studied in five-factor structures for several years but under different parameters, considering different instruments and conceptualizations. This generated a question about the Big Five model since its study varied significantly in its interpretation, considering that it hardly expressed the full range of personality traits.

Starting from this, Costa and McCrae (1992) proposed an alternative, known as the Five Factor Model (FFM), which provides a thorough and comprehensive assessment of adult personality (D'Alessio, 2008) without discarding the traditional structure of the five already recognized factors. The instrument for measuring personality domains, proposed by Costa and McCrae (1992), is called the NEO PI-R Revised Personality Inventory, which is based on factor analytic studies of personality structure. The instrument contains 30 facets organized into five domains: a) openness to experience, (b) neuroticism, (c) conscientiousness, (d) agreeableness, and (e) extraversion (Tanasescu et al., 2013). This model is considered one of the most effective in measuring personality, so studies related to personality have standardized the use of the FFM, even though there are other models derived from it.

In the individual analysis of personality domains, a high extraversion score describes the individual as assertive, energetic, optimistic, and charismatic (Costa & McCrae, 1992), seeking excitement and social attention (Bono & Judge, 2004). Extraversion comprises two central elements: participation or organization, which corresponds to being assertive and respected, and a high degree of conscientiousness, which highlights the individual's success-oriented effort and responsibility. Hence, it is crucial in the study of the traits of work psychology (Bono & Judge, 2004). By way of simplification, conscientiousness comprises two significant facets: trust, which corresponds to duty, responsibility, and organization, and achievement, which represents the ability to work and face challenges (Gelissen & de Graaf, 2006).

Concerning leadership, a formal definition refers to the social influence through which certain people can obtain help and support in carrying out a common task (Eberts, 2007; Ma, 2000; Teece et al., 1997). Burns (1978) introduced a comprehensive theory about transformational and transactional leadership. It describes the interaction by individuals, indicating that the traditional transaction creates a leadership that implies the exchange of the leader with the followers. In contrast, transformational leadership is based on leaders who can change the values, needs, and beliefs of those who follow them, increasing the morale and motivation of the workgroup and superior performance within organizations. Complementing this theory, Bass (2008) suggests that leaders can perform transactional and transformational leadership simultaneously. Bass and Avolio (1994) presented a complete range of leadership, including transformational, transactional, and passive-avoidant, with its main components. Studies indicate that a better understanding of leadership styles would allow the maximum development of subordinates' work performance (Zareen et al., 2015) and help predict organizational success (Crossan et al., 2012).

Transformational leaders inspire trust, respect, and admiration from their followers as they promote problem-solving by bonding with each collaborator or subordinate individually. In addition, they facilitate the understanding by increasing awareness of environmental problems. Therefore, personality or charisma becomes an important quality for the performance of this type of leadership (McLaurin & Al-Amri, 2008; Yukl, 2010). Transactional leaders are characterized by work execution that encompasses specific aspects such as closely monitoring their followers. Their actions focus on a leader-follower interaction so that the performance of the followers must pursue the leader's intention and direction, which rewards the follower's effort (Zareen et al., 2015). This style establishes high standards and goals to achieve, providing meaning, purpose, and constant direction to followers in their work, inspiring enthusiasm, charisma, motivation, and emotion (Harms & Credé, 2010). Passive-avoidant style leaders are described as unconcerned with influencing or giving direction to their subordinates, thus delegating all decision-making authority to followers (Chaudhry & Javed, 2012). The passive-avoidant leader offers his followers relative guidance and support so that they are more involved with the tasks. Its purpose is to motivate them in their work performance (Mujtaba, 2014), even though this type of leadership does not prioritize productivity and complete fulfillment of tasks. This style represents reluctant and even ineffective leadership (Antonakis et al., 2003).

Bass (1985) established these dimensions of transformational leadership:

(a) idealized influence, corresponding to the charisma produced by the role model by identifying attributes and behavior, developing great approval of their actions, and suppressing criticism;

(b) motivation by inspiration, which refers to the ability to transmit a particular vision of the future with emotion and commitment;

(c) intellectual stimulation, which deals with the delivery of a fresh approach to problems and questioning of assumptions, own values, and beliefs for followers; and

(d) individual consideration, which corresponds to the individual behavior of the leader toward his followers, both as a mentor and as an employer (Bass, 2008; D'Alessio, 2008).

It should be noted that idealized influence and motivation or leadership by inspiration are shown when the leader envisions a desirable future, articulates how it will be achieved, sets examples to follow, shows high-performance standards, and shows determination and confidence.

Bass and Avolio (1994), based on the proposal of Bass (1985), devised two dimensions for transactional leadership: contingent reward and active or passive management by exception. The contingent reward describes the well-known pay arrangement work in which there is an explicit and/or implicit agreement on the goals that must be achieved in order to obtain the desired rewards. On the other hand, management by exception characterizes how leaders monitor negative subordinate deviations and take corrective action only when subordinates do not meet objectives (Furtner et al., 2013). Finally, passive-avoidant leadership is composed of two dimensions:

(a) passive management by exception, which also implies performance monitoring, but in this dimension, corrective measures are implemented only in the face of serious problems, and

(b) laissez-faire dimension also known as non-leadership, since the obligations and related tasks that a leader is expected to coordinate are evaded.

Bono and Judge (2000, 2004), in search of the PsycINFO publication bases, revealed that 1,738 articles out of a total of 15,000 published between 1990 and 2004 addressed the topic of leadership and included the terms personality and leadership. Despite all the empirical evidence, questions still remain, such as what determines or predicts leadership behaviors. While some studies link personality with leadership, most research has used various personality traits, making integrating these results complicated (Bass, 2008; Furnham & Crump, 2015). Judge and Bono (2000) directly linked transformational leadership to the five-factor model. They found that extroversion and

agreeableness positively predict transformational leadership. Despite the small and moderate relationship, there was preliminary evidence that certain traits of the five-factor model could be related to transformational leadership. Furthermore, Judge et al. (2002) noted that, from the five-factor model, more than 90% of associations of openness to experience with leadership, conscientiousness, neuroticism, and extraversion had values above zero. Also, they pointed out that this model explains 28% of the variability between leadership emergence ratings and 15% of the variability among leadership effectiveness ratings.

Later, Bono and Judge (2004) included a meta-analysis study on the relationships of the five-factor model with transformational and transactional leadership. Although they obtained weak results, their findings indicate that extraversion may be essential in predicting and understanding these leadership styles, as this trait showed a robust relationship. For their part, Lim and Ployhart (2004) found that extraversion and agreeableness are significantly related to transformational leadership, whose nature of the study considered a mainly young and entirely male sample.

Bass (2008) argued that there is not enough empirical evidence for the relationship between transformational leadership and personality, especially if the empirical results do not produce a clear conclusion. It is the meta-analyses that could provide a valuable contribution, but these results have also brought with them weak results. Although the research that seeks to define the relational function between personality traits and leadership behavior does not present similar results, the recommendations and other observations derived from these studies have allowed one to obtain more stable results over time related to the methodology to be used, both for measuring personality traits and for defining the sample (Bono & Judge, 2004).

In various investigations, this process is recognized as resource development (Crossan et al., 2012; McCauley et al., 2014): the challenge of organizations to recognize people with the greatest potential and send them to action. This way, they solve a certain organizational problem and develop an administrator through experience. Despite this, experience does not guarantee a leader's de-

velopment since sometimes individuals are not open to learning from their experiences. For this reason, various studies propose development catalysts such as feedback, training, and group sessions (Hezlett, 2016; McCall Jr & Hollenbeck, 2002), in the form of management programs to achieve a leadership style. D'Alessio (2008) showed that transformational leadership behavior is directly related to increased work experience and, consequently, older age. Also, studies have been carried out to relate the educational part to the development of leadership skills, seeking to understand whether programs that offer business training can form essential leadership skills in students (Elmuti et al., 2005).

This study aims to evaluate how personality domains affect transformational, transactional, and passive-avoidant leadership styles. The target audience is graduate students from private universities in Ecuador. Taking into consideration the evidence from the literature review, the following hypotheses are proposed:

H1: There is a negative association of neuroticism with transactional and transformational leadership styles and a positive association with passive-avoidant leadership.

H2: There is a positive association of extraversion with transactional and transformational leadership and a negative association with passive-avoidant leadership.

H3: There is a positive association of openness to experience with transactional and transformational leadership and a negative association with passive-avoidant leadership.

H4: There is a positive association of agreeableness with transactional and transformational leadership and a negative association with passive-avoidant leadership.

H5: There is a positive association of conscientiousness with transactional and transformational leadership and a negative association with passive-avoidant leadership.

H6: Personality domains have a significant influence on transformational leadership.

H7: *Personality domains have a significant influence on transactional leadership.*

H8: *Personality domains have a significant influence on passive-avoidant leadership.*

2. METHODOLOGY

The study examined the relationships between the domains of personality, work experience, and leadership styles in 418 workers from private companies in Ecuador who were pursuing postgraduate studies at private Ecuadorian universities. It used a quantitative approach, implementing a non-experimental design, collecting the data in a single wave, and reaching the correlational and causal level. Self-report questionnaires were used as a primary source of information. These instruments have been widely validated and used in previous studies with satisfactory results.

The personality domains were evaluated using the instrument developed by Costa and McCrae (1992), the Revised NEO PI-R Personality Inventory. The questionnaire contains 30 facets organized into five dimensions. The responses to the items are categorical, with alternatives ranging from 1 "strongly disagree" to 5 "strongly agree." The instrument widely used by organizational psychology that contains a complete range of leadership measurements is the Multifactor Leadership Questionnaire (MLQ), proposed by Bass and Avolio (1994). This instrument contains 45 items that evaluate the main characteristics of the three leadership styles, with items that ranged from 1, definitely not, to 5, frequently. The sample included Master of Business Administration students from leading programs in the most important cities in Ecuador to identify the individual and combined effects of personality domains and work experience on their leadership styles. Generally, MBA programs are part-time for 24 months, and students attend classes every third weekend.

The data analysis process included the following sequence: (a) descriptive statistics, (b) reliability test, (c) validity test through factor analysis, (d) correlation matrix, and (e) regression model. Cronbach's alpha coefficient was used to measure the internal consistency of the questionnaires applied, applied

to the 30 facets of the five personality domains and the 9 behaviors of the three leadership styles. An exploratory factor analysis (EFA) was used for the NEO-PIR. In contrast, a second-order confirmatory factor analysis (CFA) was developed for the MLQ to evaluate the internal structure of both models. The analysis of the magnitude and significance of the correlation coefficients evaluates the hypotheses raised about the association between variables. Three multiple regression models were developed to evaluate the effects of personality domains and work experience on leadership and its styles (Lind et al., 2015).

Table 1. Sample demographic information

Characteristics	Items	Number	Percentage
Gender	Male	270	64.6%
	Female	148	35.4%
Age	23 to 33 years	203	48.6%
	34 to 44 years	174	41.6%
	45 to 57 years	41	9.8%
Educational Background	Engineering	123	29.4%
	Economics, administration, and related	227	54.3%
	Other	68	16.3%
Working Experience	4 years or less	116	27.8%
	5 to 9 years	89	21.3%
	10 to 13 years	162	38.8%
	14 or more	51	12.2%

The age of the respondents (Table 1) varied between 23 and 57 years. 64.6% of the participants were male, and the remaining 35.4% were female, demonstrating a male-to-female ratio of 3:1. In addition, professionals with economics, administration, and related degrees predominated (54.3%), compared to graduates in engineering (29.4%) and other spheres (16.3%). The students have an approximate average of nine years of professional experience, and those with work experience between 10 and 13 years predominated (38.8%).

3. RESULTS

At a descriptive level, the personality domains show that the distribution of each domain was approximately symmetrical, according to the values of the mean, standard deviation, and asymmetry (Table 2). Each domain was obtained by adding the total scores of the items of each facet that make

Table 2. Descriptive statistics of personality domains

Domains	Mean	S.D.	Min.	Max.	Skewness	Kurtosis	Coefficient of variation
Neuroticism	76.64	16.27	51	172	2.186	6.898	0.2123
Extraversion	141.78	21.67	62	169	−1.353	1.787	0.1528
Openness to experience	120.18	18.45	69	159	−0.367	0.602	0.1535
Agreeableness	130.40	25.31	60	164	−0.764	0.051	0.1941
Conscientiousness	152.88	18.58	107	183	−0.337	−1.066	0.1216

Note: N = 418 valid cases.

up the domain. The results were not reported at the facet level since the test provided final scores assigned to each domain. Neuroticism was the domain that presented the lowest central tendency score ($\overline{x}$ = 76.64) and greatest dispersion, with a coefficient of variation of 0.21. On the other hand, conscientiousness ($\overline{x}$ = 152.88) and extraversion ($\overline{x}$ = 141.78) became domains that obtained high scores about the central tendency, in addition to the coefficients of variation with lower values.

The results of the Kaiser-Meyer-Olkin (KMO) value of 0.823, as well as the Bartlett sphericity value with an X^2 statistic of 5135.68 (p < 0.01), were calculated from the NEO-PI-R scores. In the first case, the rule establishes that KMO values above 0.7 show a better adaptation of the data to a factorial model. In contrast, in the second case, the alternative hypothesis denotes that it is possible to apply a factor analysis (Thompson, 2004). Compliance with both conditions indicates adequate conditions for the use of exploratory factor analysis (EFA).

The factors were determined using the EFA extraction method, commonly used in principal component analysis (Hair et al., 2006). According to this method, five factors presented eigenvalues greater than 1 and explained 75.18% of the total variance. McCrae and Costa (1989, 1994) and McCrae et al. (1996) suggested using confirmatory analysis that is based on the rotation of Procrustes to the American Normative Structure in order to carry out replications of the structure made up of five factors of the NEO-PI-R. Procrustes analysis eliminates variations in translation, rotation, and scale across the data set, bringing them into common frames of reference and becoming a predecessor for additional statistical analysis (see Appendix A). For this process, the coefficients that have a certain similarity to the comparison matrix and the target matrix were determined and obtained

from an exploratory factor analysis, and subsequently, it is expected that the comparison matrix has orthogonal rotation compared to the target matrix that allows the minimization of deviations between the comparison matrix and the target matrix. This procedure is useful for comparative analyses of exploratory factors, or in cases where a large number of variables do not allow for structural equation models or more complex tests.

In the analysis of the sample's responses on personality traits (Table 2), all facets had their highest loading on the predicted personality factors/domains. On the other hand, one of the similarity coefficients considered in the Procrustean approach is the congruence coefficient, which is obtained by comparing the values of each variable in all the factors. The congruence coefficients range from +1.0 to −1.0, where 1.0 in absolute values indicates maximum similarity and 0.0 indicates no relationship. The literature recommends that values greater than 0.90 suggest similarity; on the other hand, values greater than 0.98 suggest essential identity (Eysenck et al., 1994; McCrae et al., 1996). However, the congruence coefficient values must be corroborated using an index sensitive to the load magnitudes. It is advisable to analyze the coefficients of the Double Scale Euclidean Distance and the Isolated Distance of the Nucleus. The first coefficient compares two variables and calculates the Euclidean distance using a strictly linear method. The second coefficient responds directly to the need to shape the distance function between two objects controlled by the standard deviation parameter. The literature recommends values greater than 0.90 that report high equality. Otherwise, it would be necessary to determine where the disparity comes from (Van de Vijver, 2015).

The results for congruence coefficients varied from 0.90 to 1.0, all being significant to the critical values indicated and established. The DSED and KSD

values were 0.9643 and 0.9844, respectively. In this analysis, 29 facets presented factor loadings greater than 0.4 in the domains of neuroticism (N), extraversion (EX), openness to experiences (AE), conscientiousness (ES), and agreeableness (A), except the values facet (0.39). Based on these results, the NEO-PI-R Form S used is similar to the English version of the NEO-PI-R Form S. The Cronbach's alpha coefficient values were greater than 0.7 in the five personality domains, confirming the reliability of the scale used.

The results of the leadership styles were calculated from the application of the MLQ measurement instrument proposed by Avolio and Bass (2004). This questionnaire allows measuring nine leadership factors grouped into three leadership types: transformational, transactional, and passive-avoidant. The results are shown in Table 3. Transformational leadership presented a mean of 2.94, with a standard deviation of 0.61, a minimum value of 0.9, and a maximum of 4, with a slight bias toward the left of the distribution with negative kurtosis and a coefficient of variation of 0.2072. In the case of transactional leadership, the global data showed a mean of 2.70, with a standard deviation of 0.72, a minimum value of 0.25, and a maximum of 4, with a slight bias toward the left of the distribution, with positive kurtosis and coefficient of variation of 0.2661. At the same time, the passive-avoidant style showed descriptive results of a mean of 0.83, a standard deviation of 0.56, a minimum value of 0.00, a maximum of 3.13, asymmetry of 1.09, a kurtosis 0.969, and a coefficient of variation of 0.676. The scores for each factor were calculated through the average scores of the items that compose it. The scores for each

transformational leadership style were obtained by averaging the values of each factor. The results of the transformational leadership scores are higher than those of the transactional, except for the idealized influence attributes. These, in turn, were greater than the passive-avoidant factors, which also presented high coefficients of variation.

The KMO measure of 0.847 and Bartlett's sphericity with an X2 statistic of 1468.65 (p < 0.01) were calculated from the MLQ scores, indicating that the use of factor analysis is appropriate. Second-order confirmatory factor analysis was also conducted to generalize the results to the leadership styles addressed. Table 4 reports the standardized regression weights obtained from the CFA for each factor and leadership style. The results obtained as the normed chi-square statistic (X2/df) = 4.208, the adjusted goodness-of-fit index (AGFI) = 0.905, the comparative fit index (CFI) = 0.947, the residual root mean square (SRMR) = 0.06, and the root mean square error of approximation (RMSEA) = 0.08, show that, in effect, for the sample considered, the leadership factors are reduced to only three.

Two procedures were carried out for factor extraction using the principal component analysis technique (D'Alessio, 2008; Judge & Bono, 2000). The first procedure analyzed the five dimensions of transformational leadership and confirmed that a single factor explained 65.16% of the total variance. The second procedure of the four remaining dimensions of the MLQ extracted two factors that explain 73.67% of the total variance, representing transactional and passive-avoidant leadership. The values of the alpha coefficients were greater than 0.7 in the transformational (α = 0.916), transac-

Table 3. Descriptive results of leadership styles

Leadership Styles	Mean	S.D.	Min.	Max.	Skewness	Kurtosis	Coefficient of variation
Transformational leadership	**2.94**	**0.61**	**0.9**	**4.00**	**−0.42**	**−0.336**	**0.2072**
Idealized influence attributes	2.66	0.82	0.25	4.00	−0.575	0.040	0.3090
Idealized influence behavior Inspirational	2.97	0.74	0.75	4.00	−0.348	−0.656	0.2508
Motivation	3.19	0.72	0.75	4.00	−0.776	−0.081	0.2239
Transactional leadership	**2.70**	**0.72**	**0.25**	**4.00**	**−0.321**	**0.080**	**0.2661**
Intellectual stimulation	2.95	0.74	0.5	4.00	−0.577	0.076	0.2506
Individualized consideration	2.92	0.76	0.75	4.00	−0.312	−0.48	0.2599
Contingent reward	2.70	0.86	0.5	4.00	−0.209	−0.629	0.3187
Passive-avoidant leadership	**0.83**	**0.56**	**0.00**	**3.13**	**1.09**	**0.969**	**0.676**
Active management-by-exception	2.68	0.82	0.00	4.00	−0.634	0.396	0.3049
Passive management-by-exception	1.02	0.68	0.00	3.75	1.131	0.606	0.6637
Laissez-faire	0.64	0.63	0.00	3.25	1.479	2.813	0.9818

Table 4. Second-order confirmatory factor analysis for leadership styles

Factors	Cronbach's Alpha	Leadership Styles			Explained Variance [a]
		TL	TcL	PA	
Transformational Leadership	0.916				65.16%
TL Factor 1	0.705	0.755			
TL Factor 2	0.785	0.587			
TL Factor 3	0.798	0.849			
TL Factor 4	0.792	0.669			
TL Factor 5	0.803	0.886			
Transactional Leadership	0.821				48.76%
TcL Factor 1	0.769		0.621		
TcL Factor 2	0.805		0.737		
Passive-avoidant Leadership	0.788				24.91%
PA Factor 1	0.674			0.701	
PA Factor 2	0.771			0.697	
Full Model	0.832	0.758	0.606	−0.818	69.73%

Note: Transformational leadership (TL); Transactional leadership (TcL); Passive-avoidant leadership (PA). [a] – explained variance was obtained from two procedures.

tional ($\alpha = 0.821$), and passive-avoidant ($\alpha = 0.78$) leadership styles when all the items of the factors that make up each style were evaluated. The results confirmed the reliability of the scale used.

Pearson correlations measured the strength of the relationship between personality traits and leadership. The direction of these relationships was established in the hypotheses. For the analysis, the factor scores were rotated with the varimax rotation technique of each personality domain, and the average of the three leadership styles was used. Conscientiousness showed the highest relationship within transformational leadership ($r = 0.257$, $p < 0.01$), followed by extraversion ($r = 0.234$, $p < 0.01$). A weak positive association was also observed in relation to openness to experience ($r = 0.101$, $p = 0.038$). Also, the results highlight a significant negative association between neuroticism and the transformational leadership style ($r = -0.439$, $p < 0.01$). Kindness did not present a significant relationship in the analysis.

The strongest positive relationship of transformational leadership was with conscientiousness ($r = 0.349$, $p < 0.01$) and extraversion ($r = 0.213$, $p < 0.01$). A negative association was also observed concerning neuroticism ($r = -0.225$, $p < 0.01$). On the other hand, a negative association of the passive-avoidant leadership style was found concerning extraversion ($r = -0.307$, $p < 0.01$) and conscientiousness ($r = -0.188$, $p < 0.01$). Furthermore, a significant positive association was evident for

neuroticism ($r = 0.452$, $p < 0.01$). No evidence of a relationship was found between experience and kindness and transactional and passive-avoidant leadership. The correlation analysis allowed the use of a single score for each leadership style, finding significant relationships between these styles and personality domains (Table 5).

Three regression models were built for each leadership type in their role as endogenous variables, considering the personality domains and work experience as independent variables. The values of the F tests at the significance level, less than 0.01, indicate that the coefficients differ from zero and prove that the models were adequate at the regression level. The adjusted coefficients of determination R^2 indicate that the independent variables explained approximately 57.6% of the variation in transformational leadership, around 51.5% in transactional style, and approximately 57.9% in passive-avoidant style. It was determined that the variance inflation factor (VIF) and Durbin-Watson were obtained to determine problems of multicollinearity and autocorrelation of the residuals, respectively. FIV values greater than 10 denote multicollinearity problems and values far from 2 in the Durbin-Watson statistic indicate autocorrelation problems (Gujarati & Porter, 2010). The results do not present problems that could affect the interpretation of the models.

The regression coefficients of the transformational leadership model are reported in Table 6. At

Table 5. Correlations between leadership styles and the Big Five domains

Personality domains	Transformational	Transactional	Passive-avoidant
Neuroticism	−0.439**	−0.225**	0.452**
	(p < 0.01)	(p < 0.01)	(p < 0.01)
Agreeableness	−0.042	0.006	0.028
	(0.3878)	(0.9089)	(0.5704)
Extraversion	0.234**	0.213**	−0.307**
	(p < 0.01)	(p < 0.01)	(p < 0.01)
Openness to experience	0.101*	−0.054	−0.015
	(0.038)	(0.271)	(0.761)
Conscientiousness	0.257**	0.349**	−0.188**
	(p < 0.01)	(p < 0.01)	(p < 0.01)

Note: ** $p < 0.01$ level, two-tailed.

a significance level of 1%, the standardized coefficient with the most critical effect was obtained by conscientiousness ($\beta = 0.146$), closely followed by extraversion ($\beta = 0.132$) and the negative effect of neuroticism ($\beta = -0.271$). The variables openness to experience ($\beta = 0.061$) and work experience ($\beta = 0.011$) had positive effects in terms of transformational leadership at the 95% confidence level. Agreeableness did not present a significant coefficient.

Table 7 presents the regression coefficients for the transactional leadership style. At a significance level of 1%, conscientiousness and work experience had a greater positive effect on the transformational leadership style, with a standardized coefficient of 0.303 and 0.222, respectively. This effect is followed by extraversion, with a standardized coefficient of 0.169. Neuroticism presented a negative coefficient of 0.243, significant at a confidence level of 99%. When analyzing the domains

Table 6. Regression coefficients for transformational leadership style

Model	Unstandardized coefficients		Standardized coefficients	T	Significance	VIF
	B	S.E.	β			
(Constant)	2.842	0.055		52.009	< 0.001	
Agreeableness	−0.031	0.025	−0.051	−1.259	0.209	1.011
Openness to experience	0.061	0.025	0.100*	2.473	0.014	1.000
Extraversion	0.132	0.025	0.217**	5.270	< 0.001	1.043
Neuroticism	−0.271	0.025	−0.445**	−11.006	< 0.001	1.007
Conscientiousness	0.146	0.025	0.239**	5.783	< 0.001	1.049
Working experience	0.011	0.005	0.086*	2.020	0.044	1.111
Adjusted R²	0.576					
F-test	34.006***					
Durbin-Watson	1.853					

Note: ** $p < 0.01$ level, two-tailed. * $p < 0.05$ level, two-tailed.

Table 7. Regression coefficients for transformational leadership

Model	Unstandardized coefficients		Standardized coefficients	T	Significance	VIF
	B	S.E.	β			
(Constant)	2396	0.067		35.515	< 0.001	
Agreeableness	−0.012	0.031	−0.017	−0.397	0.691	1.011
Openness to experience	−0.042	0.030	−0.058	−1381	0.168	1.000
Extraversion	0.121	0.031	0.169**	3.917	< 0.001	1.043
Neuroticism	−0.174	0.030	−0.243**	−5.724	< 0.001	1.007
Conscientiousness	0.217	0.031	0.303**	6.991	< 0.001	1.049
Working experience	0.034	0.007	0.222**	4.985	< 0.001	1.111
Adjusted R²	0.515					
F-test	24.748***					
Durbin-Watson	1.820					

Note: ** $p < 0.01$ level, two-tailed. * $p < 0.05$ level, two-tailed.

Table 8. Regression coefficients for passive-avoidant leadership

Model	Unstandardized coefficients		Standardized coefficients	T	Significance	VIF
	B	S.E.	β			
(Constant)	0.811	0.050		16.098	< 0.001	
Agreeableness	0.014	0.023	0.026	0.636	0.525	1.011
Openness to experience	−0.009	0.023	−0.015	−0.381	0.703	1
Extraversion	−0.175	0.023	−0.311**	−7.566	< 0.001	1.043
Neuroticism	0.254	0.023	0.451**	11.165	< 0.001	1.007
Conscientiousness	−0.108	0.023	−0.192**	−4.661	< 0.001	1.049
Working experience	0.002	0.005	0.021	0.492	0.623	1.111
Adjusted R^2	0.579					
F-test	34.538***					
Durbin-Watson	1.792					

Note: ** $p < 0.01$ level, two-tailed. * $p < 0.05$ level, two-tailed.

referring to agreeableness and openness to experience, they did not present significant effects on the transactional leadership style.

Table 8 reports the regression coefficients for the passive-avoidant leadership style. Neuroticism is the most crucial domain in influencing this style, with a positive coefficient of 0.451 at the 99% confidence level. This result is followed by the domains of extraversion (β = −0.175) and conscientiousness (β = −0.108) with negative and significant coefficients. Agreeableness, openness to experience, and work experience did not significantly affect the passive-avoidant leadership style.

4. DISCUSSION

Various studies suggest that differences in leader behavior are background characteristics, and leaders' behaviors are predictable from personality traits (Bass, 2008; Bono & Judge, 2004; Lim & Ployhart, 2004). Therefore, the present study responded to this research need, contributing to the literature. The paper suggests the possibility of using a single score for each leadership style, given that significant relationships exist between these styles and personality domains. In this way, the findings agree with what Judge and Bono (2000) indicated to treat transactional leadership and passive-avoidant leadership as different leadership styles. On the other hand, it contrasts with the conclusions of Avolio and Bass (2004), who recommended using the four independent scores of each dimension.

The findings highlight that extraversion and conscientiousness constitute the most consistent personality traits of the three leadership models, with significant and positive coefficients for the transformational and transactional. At the same time, it is negative for the passive-avoidant style. In this context, people with a high level of extraversion have greater possibilities of integrating into group situations (Emery et al., 2013; Zareen et al., 2015). Likewise, conscientious people can quickly emerge as leaders. These findings are widely corroborated by Bono and Judge (2004), Judge and Bono (2000), and Zopiatis and Constanti (2012).

The neuroticism trait was negatively associated with transformational and transactional leadership but positively associated with passive-avoidant leadership. These findings are consistent with previous studies that suggest that a leader must be emotionally stable (Bono & Judge, 2004). A low level of neuroticism is an important predictor of leadership potential (Prochazka et al., 2018). Furthermore, neurotic people are unlikely to demonstrate traits of motivation, inspiration, and intellectual stimulation (Costa & McCrae, 1992). Openness to experience reported a positive and significant coefficient only in the transformational leadership model, demonstrating that this trait represents a characteristic of a transformational leader. Open to experiences shows characteristics of being creative, imaginative, and curious, thus allowing managers to reveal interest in implementing new ways of managing and new visions of the future for the companies they direct (Bono & Judge, 2004). Work experience showed positive and significant coefficients in the transformational and transactional styles, demonstrating that the time the individual has practiced his profession can be a significant predictor of leadership (D'Alessio, 2008).

Agreeableness showed no significant coefficients in the three models of leadership styles for the Ecuadorian context. These results go in the same direction as those found by Judge et al. (2002), who showed that agreeableness was the trait that had the least relevance within the Big Five model. Thus, agreeable people tend to be obedient and passive and are less likely to emerge as leaders. In contrast, Judge and Bono (2000) and Emery et al. (2013) determined that agreeableness is a consistent predictor of leadership style behavior, mainly transformational.

The results about the importance of the constructs of the five personality traits in predicting leadership style were ambiguous. Extraversion, conscientiousness, and neuroticism were the facets with the greatest predictive capacity in all three cases. The findings show that four of the five major personality traits better predict transformational leadership (neuroticism, extraversion, conscientiousness, and experience). However, the transactional and passive-avoidant leadership models require further analysis since few domains have predictive capacity. This can result from a more specific approach to personality traits, selecting facets with a higher correlation index for each leadership style as an alternative to the Big Five model.

CONCLUSION

The study aimed to evaluate how personality domains affect transformational, transactional, and passive-avoidant leadership styles in graduate students from private universities in Ecuador. The results concluded that personality domains affect the three leadership styles. Extraversion and conscientiousness positively and significantly impact transformational leadership, while neuroticism has a negative and significant impact. Extraversion and conscientiousness positively and significantly impact transactional leadership, while neuroticism has a negative but significant effect. Extraversion and conscientiousness have a negative and significant impact on passive-avoidant leadership, while neuroticism has a positive and significant impact. Agreeableness and experience had little and insignificant impact on the leadership styles studied.

Future research should be aimed at analyzing the relationship of the variables in other contexts, such as in the public sphere. Studies with a qualitative approach should be implemented, which will allow us to delve deeper into the knowledge of the constructs, such as through in-depth interviews with experts on the subject. Finally, researchers are encouraged to explore the study with other leadership styles such as servant and collaborative.

AUTHOR CONTRIBUTIONS

Conceptualization: Danny Xavier Arévalo Avecillas, Rober Anibal Luciano Alipio.
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APPENDIX A

Table A1. Factor loadings and congruence for factors in managers' NEO-PI-R form rotated to the Normative American Structure

Domains/Facets	Cronbach's Alpha	Factor					Variable Congruence
		N	A	EX	OE	C	
Neuroticism	**0.892**						
N1. Anxiety	0.676	**0.83**	−0.03	0.00	0.01	−0.01	0.99**
N2. Angry hostility	0.676	**0.77**	0.03	−0.03	0.02	0.04	0.99**
N3. Depression	0.725	**0.77**	−0.01	−0.03	0.07	0.05	0.98**
N4. Self-awareness	0.656	**0.83**	0.01	0.01	−0.05	−0.01	1.00**
N5. Impulsiveness	0.687	**0.84**	−0.00	0.03	−0.02	−0.04	0.99**
N6. Vulnerability	0.783	**0.81**	0.01	0.01	0.01	0.00	1.00**
Agreeableness	**0.883**						
A1. Trust	0.731	0.06	**0.79**	−0.05	0.05	0.03	0.99**
A2. Straightforwardness	0.696	−0.03	**0.75**	0.06	−0.02	−0.05	0.99**
A3. Altruism	0.767	−0.00	**0.81**	−0.01	−0.06	−0.03	0.99**
A4. Compliance	0.719	−0.03	**0.77**	0.05	0.04	0.07	0.99**
A5. Modesty	0.725	−0.02	**0.82**	−0.08	−0.00	−0.03	0.99**
A6. Tender-mindedness	0.725	0.02	**0.83**	0.04	0.01	0.01	0.99**
Extraversion	**0.816**						
EX1. Warmth	0.571	−0.00	−0.02	**0.70**	0.09	−0.00	0.99**
EX2. Gregariousness	0.657	0.04	−0.04	**0.75**	−0.05	0.01	0.99**
EX3. Assertiveness	0.638	−0.01	0.01	**0.69**	−0.04	0.05	0.99**
EX4. Activity	0.578	0.02	0.03	**0.76**	0.08	−0.06	1.00**
EX5. Excitement-seeking	0.624	−0.02	−0.01	**0.65**	−0.05	−0.01	0.98**
EX6. Positive emotions	0.587	−0.05	0.05	**0.77**	−0.04	0.02	0.90*
Openness to Experience	**0.800**						
OE1. Fantasy	0.677	−0.03	0.0276	0.02	**0.82**	0.04	0.99**
OE2. Aesthetics	0.695	0.00	−0.0303	−0.00	**0.80**	−0.02	0.99**
OE3. Feelings	0.658	−0.05	−0.0359	0.00	**0.63**	0.01	1.00**
OE4. Actions	0.661	0.01	−0.0204	−0.02	**0.76**	−0.04	0.99**
OE5. Ideas	0.653	0.04	0.0093	0.04	**0.77**	−0.00	0.99**
OE6. Values	0.613	0.07	0.0589	−0.08	**0.39**	−0.00	1.00**
Conscientiousness	**0.807**						
C1. Competition	0.547	0.02	−0.0329	0.04	0.01	**0.75**	0.99**
C2. Order	0.508	−0.02	0.0101	−0.02	−0.10	**0.67**	0.98**
C3. Dutifulness	0.530	0.00	0.0295	0.07	0.08	**0.68**	0.98**
C4. Achievement striving	0.429	0.07	0.0052	−0.03	0.01	**0.73**	1.00**
C5. Self-discipline	0.434	0.07	−0.0505	0.03	−0.08	**0.72**	0.99**
C6. Deliberation	0.537	−0.13	0.0351	−0.08	0.08	**0.74**	0.97**
Full Model/Total Congruence	**0.746**	0.99**	0.88*	0.99**	0.99**	0.99**	0.99**

Note: 418 valid cases. Factor loadings over 0.40 in absolute magnitude are given in boldface. N = Neuroticism; EX = Extraversion; OE = Openness to Experience; A = Agreeableness; C = Conscientiousness. * Congruence coefficient higher than 95% of random data sets rotated to target. ** Congruence coefficient higher than 99% of random data sets rotated to target.