

Personality differences among college students according to their career and level of satisfaction

Diferencias de personalidad en universitarios de acuerdo con su carrera y nivel de satisfacción

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Abstract:

This study aimed to analyze the personality of college students in third and fourth year from different careers to test the hypothesis that the student's personality is differentiable according to their career. Two hundred fifty-nine university students from Oaxaca, México, were evaluated; 152 women and 105 men with an average age of 21.37 (SD = 1.92) were classified into four groups; engineering, medicine, business, and psychology. The research was quantitative and descriptive, personality was evaluated through the Big Five Inventory. The ANOVA analysis was applied to search for personality differences; no significant comparisons were found to support the initial hypothesis. The information was analyzed again considering the satisfaction variable; when comparing the groups, it was found that satisfied students are more conscientious while dissatisfied students are higher in neuroticism. These differences were significant ($R = 0.004^{**}$ y $N < 0.001^{***}$) and are consistent with studies on the level of life satisfaction about personality factors.

Keywords:

Conscientiousness, neuroticism, Big Five Personality Factors, comparison

Resumen:

El objetivo del presente estudio es analizar la personalidad en universitarios de tercero y cuarto año de distintas carreras para probar la hipótesis de que la personalidad de los estudiantes es diferenciable según su carrera. Se evaluó a 259 universitarios mexicanos; 152 mujeres y 105 hombres con una edad promedio de 21.37 (DE= 1.92) clasificados en cuatro grupos; ingeniería, medicina, negocios, psicología. La investigación fue de carácter cuantitativo y descriptivo, se evaluó la personalidad mediante el Inventario de los Cinco Grandes. Se realizó un análisis ANOVA para buscar diferencias de personalidad, no se encontraron datos significativos que apoyen la hipótesis inicial. Se analizó nuevamente la información tomando en cuenta la variable de satisfacción, al comparar los grupos se encontró que los alumnos satisfechos son más responsables y los no satisfechos son más altos en neuroticismo. Estas diferencias fueron significativas ($R = 0.004^{**}$ y $N < 0.001^{***}$) y son consistentes con estudios sobre el nivel de satisfacción vital en relación con los factores de personalidad.

Palabras Clave:

Responsabilidad, neuroticismo, Cinco Factores de Personalidad, comparación

INTRODUCTION

The idea that students studying the same university degree share similar personalities has been studied from different personality theories (García et al., 2009; Guzmán-González et al., 2020); however, the results of the studies are inconclusive and do not reach an agreement on the validity of the claim. There are

methodological differences between the studies in this regard, and most focus on studying the similarities between the same career group rather than finding differential profiles between them.

Some studies have had results that support the idea that students of the same major share a defined personality profile. For example, the questionnaire of 16 Personality Factors form A

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(16FP) was applied to 141 psychology students from the Public University of the West of Mexico to find distinctive personality factors; it was concluded that the presence of traits related to emotional instability and indicators that indicate a lack of adherence to social norms are common in the personality of psychology students. As additional data, significant differences were found between the intelligence and impulsivity factors of men and women (Guzmán-González et al., 2020).

Another study focused on the similarities in students of different careers belonging to the same area of study; García-Sedeño et al., 2009 analyzed the personality of 735 students through the 16FP questionnaire and divided them into groups according to their results in the Kuder-C Professional Tendencies Questionnaire; the first shows a trend towards the area of science and technology (S&T) and the second towards the humanities and social sciences (H&S). A significant difference was found between the groups in sensitivity, warmth, impulsiveness, and emotional stability. Also, areas are associated differently with specific traits; HyCS showed higher levels of extroversion, while in S&T, it happens the other way around. In a third study based on Holland's theory, the personality of a sample of 213 students from the University Center for Administrative Economic Sciences was analyzed to investigate the motivation for choosing a career and the differences in the personality characteristics of the students—international business and tourism. The model used classifies personality and occupations into six vocational profiles, arguing that the vocational choice is the expression of the individual's personality and, therefore, the more congruent it is with their work environment, the greater their satisfaction, stability, and achievement. professional (Sánchez & Valdés, 2007). The research concluded that the students of both majors matched the entrepreneurial profile of the model since they share traits such as leadership, extraversion, and ease in establishing social relationships (Cruz Barba & Silva Gutiérrez, 2018). On the contrary, other investigations have not found personality similarities between students of the same major. For example, in a study that analyzed the personality traits that determine vocational choice in students of different careers at the business school through the application of a survey to 392 university students from northern Mexico did not find a defined profile for each business school degree; however, found that the entrepreneurship attribute was a substantial similarity among the students in the sample (Farías-Martínez et al., 2016).

Similarly, (van Huizen, Mason, & Williams, 2021), based on Holland's vocational model, found that the average personality type of a sample of paramedicine students did not match the profile proposed by the model for this career. Although on average, the students coincided in two of the three traits indicated by Holland's profile, this was only the case for some of them. Hence, the study concludes that the university students with the most remarkable coincidence between their personality profile and Holland's paramedicine profile will perform better in the race and less predisposition to be affected by the high-stress levels. Among the studies that address the issue, tests such as the

16FP and personality surveys based on Holland's vocational profiles model are the most widely used for personality assessment. However, the Big Five Model (MCG) is one of the personality theories with the greatest evidence and predictive success to date (Soto, 2018) since personality functioning is explained through the interaction of five factors with external influences and biological factors to form and maintain adaptive characteristics (McCrae & Costa, 1996). In other words, there are five basic categories into which people's behavioral tendencies can be classified, which, added to the environmental stimuli and the biological characteristics of the individual, result in the way of being of each one.

The five personality factors that make up the model are: 1) extraversion: refers to individual differences in social engagement, assertiveness, and energy to participate in social relationships; 2) agreeableness: describes positive and empathetic attitudes towards others, encompasses compassion, respect and the ability to accept others, 3) responsibility: it is the level of organization, productivity, and commitment that a person places in their activities and relationships; 4) neuroticism: related to the incidence of negative emotions such as anxiety, sadness, and mood swings and 5) openness to experience: predisposition to engage in intellectual, creative, and imaginative activities (Soto, 2018). Based on these personality factors, the model has shown the ability to successfully predict the performance of individuals in different areas of life (Soto, 2018), for example, the article by Novoa and Barra (2015) that evaluated 353 students and analyzed the interaction between their level of life satisfaction, personality, and perceived social support. The level of satisfaction showed a negative relationship with neuroticism and a positive relationship with the rest of the factors, except for openness, which was not related. The variables with the greatest influence were perceived social support, neuroticism, and extraversion. Considering the GCM's ability to relate to other variables, it is worth comparing the data offered by this model in the study of personality with the existing evidence.

Perera and McIlveen, 2018 addressed the relationship between career choice and personality from the GCM, they concluded that the factors have an important influence on the vocational choice process. In their research, they classified students into six profiles according to their vocational interests (social, realistic, conventional, disinterested, ambivalent, and investigative) and analyzed their personality using the Big Five Questionnaire. They observed that high scores in extraversion and agreeableness increase the probability of having a "social" profile, in openness to experience they are related to the "investigative" group and in responsibility with the "conventional" and "disinterested" profiles; on the other hand, the neuroticism scale was not significant in the classification.

The importance of the study of this subject lies in the fact that the vocational choice is a necessary step to access the university level, however, the wrong choice of a career by the students causes them to change educational institutions and fall behind in

their studies. Or have to drop out of school, which is why it is among one of the main causes of school lag and academic dropout at the higher education level in Mexico (Jiménez-García & Gómez-López, 2019), which during the 2019-2020 cycle it reached a rate of 7.4% in the country (National Institute of Statistics and Geography, 2020).

It was finally, understanding how factors such as personality influence vocational choice can help to offer adequate vocational guidance services to students, preventing them from falling behind and dropping out of the university (Jiménez-García & Gómez-López, 2019). Through this study, it is expected to prove the usefulness of the MCG within the occupational field and lay a foundation for its use during the vocational guidance process in the future, as well as to know how much the students' personality influences their career choice. In other words, the research aims to analyze personality factors to find differences between students who study different careers.

METHOD

Participants

The study is quantitative and has a descriptive scope (Hernández-Sampieri & Mendoza-Torres, 2018). The sample consisted of 259 students from the last two years of four different careers in Oaxacan universities, who were gathered through a quantitative snowball sampling. Of them, 152 were women and 105 men; the mean age was 21.37 (SD=1.92). The participants were classified into four groups according to the career they were studying, as shown below (see Table 1).

Table 1

Sample distribution (N=259)

Date	Category	Frecuency (fi)	Percentage (%)
Sex	Women	176	68.8%
	Men	80	31.3%
Semester	4°	70	27.3%
	1°	66	25.8%
	3°	54	21.1%
	2°	28	10.9%
	6°	19	7.4%
	9°	11	4.3%
	8°	5	2.0%
	7°	3	1.2%
Occupation	Student	186	72.7%
	Study and work	70	27.3%
Civil Status	Single	250	97.7%
	Free Union	4	1.6%
	Married	2	0.8%

Note: the total of the groups adds up to 100%

Instruments

John Donahue and Kentle's (1991) Big Five Inventory was used, adapted from Castro Solano and Casullo, 2001, which assesses personality through five scales: extraversion, agreeableness, neuroticism, responsibility, and openness to experience, and gives a score that allows knowing the tendencies of the person in each one of them. The participant is presented with a series of statements and is asked to answer how identified they feel in each case. The questionnaire consists of 44 items on a Likert scale (strongly disagree=1, slightly disagree=2, neither agree nor disagree=3, slightly agree=4, strongly agree=5). According to the study carried out by Reyes Zamorano, Carrillo Álvarez, Silva Peredo, Sandoval Miranda, and Rebolledo Pastrana, 2014, the test obtained a coefficient of $\alpha=0.72$ for its application in the Mexican population.

Additionally, a sociodemographic data card was applied where students were asked to which major they belonged to and the resulting groups functioned as an independent variable.

A Likert scale question was also included to assess the student's level of satisfaction with his career (not at all satisfied=1, not very satisfied=2, moderately satisfied=3, satisfied=4, very satisfied=5) with the purpose of determining if this variable influenced the personality differences obtained between groups. It was decided to classify the answers as satisfied and not satisfied.

Procedure

For data collection, a form with three sections was distributed electronically; the first contained the informed consent and informed the respondent of the conditions of their participation as established in section 8 of the Ethical Principles of Psychologists and the Code of Conduct (2017).

The second collected the demographic data and added a question that evaluated the level of satisfaction with the career and finally, the third contained the ICG. The maximum response time was 30 minutes. The collected data was captured in Excel, the individual results were obtained and entered into the JASP program (JASP Team, 2020) where the average per group was determined on each scale and the ANOVA function was applied to determine if there were significant differences between the group means. To broaden the study of the sample, a new variable was added. The sample was separated into two groups and the data was reanalyzed through the ANOVA function to compare the personalities of the students who reported satisfaction with their career. (4: satisfied or 5: very satisfied) and those who reported not feeling totally satisfied (1: not at all satisfied, 2: little satisfied, 3: moderately satisfied). In post hoc analyses, the Tukey multiple comparison test was applied.

RESULTS

Differences between the scores of the groups on the ICG scales were analyzed. Differences were observed in the group means (see Table 2), business was the highest group in openness to experience and extraversion, and psychology obtained the

highest means in agreeableness, neuroticism, and responsibility. On the other hand, the group that obtained the lowest mean in agreeableness was business, in extraversion the psychology group, in responsibility, engineering, and finally medicine obtained the lowest score in openness to experience and neuroticism.

Table 3

Sociodemographic data of psychology students

Carrera	n	Ag		Ap		E		N		R	
		Mean	DS	Mean	DS	Mean	DS	Mean	DS	Mean	DS
Engineering	55	3.26	0.43	3.81	0.57	3.06	0.74	3.06	0.78	3.12	0.57
Medicine	91	3.26	0.55	3.69	0.74	3.14	0.84	2.95	0.72	3.23	0.58
Business	56	3.25	0.45	3.97	0.53	3.33	0.68	2.96	0.83	3.20	0.57
Psychology	57	3.30	0.53	3.76	0.61	2.99	0.65	3.08	0.64	3.28	0.59

Note: Ag: pleasantness. Ap: openness to experience. I: extraversion. N: neuroticism. A: responsibility.

The ANOVA indicated that the F statistic did not reach significance in any of the cases (see Table 3), therefore there are no statistically significant personality differences between the races. This suggests that the personality differences found among the students in this sample cannot be attributed to their belonging to a group (engineering, medicine, business, or psychology).

Table 3

Group differences on the ICG scales

Factor	MS	F	p
Pleasantness	0.03	0.10	0.96
Openness to experience	0.96	2.38	0.07
Extroversion	1.21	2.16	0.09
Neuroticism	0.31	0.56	0.64
Responsibility	0.24	0.73	0.53

Note: Significant score $p < 0.05$.

When the data were reanalyzed comparing the personalities of students who reported satisfaction with their career and those who reported not feeling fully satisfied, the results revealed significant personality differences in the responsibility trait with a medium effect size ($F(7, 251) = 6.794, p < 0.001, \omega^2 = 0.076$) and neuroticism with a small effect size ($F(7, 251) = 4.489, p = 0.004, \omega^2 = 0.028$) between both groups (see Table 4).

Table 4

Variability and statistical differences between students satisfied and dissatisfied with their career

Category	n	AG		AP		E		N		R	
		F	p	F	p	F	p	F	p	F	p
Satisfied	179										
Dissatisfied	80	1.34	0.248	2.13	0.146	0.66	0.418	8.37	<.001***	21.854	0.004**

** $p < .01$; *** $p < .001$

Note: Ag: pleasantness. Ap: openness to experience. I: extraversion. N: neuroticism. A: responsibility.

As shown in the table below, the group means were compared to find out the source of the differences. In the post hoc analysis, the Tukey test revealed higher levels of responsibility and lower scores in neuroticism in the satisfied students compared to the group that reported not feeling completely satisfied with the degree.

In the same way, other differences were observed between the means of both groups; students dissatisfied with the major show a lower level of openness to experience, agreeableness, extraversion, and responsibility than satisfied students, although these differences were not reported to be statistically relevant (see Table 5).

Table 5
Measurements of the ICG scales in satisfied and dissatisfied students

	Opening		Pleasantness		Extraversion		Responsibility		Neuroticism	
Carrera	NS	S	NS	S	NS	S	NS	S	NS	S
Engineering	3.95	3.73	3.27	3.27	3.20	2.98	2.87	3.29	3.33	2.90
Medicine	3.48	3.77	3.14	3.30	2.90	3.24	3.04	3.30	3.13	2.89
Business	3.96	3.99	3.18	3.31	3.46	3.25	3.00	3.34	3.23	2.79
Psychology	3.45	3.86	3.28	3.31	2.67	3.09	2.96	3.38	3.14	3.07
Total	3.71	3.84	3.22	3.30	3.06	3.14	2.97*	3.33*	3.21*	2.91*

Note: NS: not satisfied, S: satisfied; *shows groups with statistically significant difference

DISCUSSION AND CONCLUSION

Not enough information was found to support the hypothesis that students of the same degree have similar personalities, since the differences between the groups were not statistically significant, which suggests that the variability in the personality of the students in this sample is independent of his career. Therefore, the main hypothesis is rejected.

In addition, the main results of the study show discrepancy with those of other investigations. For example, Cruz-Barba and Silva-Gutiérrez (2018) were based on Holland's model and found that international business and tourism students fit the entrepreneurial profile, similarly, García-Sedeño et al. (2009) divided their student population into two groups (sciences-technology and humanities-social sciences) and obtained significant differences between them, and finally Guzmán-González et al. (2020) studied a sample of psychology students and found that they share traits such as instability emotional and detachment from social norms.

When taking into account the satisfaction variable in order to know its interaction with the personality of the students, it was found that satisfied university students are more responsible and present lower levels of neuroticism than dissatisfied students. These results are consistent with what was found in Carmona-Halty and Rojas-Paz, 2014, who point out that emotional stability, the search for pleasant social interactions and a position of commitment towards responsibilities are characteristics of people who reach the highest levels. high satisfaction with life on a general level.

Regarding the trait of responsibility, some authors have addressed the issue using the term "grit" which is parallel to the trait of "responsibility" described in the MCG, since it refers to the level of perseverance and commitment of a person with long-term goals. term, and like "responsibility", it is capable of predicting academic permanence and the tendency to choose activities where commitment is required (Chaustre Jota, 2019). This variable has been shown to be positively correlated with an individual's life satisfaction and happiness, that is, the higher the level of grit, the higher their level of satisfaction with life will be, according to the study carried out by Singh & Jha, 2008.

In this same study it is mentioned that negative affect, to which the concept of neuroticism refers, is negatively correlated with the level of satisfaction with life and happiness of individuals, as found in the present investigation. Therefore, the trait of responsibility and neuroticism have an opposite effect on people's life satisfaction, as the study by Singh and Jha, 2008 shows.

Studies carried out in young populations have found that the level of negative emotions of a person can be useful to predict their level of well-being throughout life, for example, a high level of negative emotions was related to a lower level of well-being in adult life, as they are more prone to suffering from physical and psychological discomfort and to perceiving a level of dissatisfaction with life in general in the long term (Gale et al., 2013). This relationship between the tendency to negative affect and the level of satisfaction has also been studied in adulthood in other contexts, for example, a study was carried out with workers from two different banks, and it was found that workers with lower scores in the trait of neuroticism were also those who reported feeling more satisfied with their job, although in general the average level of this variable for the studied sample was reported as low (Hlatywayo et al., 2013).

What has been mentioned coincides with what was found by Novoa and Barra, 2015 who calculated the Pearson correlation coefficients to describe the relationship between the variables perceived social support, the big five personality factors and life satisfaction. They found that the most influential personality factors in life satisfaction in university students are neuroticism, responsibility and extraversion. In addition, they determined that the most relevant variables due to their predictive capacity are neuroticism, which is the only one with a negative correlation, and in second place, extraversion. However, it was concluded that the social support that students perceive from their family is the most significant correlation.

When comparing the results of this study with those found in similar investigations (Cruz-Barba & Silva-Gutiérrez, 2018; Farías-Martínez et al., 2016; García-Sedeño et al., 2009), it is important to take into account that the size of the effect of the personality factors on the level of satisfaction with the career was small in the trait of responsibility and medium in the case of

neuroticism. Additionally, unlike similar studies, in the present, career groups were taken into account instead of academic areas. It is also worth mentioning that the sample only took into account students in the last two years of each major, so the effect of satisfaction with the major in earlier stages is still being determined, since the study was not longitudinal.

Although the satisfaction variable was important for the results of this study, it should be taken into account that it was only addressed through a question in the sociodemographic data form. Its correlation with the other variables was not analyzed, unlike other studies, in which significant results were obtained in this regard (Singh & Jha, 2008), so it is recommended to evaluate this variable further if one wishes to understand its relationship with the personality of students from different majors. Although the significant data found does not contribute to the acceptance of the initial hypothesis, they can set a precedent for future research that takes into account the satisfaction variable, so it would be worth reproducing the study considering the limitations exposed, to observe what happens in more diverse samples.

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