

Tax Justice as a Determinant of Voluntary Tax Compliance: An Analytical Examination in the Algerian Environment

العدالة الجبائية كعامل محدد للامتثال الجبائي الطوعي: دراسة تحليلية في البيئة الجزائرية

. **Nadia ABDERRAHIM**^{1,*}, **Ismail MORAD**²

¹ University of Ain Temouchent (Algeria), nadia.abderrahim@univ-temouchent.edu.dz

² University of Ain Temouchent (Algeria), morad.ismail@univ-temouchent.edu.dz

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Abstract:

This study investigates the impact of vertical, horizontal, and procedural tax justice on voluntary tax compliance using a questionnaire administered to a random sample of 542 taxpayers.

SPSS analysis shows that all three dimensions of tax justice have a positive and statistically significant effect on compliance. Vertical justice exhibits the strongest influence, followed by procedural justice, while horizontal justice shows a weaker yet meaningful impact.

Overall, the combined effect of these dimensions enhances voluntary compliance. The study concludes that strengthening tax justice is essential for improving taxpayers' willingness to comply and for building trust in the tax administration.

Keywords: Tax justice; Voluntary Tax Compliance; Vertical Tax Justice; Horizontal Tax justice; Procedural Tax Justice.

Jel Classification Codes : H21 ; H26 ; H30.

*Corresponding author,

Introduction:

Tax justice, in all its dimensions, is a cornerstone of successful tax systems, it is one of the fundamental principles established by pioneers of classical finance, most notably Adam Smith, alongside the principles of certainty and convenience. Moreover, numerous recent studies have confirmed the importance of justice in achieving an effective and stable tax system.

The importance of tax justice stems from its contribution to building trust between tax authorities and taxpayers, a factor that, in turn, positively impacts levels of voluntary compliance and ensures the stability of tax revenues, thereby contributing to economic and social stability. Conversely a tax system not built on fair foundations can face resistance from taxpayers and increases the likelihood of tax evasion and tax crimes. However, tax justice alone is insufficient to achieve the desired compliance, it requires accompanying measures such as raising tax awareness among taxpayers and implementing effective oversight systems that ensure a balance between trust and accountability. This allows the tax administration to safeguard state resources while respecting taxpayers' rights. Hence, the central question of this research arises:

To what extent do the dimensions of tax justice (vertical, horizontal, and procedural) affect the level of voluntary tax compliance?

Given the research problem, it becomes necessary to formulate testable hypotheses that reflect the theoretical expectations of these relationships. Previous literature indicates that tax justice plays a significant role in shaping compliance behaviour; however, the strength of this influence may vary across the dimensions of justice under consideration. Accordingly, and to empirically verify these relationships, the following main and sub-hypotheses were developed:

H0: There is no statistically significant effect of tax justice on voluntary tax compliance.

H1: There is a statistically significant effect of tax justice on voluntary tax compliance.

H1a: Vertical tax justice has a statistically significant positive effect on voluntary tax compliance.

H1b: Horizontal tax justice has a statistically significant positive effect on voluntary tax compliance.

H1c: Procedural tax justice has a statistically significant positive effect on voluntary tax compliance.

In the Algerian context, the state is making continuous efforts to transition from reliance on oil revenues to traditional taxation. However, achieving this transition faces several challenges, most notably the prevalence of the informal economy, tax evasion, and generally weak compliance. Therefore, there is a need to study the factors influencing this behaviour, whether related to legislative and administrative reforms, enhancing the efficiency of human resources, or strengthening trust and tax awareness among taxpayers. In this regard, strengthening tax justice is a pivotal step in this process, given its role in increasing confidence in the tax system and boosting voluntary tax compliance.

I-Previous studies:

Previous studies have largely emphasized the importance of tax justice in promoting tax awareness and, consequently, voluntary tax compliance, this is based on classic studies such as (Allingham & Sandmo, 1972), which examined the economic and psychological factors influencing tax evasion, these studies indicated that evasion is primarily driven by the likelihood of audits and penalties, thereby implicitly highlighting the importance of a deep sense of fairness and equity within the tax system. Similarly, (Torgler, 2007) offered another example of this link, as his study connected tax justice to taxpayers' trust in the government, suggesting that a perceived fairness in the tax system reduces evasion.

In this context, (Kirchler et al., 2008) presented the "Slippery Slope Framework", which demonstrates that the highest levels of compliance are achieved when power (i.e., the power of tax authorities) and trust (i.e., taxpayers' trust in the government) are balanced, this model also affirmed that fairness enhances taxpayers' cooperation with tax authorities. Moreover, (Alm & Torgler, 2011) analysed the role of ethics and fairness in tax compliance, demonstrating that a strong sense of fairness is associated with higher levels of voluntary compliance. In the same vein, the (OECD (2019) report on transparency and international tax standards also emphasized that enhancing transparency and fairness within tax policies is a crucial factor in increasing tax compliance.

More recent studies have further broadened this framework by analysing the social and behavioural effects of tax evasion. For example, (Besley et al., 2023) showed that social norms and personal motivations interact with the application and enforcement of tax rules, such that compliance decreases when evasion is socially prevalent, while fostering trust and interaction with authorities promotes compliance, even in the absence of changes in legal penalties. Likewise, the (OECD, 2023) report indicated that simplifying tax procedures, increasing transparency and digitalization, and enhancing interaction between taxpayers and authorities contribute to improved tax compliance, the results also confirmed that procedural justice is a key factor in promoting voluntary compliance and reducing evasion, regardless of the severity of traditional penalties.

In addition, (Gangl et al., 2017) conducted behavioural experiments to measure the impact of procedural justice (such as ease of electronic reporting) on tax compliance. It found that tax compliance increases when tax authorities are perceived as legitimate and fair, rather than merely coercive or punitive. These experiments also showed that streamlining procedures and improving procedural justice promote voluntary compliance and reduce evasion, even in the absence of severe penalties. The study by (Bauhr & Grimes, 2017) focused on the role of financial and procedural transparency in promoting tax justice, indicating that increased access to information and effective accountability are associated with a decrease in non-compliance practices.

Beyond previous research, recent studies have added new dimensions by focusing on the role of digitalization (electronic platforms and artificial intelligence) in enhancing fairness and compliance. For instance, (Nathwani, 2024) examined the use of AI in automated tax decision-making, emphasizing justice and legal oversight, such as the need for transparency and the avoidance of bias. Along similar lines, (Mokander & Schroeder, 2024) demonstrated how AI can be used in designing tax policies to achieve justice or equality, while also addressing ethical, social, and political constraints. Finally, (Wang, 2024) conducted a systematic review analysing AI applications in tax administration, outlining their benefits, challenges, and impacts on tax compliance and transparency, while also highlighting the combined role of procedural justice and digitalization in promoting voluntary compliance and reducing tax evasion.

II-Conceptual Framework:

This section outlines the key concepts required to establish the theoretical framework of the study's variables and their corresponding dimensions.

II-1- Tax Justice: Definition and Dimensions:

Tax justice is defined as the principle that the tax system should be designed and implemented in a way that ensues fairness in the distribution of the tax burden according to taxpayers' ability to pay (Musgrave, 1959, p. 160). This justice is manifested through two main dimensions: horizontal justice, which requires taxpayers with similar financial capabilities to be treated equally, and vertical justice, which requires taxpayers with different financial capabilities to be treated

differently, so that those with higher incomes bear a relatively larger tax burden. (Musgrave, 1959, pp. 160–161)

The concept of tax justice goes beyond simply collecting revenue; it is an effective tool for redistributing income and wealth and correcting social and economic inequalities (Stiglitz, 2015, pp. 108–115). In this context, (Piketty, 2014, p. 571) argues that a progressive tax system, particularly wealth taxes, is essential to counter the structural trend toward increasing inequality in capitalist economies.

Tax justice has multiple dimensions, including procedural and institutional aspects; these, in turn, focus on the fairness and transparency of the tax system's application, ensuring equal opportunities for all taxpayers and providing clear mechanisms for appealing and reviewing tax decisions (Zolt & Bird, 2005, p. 42). Moreover economic literature emphasizes that effectively implementing tax justice requires a balance between these different dimensions: horizontal justice, which ensures equality among taxpayers with similar capabilities; vertical justice, which requires higher-income earners to bear a greater share of the tax burden; and procedural justice, which guarantees transparency and accountability (Musgrave & Musgrave, 1989, p. 218). At the international level, tax justice stands out as a framework for combating practices that undermine the national tax base, such as base erosion and profit shifting (BEPS), which is exploited by multinational corporations (OECD, 2015). In addition, efforts to combat tax evasion and fraud, and to promote transparency through the exchange of financial information, are also central to achieving global tax justice (Murphy, 2015).

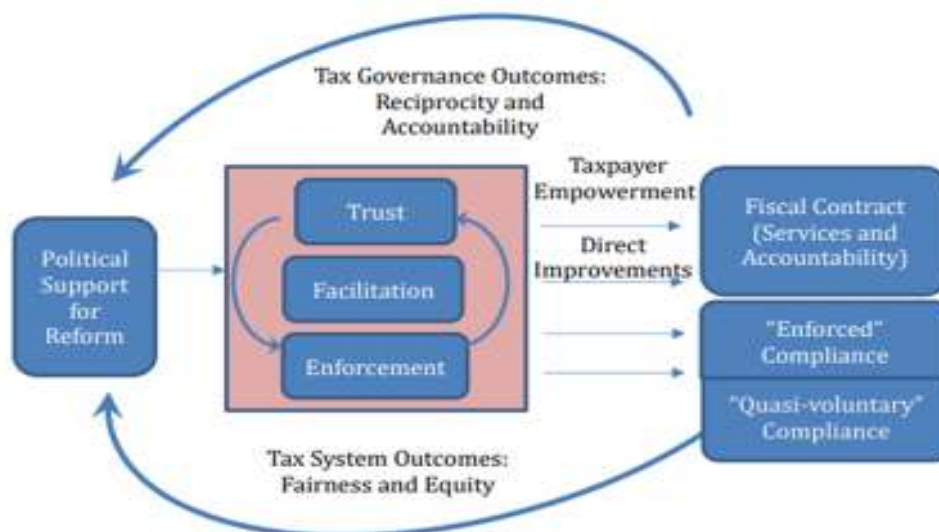
Recent empirical data further underscores the urgent need to adopt these principles. For instance, the World Inequality Report shows that the poorest 50% of the world's population owns only 2% of total global wealth, reinforcing the call for more progressive tax systems as a structural solution to growing inequality. (World Inequality Report, 2021)

II-2- Tax Compliance:

Tax compliance is a recent and important stage in global tax reform, shifting from the principle of mandatory tax payment to the principle of voluntary tax payment, driven by a sense of responsibility and belonging. This leads to greater awareness and engagement among taxpayers. Even in cases of coercion or a mandatory system, taxpayer behaviour continues to be shaped by the concept of tax compliance, preventing them from exploiting loopholes to evade taxes (OECD, 2014, p. 15). Voluntary tax compliance is defined as the behaviour of taxpayers based on their self-commitment to fulfilling various tax obligations—from registration and filing returns to reporting, payment, and fulfilling additional obligations—without external coercion. In this context, the taxpayer is “In control” of his tax obligations, and aware of both the results and the method by which these results were achieved. (OECD, 2014, p. 15)

The World Bank has developed a theory highlighting the impact of political support for tax reforms in building trust between the government and taxpayers, streamlining procedures, and strengthening enforcement authority. This positively impacts tax governance outcomes by enhancing transparency and accountability, thereby empowering taxpayers. This empowerment, in turn, leads to the establishment of a tax contract that strengthens both compulsory and semi-voluntary tax compliance, thus revitalizing the cycle and reinforcing the sustainability of the tax system.

Figure n°1: The World Bank's Theory of Tax Compliance



Source : (*What Drives Tax Morale?*, 2012)

Improving voluntary taxpayer compliance is a key objective of tax authorities, and can be objectively measured by the extent to which taxpayers voluntarily fulfil their obligations. While specific taxpayer obligations vary from one tax system to another and from one jurisdiction to another, there are four universal categories of obligations common to most taxpayers: (OECD, 2014, p. 60)

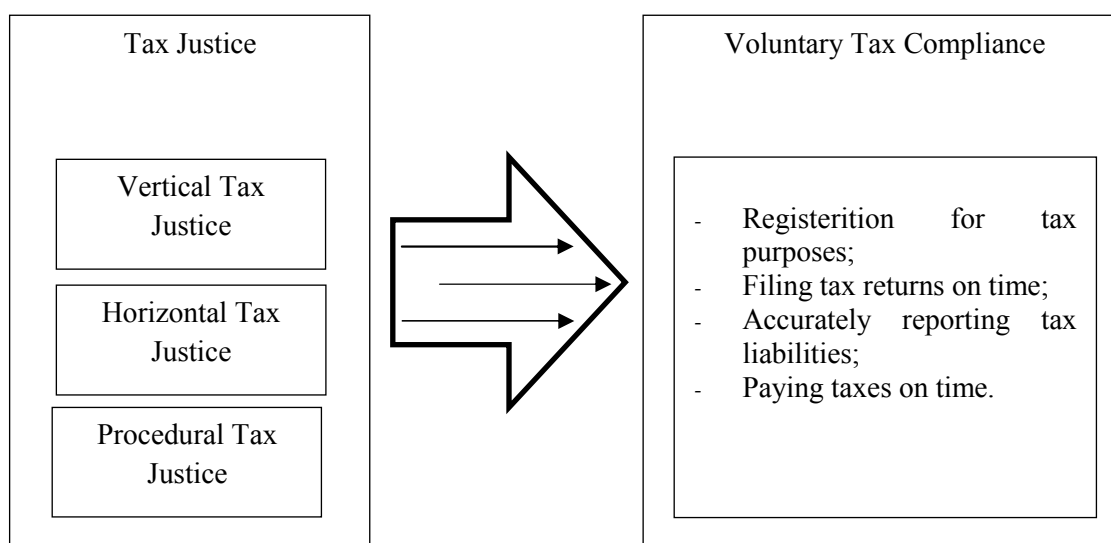
1. Registration for tax purposes;
2. Filing tax returns on time;
3. Accurately reporting tax liabilities;
4. Paying taxes on time.

In this regard, a distinction can be made between voluntary compliance, in which taxpayers fulfil these basic obligations willingly, and enforced compliance, in which compliance is achieved only after intervention by the tax authority. This distinction is crucial, as enforced compliance often entails significant costs. Ideally, tax authorities seek full voluntary compliance; however, when non-compliance occurs, enforced compliance becomes necessary. Taxpayers who fail to fulfil any of their obligations are considered non-compliant, although the reasons for their non-compliance may range from unintentional error to deliberate evasion. (OECD, 2014, p. 60)

□-Methodology and Tools:

The study model begins by identifying tax justice as the independent variable, represented by three main dimensions: vertical justice, horizontal justice, and procedural justice. The dependent variable is the voluntary tax compliance of taxpayers. This model was adopted based on previous literature that highlighted the pivotal role of the dimensions of justice in explaining compliance behaviour, as illustrated in the accompanying figure's conceptual structure:

Figure n°2 :The study model.



Source: Authors' compilation based on previous studies.

In light of this model, a comprehensive questionnaire was designed that aligns with its dimensions and variables. The questionnaire comprised five main sections: the first section was dedicated to collecting respondents' personal data, while the following three sections were dedicated to measuring tax justice across its three dimensions (vertical, horizontal, and procedural). The fifth section aimed to measure the level of voluntary tax compliance.

The study employed a descriptive methodology using a case study approach. The questionnaire was distributed to a random sample of taxpayers through direct distribution and social media platforms. A total of 587 questionnaires were returned, of which 45 were discarded due to incomplete or misunderstood questions, leaving 542 valid questionnaires for analysis. Given that the questionnaire was designed for respondents with varying levels of knowledge, we ensured the simplification of the questions to guarantee clarity of concepts and minimize errors arising from misunderstandings.

IV- Results:

In order to verify the hypotheses of the study and examine the relationships between the main variables, the collected data were subjected to a series of statistical analyses. These analyses aimed to describe the characteristics of the sample, assess the reliability of the measurement scales, and test the impact of the dimensions of tax justice on voluntary tax compliance. The following section presents the key statistical results obtained from SPSS.

IV-1- Reliability of the Study Instrument:

The study's reliability was measured using Cronbach's alpha coefficient. The results showed that all items used in the study exhibited a high degree of internal consistency, with alpha values ranging between (0.788 and 0.909), exceeding the minimum acceptable value (0.70). This confirms the reliability of the statistical instrument used to measure the dimensions of tax justice and voluntary tax compliance, as illustrated in the following table:

Table n°1: Stability coefficient

Variable	Number of Items	Cronbach's Alpha (α)
Vertical Justice	4	0.828
Horizontal Justice	3	0.788
Procedural Justice	5	0.872
Voluntary Tax Compliance	6	0.909
Overall Reliability of Items	18	0.829

Source: Authors' compilation based on SPSS (version 20) outputs.

IV-2- Statistical Analysis of the Questionnaire Data:

Table n°2: Personal data of the sample

Variables	Categories	N	%
Gender	Male	269	49.6
	Female	273	50.4
Age	Less than 20 years old	28	5.2
	20 to 39 years old	206	38.0
	40 to 59 years old	260	48.0
	More than 60 years	48	8.9
Academic Qualification	Primary Education or Less	45	8.3
	Secondary Education or Equivalent	216	39.9
	University Education or Equivalent	230	42.4
	Postgraduate Studies	51	9.4
Professional Status	Employee	190	35.1
	Self-employed	143	26.4
	Retired	77	14.2
	Unemployed	70	12.9
	Other	62	11.4
Professional experience	Less than 5 years	134	24.7
	From 5 to 10 years	184	33.9
	From 11 to 15 years	103	19.0
	More than 15 years	121	22.3

Source: Authors' compilation based on SPSS (version 20) outputs.

The sample is relatively balanced in terms of gender, with 49.6% male and 50.4% female respondents.

Most participants are middle-aged, with 48.0% aged between 40 and 59, and 38.0% between 20 and 39, indicating that the majority belong to economically active age groups.

Educationally, the sample is well-qualified: 42.4% hold a university degree, and 39.9% have a secondary-level education, while 9.4% possess postgraduate qualifications and 8.3% have only basic education.

In terms of employment, employees form the largest group (35.1%), followed by the self-employed (26.4%), retired individuals (14.2%), and the unemployed (12.9%). This diversity provides a comprehensive view of taxpayers with varying professional backgrounds.

Regarding work experience, the sample is well distributed: 33.9% have 5–10 years of experience, 24.7% less than 5 years, 19.0% between 11 and 15 years, and 22.3% more than 15 years. This variety enhances the reliability and depth of the collected opinions.

Overall, the sample appears appropriate and sufficiently diverse to explore the relationship between tax justice and voluntary tax compliance, though limited representation of younger and less educated respondents may slightly limit generalizability.

IV-3- Statistical Analysis of the Questionnaire Statements:

To evaluate respondents' perceptions of the study variables, descriptive statistics were calculated for all questionnaire items. The following sections present the means and standard deviations, which offer a clear overview of the general tendencies and variability in participants' responses.

IV-3-1- Descriptive Analysis of Tax Justice Axis:

Table n°3: Responses of the Sample Regarding the Tax justice Axis

Statement	M	Std
I believe that individuals or businesses with higher income pay more taxes than those with lower income.	3.39	0.835
The tax system ensures a fair distribution of the tax burden according to the taxpayer's ability to pay.	3.43	0.828
I think that available tax exemptions effectively target support for low-income individuals and small businesses.	3.39	0.863
The current tax system helps reduce income inequality levels.	3.35	0.820
Vertical Justice	3.3921	0.680
I believe that all taxpayers with similar income and activities are subject to the same rules and tax rates.	3.36	0.841
The tax administration treats all taxpayers with the same level of scrutiny and attention.	3.39	0.832
There is no favouritism or discrimination in the application of tax laws among taxpayers.	3.43	0.858
Horizontal Justice	3.3911	0.707
The registration, declaration, and payment procedures in the tax system are simple and clear.	3.36	0.842
I can easily access clear tax information and instructions when needed.	3.39	0.832
The tax administration has effective communication channels for inquiries and complaints and responds promptly.	3.42	0.842
Tax administration employees treat me fairly during interactions.	3.43	0.860
I have the ability to appeal tax decisions and have them reviewed fairly.	3.40	0.814
Procedural Justice	3.3996	0.682
Overall Tax justice dimensions	3.3950	0.394

Source: Authors' compilation based on SPSS (version 20) outputs.

The results show a moderate perception of tax justice among respondents, with all dimensions scoring around the midpoint of the scale. Vertical Justice recorded a mean of 3.39, indicating a balanced view that higher-income individuals are generally seen to pay more taxes, though not to a fully satisfactory degree. Horizontal Justice scored 3.39, reflecting a fair but not complete belief in equal treatment and the absence of favouritism among taxpayers. Procedural Justice showed the

highest perception ($M = 3.40$), suggesting relative confidence in the clarity of procedures, access to information, and fairness in interactions with tax authorities.

Overall, the Tax justice construct averaged $M = 3.40$, indicating a moderately positive yet cautious perception of fairness within the tax system—respondents acknowledge elements of justice but still perceive areas that need improvement.

IV-3-2- Descriptive Analysis of Voluntary Tax Compliance Axis:

Table n°4: Responses of the Sample Regarding the Voluntary Tax compliance Axis

Statement	M	Std
I am officially registered with the tax authorities.	3.40	0.842
Registration for Tax Purposes	3.40	0.842
I always file tax returns within the specified deadlines.	3.40	0.813
Filing Tax Returns on Time	3.40	0.813
I make sure to accurately declare all my income and profits in my tax return.	3.42	0.827
I provide all required documents and financial records (such as invoices and statements) correctly and completely.	3.38	0.840
I do not hide any information or income that could affect the calculation of taxes due.	3.42	0.852
Accurate Reporting of Tax Obligations	3.41	0.728
I pay my taxes in full and on time.	3.38	0.870
Timely Payment of Taxes	3.38	0.870
Overall Voluntary Tax Compliance	3.40	0.697

Source: Authors' compilation based on SPSS (version 20) outputs.

The mean values range between 3.38 and 3.42, which are close to the midpoint on the Likert scale (3 = Neutral, 4 = Agree). This indicates that respondents tend to show moderate agreement, reflecting a moderate to relatively high level of voluntary tax compliance.

Overall, the average score for voluntary tax compliance is 3.40 with a standard deviation of 0.697, indicating a moderate to good level of voluntary tax adherence among respondents.

This suggests that taxpayers hold a generally positive attitude toward compliance, though not a fully committed one — meaning they tend to fulfil their tax obligations out of a sense of responsibility, rather than complete conviction in the fairness or simplicity of the tax system.

IV-4-Hypothesis Testing Using Simple Linear Regression Analysis:

To assess the effect of each dimension of tax justice on voluntary tax compliance, simple linear regression analyses were conducted. The following section presents the results of these tests and evaluates the significance and strength of the proposed relationships.

IV-4-1- Simple Linear Regression Results of the effect of Tax Justice on Voluntary Tax Compliance.

The regression analysis results reveal a statistically significant and positive relationship between tax justice and voluntary tax compliance, as evidenced by the results presented in the following tables:

Table n°5: Regression Analysis Results for Testing the Relationship between Tax Justice and Voluntary Tax Compliance

Variable	Unstandardized Coefficient (B)	Standardized Coefficient (β)	t-value	Significance Level	R-squared (Coefficient of Determination)	Adjusted R-squared	Correlation Coefficient (R)	Significance Level
Constant	0.563	/	2.540	0.000	0.223	0.221	0.472	
Tax justice	0.836	0.472	12.442	0.000				0.000

Source: Authors' compilation based on SPSS (version 20) outputs.

Table n°6: Analysis of Variance (ANOVA) Results for the Relationship between Tax Justice and Voluntary Tax Compliance.

Source	Sum of Squares	Degrees of Freedom (df)	Mean Square	F-value	Significance Level
Regression	85.683	1	58.683	154.793	0.000
Residual	204.715	540	0.379		
Total	263.398	541			

Source: Authors' compilation based on SPSS (version 20) outputs

The model is statistically significant ($F = 154.793$, $p < 0.001$), and the correlation coefficient ($R = 0.472$) confirms a moderately strong positive relationship between tax justice and voluntary tax compliance. Therefore, the null hypothesis is rejected, supporting the presence of a significant effect of tax justice on taxpayers' compliance behaviour.

The coefficient of determination ($R^2 = 0.223$) indicates that tax justice accounts for approximately 22.3% of the variation in voluntary tax compliance, underscoring its notable role in shaping taxpayers' willingness to comply. The standardized coefficient ($\beta = 0.472$) and the unstandardized coefficient ($B = 0.836$) further show that for every one-unit increase in perceived tax justice, voluntary tax compliance rises by 0.836 units, holding other factors constant. The t-value ($t = 12.442$, $p < 0.001$) confirms the strength and statistical significance of this effect.

Accordingly, the regression equation can be expressed as:

$$\text{Voluntary Tax Compliance} = 0.563 + 0.836(\text{Tax Justice})$$

These findings suggest that taxpayers who perceive the tax system as fair in burden distribution, equal in treatment, and transparent in its procedures are more likely to comply voluntarily, without the need for coercive measures. Hence, enhancing tax justice—through procedural transparency, equitable enforcement, and fairness in policy design—emerges as a key determinant in strengthening voluntary tax compliance and fostering trust between taxpayers and the tax administration.

IV-4-2- Simple Linear Regression Results of the relationship between Vertical Tax Justice and Voluntary Tax Compliance.

Table n°7: Regression Analysis Results for Testing the Relationship between vertical justice and Tax Morale

Variable	Unstandardized Coefficient (B)	Standardized Coefficient (β)	t-value	Significance Level	R-squared (Coefficient of Determination)	Adjusted R-squared	Correlation Coefficient (R)	Significance Level
Constant	2.332	/	8.541	0.000	0.094	0.092	0.307	0.000
Horizontal Justice	0.315	0.307	6.799	0.000				

Source: Authors' compilation based on SPSS (version 25) outputs.

Table n°8: Analysis of Variance (ANOVA) Results for the Relationship between Vertical Tax Justice and Voluntary Tax Compliance.

Source	Sum of Squares	Degrees of Freedom (df)	Mean Square	F-value	Significance Level
Regression	24.776	1	24.776	56.067	0.000
Residual	238.622	540	0.442		
Total	263.398	541			

Source: Authors' compilation based on SPSS (version 20) outputs.

The regression analysis reveals a positive and statistically significant relationship between vertical tax justice and voluntary tax compliance. The correlation coefficient ($R = 0.307$) at a significance level ($p = 0.000$) confirms that the association between the two variables is not due to chance. The coefficient of determination ($R^2 = 0.094$) indicates that vertical tax justice explains about 9.4% of the variation in voluntary tax compliance, while the remaining 90.6% is attributed to other variables not included in the model, such as horizontal and procedural justice, tax awareness, or trust in the tax administration. The adjusted $R^2 = 0.092$, being very close to R^2 , supports the model's statistical validity and reliability.

Moreover, the t-value ($t = 6.799$, $p = 0.000$) demonstrates that vertical tax justice has a strong and statistically significant influence on taxpayers' compliance behaviour. The unstandardized coefficient ($B = 0.315$) implies that for every one-unit increase in perceived vertical fairness, voluntary tax compliance rises by 0.315 units, while the standardized coefficient ($\beta = 0.307$) confirms the positive direction and moderate strength of this relationship. Thus, the regression equation can be expressed as:

$$\text{Voluntary Tax Compliance} = 2.332 + 0.315(\text{Vertical Tax Justice})$$

The ANOVA results further validate the model's overall significance, with an F-value of 56.067 at a significance level ($p = 0.000$). The mean square for regression (24.776) being much higher than that of the residuals (0.442) demonstrates that the explained variance in voluntary tax compliance greatly exceeds the unexplained variance, confirming the robustness and explanatory power of the model. Consequently, the null hypothesis (H_0)—stating that vertical tax justice has no significant effect on voluntary tax compliance—is rejected, while the alternative hypothesis (H_1)—that vertical tax justice has a positive and significant effect—is accepted. This finding suggests that

enhancing vertical fairness in the tax system—by ensuring equitable distribution of tax burdens based on income and ability to pay—plays a crucial role in promoting voluntary tax compliance and strengthening taxpayers’ trust in the fiscal system.

IV-4-3- Simple Linear Regression Results of the relationship between Horizontal Tax Justice and Voluntary Tax Compilation.

Table n°9: Regression Analysis Results for Testing the Relationship between Horizontal justice and Tax Morale

Variable	Unstandardi zed Coefficient (B)	Standardi zed Coefficien t (β)	t-value	Signifi cance Level	R-squared (Coefficient of Determinati on)	Adjust ed R- square d	Correlati on Coefficie nt (R)	Significa nce Level
Constant	2.678	/	18.64 5	0.000	0.047	0.045	0.216	0.000
Horisont al justice	0.213	0.216	5.133	0.000				

Source: Authors’ compilation based on SPSS (version 20) outputs.

Table n°10: Analysis of Variance (ANOVA) Results for the Relationship between Horizontal Tax Justice and Voluntary Tax Compliance.

Source	Sum Squares	Degrees Freedom (df)	Mean Square	F- value	Significance Level
Regression	12.255	1	12.225	26.350	0.000
Residual	251.143	540	0.465		
Total	263.398	541			

Source: Authors’ compilation based on SPSS (version 20) outputs.

The regression analysis indicates a positive and statistically significant relationship between horizontal tax justice and voluntary tax compliance. The correlation coefficient ($R = 0.216$) at a significance level ($p = 0.000$) confirms that this relationship is statistically meaningful and not due to random variation. The coefficient of determination ($R^2 = 0.047$) reveals that horizontal tax justice explains about 4.7% of the variation in voluntary tax compliance, while the remaining 95.3% is influenced by other factors not captured by the model, such as vertical and procedural justice, taxpayer awareness, or the perceived fairness of tax enforcement. The adjusted $R^2 = 0.045$, being very close to R^2 , indicates that the model maintains statistical stability and internal consistency.

Furthermore, the t-value ($t = 5.133$, $p = 0.000$) demonstrates that horizontal tax justice has a significant but relatively modest impact on taxpayers’ compliance behavior. The unstandardized coefficient ($B = 0.213$) shows that for every one-unit increase in perceived horizontal fairness—that is, in the equal treatment of taxpayers with similar income and activity levels—voluntary tax compliance increases by 0.213 units, holding other factors constant. The standardized coefficient ($\beta = 0.216$) supports this finding, confirming that the effect is positive though moderate in strength. Accordingly, the regression equation can be expressed as:

$$\text{Voluntary Tax Compliance} = 2.678 + 0.213(\text{Horizontal Tax Justice})$$

The ANOVA results further support the model’s overall significance, with an F-value of 26.350 at a significance level ($p = 0.000$), indicating that the inclusion of horizontal tax justice as an

independent variable significantly enhances the explanatory power of the model. The mean square for regression (12.225) is considerably greater than that of the residuals (0.465), confirming that the explained variance in voluntary compliance substantially exceeds the unexplained variance and validating the robustness of the regression model. Consequently, the null hypothesis (H_0)—which states that horizontal tax justice has no significant effect on voluntary tax compliance—is rejected, while the alternative hypothesis (H_1)—that horizontal tax justice exerts a positive and significant influence—is accepted. These findings suggest that when taxpayers perceive equal treatment, non-discrimination, and fairness in the application of tax laws, they are more inclined to comply voluntarily, reinforcing the importance of fairness and impartiality in tax administration.

IV-4-4- Simple Linear Regression Results of the relationship between Tax Justice and Voluntary Tax Compliance:

Table n°11: Regression Analysis Results for Testing the Relationship between procedural Tax Justice and Voluntary Tax Compliance:

Variable	Unstandardized Coefficient (B)	Standardized Coefficient (β)	t-value	Significance Level	R-squared (Coefficient of Determination)	Adjusted R-squared	Correlation Coefficient (R)	Significance Level
Constant	2.441	/	16.631	0.000	0.076	0.074	0.276	0.000
Procedural justice	0.282	0.276	6.670	0.000				

Source: Authors' compilation based on SPSS (version 20) outputs.

Table n°12: Analysis of Variance (ANOVA) Results for the Relationship between Procedural Tax Justice and Voluntary Tax Compliance.

Source	Sum of Squares	Degrees of Freedom (df)	Mean Square	F-value	Significance Level
Regression	20.047	1	20.047	44.484	0.000
Residual	243.351	540	0.451		
Total	263.398	541			

Source: Authors' compilation based on SPSS (version 20) outputs.

The regression analysis reveals a positive and statistically significant relationship between procedural tax justice and voluntary tax compliance. The correlation coefficient ($R = 0.276$) at a significance level ($p = 0.000$) confirms that this relationship is meaningful and not the result of random variation. The coefficient of determination ($R^2 = 0.076$) indicates that procedural justice explains about 7.6% of the variation in voluntary tax compliance, while the remaining 92.4% can be attributed to other factors such as vertical and horizontal justice, taxpayer awareness, or trust in the tax system. The adjusted $R^2 = 0.074$, being close to R^2 , demonstrates the reliability and statistical validity of the model.

In addition, the t-value ($t = 6.670$, $p = 0.000$) confirms that the influence of procedural justice on voluntary compliance is significant and positive. The unstandardized coefficient ($B = 0.282$) indicates that for every one-unit increase in perceived procedural fairness—reflecting transparent processes, clarity of information, and fair treatment by tax authorities—voluntary tax compliance

risers by 0.282 units, holding other variables constant. The standardized coefficient ($\beta = 0.276$) supports this conclusion, showing that procedural fairness has a moderate but meaningful impact on taxpayers' behaviour. The regression equation can therefore be expressed as:

$$\text{Voluntary Tax Compliance} = 2.441 + 0.282(\text{Procedural Tax Justice})$$

The ANOVA results further confirm the statistical significance of the model, with an F-value of 44.484 at a significance level ($p = 0.000$). The mean square for regression (20.047) is substantially greater than that of the residuals (0.451), indicating that the explained variance in voluntary tax compliance far exceeds the unexplained variance, which validates the robustness and explanatory strength of the regression model. Consequently, the null hypothesis (H_0)—which states that procedural tax justice has no significant effect on voluntary tax compliance—is rejected, while the alternative hypothesis (H_1)—that procedural justice has a positive and significant effect—is accepted. These findings suggest that taxpayers who perceive the tax system as transparent, accessible, and procedurally fair are more likely to comply voluntarily, highlighting the essential role of procedural justice in fostering trust and encouraging sustainable compliance behaviour.

V-Results Discussion:

The findings of this study reveal that respondents hold a neutral and balanced perception of tax justice. They do not reject the idea of fairness in the tax system, yet they are not fully convinced of its fair implementation in practice. This attitude seems to reflect a mixture of caution and limited trust. Many taxpayers feel uncertainty or lack of clarity in their interactions with tax authorities, while others have only partial knowledge of how taxes are calculated or distributed. Moreover, economic and social disparities, together with uneven personal experiences with the tax administration, contribute to this cautious view. Some taxpayers recognize improvements in administrative fairness, whereas others continue to perceive inefficiency or inconsistency. The lack of transparency about how tax revenues are used and cultural tendencies to avoid taking strong positions on governmental issues further reinforce this neutrality. Thus, the neutral perception does not necessarily imply rejection—it reflects a form of critical realism, where taxpayers acknowledge the importance of justice but remain sceptical about its practical realization.

Similarly, the results show that voluntary tax compliance among respondents is moderate rather than high. Taxpayers appear to fulfil their obligations more out of responsibility than conviction. This behaviour can be attributed to several factors: complex procedures, limited incentives for compliance, and economic pressures that may lead to postponed payments or partial declarations—not out of intent to evade, but out of necessity. Moreover, uneven experiences with tax officials—where some individuals face delays or bureaucratic difficulties—affect taxpayers' motivation to comply fully. Consequently, compliance in this context appears to be a rational and responsible act, but not an expression of deep trust or full satisfaction with the tax system. In other words, taxpayers comply because they feel they should, not necessarily because they believe the system is completely fair.

When examining the overall relationship between tax justice and voluntary tax compliance, the results reveal a positive and statistically significant correlation across all dimensions—vertical, horizontal, and procedural justice—though with moderate strength. Vertical justice showed the strongest influence, suggesting that taxpayers are highly sensitive to fairness in the distribution of tax burdens. Procedural justice ranked second, highlighting the role of transparency and fair treatment in fostering compliance, while horizontal justice had the weakest effect, reflecting some lingering doubts about equal treatment among taxpayers. When considered together, the overall tax

justice construct explains about 22% of the variation in voluntary compliance, which is a notable proportion in behavioural research. Simply put, the more taxpayers perceive the system as fair, transparent, and balanced, the more willing they are to comply voluntarily. Yet, achieving this requires more than fairness alone—it calls for building trust, simplifying procedures, and ensuring transparency in public spending. Creating a just and transparent tax system is not merely an administrative reform; it is an investment in social trust, laying the foundation for a genuine partnership between citizens and the tax administration.

Conclusion:

The results of this study clearly demonstrate the central role of tax justice in shaping voluntary tax compliance, even among respondents with moderate or neutral perceptions. While respondents do not reject the principle of justice in the tax system, limited trust, varying individual experiences, and weak tax awareness make them less convinced of the justice of its actual application. This attitude reflects what previous international studies have termed "cautious neutrality," as noted in the work of (Kirchler, 2007), where taxpayers in several developing countries tended to moderate their assessment of the fairness of the tax system due to weak transparency and administrative uncertainty.

The findings in Algeria appear to align with those of comparative studies in countries characterized by moderate bureaucracy and complex procedures, such as Tunisia and Morocco, where research has observed that trust in the tax administration is not high enough to allow for a strong, positive perception of tax justice. In the Algerian context specifically, socioeconomic divisions, the expansion of the informal sector, and weak transparency regarding the use of public revenues reinforce this cautious stance. Furthermore, taxpayers' experiences with the administration, whether through the tax administration or electronic services, remain varied, explaining the generally moderate perceptions.

Regarding voluntary tax compliance, the study revealed a moderate level of compliance, consistent with the findings of several international studies, including those by (Alm & Torgler, 2011), which demonstrated that compliance increases due to social responsibility but does not reach the level of compliance based on strong trust in the system. In the Algerian context, this moderate level stems from a set of structural factors, most notably: the complexity of administrative procedures, economic pressures, weak positive incentives, and the persistent gap between citizens and the tax authority.

Concerning the relationship between tax justice and its three dimensions, on the one hand, and voluntary compliance, on the other, the results revealed a statistically significant, albeit moderately strong, positive correlation. This finding is entirely consistent with previous literature that has focused on the role of vertical and procedural justice as the primary drivers of compliance behaviour. In our study, the vertical dimension emerged as the strongest influence, which aligns with the Algerian context where the issue of fairness in the distribution of the tax burden is among the most frequently raised concerns by taxpayers. Procedural justice ranked second, reflecting the increasing importance of transparency, guaranteeing taxpayer rights, and improving the quality of public services. Horizontal justice, on the other hand, registered the weakest influence, reflecting the continued scepticism among citizens regarding the rigorous application of the law to all groups, particularly given the growth of the informal sector.

Taken together, these results indicate that tax justice, as demonstrated by international studies, is a prerequisite for compliance, but it is insufficient on its own to raise compliance levels to the desired extent. In the Algerian context, enhancing compliance appears to require a comprehensive

vision based on three main pillars: simplifying procedures, promoting transparency, and building trust through improved administrative practices and fostering a culture of tax integrity. Investing in tax justice, in all its dimensions, is not merely a technical adjustment of the tax system, but a strategic step toward strengthening the social contract and building a genuine partnership between citizens and the tax administration.

Referrals and references:

1. Allingham, M. G., & Sandmo, A. (1972). Income tax evasion: A theoretical analysis. *Journal of Public Economics*, 1(3), 323–338. [https://doi.org/10.1016/0047-2727\(72\)90010-2](https://doi.org/10.1016/0047-2727(72)90010-2)
2. Alm, J., & Torgler, B. (2011). (PDF) Do Ethics Matter? Tax Compliance and Morality. *Journal of Business Ethics*. <https://doi.org/10.1007/s10551-011-0761-9>
3. Bauhr, M., & Grimes, M. (2017). Transparency to curb corruption? Concepts, measures and empirical merit. *Crime, Law and Social Change*, 68(4), 431–458. <https://doi.org/10.1007/s10611-017-9695-1>
4. Besley, T., Jensen, A., & Persson, T. (2023). Norms, Enforcement, and Tax Evasion. *The Review of Economics and Statistics*, 4(105), 998–1007. https://doi.org/10.1162/rest_a_01123
5. Gangl, K., Pfabigan, D. M., Lamm, C., Kirchler, E., & Hofmann, E. (2017). Coercive and legitimate authority impact tax honesty: Evidence from behavioral and ERP experiments. *Social Cognitive and Affective Neuroscience*, 12(7), 1108–1117. <https://doi.org/10.1093/scan/nsx029>
6. Kirchler, E. (2007). Interaction between tax authorities and taxpayers. In *The Economic Psychology of Tax Behaviour* (pp. 167–181). Cambridge University Press. <https://doi.org/10.1017/CBO9780511628238.008>
7. Kirchler, E., Hoelzl, E., & Wahl, I. (2008). Enforced versus voluntary tax compliance: The “slippery slope” framework. *Journal of Economic Psychology*, 29(2), 210–225. <https://doi.org/10.1016/j.joep.2007.05.004>
8. Mokander, J., & Schroeder, R. (2024). Artificial intelligence, rationalization, and the limits of control in the public sector: The case of tax policy optimization. *Social Science Computer Review*, 42(6), 1359–1378. <https://doi.org/10.1177/08944393241235175>
9. Murphy, R. (2015). *The Joy of Tax*. <https://www.penguin.co.uk/books/430502/the-joy-of-tax-by-richard-murphy/9781473525337>
10. Musgrave, R. A. (1959). *The Theory of Public Finance: A Study in Public Economy* (1st ed). McGraw-Hill Book Company.
11. Musgrave, R. A., & Musgrave, P. B. (1989). *Public finance in theory and practice* (5. ed). McGraw-Hill.
12. Nathwani, K. (2024). *Artificial intelligence in automated decision-making in tax administration: The case for legal, justiciable and enforceable safeguards*. The IFS. <https://doi.org/10.1920/re.ifs.2024.0503>
13. OECD. (2014). *Measures of Tax Compliance Outcomes: A Practical Guide*. OECD. <https://doi.org/10.1787/9789264223233-en>
14. OECD. (2015). *Base erosion and profit shifting (BEPS)*. OECD. <https://www.oecd.org/en/topics/base-erosion-and-profit-shifting-beps.html>
15. OECD. (2019). *OECD Secretary-General Tax Report to G20 Finance Ministers (October 2019)*. OECD Publishing. <https://doi.org/10.1787/d136e378-en>
16. OECD. (2023). *Tax Administration 2023: Comparative Information on OECD and other Advanced and Emerging Economies*. OECD Publishing. <https://doi.org/10.1787/900b6382-en>
17. Piketty, T. (2014). *Capital in the Twenty-First Century*. Harvard University Press. <https://www.hup.harvard.edu/books/9780674982918>
18. Stiglitz, J. (2015). *The Great Divide*. <https://www.norton.com/books/The-Great-Divide/>
19. Torgler, B. (2007). *Tax Compliance and Tax Morale: A Theoretical and Empirical Analysis*. ResearchGate. https://www.researchgate.net/publication/27474421_Tax_Compliance_and_Tax_Morale_A_Theoretical_and_Empirical_Analysis
20. Wang, M. (2024). AI Technologies in Modern Taxation: Applications, Challenges, and Strategic Directions. *International Journal of Finance and Investment*, 1, 42–46. <https://doi.org/10.54097/v2kgty49>
21. *What Drives Tax Morale?* (2012, November 22). OECD. https://www.oecd.org/en/publications/what-drives-tax-morale_5k8zk8m61kzq-en.html
22. World Inequality Report. (2021, October 20). The World #InequalityReport 2022 presents the most up-to-date & complete data on inequality worldwide: *World Inequality Report 2022*. <http://wir2022.wid.world/chapter-1/>
23. Zolt, E. M., & Bird, R. M. (2005). *Redistribution Via Taxation: The Limited Role of the Personal Income Tax in Developing Countries* (SSRN Scholarly Paper No. 804704). Social Science Research Network. <https://papers.ssrn.com/abstract=804704>