

Analysis and measurement of the impact of financial inclusion on the social dimension of sustainable development in Algeria**MOUSSI Assia**

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Received: 21/02/2025**Accepted:** 25/04/2025**Published:** 25/05/2025**Abstract:**

This study aims to measure the impact of financial inclusion on the social dimension of sustainable development in Algeria using quarterly data for the period 2004-2020. The inductive approach was followed to cover all theoretical aspects related to the study through descriptive and analytical methods. In the applied aspect, an experimental approach was adopted using the multiple linear regression model. Among the results obtained in this study is the finding of a direct relationship between some financial inclusion indicators, represented by ATMs and domestic credit provided to the private sector, and the social dimension of sustainable development. Additionally, an inverse relationship was found between the money supply indicator and foreign direct investment in relation to financial inclusion's impact on the economic dimension of sustainable development in Algeria.

Keywords: Financial inclusion; Sustainable development; Multiple linear regression; Algeria.

JEL Classification: E59 ,F36

1. Introduction:

Financial inclusion, both globally and particularly in Algeria, has received significant attention. It has become one of the most widely discussed concepts, particularly after the 2008 global financial crisis. This crisis prompted increased focus and the development of international strategies aimed at enhancing financial inclusion through international financial institutions, especially considering its relationship with achieving financial and social stability.

According to the World Bank, financial inclusion refers to the ability of individuals and businesses to access useful and affordable financial products and services that meet their diverse needs, including payments, credit, transactions, savings, and insurance, all provided in a responsible and sustainable manner. Thus, financial inclusion serves as a dynamic tool aiming to achieve various dimensions.

Achieving sustainable development requires a comprehensive approach that takes into account economic, environmental, and social aspects. Financial inclusion serves as a bridge between these dimensions, contributing to reducing social disparities by providing equal opportunities for access to financing and credit. It enhances the economic inclusion of disadvantaged groups, such as women, youth, and micro and small business owners, who often face barriers to accessing the traditional financial system. Furthermore, financial inclusion contributes to social stability by enabling individuals to save and engage in financial planning, helping them cope with economic crises and reducing poverty levels and social instability.

With the rapid technological and digital advancements, financial inclusion has become more capable of penetrating various communities. Digital banking services and financial technology have provided innovative solutions to expand the reach of financial services, making them more efficient and inclusive. However, the relationship between financial inclusion and the social dimension of sustainable development is not simple or linear; it is a complex relationship influenced by various factors, such as economic policies, institutional structures, financial practices, and the extent to which communities embrace these changes.

In light of the above, and within this context, the Algerian public authorities, represented by the Bank of Algeria, have attempted to adopt national strategies to enhance financial inclusion in order to achieve economic stability. Thus, the central research problem revolves around the main question:

How does financial inclusion impact the achievement of the social dimension of sustainable development in Algeria?

As an initial response to the research problem outlined above, the following hypotheses were relied upon:

- There is a significant positive impact of financial inclusion on the social dimension of sustainable development in Algeria.
- There is a negative impact of financial inclusion on the social dimension of sustainable development in Algeria.

This study seeks to present the basic concepts related to financial inclusion and to

define its theoretical relationship with the social dimension of development, then analyze the reality of financial inclusion in Algeria during the study period, in addition to measuring its impact on the social dimension of sustainable development using an econometric model.

This study is significant because financial inclusion in promoting sustainable development, particularly in its social dimension. Equitable access to financial services can contribute to poverty reduction, economic inclusion, and the enhancement of employment and entrepreneurship opportunities, thereby supporting inclusive and fair growth. Furthermore, this study highlights the analysis and measurement of the extent to which the social dimension of sustainable development is influenced by financial inclusion, making this research valuable for policymakers, researchers, and practitioners in the economic and social fields.

To address the posed issue and examine the components of this study, an inductive approach was followed by utilizing descriptive and analytical methods in the theoretical aspect. As for the practical aspect, a quantitative approach was employed, using data collection methods from various literatures related to the study topic.

Among the most important previous studies relied upon in this research, the following can be distinguished, for example, but not limited to:

- **Study (Leora, Mayada, & Jake , 2016):** This paper outlines where and how financial services can help achieve sustainable development goals by reviewing research on the link between financial inclusion and development. It emphasizes that by moving away from cash and using digital payments for distributing social benefits and wages, governments can reduce costs and leakage, while simultaneously promoting financial inclusion. It suggests that continued investment in research can help build evidence on new opportunities such as digital payments and their impact on households and broader economies.
- **Study(paterson, 2022) :** This research aimed to examine the relationship between financial inclusion and sustainable development in a global context. The study utilized two datasets and employed Pearson correlation analysis and Granger causality tests to assess the bilateral correlation and causality between financial inclusion and sustainable development. The findings indicated that higher levels of financial inclusion (measured by the number of commercial bank branches per 100,000 adults) are significantly associated with increased electricity production from renewable sources, higher industrial productivity, improved adult literacy rates, and greater renewable electricity generation. Additionally, higher financial inclusion is significantly linked to a decrease in combustible renewable and waste energy sources. Furthermore, a unidirectional Granger causality relationship was identified between global interest in online information about sustainable development and global interest in online information about financial inclusion, particularly in the period following the global financial crisis but before the COVID-19 pandemic.
- **Study (Shen, Hui, & Ping, 2023):** Aimed at measuring the role of financial inclusion in achieving sustainable development goals, the current study employed a stratified regression model to examine the individual and collective effects of financial inclusion on sustainable development goals in selected countries between 2017 and 2020. Since most existing studies have only examined the

sustainable development goals individually, the results indicated that financial inclusion shows a positive correlation with SDGs 2, 5, and 8 of sustainable development, but not significantly enough with goals one, three, nine, and ten. A significant positive correlation was also identified between financial inclusion and sustainable development.

- **Study (kapil & pallavi, 2024) :** This study aimed to propose a multilateral collaborative framework to enhance financial inclusion in impoverished countries through the adoption of financial technology (FinTech), thereby contributing to the achievement of sustainable development goals. It concluded that adopting the World Bank's MFD approach, alongside engaging the private sector and strengthening regulatory frameworks, can accelerate the integration of digital financial services. The study also highlighted that initiatives such as the Better Than Cash Alliance and the mSTAR project provide opportunities to develop digital payment systems and increase financial literacy. It concluded that implementing these strategies enhances financial inclusion and supports economic development in developing countries.
- **Study (chamseddin & abderazak, 2025) :** This study investigates the nexus between sustainable development and finance, with particular emphasis on financial inclusion and the role of financial technology (FinTech) across 25 African countries between 2011 and 2019. Utilizing econometric approaches such as the System Generalized Method of Moments (SGMM) and fixed effects models, the findings indicate that both financial inclusion and FinTech exert a significant positive influence on sustainable development. However, their interaction exhibits a marginal negative effect. A distinctive contribution of this research lies in its estimation of the marginal effects of these variables. The study advocates for strengthened collaboration among financial service providers, expansion of financial infrastructure, and increased support for FinTech as strategic measures to advance sustainable development and foster economic integration in Africa.

2. An Overview of Financial Inclusion and Its Relationship with Sustainable Development

In the recent years of the 20th century, financial inclusion has asserted itself, leading to a shift in the prevailing concepts of economic stability. In order to cover all theoretical aspects of financial inclusion, we will address the key concepts related to it as outlined below.

2.1 The concept of financial inclusion

The definitions and concepts related to financial inclusion have varied and differed from one researcher to another. Among these concepts, the following have been discussed:

- Financial inclusion refers to the availability and usage of financial services by all segments of society, including institutions and individuals, through official channels. This encompasses savings accounts, payment and transfer services, insurance, financing, and credit, as well as the innovation of more accessible

financial services at competitive prices. (Ben Attia & Madoukh, 2022, P241)

- Financial inclusion is defined as the process through which easy access, availability, and use of formal financial transactions are ensured for all components of society. (Ben Mansour, 2022, P261)
- According to the United Nations report, the concept of financial inclusion refers to the sustainable provision of affordable financial services that integrate the poor or low-income individuals into the formal economy. (Paterson, 2018, P332)

In conclusion, as a comprehensive definition of financial inclusion, it can be stated that financial inclusion is a process through which all financial services are utilized by various segments of society, regardless of their different levels.

2.2 The objectives of financial inclusion:

Among the objectives of financial inclusion, the following can be identified :(Nahla, 2021, P348)

- Enabling individuals to access financial services and products at affordable prices, such as deposits, money transfer services, loans, and insurance.
- Establishing specialized financial institutions that meet the needs of the poor and provide them with suitable services.
- Enhancing financial sustainability to ensure that underprivileged groups can protect their savings and secure their financial future.
- Expanding the base of institutions offering low-cost financial services, which promotes competition and provides customers with multiple options that suit their needs.
- Promoting understanding of the value and advantages of financial services among economically marginalized populations to facilitate their inclusion in the financial system.
- Designing tailored financial products that address the specific needs of underserved communities.
- Enhancing nationwide financial literacy to enable individuals to make informed and sustainable financial choices.
- Designing customized financial solutions that align with the financial circumstances of low-income households, based on their needs and income levels.
- Achieving financial inclusion can offer several expected benefits, including:
- Financial inclusion contributes to sustainable economic development by enabling individuals and businesses to access financial services, which enhances investment, stimulates economic activity, and creates new job opportunities.
- It provides tools for saving and investing, helping individuals and communities plan financially and manage risks better, in addition to offering financial protection mechanisms such as insurance to cope with economic shocks.
- It helps reduce the financial gap between different social classes by ensuring equitable access to financial services, promoting equal opportunities for all.
- Financial inclusion enables individuals and businesses to access the funding and resources needed to invest in long-term projects, such as renewable energy and

sustainable agriculture, thus contributing to sustainable development.

- It drives the development of innovative financial solutions, such as digital payments and mobile banking applications, which provide more efficient and cost-effective financial services.

2.3 Characteristics of Financial Inclusion:

All studies and definitions provided by international organizations point to a set of essential elements that define the concept of financial inclusion, which include: (Osama & Rahma, 2021, P648)

- **Inclusivity:** Financial inclusion targets all segments of society, including low-income individuals, to ensure their access to financial services.
- **Diversity:** It involves offering a wide range of financial products and services, such as bank accounts, savings, short- and long-term financing, leasing, mortgages, insurance, payments, domestic and international money transfers, and retirement programs.
- **Affordability:** Providing financial services and products at affordable prices, making them accessible to all segments of society.
- **Quality:** Ensuring a high level of quality in the financial services and products offered, efficiently meeting the needs of customers.
- **Availability:** Providing financial services continuously throughout the year to ensure easy access at any time.
- **Geographic Expansion:** Enhancing the distribution of financial services by reaching various regions, both for individuals and businesses, to facilitate access to services without barriers.

2.4 The Relationship Between Financial Inclusion and the Social Dimension of Sustainable Development

Amid rapid economic transformations, financial inclusion has emerged as a key driver of growth and economic stability. Beyond access to financial services, it empowers individuals and businesses, contributing significantly to sustainable development—particularly in its economic dimension, which underpins societal prosperity. This relationship can be summarized as follows : (Prepared by the researcher based on several references)

- **Enhancing Economic and Social Inclusion:** Financial inclusion contributes to enhancing economic and social inclusion by enabling marginalized groups to access financial services such as bank accounts, financing, and insurance. Empowering individuals in this manner enhances their ability to establish small businesses, expand existing ventures, and elevate their standard of living, thereby facilitating their more effective integration into the broader economy. Moreover, ensuring equitable access to financial resources contributes to narrowing the socioeconomic divide by enabling individuals from all backgrounds to utilize financial services that support financial stability and long-term growth. This, in turn, fosters greater economic equity within society.
- **Reducing Poverty and Improving Living Standards:** Financial inclusion directly

contributes to reducing poverty and improving living standards by offering accessible loans that support entrepreneurs and small business owners, enabling them to expand their businesses and create new job opportunities. It also facilitates access to saving and investment tools for low-income households, helping them secure their financial future, manage unexpected crises, and achieve greater economic stability. In this way, financial inclusion becomes an effective tool in empowering individuals and enhancing their capacity to improve their living conditions, contributing to more inclusive and sustainable economic development.

- **Economic Empowerment of Women :** Financial inclusion is a pivotal factor in promoting the economic empowerment of women. Through access to microfinance services, women are enabled to establish and manage their own businesses, thereby achieving greater financial independence and contributing to the enhancement of both their personal living conditions and those of their communities. Additionally, the provision of digital financial tools-such as electronic wallets and mobile banking-facilitates access to capital, particularly in regions with limited traditional banking infrastructure. This form of financial empowerment not only broadens women's participation in economic activities but also strengthens their role in sustainable development, yielding positive outcomes for families and society at large.
- **Improving Opportunities in Education and Health:** Financial inclusion improves opportunities in education and health by providing flexible financing solutions that help low-income families cover educational costs, enabling their children to access quality education and opening broader future prospects. It also facilitates access to affordable health insurance and medical services, enhancing healthcare quality and reducing unexpected financial burdens that might overwhelm families. Thus, financial inclusion becomes a fundamental tool in supporting human development, ensuring long-term economic stability, and improving living standards.
- **Enhancing Financial and Societal Stability:** Financial inclusion strengthens financial and societal stability by reducing reliance on the informal economy. Integrating individuals into the banking system increases financial transparency, promotes economic growth, and provides broader opportunities for investment and employment. It also fosters a culture of saving and financial planning among individuals and households, helping them manage their resources more efficiently, prepare for emergencies, and achieve long-term economic stability. In this way, financial inclusion becomes a pivotal tool in building more stable communities capable of facing economic challenges.
- **Stimulating Entrepreneurship and Job Creation:** Financial inclusion plays a key role in stimulating entrepreneurship and creating job opportunities by financing emerging projects, which boosts innovation and drives economic growth. It also supports small and medium-sized enterprises, which are a cornerstone of the local

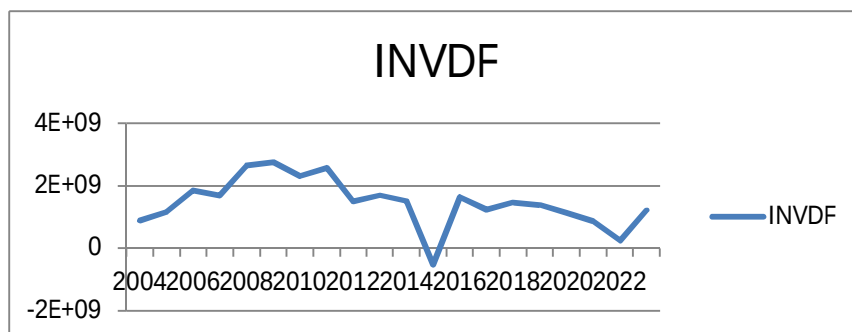
economy, as these businesses provide new jobs, help reduce unemployment, and promote economic stability. By facilitating access to financing and banking services, entrepreneurs can develop their ideas and turn them into successful projects, contributing to economic diversification and sustainable development.

- **Achieving Financial Sustainability for Individuals and Communities:** Financial inclusion contributes to achieving financial sustainability for individuals and communities by providing digital financial services that reduce operational costs, making financial transactions more efficient and transparent. It also plays an important role in supporting environmental projects and sustainable initiatives through green financing, which directs investments towards environmentally friendly projects that help mitigate climate change and promote sustainable economies. Through these mechanisms, financial inclusion strengthens the financial stability of individuals and supports community growth in a responsible and balanced manner, ensuring long-term sustainability.
- **Reducing Economic Vulnerability During Crises:** Financial inclusion helps reduce economic vulnerability during crises by offering digital financial solutions, such as e-wallets, that allow individuals and businesses to conduct transactions easily and securely even in difficult conditions. It also contributes to providing flexible financing programs that help individuals and businesses recover from economic shocks, such as financial crises or natural disasters, ensuring the continuity of economic activities and minimizing the impact of crises on the most vulnerable groups. In this way, financial inclusion enhances resilience and financial stability, contributing to the building of a more resilient and sustainable economy.

3. Analysis of the reality of financial inclusion and the social dimension of sustainable development in Algeria.

The indicators of financial inclusion in Algeria have varied and differed, especially during the period from 2004 to 2023. Among these indicators, this study addresses foreign direct investment, branches of commercial banks, and ATMs, in addition to domestic credit provided to the private sector and the money supply.

Figure 01: Development of Foreign Direct Investment in Algeria

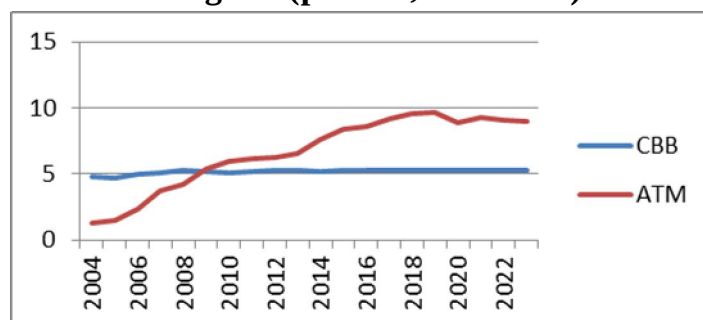


Source : World Bank

As observed from Figure 01, foreign direct investment in Algeria has significantly increased during the period from 2004 to 2006, reaching a value of approximately 1,841,000,000 USD in 2006, marking an increase of about 956,250,972 USD compared to

2004. It then declined in 2007 by 154,263,460 USD compared to 2006. The investment rose again, reaching its highest value of around 2,746,930,734 USD in 2009, before decreasing once more, recording its lowest value in 2015, with a negative value of approximately - 537,792,921 USD. The investment then fluctuated, reaching a value of 4,717,399,329 USD in 2023.

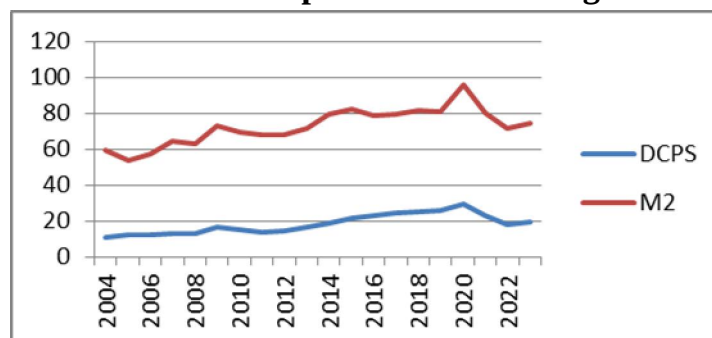
Figure 02: Analysis of the development of both commercial bank branches and ATMs in Algeria (per 100,000 adults).



Source: World Bank

It can be observed from Figure 02 that the number of commercial bank branches per 100,000 adults has grown very slowly, recording a value of 4.73 in 2004. This number increased slightly in 2008 to 5.54, and continued to fluctuate weakly, reaching a value of 5.26 in 2023, representing an increase of approximately 0.53 compared to 2004. On the other hand, the number of ATMs per 100,000 adults grew significantly and noticeably, recording a value of 1.27 in 2004. It steadily increased, reaching its highest value in 2019, with an increase of approximately 8.37 compared to 2004. However, it slightly decreased afterward, recording a value of 9.00 in 2023.

Figure 03: Analysis of the evolution of both broad money supply and domestic credit extended to the private sector in Algeria.

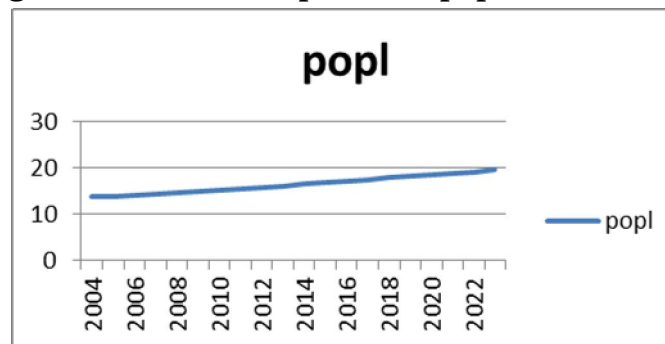


Source: World Bank

It can be observed from Figure 03 that the broad money supply achieved its highest rates from 2004 to 2020 compared to domestic credit extended to the private sector. The increase in broad money supply was fluctuating throughout the study period, reaching 96.08% in 2020, which represents a growth of approximately 36.82% compared to 2004. This can be attributed to the development of the banking sector and the increase in deposits outside the hydrocarbons sector. Subsequently, it decreased to 74.66% in 2023. As for domestic credit extended to the private sector, it recorded the second-highest rate after broad money supply during the study period, reaching its peak in 2020 at about 29.69%, which

reflects an increase of approximately 18.7% compared to 2004. This is a significant percentage, which then gradually decreased to 19.47% in 2023.

Figure 04: The development of population density



Source : World Bank

Between 2004 and 2023, Algeria witnessed a significant development in population density, influenced by various economic, social, and political factors, among others. In 2004, the population density was estimated at around 13.70, rising to 19.50 in 2023.

4. Measuring the impact of financial inclusion on the economic dimension of sustainable development in Algeria.

After identifying and selecting certain variables that represent financial inclusion and affect the economic dimension of sustainable development, a multiple linear regression model was used, relying on the Eviews10 software and applying the ordinary least squares method, as it provides unbiased estimators. Therefore, the table below shows the variables used in the study, which were gathered from the World Bank database as follows:

Table 1. Variables used in the standard model

Variable name	Variable symbol	Variable type
Population density	popl	Dependent variable
Foreign Direct Investment	INVDF	Independent variable
Commercial bank branches (per 100,000 adults)	CBB	Independent variable
ATMs (per 100,000 adults)	ATM	Independent variable
Domestic credit to the private sector (% of GDP)	DCPS	Independent variable
Broad money supply (% of GDP)	M2	Independent variable

Source: World Bank

4.1 Formulating the econometric model:

One of the most important stages in constructing any econometric model is its formulation. To estimate the model, we use the Ordinary Least Squares (OLS) method, as it provides unbiased linear estimators. Therefore, the OLS method is considered one of the best techniques for estimating linear models due to its distinctive properties and assumptions for estimating the multiple linear regression model. (bourahla, 2021, P123)

$$H_1 : E(\varepsilon_i) = 0 \quad , \forall i$$

$$H_2 : var(\varepsilon_i) = E(\varepsilon_i^2) = \sigma_u^2$$

$$H_3 : cov(\varepsilon_i \varepsilon_j) = E(\varepsilon_i \varepsilon_j) = 0 \quad , \forall i \neq j$$

$$H_4 : cov(\varepsilon_i X_i) = E(\varepsilon_i X_i) = 0$$

$$H_5 : \varepsilon_i \rightsquigarrow N(0, \sigma^2)$$

After identifying the variables included in the econometric model and collecting all the data for each variable, the mathematical form of the model was determined as a function as follows:

$$lpopl = f(lINVDF, lCBB, lATM, lDCPS, lM2)$$

In order to study this function, the multiple linear regression method was used to estimate the econometric model for this study, and its mathematical formula is written as follows:

$$lpopl_t = \beta_0 + \beta_1 lINVDF_t + \beta_2 lCBB_t + \beta_3 lATM_t + \beta_4 lDCPS_t + \beta_5 lM2_t + \varepsilon_t$$

Where:

t: represents time, i.e., the value of the variable in year t;

$\beta_6 \ \beta_5 \ \beta_4 \ \beta_3 \ \beta_2 \ \beta_1 \ \beta_0$: represents the model parameters;

ε_t : represents the random variable or error term.

4.2 Estimation of the Standard Model:

Appendix 01 presents the results of estimating the multiple linear model, in which the model is written as follows:

$$\widehat{lpopl} = -0.51 * LM2 - 0.01 * LINVDF + 0.34 * LDCPS + 0.13 * LCBB + 0.12 * LATM + 0.45$$

$$Pro_{\hat{\beta}_i}: (0.0005) (0.0846) (0.0000) (0.8170) (0.0034) (0.0000)$$

$$R^2 = 0.860193 \quad \overline{R^2} = 0.850348$$

$$F_c = 87.36888 \quad Pro_F = 0.000000 \quad n = 77$$

The results confirmed that all parameters were statistically significant, as their associated p-values were smaller than 0.05, except for the LCBB parameter, which was not significant.

The value of the coefficient of determination indicates that the proposed multiple linear regression model adequately represents the relationship under study, as 86.02% of the variations in the logarithm of population density are explained by both ATMs (per 100,000 adults) and broad money supply (as a percentage of GDP), while 13.98% remains unexplained by factors represented by the random variable.

The coefficient for broad money supply (as a percentage of GDP) and foreign direct investment was negative, indicating an inverse relationship between the independent variables and the dependent variable. Specifically, as broad money supply (as a percentage of GDP) and foreign investment increase by one unit, the social dimension decreases by 0.51 and 0.01 units, respectively.

On the other hand, the coefficients for ATMs (per 100,000 adults) and domestic credit to the private sector were positive, indicating a direct relationship. As the independent variables increase by one unit, population density increases by 0.12 and 0.34 units, respectively.

Table N°02: Standard problems detection results

Test	Pointer	Coefficient t	Prob	the decision
The normal distribution of residuals	Jarque bera	0.115670	0.943806	H ₀ accepted
Autocorrelation	LM test	1.283073	0.3014	H ₀ accepted
Homoscedasticity	Test: ARCH	0.311375	0.5806	H ₀ accepted

Source: Eviews 10

indicates that the probability values exceed the critical value of 10%. This leads us to accept the null hypothesis, which asserts that the model is free from standard problems, meaning that the errors are distributed normally and that the autocorrelation of errors is not an issue for the Auto-Regressive Distribution lag model. The issue with the contrast's instability.

5. Discussion of results

The negative impact of money supply and foreign direct investment on the social dimension of development in Algeria can be attributed to several factors:

- **Money Supply:** An increase in the money supply without proper regulation may lead to inflation, which deteriorates the purchasing power of citizens and exacerbates poverty and inequality. This can negatively affect the social dimension of development by reducing individual well-being and creating economic disparities.
- **Foreign Direct Investment:** In some cases, foreign investment may increase social inequality, especially if investments are concentrated in specific sectors or if their returns are not fairly redistributed. Additionally, such investments may be short-term or target only wealthy areas or projects that do not contribute to improving the living conditions of the general population.

Overall, if money supply and foreign investment are not properly and effectively directed towards projects that promote sustainable and inclusive development, their impact on the social dimension could be negative.

The positive impact of ATMs (per 100,000 adults) and domestic credit provided to the private sector on the social dimension of sustainable development in Algeria can be attributed to several reasons:

- **ATMs:** ATMs provide easy and quick access to funds, which contributes to improving financial inclusion and helps individuals in remote or impoverished areas manage their financial affairs more effectively. This enhances citizens' ability to meet their daily needs, thereby improving their quality of life and contributing to the social dimension of sustainable development.
- **Domestic Credit to the Private Sector:** Loans and domestic credit to the private sector offer opportunities for small and medium-sized businesses to grow and expand, creating new job opportunities and increasing personal income. This fosters local economic growth, encourages innovation and productivity, and helps reduce unemployment while improving individuals' economic conditions. Thus, credit plays a crucial role in enhancing social stability and achieving sustainable development.

Overall, these factors contribute to achieving sustainable development by improving financial inclusion, reducing poverty, and promoting social equity.

6. Conclusion:

Among the most important findings of the study, the following can be distinguished:

- Algeria is still considered one of the countries lagging behind in achieving financial inclusion due to its ongoing lack of electronic readiness.
- The level of financial inclusion achieved in Algeria has not yet reached a threshold that enables it to influence the social dimension of sustainable development.
- The money supply and foreign direct investment negatively impact the social dimension of development in Algeria.
- ATMs (per 100,000 adults) and domestic credit provided to the private sector positively affect the social dimension of sustainable development in Algeria.

As recommendations derived from this study, the following points can be highlighted:

- Promoting financial inclusion by adopting macroeconomic policies aimed at reducing inflation, unemployment rates, and alleviating poverty in Algeria.
- Arab countries, particularly Algeria, should incorporate the enhancement of the financial inclusion index into their future plans and development strategies by reviewing the banking and financial systems in line with current technological advancements.
- Fostering competition among financial institutions and banks and encouraging their geographic expansion by increasing their branches in Algeria, alongside an increase in the number of ATMs.
- Algeria should make concerted efforts to benefit from leading international

experiences in the field of financial inclusion.

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7. Appendices :

Appendice 01 : Multiple linear model estimation results

Dependent Variable: LPOPL

Method: Least Squares

Date: 02/20/25 Time: 21:28

Sample (adjusted): 2004Q1 2023Q1

Included observations: 77 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LM2	-0.514418	0.140661	-3.657152	0.0005
LINVDF	-0.011914	0.006812	-1.749077	0.0846
LDCPS	0.337251	0.060001	5.620810	0.0000
LCBB	0.132689	0.571282	0.232264	0.8170
LATM	0.122147	0.040282	3.032306	0.0034
C	0.448768	0.958022	8.818973	0.0000
R-squared	0.860193	Mean dependent var	7.396421	
Adjusted R-squared	0.850348	S.D. dependent var	0.107259	
S.E. of regression	0.041493	Akaike info criterion	-3.451860	
Sum squared resid	0.122239	Schwarz criterion	-3.269226	
Log likelihood	138.8966	Hannan-Quinn criter.	-3.378808	
F-statistic	87.36888	Durbin-Watson stat	0.956619	
Prob(F-statistic)	0.000000			