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# Measuring the impact of financial inclusion indicators on improving the level of financial well-being in Iraq for the period 2017-2024

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**Abstract:** The Paper aims to measure the impact of financial inclusion on a specific level of financial stakeholders in Iraq, identifying a mechanism for determining individuals' access to financial services in a fair and transparent manner in general, and the cost of both, leading to financial well-being, and all of them, To achieve the research objective, annual data for the Iraqi banking sector for the period (2017-2024) were used, The research problem was formulated, which refers to the following question: Do financial inclusion indicators affect the level of financial well-being?, To test the research hypothesis, the effect of the independent variable (financial inclusion) was measured, represented by its indicators (the spread of ATMs, bank accounts, banking density, banking penetration, total deposit volume, and total loan volume) on the dependent variable (financial well-being) through the gross domestic product, The research reached a set of results, the most important of which is (the existence of a statistically significant influence relationship between the financial inclusion indicators (X1, X2, X3, X5, X6) at a significance level of (0.05), As for the independent variable indicator (Y4), the results showed that there was no statistically significant relationship with the dependent variable indicator (gross domestic product) at a significance level of (0.05), The current study recommends the need to attract individuals suffering from financial exclusion by focusing on banking education and increasing banking awareness, as well as increasing the number of loans and accepting deposits by reducing interest rates and facilitating loan granting procedures, with the aim of increasing demand for banking services to achieve a high level of financial well-being.

**Keywords: Financial inclusion, financial well-being, financial inclusion indicators.**

**Introduction:** Financial inclusion has received widespread global attention in recent years, particularly after the 2008 global financial crisis and the resulting commitment of international financial institutions, led by the International Monetary Fund and the World Bank, to follow a set of principles that contribute to achieving the acceptable or desired level of financial inclusion. There is a disparity between countries in the level of financial inclusion, despite the significant trend towards financial inclusion and its consideration as a priority for financial and monetary policymakers around the world. It is also considered one of the main objectives of central banks due to its important role in achieving financial well-being.

By innovating new financial services and developing existing ones, we aim to deliver them to the largest possible number of members of society, particularly those who are deprived, more easily and at a lower cost, while protecting their rights and helping them channel their savings and manage their money efficiently and effectively. This will make the banking sector more inclusive and contribute to achieving the desired level of financial well-being in Iraq.

## 2 Scientific methodology of research

### Research problem

The Iraqi banking sector is affected by many accelerating financial and technological challenges, examples of which include the insufficient financing for economic development, as well as the difficulty in using newly developed financial instruments, whether by banks or by banking service recipients (customers), especially after financial openness and technological progress. There are a large number of segments or individuals in society who are financially excluded and unable to easily access the necessary banking services. The impact of financial inclusion on financial well-being varies from one country to another, depending on the level of financial inclusion and the level of financial well-being available in each environment. To clarify this controversy, the current research came to test the relationship between financial inclusion and financial well-being in the Iraqi environment and to know the nature of the relationship between them. The research problem can be framed in the form of the following question: (What is the extent of the impact of financial inclusion indicators on financial well-being in Iraq?)

**The importance of research**

The importance of the research stems from the importance of its variables, namely financial inclusion and financial well-being, and clarifying the relationship between them. This is especially true since financial inclusion is one of the most important financial strategic objectives of the Iraqi state, given its clear and significant impact on the volume of employment and financial empowerment, leading to financial well-being and, subsequently, economic growth. To investigate the above, it was necessary to study these variables in the Iraqi banking system.

**Research objectives**

The research aims to measure the relationship between the indicators of the independent variable (financial inclusion) and the indicators of the dependent variable (financial well-being) in the Iraqi banking sector, and to show the level of financial inclusion in financial and banking institutions. And to clarify the difficulties facing the expansion of achieving financial inclusion and trying to find appropriate solutions for them. The research objectives can be formulated in more detail as follows: (Measuring indicators of financial inclusion and financial well-being, and then identifying the impact of financial inclusion indicators on financial well-being represented by the gross domestic product in the Iraqi banking sector).

**Research hypothesis**

The main hypothesis of the research, according to the five-level regression model, is as follows: (There is a statistically significant influence relationship between financial inclusion indicators and financial well-being at a significance level of (0.05)). A set of sub-hypotheses are derived from it, as follows:

**The first sub-hypothesis**: There is a statistically significant relationship between financial inclusion indicators and GDP at a quantile level of 0.20 and a significance level of 0.05.

**The second sub-hypothesis:** There is a statistically significant relationship between financial inclusion indicators and GDP at a quantile level of 0.40 and a significance level of 0.05.

**Sub-hypothesis 3:** There is a statistically significant relationship between financial inclusion indicators and GDP at a quantile level of 0.60 and a significance level of 0.05.

**Sub-hypothesis 4:** There is a statistically significant relationship between financial inclusion indicators and GDP at a quantile level of 0.80 and a significance level of 0.05.

**Fifth sub-hypothesis:** There is a statistically significant influence relationship between financial inclusion indicators and GDP at a coefficient of 0.96 and a significance level of (0.05).

**Community and duration of research**

The research community represents the Iraqi banking sector. The research period was (2017-2024), as data was collected from reports of the Central Bank of Iraq for various years, in addition to reports of the World Bank.

**Research sources**

In preparing the current research, the theoretical aspect was based on foreign sources, in addition to Arab sources. As for the analytical aspect, the reports of the Central Bank of Iraq were used, and then the results were obtained using the programs (Excel) and (SPSS). Table (1) displays the indicators of the independent variable (financial inclusion) and the indicators of the dependent variable (financial well-being).

**Table (1) Indicators for measuring financial inclusion (independent variable) and financial well-being (dependent variable)**

| N. | Indicators of the independent variable (financial inclusion) | Dependent variable index (financial well-being) |
|---|---|---|
| 1 | ATM spread per 1000 km = ((population)/1000))/ (ATM) | GDP |
| 2 | Bank accounts = $(P_2-P_1)/(P_1)$ | |
| 3 | Banking density = (number of population) / (number of bank branches) | |
| 4 | Banking spread = (Number of bank branches) / (Number of population) | |
| 5 | Total Deposits | |
| 6 | Total Loans | |

**Source: Prepared by researchers based on the Central Bank's 2025 report.**

## 3 Theoretical aspect of the research

### 3.1 Financial inclusion

Financial inclusion is incompatible with the term financial exclusion (inability to access necessary banking services). Interest in expanding financial inclusion increased after the global financial crisis of 2008 (Ozili, 2021:3). It is worth noting that the term financial inclusion has been widely agreed upon, unlike most financial terms, which researchers may differ in their interpretation. It has been defined by the OECD as "the extent to which a natural or legal person can benefit from banking services, such as deposits, loans, insurance, and transfers, with high quality and in a sustainable manner within an appropriate legal framework" (Abdullah, 2016:15). The World Bank also defines it as access to all financial and banking services at a cost that suits their capabilities and needs (Demirguc-Kunt et al., 2017:2). Financial inclusion is achieved by facilitating financial access through two paths: the first is reducing the costs of services that hinder individuals' access to basic financial services, and the second path is expanding the base

of basic banking services. (Nkuna et al, 2018:813), it is worth noting that sometimes the weakness of financial inclusion is not due to the unavailability of banking services or the difficulty of obtaining them, but rather the reason may be due to ideological or cultural factors related to the individual or society's view of the nature of these services, and then they may take a decision to refrain from using these banking services (Ozili, 2021:3), and that achieving financial inclusion has become a goal due to its role in economic development, and then the development of financial and banking services, especially electronic ones, and then its financing role in supporting projects of various types, in order to achieve equality among individuals and achieve financial and social welfare (Khan et al, 2022:2) (Pandey et al, 2022:6).

Central banks bear the significant responsibility for achieving financial inclusion by regulating transactions in financial and banking services, particularly electronic ones, by establishing comprehensive procedures covering all banking transactions and then imposing adequate oversight to mitigate the risks they face. Examples of measures that can expand the level of financial inclusion include reducing commissions and fees for banking services in general, as well as increasing the prospects of competition in the banking sector between banks and other financial institutions by increasing the financial services provided to companies of all sizes (Tissot and Gadanecz, 2017:3) (Al-Fatlawi, 53:2019) (Al-Bakl, 163:2022). Financial inclusion primarily aims to reduce poverty by facilitating the financing process for low-income individuals to improve their living conditions, as well as expanding the banking services base and enabling individuals to easily access this base, and finally providing the necessary means to encourage competition between financial and banking institutions (Fungacova & Weill, 2015:196) (Nguyen & Du, 2022:2), by providing or innovating the largest possible number of banking services, and then attracting the largest possible number of customers, especially individuals in areas that do not benefit from banking services, or are financially excluded, to achieve economic and social progress and financial well-being (Morgan & Pontines, 2014:5) (Nguyen & Du, 2022:4).

Financial inclusion faces many challenges, most notably financial exclusion (many members of society do not deal with banks), the high cost of banking services, which makes them out of reach for most members of society (low-income individuals), the presence of legal and regulatory obstacles, the lack of development of banking services, and the clear weakness of technological financial tools (Schubert, 2019:11).

The Central Bank of Iraq is working to enhance the level of financial inclusion through numerous measures and initiatives, most notably cooperation with the Ministry of Planning and the Arab Monetary Fund to benefit from the expertise of Arab countries in developing and innovating banking services and attracting the largest possible number of customers to deal with the banking sector. In addition, the Central Bank of Iraq's initiatives to finance small, medium, and large projects, launched in 2015 and subsequent years, have clearly played a role in increasing the number of bank accounts and the volume of bank deposits. Furthermore, the launch of the project to localize the salaries of Iraqi civil servants in 2016 (Central Bank of Iraq, 2021:143).

Financial inclusion can be measured through several measurement indicators, the most important of which is the spread of electronic money transfer devices. Automated teller machine (ATM), which is measured by dividing the population by (1000) km, as well as the number of bank accounts, and banking density, which is measured by dividing the population by the number of bank branches, and vice versa for the banking penetration index, which is measured by dividing the number of bank branches by the population, and finally the total volume of deposits and the total volume of loans.

**3.2 Financial Well-being**

The concept of financial well-being is relatively vague in its definition and components, as there is no universally agreed-upon definition or measurement (Bruggen, et al., 2017: 2). Financial well-being refers to achieving a high level of financial freedom that guarantees an individual an acceptable standard of living (services, comfort, wealth, and necessary goods). Financial well-being can also be expressed as the level at which an individual can comfortably meet his or her obligations and essential needs, both now and in the future (Gita, et al., 2020: 2-3).

It is worth noting that the level of financial well-being does not necessarily depend solely on income. Low-income individuals may not lack financial well-being when they are able to meet their living expenses. Conversely, educated individuals with high incomes may suffer from a lack of financial well-being if they are unable to cover their expenses (Abrantes & Veludo, 2019: 4).

Financial well-being is of great importance due to its role in reducing poverty, improving quality of life, success and happiness, mental health, and building social relationships. Financial well-being is also important for an individual's health and psychological state (Iramani & Lutfi, 2021: 691). Conversely, a severe lack of financial well-being can affect an individual mentally, physically, and socially, leading to poor job performance, decreased ability to concentrate, and decreased productivity (Ouma, et al., 2019: 57). Financial well-being reflects the extent to which individuals use banking services, the success of the banking sector in meeting financial needs and providing essential

services, and individuals' ability to manage their financial lives, as well as linking financial services to social and economic services (Makuvaza, et al., 2018: 12).

**4 - Analysis of Research Indicators (Financial Inclusion and Financial Well-being)**

The independent variable indicators (ATM penetration, number of bank accounts, banking density, banking penetration, deposit volume, and loan volume) and the dependent variable indicator (GDP) will be analyzed, as shown in the following table.

**Table (2) Research Indicators: Financial Inclusion and Social Well-being**

| year | ATM penetration per 1,000 km | Number of bank accounts | Banking density | Banking penetration | Total deposits (trillion) | Total loans (trillion) | GDP growth |
|---|---|---|---|---|---|---|---|
| 2017 | **1.5** | **1361034** | **44.05** | **2.27** | **67** | **37.95** | **-1.8** |
| 2018 | **2** | **1630677** | **26.27** | **3.81** | **76.9** | **38.48** | **2.6** |
| 2019 | **2.3** | **3039522** | **24.88** | **4.02** | **82.1** | **42.05** | **5.5** |
| 2020 | **3.1** | **6126976** | **25.44** | **3.93** | **84.9** | **49.81** | **-12** |
| 2021 | **3.6** | **6696657** | **25.72** | **3.89** | **96.1** | **52.97** | **1.5** |
| 2022 | **5.1** | **8795891** | **27.25** | **3.67** | **129.1** | **60.57** | **7.6** |
| 2023 | **9.2** | **13289332** | **38.54** | **2.59** | **133.5** | **69.56** | **-2.9** |
| 2024 | | **13289332** | | **2.59** | **13.5** | **72.7** | |

**Source: 1- Central Bank of Iraq Financial Stability Reports for the period (2017-2023)**
**2- Central Bank of Iraq Economic Report for the period (2017-2024)**
**3- Central Bank of Iraq Statistical Website**

From the table above, we note a significant increase in the number of ATMs during 2023 compared to previous years, as the ATM penetration rate per 1000 square meters of Iraq's area reached (9.24) after it was (5.1) in 2022 and (1.5) in 2017, indicating an increase in the spread of ATMs during the research period. The number of bank accounts indicates a continuous increase during the period (2017-2024), as it reached a rise of nearly half in 2019 in the number of bank accounts, reaching (3) million accounts, compared to (1.6) million bank accounts in 2018. The year 2023 witnessed the highest increase in terms of the number of bank accounts, reaching (13) million, after it was (8) million in 2022 and (6) million accounts in 2021.

As for the banking density and banking penetration index, which is based on the number of branches of local and foreign banks in Iraq, the banking density rate reached 38.45 thousand people per branch during the year. 2023, after it covered (27.25) thousand people per bank branch, and in return, the banking penetration index decreased during the year 2023 to (2.59) after it was (3.67). This change in the banking density and banking penetration indicators is due to the decrease in the number of bank branches during the mentioned period compared to what it was in 2019, where the banking density index reached (24.88) thousand people per bank and (4.02%) for the banking penetration index. The total volume of deposits and loans witnessed a continuous increase during the research period, reaching (133.5) trillion dinars in 2023, and increased during the three quarters of 2024 compared to 2017, when the total volume of deposits reached (67) trillion dinars. This increase is attributed to the increase in the number of current deposits and the improvement of the economic situation in general. Similarly, the total volume of loans witnessed an increase during 2024, reaching (72.7) in the third quarter of 2024, after it was (69.56) trillion dinars in 2023.

As for the annual growth rate of the gross domestic product (GDP), it has been between highs and lows. The years (2017, 2020, and 2023) witnessed negative GDP growth, and 2022, followed by 2019, represented the best year for GDP growth during the research period, reaching (7.6%) and (5.5%), respectively.

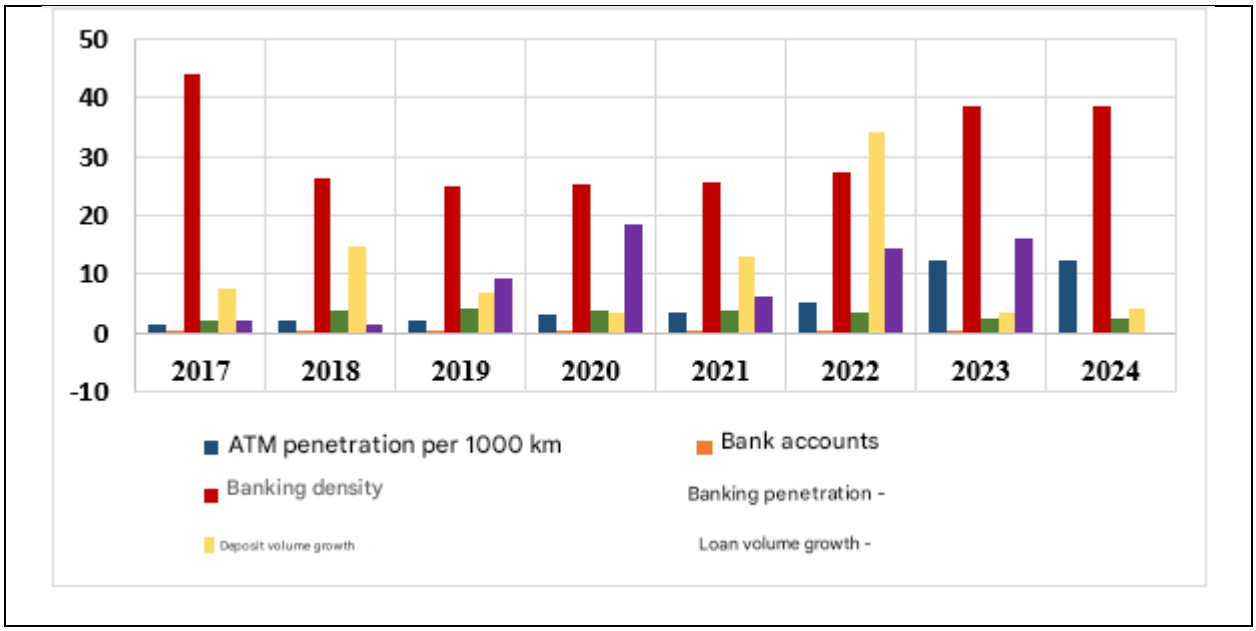


**Figure (1) Financial inclusion indicators for the period(2024-2017)**
**Source: Prepared by researchers**

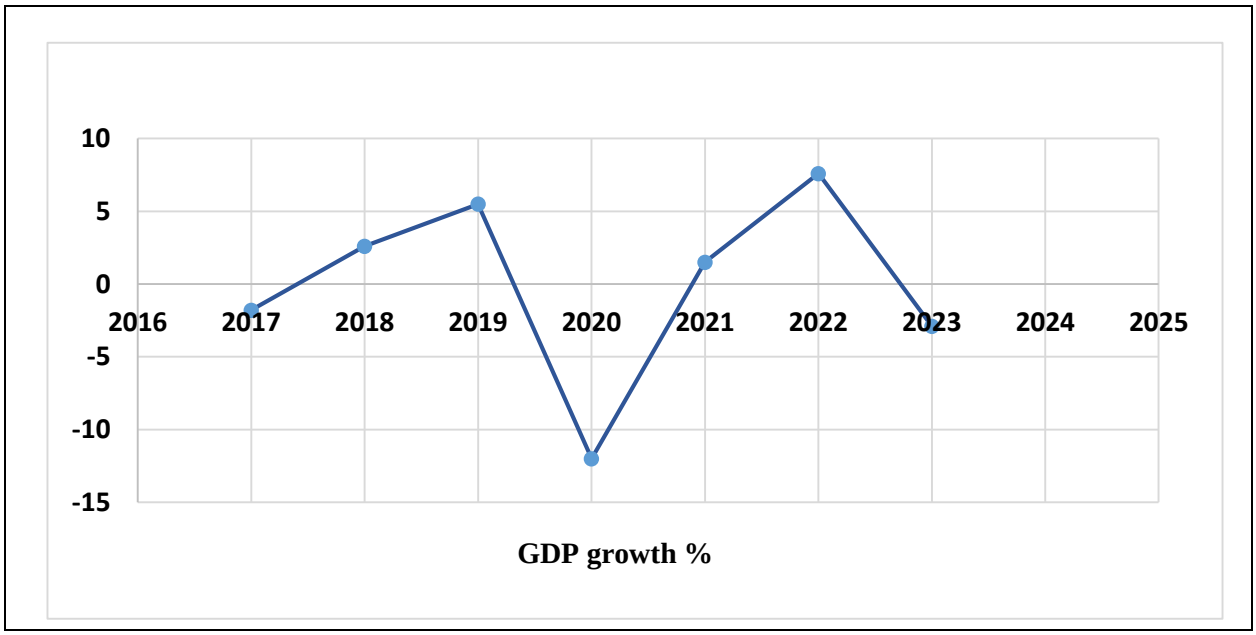


**Figure (2) GDP growth for the period (2017-2024)**
**Source: Prepared by the researchers**

**5.Testing research hypotheses**

The research hypotheses were tested by finding the impact relationship between some financial inclusion variables as an independent variable in the GDP variable as the dependent variable, and at the same time the most important variables affecting the dependent variable will be selected by employing the lasso technique. Given that the sample size used in the analysis is small (8) individuals (during the fiscal years from 2017-2024), to overcome this problem, the quantile regression model was used. The advantages of this model are that it is immune to the standard problems that accompany this model on the one hand, and on the other hand it is not affected by outliers or outliers, and most importantly, it provides comprehensive coverage of all estimated relationships through the end of the quantile regression levels, where in our current research we will focus on five quantile levels, which are:

($\tau = 0.20, \tau = 0.40, \tau = 0.60, \tau = 0.80$ and $\tau = 0.96$ ) Researchers believe that these five levels are sufficient to cover the estimated relationship between the independent variables and the dependent variable. The following figure shows these levels and how to cover the estimated relationship between the independent variables and the dependent variable. Then we will focus on a main hypothesis that states (that the financial inclusion variables used have a statistically significant effect on the GDP variable) as follows:

**1- The relationship between the impact of independent variables on the dependent variable at a significance level (τ=0.20)**

Through the low level of regression at the level of 0.20, the indicators of the independent variable (ATM spread, bank accounts, banking density, banking spread, total deposit volume, and loan volume) will be estimated and selected, and the indicators that have the greatest impact on the dependent variable indicator (GDP) will be shown using the first level of regression, as shown in the following table.

**Table (3) Estimation of the impact relationship and selection of independent variables in the dependent variable at the quantile level (τ=0.20)**

| Variables | Variable symbol | Estimated values $\beta$ | Standard error | Calculated t-values | Sig |
|---|---|---|---|---|---|
| **Fixed Limit** | Intercept | 0.421 | 1.747 | 0.241 | 0.627 |
| **ATM Spread** | $X_1$ | 0.561 | 0.173 | 3.241 | 0.006 |
| **Bank Accounts** | | 0.622 | 0.141 | 4.421 | 0 |
| **Banking Density** | $X_3$ | 1.041 | 0.293 | 3.548 | 0 |
| **Banking Spread** | $X_4$ | 0 | 0.294 | 0 | 1 |
| **Total Deposit Size** | $X_5$ | 0.116 | 0.022 | 5.264 | 0 |
| **Loan Size** | $X_6$ | 1.007 | 0.238 | 4.227 | 0.007 |
| **Pseudo-$R^2$= 0.831** | | | | | |

**Source: Prepared by the researchers using SPSS.**

From the estimated results of the explanatory variables, we find that five explanatory variables (ATM penetration, bank accounts, banking density, total deposit volume, and loan volume) had a direct impact on the dependent variable (GDP). However, the banking penetration index had no impact on the GDP variable, and therefore, this variable could be excluded from the model. The remaining five variables had a direct impact on the GDP variable at the regression level of 0.20, and this impact was significant for all five of the remaining variables, as the significance (sig) was less than 0.05. Based on these results, we accept the first sub-hypothesis: "The remaining five financial inclusion variables have a statistically significant impact on the GDP variable."

We note that these five independent variables (ATM spread, bank accounts, banking density, total deposit volume, loan volume) had a direct impact on the dependent variable. They were able to explain 83.1% of the changes in the GDP variable.

**2- The relationship between the impact of the independent variables on the dependent variable at a significance level (τ=0.40)**

Using the low-level regression at the 0.40 level, the variables will be estimated and selected, as shown in the following table:

**Table (4) Estimating the relationship between the impact and selection of independent variables on the dependent variable at the quantile level (τ=0.40)**

| Variables | Variable symbol | Estimated values $\beta$ | Standard error | Calculated t-values | Sig |
|---|---|---|---|---|---|
| **Fixed Limit** | Intercept | 0.648 | 0.255 | 2.542 | 0.041 |
| **ATM Spread** | $X_1$ | 0.472 | 0.129 | 3.648 | 0.008 |
| **Bank Accounts** | | 0.951 | 0.190 | 4.994 | 0.004 |
| **Banking Density** | $X_3$ | 0.675 | 0.220 | 3.064 | 0.007 |

| | | | | | |
|---|---|---|---|---|---|
| **Banking Spread** | $x_4$ | 0.811 | 0.198 | 4.091 | 0.072 |
| **Total Deposit Size** | $x_5$ | 0.622 | 0.119 | 5.217 | 0.000 |
| **Loan Size** | $x_6$ | 0.318 | 0.087 | 3.661 | 0.001 |
| **Pseudo-$R^2$= 0. 905** | | | | | |

**Source: Prepared by the researchers using SPSS.**

Through the estimated results of the explanatory variables, we find that five explanatory variables (ATM penetration, bank accounts, banking density, total deposit volume, and loan volume) had a clear impact on the dependent variable, GDP. However, the banking penetration variable had no impact on the GDP variable, and therefore, this variable can be excluded from the studied model. The remaining five variables had a direct impact on the GDP variable at the regression level of 0.40, and this impact was significant for all five remaining variables, as the significance (sig) was less than 0.05. Based on these results, we accept the second sub-hypothesis: "The remaining five financial inclusion variables have a statistically significant impact on the GDP variable."

We note that these five independent variables (ATM penetration, bank accounts, banking density, total deposit volume, and loan volume) were able to explain 90.5% of the changes in the GDP variable.

**3- The relationship between the impact of the independent variables on the dependent variable at a significance level (τ=0.60)**

Using the low-level regression at the 0.60 level, the variables will be estimated and selected, as shown in the following table:

**Table (5) Estimating the relationship between the impact and selection of independent variables on the dependent variable at the quantile level (τ=0.60)**

| Variables | Variable symbol | Estimated values $\beta$ | Standard error | Calculated t-values | Sig |
|---|---|---|---|---|---|
| **Fixed Limit** | Intercept | 1.871 | 1.529 | 1.224 | 0.112 |
| **ATM Spread** | $x_1$ | 0.218 | 0.063 | 3.421 | 0.007 |
| **Bank Accounts** | | 0.622 | 0.126 | 4.928 | 0 |
| **Banking Density** | $x_3$ | 0.708 | 0.189 | 3.741 | 0.004 |
| **Banking Spread** | $x_4$ | 1.062 | 0.264 | 4.009 | 0.004 |
| **Total Deposit Size** | $x_5$ | 0.511 | 0.136 | 3.751 | 0.007 |
| **Loan Size** | $x_6$ | 0.627 | 0.21 | 3.118 | 0.006 |
| **Pseudo-$R^2$= 0. 847** | | | | | |

**Source: Prepared by the researchers using SPSS**

Through the estimated results of the explanatory variables, we find that five explanatory variables (ATM penetration, bank accounts, banking density, total deposit volume, and loan volume) had a clear impact on the dependent variable, GDP. However, the banking penetration variable has no impact on the GDP variable and therefore this variable can be excluded from the studied model. The remaining five variables have a direct impact on the GDP variable at the regression level of 0.60 and this impact was significant for all five remaining variables, as the significance (sig) is less than 0.05. Based on these results, we accept the third sub-hypothesis: "The remaining five financial inclusion variables have a statistically significant impact on the GDP variable."

We note that these five independent variables (ATM penetration, bank accounts, banking density, total deposit volume, and loan volume) were able to explain 84.7% of the changes in the GDP variable**.**

**4- The relationship between the impact of the independent variables on the dependent variable at a significance level (τ=0.80)**

Using the low-level regression at the 0.80 level, the variables will be estimated and selected, as shown in the following table:

**Table (5) Estimating the relationship between the impact and selection of independent variables on the dependent variable at the quantile level (τ=0.80)**

| Variables | Variable symbol | Estimated values $\beta$ | Standard error | Calculated t-values | Sig |
|---|---|---|---|---|---|
| **Fixed Limit** | Intercept | 0.184 | 0.156 | 1.177 | 0.264 |
| **ATM Spread** | $x_1$ | 0.627 | 0.235 | 2.657 | 0.018 |
| **Bank Accounts** | | 0.719 | 0.186 | 3.864 | 0.004 |
| **Banking Density** | $x_2$ $x_3$ | 1.284 | 0.341 | 3.761 | 0.007 |
| **Banking Spread** | $x_4$ | 0.127 | 0.027 | 4.651 | 0.004 |
| **Total Deposit Size** | $x_5$ | 0.814 | 0.197 | 4.127 | 0.001 |
| **Loan Size** | $x_6$ | 0.526 | 0.136 | 3.861 | 0.004 |
| **Pseudo-$R^2$= 0. 847** | | | | | |

**Source: Prepared by the researchers using SPSS**

Through the estimated results of the explanatory variables, we find that five explanatory variables (ATM penetration, bank accounts, banking density, total deposit volume, and loan volume) had a clear impact on the dependent variable, GDP. However, the banking penetration variable has no impact on the GDP variable and therefore this variable can be excluded from the studied model. The remaining five variables have a direct impact on the GDP variable at the regression level of 0.80 and this impact was significant for all five remaining variables, as the significance (sig) is less than 0.05. Based on these results, we accept the fourth sub-hypothesis: "The remaining five financial inclusion variables have a statistically significant impact on the GDP variable."

We note that these five independent variables (ATM penetration, bank accounts, banking density, total deposit volume, and loan volume) were able to explain 91.5% of the changes in the GDP variable.

**5- The relationship between the impact of the independent variables on the dependent variable at a significance level (τ=0.96)**

Using the low-level regression at the 0.96 level, the variables will be estimated and selected, as shown in the following table:

**Table (6) Estimating the relationship between the impact and selection of independent variables on the dependent variable at the quantile level (τ=0.96)**

| Variables | Variable symbol | Estimated values $\beta$ | Standard error | Calculated t-values | Sig |
|---|---|---|---|---|---|
| **Fixed Limit** | Intercept | 1.007 | 1.494 | 0.674 | 0.612 |
| **ATM Spread** | $x_1$ | 0.264 | 0.077 | 3.417 | 0.008 |
| **Bank Accounts** | | 0.818 | 0.213 | 3.837 | 0.007 |
| **Banking Density** | $x_2$ $x_3$ | 0.619 | 0.206 | 3.008 | 0.127 |
| **Banking Spread** | $x_4$ | 0.327 | 0.071 | 4.612 | 0 |
| **Total Deposit Size** | $x_5$ | 0.673 | 0.176 | 3.821 | 0.002 |
| **Loan Size** | $x_6$ | 0.924 | 0.286 | 3.228 | 0.003 |
| **Pseudo-$R^2$= 0. 864** | | | | | |

**Source: Prepared by the researchers using SPSS**

Through the estimated results of the explanatory variables, we find that five explanatory variables (ATM penetration, bank accounts, banking density, total deposit volume, and loan volume) had a clear impact on the dependent variable, GDP. However, the banking penetration variable has no impact on the GDP variable and therefore this variable can be excluded from the studied model. The remaining five variables have a direct impact on the GDP variable at the regression level of 0.96 and this impact was significant for all five remaining variables, as the significance (sig) is less

than 0.05. Based on these results, we accept the fifth sub-hypothesis: "The remaining five financial inclusion variables have a statistically significant impact on the GDP variable."

We note that these five independent variables (ATM penetration, bank accounts, banking density, total deposit volume, and loan volume) were able to explain 86.4% of the changes in the GDP variable**.**

**6.Conclusions and Recommendations**

**6.1 Conclusions**

1- We conclude that financial exclusion (individuals who do not deal with banks) reaches approximately 70%. This is confirmed by international reports, which indicate a significant disparity in financial inclusion rates between developing and developed countries. The percentage of individuals with bank accounts does not exceed 30% in developing countries, especially Iraq, while in developed countries, the percentage exceeds approximately 70%. This illustrates the disparity in financial inclusion rates.

2- We conclude from an analysis of the independent variable indicators (ATM penetration, bank accounts, banking density, banking penetration, deposit volume, and loan volume) that there is clear fluctuation, and that these rates are not at the desired level compared to financial inclusion rates across the Arab world and globally during the research period.

3- There is a statistically significant relationship between financial inclusion indicators (X1, X2, X3, X5, X6) at a significance level of (0.05). As for the independent variable (X4), the results showed no statistically significant relationship with the dependent variable (GDP) at a significance level of (0.05).

**2.6 Recommendations**

1- The necessity of providing financial inclusion requirements, including the use of modern technological means, as well as providing an accurate database and expanding the Internet to include all regions of Iraq, as it is the direct means of spreading electronic financial culture and enhancing confidence in the banking sector.

2- Encouraging individuals to increase the volume of deposits, increase demand for loans, and open bank accounts by facilitating banking transaction procedures and increasing the spread of financial services by increasing the number of bank branches and ATMs.

3- The need to attract individuals suffering from financial exclusion by focusing on banking education and raising banking awareness, as well as increasing the number of loans and deposit acceptance by reducing interest rates and facilitating loan granting procedures, with the aim of increasing demand for banking services and achieving a high level of financial well-being**.**

**Sources**

1. Al-Bakl, Ahmed Saeed, (2022), Financial Inclusion and its Impact on the Economic Growth Rate in Egypt, Journal of the Faculty of Economics and Political Science, 15 (14).
2. Al-Fatlawi, Riyam Fadhel Shaker, (2019), Analyzing the Relationship between Financial Inclusion and Banking Stability - Iraq as a Case Study, Published Master's Thesis, University of Karbala, College of Administration and Economics.
3. Abdullah, Samir, (2016), Financial Inclusion in Palestine, Palestine Economic Policy Research Institute (MAS), Alliance for Financial Inclusion (AFI).
4. Brüggen, E. C., Hogreve, J., Holmlund, M., Kabadayi, S., & Löfgren, M. , Financial well-being: A conceptualization and research agenda. Journal of business research, 79, 228-237, 2017.
5. Demirguc-Kunt, Asli & Klapper, Leora & Singer, Dorothe, Financial Inclusion and Inclusive Growth A Review of Recent Empirical Evidence, World Bank Group, Policy Research Working Paper 8040, 2017.
6. FUNGÁČOV, Zuzana & WEILL, Laurent, Understanding financial inclusion in China, China Economic Review, Vol (34), 2014.
7. Gita, S., & al, e, The Effect of Financial Knowledge, Financial Behavior and Financial Inclusion on Financial Well-being, Department of Management, Faculty of Economics and Business. Retrieved 09 09, 2022,pp:02-03. from 2020, https://eudl.eu/pdf/10.4108/eai.3-10-2020.2306600#
8. Iramani, R., & Lutfi, L. , An integrated model of financial well-being: The role of financial behavior. Accounting, 7(3), 691-700, 2021.
9. Morgan, Peter J. & Pontines, Victor, Financial Stability and Financial Inclusion, Asian Development Bank Institute (ADBI), Working Paper Series No. 488,2014.
10. Nguyen, Trung Duc & Du, Quynh Lan Thi, The effect of financial inclusion on bank stability: Evidence from ASEAN, Cogent Economics & Finance, 10:1, 2040126,2022.
11. Nkuna, Onelie & Lapukeni, Angella Faith.& Kaude, P. and Kabango, G. The Role of Commercial Banks on Financial Inclusion in Malawi, Open Journal of Business and Management, 6,2018.
12. Ozili, Peterson K, Measuring financial inclusion and financial exclusion, MPRA paper, 2021.

13. Ouma, M. O., & Kirori, G. N., Evaluating the financial soundness of small and medium-sized commercial banks in Kenya: an application of the bankometer model. International Journal of Economics and Finance, 11(6), 93-100, 2019.
14. Pandey, Amit & Kiran, Ravi & Sharma, Rakesh Kumar , Investigating the Impact of Financial Inclusion Drivers, Financial Literacy and Financial Initiatives in Fostering Sustainable Growth in North India, Sustainability, 14, 11061, 2022, https://www.mdpi.com/journal/sustainability
15. Schubert, Deborah, The Impact of Financial Inclusion on Poverty in Low-and Middle-Income Countries, Master en sciences économiques, HEC-Ecole de gestion de l'Université de Liège,2019.
Tissot, Bruno and Gadanecz, Blaise, Measures of financial inclusion - a central bank perspective, Bank for International Settlements, Bank of Morocco – CEMLA – IFC Satellite Seminar at the ISI World Statistics Congress on "Financial Inclusion" Marrakech, Morocco,2017.