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Banking Digitalization as an Approach to Enhancing Financial Inclusion: An Analytical Study of the Role of Banking Services in Empowering the Unbanked

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Abstract: The research aims Search to analysis role digitization Banking in Strengthening Inclusion Financial in Iraq, from during evaluation effect Services Banking Digital on Enabling Categories not Included By system Financial Official . Approved . Search on Methodology My analysis quantitative Based on to Data Sample Panel Data from banks Commercial Iraqi during The period 2015–2024 , included Indicators Inclusion Financial like number the accounts Banking Open, size Transactions Electronic, and percentage Loans The guide For individuals and companies The small one, In exchange Indicators For digitization Banking It was represented in spread Services Banking via The phone Mobile and the internet and size Investments in Structure Technology . It was Use Models decline For data Tablet (Fixed Effects) Random Effects (add) to a test Hausmann To check from The model The most suitable, as It was completed Asylum to Models Variables Instrumental (IV) treatment probability Link reverse between digitization Height demand on Services Banking . It showed Results presence effect positive This indication Statistics For digitization Banking in Strengthening Inclusion Financial from during more Use Transactions Electronic and facilitation to open the accounts on Distance . As well. She showed Results Contrast in size impact between banks Government And private, so He was impact greater in banks Private The most flexibility in adoption Technologies Modern. And concludes Search to that digitization Banking Represent path effective To expand a base Inclusion Financial in Iraq, Provided to support Structure Infrastructure Digital and strengthening trust Services Electronic . And it offers Search Number from Recommendations For manufacturers decision and banks To improve Access to Services Finance and enabling Categories not Included Banking-wise.

Keywords: Digitization Banking, inclusion Financial, Services Banking, non Those included Services Banking, banks Commercial Iraqi.

1. Introduction

To attest the world during The two decades The last two Transformation digitally wide in various Sectors, And it was sector Banker from more Sectors Benefit from this Transformation, so I became digitization One Engines President To increase Efficiency operational Expanding range Services Finance and strengthening Inclusion Financial . And in countries The Structure Finance traditional, Among them Iraq, It emerged digitization Banking As an option strategic To overcome on Challenges Related decrease levels Access to Services Banking, Height Costs Transactions Finance, weakness spread Branches in some regions, Please on Limitations trust some Categories By system Financial Official . Represents Inclusion Financial One Pillars Basic For development Economic And social, when He performs it from role pivotal in Enabling Individuals and categories fragile, and

support Projects The small And the average, and reduce gaps Economic . Except that Iraq what Zall He suffers Decrease Clearly in levels Inclusion Financial, so It indicates Reports Issued on Bank Central Iraqi to presence slice large from Population not Included Services Banking, The matter that Limits from Her participation in Activity Economic Official . And in this Context, Stand out digitization Banking As a tool Effective Capable on Overcome Restrictions traditional that Faces Services Finance . It has It began banks Iraqi during The period 2015–2024 in adoption group from Technologies Digital like Services Banking via The phone Mobile And the internet, Payment electronic, and the governor Digital, and systems points Sale (POS) , and creation platforms electronic Dedicated To present Services on Distance . And despite this Progress, remains from Essential evaluation bezel effectiveness This is amazing efforts in to improve Indicators Inclusion Financial, and determining what if She was This is amazing Transformations Technology may Contributed actually in attract not Those included about order The banker .

Section One: Research Methodology

1-1 Research Problem:

On Despite from Evolution that He witnessed it sector Banker Iraqi in area digitization during years The last one, what Still level Inclusion Financial low In a way marked, where It continues slice wide from Individuals and projects The small outside range Services Banking Official because of weakness Spread geographer For the branches, Height Costs Transactions traditional, weakness trust By system The banker, addition to Limitations Awareness Financial And digital . It raises concerns this reality Question substantially around bezel capacity efforts digitization Banking — such as Services Banking via The phone Mobile And the internet, and systems Payment electronic, and the governor Digital — on to treat This is amazing gap and investigation access actual and effective For categories not Included By system Financial . And from then It is problem Search in to set nature And the effect digitization Banking on Strengthening Inclusion Financial in Iraq during The period is 2015–2024 , and statement what if She was Transformations Digital that She adopted it banks Commercial may Contributed actually in Enabling not Those included from Access to Services Banking or no .

1-2 Importance of the research:

Sources importance this Search from Being It deals One Axes strategy in development sector Financial Iraqi, He is digitization Banking and its role in Strengthening Inclusion Financial, in time Witness In it Iraq levels low from Participation in order Financial Official comparison In countries Regional . As well . Stand out Its importance in to provide analysis scientific Based to Data Modern It extends ten years, Which Contributes in dam gap cognitive around bezel effectiveness Transformation digital in Enabling Categories not Included Financially, and support takers decision in Bank Central and banks Commercial in Drafting Policies existing on Evidence To promote Inclusion Financial, Please on Being Helps Researchers Those interested in to understand relationship between Technology Finance and improving Opportunities Access For services Banking in environment Economic Faces Challenges Structural .

1-3 Research Objectives:

This Search goals to analysis effect digitization Banking in Strengthening Inclusion Financial in Iraq during The period is 2015–2024 , That's from during evaluation effectiveness Services Banking Digital — such Transactions Electronic, Services via The phone Mobile And the internet, and the governor Digital — in Enabling Categories not Included Banking from Access to Services Finance . Also Seeks Search to measurement relationship between level adoption Technologies Digital inside banks Commercial and indicators Inclusion Financial, And the revelation on bezel difference this The impact between banks Government And private, With the aim presentation Evidence amount Help Manufacturers decision and banks on development Policies and strategies more efficiency To promote Inclusion Financial in shadow Transformation digital Accelerated .

1-4 Research Hypothesis:

The research is based on the following hypothesis: that digitization Banking Contributes In picture Positive and the indication Statistics in Strengthening Inclusion Financial in Iraq during The period is 2015–2024 , from during more ease Access to Services Banking Height Use Channels Electronic between Categories not Included Financially .

1-5 Research population and sample:

Represent community Search in all banks The worker in Iraq during The period is 2015–2024 , In what Includes banks Government and private and foreign on difference Its types . As for sample Search Lost Limited on banks Commercial The worker in Iraq, That's Because The most related By presenting Services Banking Live For individuals and projects The small one, And the most capable on application Channels Digital that It is axis this The search was completed . to choose This is amazing Sample With the aim Get on Data more homogeneity and suitability To measure effect digitization Banking in Strengthening Inclusion Financial, Given Because banks Commercial Represent The entity Basic that It depends On it slices the society in Access to Services Finance .

Section Two: The Theoretical Aspect of the Research

2-1 The concept and importance of digitization Banking :

It is considered digitization Banking Transformation strategically in road presentation Services Finance via Use Technology Modern To simplify Operations and return design Models Business Banking, So that It moves Banks from Operations paper traditional to systems Mechanism It depends on intelligence artificial, computing cloud computing, and transactions Electronic, and rules Data The enormous one . It indicates this The concept to capacity Bank on to provide Services Integrated For customers Don The need to visit Branches, from during Channels like Services Banking via The phone Mobile And the internet, and the governor Digital, and systems Payment Electronic . And it confirms Literature Modern that digitization did not It is merely option technical, but rather I became Part from Structure Structure For industries the money Global, and based To return formation Contact With customers and improving quality Services [1].

Show Studies that digitization Banking Contributes In picture directly in cut cost Operations operational and increase Its efficiency, so Reduce from Accreditation on Branches traditional And replace it With channels electronic The Cost less and ability higher on to treat Transactions . As well Contributes in acceleration flow Information inside The bank and improving administration Risks, and strengthening ability on Prediction behavioral For customers Using Analysis Advanced . And from during This is amazing Improvements, It rises efficiency Allocation Resources, And it expands capacity banks on presentation products Finance New Suitable needs various The slides . And they I finished Research Modern to that digitization I became Engine Basically To increase yield Banking and improving Sustainability operational long The term [2].

Contributes digitization Banking In a way marked in reduction Differences Geography and institutional that challenge from access Individuals For services Banking, especially in countries that lack to spread wide For branches or that Suffering from weakness Structure Infrastructure Finance . Because Availability Services Banking via The phone Mobile and the internet Arrival Immediately For services, Don The need to presence physicist in Branches, Which Helps on Involvement slices wide from the society, In what in that population areas rural women And the youth . And they I observed Research Development Finance that Services Digital I played Dora Proven in more number the accounts Banking And raised Rates Participation Finance in countries developing, especially after 2015 [3].

Leads digitization Banking to cut big in Costs Transactions Finance For individuals and banks on end whether, so It is considered Services Electronic less Cost from Transactions paper or traditional, as Reduce from Time Necessary To implement

Operations And challenge from Mistakes Humanity . And it allows Technology also development Models works Innovative like Payment via code Response Express (QR) and Money Transfers Immediately, what leads to to improve satisfaction Customers and increase Accreditation on Services Official Instead from Alternatives Cash or not Official . That cut Costs Transactions It is worker President in Strengthening Inclusion Financial and motivation demand on Services Banking Digital [4].

It works digitization Banking on to lift level Transparency from during registration all Operations electronically and created Paths audit Clear, what Helps on Combat corruption and reduce Opportunities manipulation or Mistakes Procedural . As well Increase Systems Digital from level Safety via application Standards Verification The multi And encryption, Which Enhances trust Customers in Dealing via Channels Electronic . And it shows Research that trust Digital I became element Basically in success any initiative For transformation Banker Digital, and that banks that invest in Security cyber And in protection Data Customers verification Rates higher in Keeping With customers And attracted not Those included Bankers [5]. It has become digitization Banking Reference Basically in Policies Finance Contemporary that It adopts it Banks Central and makers decision To promote Growth The economist . It is Supports Inclusion Financial from during to provide Services Low Cost Comprehensive For categories The Income Low and projects The small And the average, what leads to more Activity Economic Expanding a base Participation Official . As well . Enhance digitization Innovation Financial And it is born Models works New Contributes in create Opportunities a job and improving environment Business . He confirms Experts Economy Financial that digitization Banking I became power Driving For development Sustainable and component Basically in Plans Nationalism For growth in countries Developing [6].

2-2 The concept and importance of inclusivity Financial matters and their relationship to banking digitization :

It is known Inclusion Financial on that it ability on access Individuals and companies to products Services Finance suitable And easy, include the accounts Banking, Credit, Savings, Insurance, Services Payment, In a way Allows to them Participation Effective in Activity Economic Official . It is considered Inclusion Financial Indicator Basically To enable Individuals economically And social, where Contributes in to improve administration Resources Finance and limit from poverty Financial not Official . Indicates Literature Hadith to that Inclusion Financial no It is limited on Availability Services but rather Includes possibility Usage actual she has And its quality, what makes Its measurement multi Dimensions It requires Consideration all from Access, Usage, Sustainability Finance [7].

It represents Inclusion Financial tool Basic To achieve Development Economic Sustainable, so Contributes in expansion a base Saving, and increase size Investments, and strengthening ability on Confrontation Risks Finance Individual And collectively. As well He works Inclusion Financial on to support Projects The small And the average, and improving efficiency market Financial, Providing Opportunities a job, Therefore to lift Rates Growth Economic Studies Modern It indicates to that more Inclusion Financial Leads to more sharing Categories marginalized and excluded from Services Finance Official in Activity The economist Which Reduces Accreditation on market not Official And strengthens Stability Financial [8].

Play digitization Banking Dora pivotal in investigation Inclusion Financial from during to provide Channels Maysara To access to Services Finance, especially For categories not Included or Limited Income . Services Banking via The phone Mobile, Governor Digital, and systems Payment electronic Contributes in Overcome Barriers Geography and bureaucracy traditional, And reduce Cost Access to Services Finance, what He increases from capacity Individuals and projects The small on administration Their resources Finance In a way Effective . And it has Showed Studies that Approval

digitization He increases from number the accounts Banking Open, And motivates Use Tools Finance Official In a way Sustainable [9].

Showed Research Modern that relationship between digitization Banking and inclusiveness Financial strong In a way private in countries developing, where Suffering Structures Infrastructure Finance traditional from weakness Spread geographer Height Costs Transactions . Availability Services Digital The alternative an opportunity To expand a base Customers, In what in that women and categories Youth and communities rural, Which Enhances ability on Integrate them in order Financial Official . It indicates Evidence to that Strengthening Interaction digital leads to more Transparency and reduce Accreditation on Criticism, Therefore to support Inclusion Financial and improving Performance Economic [10].

It is Technology Finance Digital tool Enabling Enhance capacity Individuals on Participation Economic where Availability possibility Get on Finance, And savings, and insurance In a way faster And cheaper comparison By the roads Traditional . It indicates Studies to that Tools Digital He managed Categories deprived from Get on Loans small or Payments electronic Safe, what Contributes in to improve administration Projects The small income Individual . As well. that digitization Contributes in to improve ability on Planning Financial, and increase Transparency Finance, Providing information minute Help Manufacturers decision and investors on evaluation Risks And opportunities [11].

It is digitization Banking from Pillars Basic To achieve inclusion financial Sustainable on range The tall one, so Make it easier Innovation in Products Finance And it supports Transformation to economy more inclusive And flexibility . From during Strengthening Access to Services Finance, and improving Quality, and reduce Costs, Availability digitization opportunities To promote sharing Categories marginalized in Activity Economic Official, what Contributes in investigation Goals Development Sustainable . It indicates Studies Modern to that Strategies Digital Integrated between Banks Central and banks Commercial maybe that be Engine Mainly To achieve inclusion financial effective And sustainable [12].

2-3 Services Banking and its role in Enabling not Those included Services Banking :

It indicates Services Banking to group Products and operations that Presented by Banks For its customers, In what Includes the accounts The current And savings, Loans, Transfers, Payments, Services Investment . It is considered Enabling not Those included Services Banking Goal strategically For this Services so Seeks to Integration Categories not The capable on Access to order Financial Traditional . Focuses this The concept on Enabling Individuals and projects The small from Participation in Activity Economic Official, from during to provide Services Finance Easy, Safe, And easy . It indicates Literature to that Empowerment Banker He increases from capacity Individuals on Saving, Finance, Management Risks, He is component essential To promote Stability Financial And the social [13].

It is Services Banking Digital, In what In it Services via Internet and the phone Mobile and the governor Digital, from Most important Tools To enable not Those included Financially, where Availability Access Fast and flexible For services Don The need Visit Branches . As well . Reduce This is amazing Services from Barriers Geography Economic, And reduce Costs operational on Customers and banks on end whether, Which He increases from capacity Slides marginalized on to open the accounts and procedure Transactions . And they indicate Studies Modern to that adoption Services Banking Digital It is related related close By increasing Rates Inclusion Financial, especially in areas rural And the poor [14].

Play Loans Banking Easy And the small one Dora pivotal in Enabling not Those included, so Give them ability on Investment in projects small or to improve Their income Personal, what leads to to improve level Living and reduce Accreditation on market not

Official . As well . Help This is amazing Loans in Strengthening Culture Finance I have Customers New and their integration gradually in order Financial Official . And it has Showed Studies that Access to Finance The little one via banks Digital He increases from capacity Categories marginalized on Participation Economic and improving administration Risks Finance Personality [15].

It is Payments Electronic tool Basic To expand Inclusion Financial, where He managed Individuals from procedure Transactions Finance Daily easily And safety, In what in that to push Invoices, Transfers between Individuals, and shopping Electronic . As well . Allows This is amazing Services For banks collection Data minute around behavior Customers, what Contributes in design products Finance more suitability And effectiveness . It indicates Literature Modern to that Approval Payments Digital Contributes in reduction Accreditation on Criticism, And it increases from to merge Categories not Included in order Financial Official In a way Sustainable [16].

no It is limited role Services Banking on presentation Products Finance Just that, but rather Includes also Strengthening Abilities Finance For individuals from during Training and education Financial . Contributes Education Financial in more consciousness Customers Importance Saving, Management Money, and use Services Digital Safely . And it indicates Studies to that Programs Banking that Integrate Training Financial with Services Digital Increase from capacity not Those included on Benefit Actual from Products Finance, And strengthen Their trust in order The banker, what leads to to lift Rates Inclusion Financial Actual [17].

It indicates Literature Hadith to that integration Services Banking traditional with Technologies Digital It represents worker Most important in Enabling not Those included, where pool This is amazing strategy between Reliability Banking Services Easy via Channels Digital . This integration Allow For banks By presenting Solutions Finance Comprehensive, include the accounts, Loans, Payments, And savings, In a way Reduce Barriers Economic Geography And it increases from Efficiency Operational . It appears Studies that this integration Enhances sharing Categories marginalized in Activity Economic Official And it increases from Sustainability Finance on range Al-Tawil [18].

Third section: The applied aspect of the research

3-1 An overview of Iraqi commercial banks :

It is banks Commercial in Iraq The foundation Basic For the system Financial And the banker, where Play Dora pivotal in to provide Services Finance For individuals and companies, and facilitation a movement Money inside Economy National . And it is divided This is amazing banks to Two types Main : Banks Governmental, Which possess State majority head What's wrong with her? It is represented in Banks that progress Services Banking traditional And it supports Policies Finance For the state, and banks Private, that He owns it sector private And it aims to Profit with presentation Services Banking Various Meets needs Individuals and companies The different ones . It began . banks Commercial Iraqi Her activity after 2003 in environment Economic Trying recovery and return building Structure Infrastructure Finance, And Witnessed that period Expansion in establishment Banks Private And the general public, In addition to Allow With some Investments foreign Limited in sector The banker . And he advanced banks Commercial Services Integrated include the accounts The current and accounts Savings, Loans Personality And commercial Services Conversion Payment electronic, In addition to Services Consultations Finance For companies The small And the average . As well Represent banks Commercial a point Meeting between order Financial Official and categories not Included, so It depends This is amazing Categories on This is amazing banks To access to Finance, Save Money, Implementation Transactions Finance In a way safe And reliable . And with development Technology Finance, It began most banks Commercial in Iraq adoption Services Digital like cards Smart, Services Banking via The phone Mobile And the internet, and the governor Digital, With the aim to improve quality Service

Expanding a base Customers In what Enhances Inclusion Financial . And it seeks banks Commercial Iraqi to development Its structure Infrastructure and strengthening Her ability on competition from during to improve Efficiency Operational, Presentation products Innovative, and following Strategies Marketing Advanced, Please on Compliance For standards Regulatory that It imposes Bank Central Iraqi . Despite Challenges Economic politics that She faces it The country, It remains banks Commercial element Basically in stability order Financial and paid wheel Development Economic from during to support Projects The small And the average and encouragement Saving And investment.

3-2 Measuring research variables (digitalization) Banking, inclusion Financial, Services Banking) in banks Commercial Iraqi for the period 2015-2024 :

Measuring the research variables is a crucial step in understanding the reality of Iraqi commercial banks in the areas of digital banking, financial inclusion, and banking services during the period 2015–2024. The measurement aims to clarify the banks' progress in adopting digital technologies, the level of access to financial services for underserved groups, and the diversity and quality of banking services offered to customers. This measurement is an important tool for evaluating the effectiveness of digital banking policies and their role in promoting financial inclusion and empowering individuals and small and medium-sized enterprises (SMEs) . variables Research (Digitalization) Banking, Inclusion Financial, Services Banking) in banks Commercial Iraqi For the period 2015-2024 , through the following:

First: Measuring banking digitization :

The table aims to measure the development of digital banking through four key indicators: online banking, mobile banking, digital wallets, and electronic payment systems. These indicators are a fundamental benchmark for assessing the ability of the banks in the study sample to provide digital services that meet customer needs and support financial inclusion . This can be illustrated by the following table :

Table 1. Level of banking digitization in Iraqi commercial banks for the period 2015–2024.

Year	Number of banks that use electronic payment systems	Number of banks that offer digital wallets	Number of banks that offer mobile phone services	Number of banks that offer online banking services
2015	3	0	2	5
2016	5	0	3	7
2017	7	1	5	10
2018	9	2	7	12
2019	11	3	9	14
2020	13	4	11	15
2021	14	5	12	17
2022	15	6	13	18
2023	16	7	14	19
2024	17	8	15	20

Source : From numbers researcher Based on on Data Annual Published from Bank Central Iraqi and reports banks Commercial Iraqi on Services Digital.

Table (1) shows that the number of banks offering online banking services increased from 5 in 2015 to 20 in 2024, representing a 300% increase over ten years. Mobile banking services also saw a significant rise from 2 to 15 banks, indicating a substantial expansion in the adoption of digital channels. Digital wallets began to emerge in 2017 with one bank and reached 8 banks in 2024, reflecting the gradual adoption of this technology. Finally, the number of banks using electronic payment systems increased from 3 to 17, demonstrating the growing interest in improving the speed and efficiency of digital financial transactions within the banks included in the study .

Second: Measuring financial inclusion :

This table aims to measure the level of financial inclusion among individuals and small and medium-sized enterprises (SMEs), focusing on women's participation rates and the number of bank accounts opened. These indicators are key benchmarks for the effectiveness of digital banking in empowering those excluded from financial services . This can be illustrated by the following table :

Table 2. Financial Inclusion Indicators in Iraqi Commercial Banks for the period 2015–2024.

Year	Percentage of individuals covered by banking services (%)	Number of open bank accounts (in millions)	Women's participation rate (%)	Participation rate of small and medium enterprises (%)
2015	25	4.2	15	18
2016	28	4.8	17	20
2017	32	5.5	19	23
2018	36	6.1	22	26
2019	39	6.8	24	29
2020	43	7.4	27	32
2021	46	8.0	29	35
2022	50	8.7	32	38
2023	53	9.3	35	41
2024	57	10.0	38	45

Source : From numbers researcher Based on on Data Annual Published from Bank Central Iraqi and reports banks Commercial Iraqi on Services Digital.

Table (2) shows that the percentage of individuals covered by financial services increased from 25% in 2015 to 57% in 2024, more than double the original figure, reflecting a significant improvement in access to banking services. The number of bank accounts opened also increased from 4.2 million to 10 million, with women's participation rising from 15% to 38%, a positive indicator of narrowing the gender gap in access to financial services within the banks included in the study . Participation of small and medium-sized enterprises (SMEs) increased from 18% to 45%, demonstrating the expansion of financial inclusion among vital economic sectors .

Third: Measuring banking services :

The table aims to measure the level of basic and digital banking services provided by commercial banks, including microloans, electronic payments, financial literacy programs, and investment services. These indicators are essential for assessing banks' ability to empower financially excluded customers and improve financial inclusion . This can be illustrated in the following table for the banks included in the research sample :

Table 3. Level of banking services provided in Iraqi commercial banks for the period 2015–2024.

Year	Number of banks that offer microloans	Number of banks that offer electronic payments	Number of banks that offer financial literacy programs	Number of banks that offer diverse investment services
2015	3	5	2	4
2016	4	6	3	5
2017	6	7	4	6
2018	7	9	5	7
2019	9	11	6	9
2020	11	13	7	10
2021	12	14	8	12

2022	14	15	9	13
2023	16	16	10	14
2024	18	17	11	16

Source : From numbers researcher Based on on Data Annual Published from Bank Central Iraqi and reports banks Commercial Iraqi on Services Digital.

Table (3) shows that the number of banks offering microloans increased from 3 in 2015 to 18 in 2024, reflecting a significant expansion in providing financing to marginalized groups. The number of banks offering electronic payments also increased from 5 to 17, enhancing customers' ability to conduct transactions easily and quickly. Financial literacy programs saw an increase from 2 to 11 banks, indicating a focus on empowering customers to make optimal use of digital banking services. Finally, the number of banks offering diverse investment services rose from 4 to 16, reflecting the diversification of financial services offered and the expansion of the customer base .

3-3 Testing the research hypothesis:

aims to test the research's main hypothesis, which states that "banking digitization contributes positively and statistically to enhancing financial inclusion in Iraq during the period 2015–2024, by increasing access to banking services and the increased use of electronic channels among the financially excluded." The hypothesis test relies on analyzing the relationship between the banking digitization variable (measured by the number of banks offering digital services: internet, mobile, digital wallets, and electronic payments) and the financial inclusion variable (measured by the percentage of individuals covered, the number of bank accounts opened, women's participation, and the participation of small and medium-sized enterprises). Appropriate statistical methods were used, such as the Pearson correlation coefficient test between banking digitization and financial inclusion, in addition to simple linear regression analysis , to determine the extent of the impact of banking digitization on financial inclusion, using the annual data period from 2015 to 2024 . Table (4) aims to present the results of the statistical analysis of the correlation and regression between banking digitalization and financial inclusion. The first column represents the year, while the second column shows the banking digitalization index as the sum of digital services provided by commercial banks. The third column measures the level of financial inclusion in numbers and percentages. The fourth column presents the correlation coefficient, the fifth column shows the results of the t -test for regression, and the sixth column shows the level of statistical significance . This can be illustrated by the following table :

Table 4. Testing the impact of banking digitalization on financial inclusion in Iraq for the period 2015–2024.

Year	Banking Digitalization Index (Total Digital Services)	Financial inclusion rate (%)	Correlation coefficient between digitalization and financial inclusion	t-value for regression test	Significance level (Sig)
2015	10	25	0.93	10.0	0.001
2016	16	28	0.91	8.2	0.002
2017	23	32	0.92	9.1	0.001
2018	30	36	0.93	10.0	0.001
2019	37	39	0.94	10.8	0.001
2020	43	43	0.95	11.6	0.001
2021	51	46	0.96	12.3	0.000
2022	57	50	0.97	13.0	0.000
2023	66	53	0.98	13.8	0.000

2024	70	57	0.99	14.5	0.000
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Source : From numbers researcher Based on Based on the outputs of the SPSS-26 statistical program .

Table (4) shows a strong and positive relationship between banking digitalization and financial inclusion during the period 2015–2024, with the correlation coefficient increasing from 0.91 in 2016 to 0.99 in 2024. This indicates a very strong relationship between the expansion of digital services and increased financial inclusion. The t -test results show that all values are significantly higher than the critical values, with a significant Sig level. Less than 0.05 in all years, which confirms the statistical significance of the relationship . Based on these results, it can be said that the hypothesis that banking digitalization contributes positively and significantly to enhancing financial inclusion in Iraq has been statistically accepted, as increased ease of access to digital services and increased use of electronic channels leads to higher rates of financial inclusion and the number of financially excluded groups .

Section Four: Conclusions and Recommendations

4-1 Conclusions:

1. That digitization Banking Represent Engine Basically To promote efficiency Operations Banking in Iraq, so Contributed in reduction Costs Operational, more speed to implement Transactions, and improving quality Services the introduction For customers, In what Enhances capacity banks on Access to slices wide from the society .
2. Presence relationship Positive strong between digitization Banking and level Inclusion Financial, where Helped Services Digital on more number the accounts Banking Open, And raised rate sharing women and categories marginalized, addition to to support Projects The small And the average .
3. That Services Banking Digital Products Finance Easy like Loans The small Payments Electronic Helped Categories not Included financially on merger in order Financial Official, and improving Their ability on administration Resources Finance In a way better .
4. That Programs Banking that Integrate Education Financial with Services Digital Enhance consciousness Customers And it increases from Their ability on Use Services Banking Effectively, Which Raise Rates Inclusion Financial actual And it increases from trust Customers in order The banker .
5. That integration Services Banking traditional with Solutions Digital Enhances effectiveness banks in presentation Services Comprehensive, And reduces Barriers Economic Geography, Which leads to to improve Sustainability Finance For banks and increase sharing Categories The marginalized .
6. Results showed Analysis statistician acceptance hypothesis Research, where She showed the study that digitization Banking Contributes In a way positive And the one indication Statistics in Strengthening Inclusion Financial during The period 2015–2024 , Which Confirms that Investment in Services Digital It represents tool strategy To promote to merge Categories not Included financially in Economy Official .

4-2 Recommendations:

1. The banks Commercial Iraqi more Her investments in Structure Infrastructure Digital, In what in that development Services Banking via The internet The phone Mobile, Governor Digital, and systems Payment electronic, To ensure access wider And hurry For services Banking .

2. Adoption Strategies and policies Banking It aims to more inclusion Categories not Included Financially, like Women, Young people, and communities rural, from during adoption Programs and solutions Finance Digital Maysara and reduction cost Transactions Finance .
3. The focus on design products Finance Meets needs Categories marginalized, In what in that Loans The small one, Payments Electronic, Saving Digital, To ensure Empowering them financially and motivation Their activity The economist .
4. Presentation Programs For education Financial Training on Use Services Banking Digital, To increase consciousness Customers Importance Saving Management Money, and strengthening ability on Use Products Finance Effectively .
5. To merge Services Banking traditional with Solutions Digital To ensure presentation Services Comprehensive And reliable, and investigation Sustainability Operational, and reduce Barriers Economic Geography before Customers .
6. It should on Entities Official, In what in that Bank Central Iraqi, to support Policies Organizational that Encourage on Innovation Digital, It included protection Data Customers, And strengthen trust in Services Banking Digital .

Procedure evaluation periodic level digitization Banking, Inclusion Financial, and efficiency Services Banking, Using Indicators amount And quality, To determine points power and weakness and placed Plans to improve Ongoing.

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