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HOUSEHOLD DEBT, FINANCIAL INCLUSION, AND ECONOMIC GROWTH OF INDIA: IS IT ALARMING FOR INDIA?

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ABSTRACT

The process of economic growth must strive to include participation from all sections. In India, inclusive growth has always been a priority. The agenda of inclusive growth is reflected in the kind of policies and regulations that the policymaking and regulating institutions have been developing over the past decade. From Agricultural Economy to developing economy, India has come a long way in implementing financial sector reforms especially related to financial inclusion. The motive is economic growth. The present study was done to find the causal relationship between India's financial inclusion and economic growth and household debt and economic growth using indicators for financial inclusion, household debt, and economic growth. The relationship was checked using the linear regression technique. The results indicated that only three out of ninety-six indicators of financial inclusion affected economic growth but. Household debt and economic growth have a negative relationship. The results have serious policy implications in India as India is moving towards financial inclusion.

Contribution/ Originality: The paper contributes the first logical analysis in financial inclusion arena and works as a background check for the government's financial inclusion programme.

1. INTRODUCTION

In a recent article published by *Economic Time*, the household debt in India has doubled since the 2017-18 financial year. The figures are alarming. Credit cards and personal loans have contributed the most to rising debt. In class B and class C cities, the reason for this growth in debt is the aspiration for a lifestyle that is not affordable. Hence household debt from both banking and non-banking organizations is rising. The report from the RBI also quotes that the ratio of household debt to GDP is increasing at a higher pace than any other peer nation. The other reasons attributed to this included the rising sales of credit cards, banks being more focused on consumer lending and slower growth in credits to corporates.

1.1. Indian Scenario

India was an agricultural country where the main source of income was agriculture for long. Though in the present days it is the speedily growing economy there are still a large number of farmers who depend upon agriculture for their livelihood. This restricts the economic growth of their family as well as of the country. If we

talk about workers in other sectors, they also engage in their old culture and workplace practices. They don't want to change themselves and their way of doing work.

There are many factors that affect them that restrict them from change like unavailability of funds, high-interest rates, illiteracy, unawareness, trust, etc. The thing which comes first to mind is finance. Earlier there was not any formal source of getting funds. Hence, the lender's last resort were moneylenders, Zamiddars and Sahukars (Kenton, 2019). Formal sources were available but people were not aware of their benefits and were not literate enough to go through the formalities and documentation required.

To fulfill this gap of fund requirements, the RBI worked on financial inclusion. Whether it is developed, developing or underdeveloped nation, every nation is working on financial inclusion of those who are excluded to date.

Many researchers have worked on exploring the connection between financial development and economic growth as it is well understood now that only focusing on financial development is not adequate. Every country should strive for the financial development of the person standing last in the line and make it accessible and affordable for everyone and this will lead to the holistic growth of the economy of the country and the path to this is financial inclusion. In this research work, researchers have examined the relationship between financial inclusion and economic growth.

1.2. Household Debt

Consumer debt and mortgage loans in combination create household debt. In other words, it can be defined as the total debt of all the people in the household. The lower the value of household debt, the higher the economic development of a nation. The total burden of this debt can be quantified in terms of the burden of interest it generates a vis-à-vis income of the borrower.

A news article published in January 2019, quoted that India, among the emerging nations, has one of the highest Debt to GDP ratios. Adding to the fuel will be bailout packages provided to poorly run banks run by the state. Public Debt and finances are weakened by government borrowings which is in turn required for more spending by the government. Common household debts and the firm debt have also contributed towards the increased burden of the Indian economy. To reduce the debt component, these households and firms decrease their investment as well as spending which ultimately slows down economic growth. The government spends to boost the economy and bring it back on track. This spending needs money which is obtained by the government by more borrowing which ultimately increases public debt.

1.3. Financial Inclusion

Financial inclusion refers to the accessibility and equality of opportunities to financial products and services for everyone. The essence of this relates to every aspect of finance and financial products. As per the definition given by Reserve Bank of India, it is "the process of ensuring access to appropriate financial products and services needed by vulnerable groups such as weaker sections and low-income groups at an affordable cost in a fair and transparent manner by mainstream institutional players".

Asian Development Bank (2000) explains financial inclusion by way of "the provision of a broad range of financial services such as deposits, loans, payment services, money transfers and insurance to poor and low-income households and their microenterprises". Siclair (2001) defined financial exclusion as "the inability to access necessary financial services in an appropriate form". Chant Link and Associates, Australia (2004) defined financial exclusion as "the lack of access by certain consumers to appropriate low-cost, fair and safe financial products and services from mainstream providers. Financial exclusion becomes a concern in the community when it applies to lower-income consumers and/or those in financial hardship".

The UK's House of Commons' Treasury Committee (2004) defined financial inclusion as "The ability of individuals to access appropriate financial products and services".

The Scottish Government (2005) defined it as: "access for individuals to appropriate financial products and services. This includes having the capacity, skills, knowledge, and understanding to make the best use of those products and services. Financial exclusion, by contrast, is the converse of this."

The United Nations (2006) defined inclusion as "a financial sector that provides 'access': to credit for all 'bankable' people and firms; to insurance for all insurable people and firms; and to savings and payments services for everyone." Rangarajan (2008) in their report, defined financial inclusion as "the process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups such as weaker sections and low-income groups at an affordable cost". The World Bank Report (2008) defined financial inclusion as "broad access to financial services implies an absence of price and non-price barriers in the use of financial services; it is difficult to define and measure because access has many dimensions".

1.4. Columns of Financial Inclusion

- Financial learning.
- Branch entrée.
- Product availability.
- Risk management.

Figure-1. Pillars of financial inclusion.

1.5. Measuring Financial Inclusion

There are certain indicators that help measure the extent of financial inclusion for a nation including those listed below:

- Accounts at financial institutions.
- The extent of use of mobile money account services.
- The use of digital payment system for making or receiving any kind of payment.
- The extent of use of an account to receive direct salary payments and receive any payment from the government.
- Payment of online purchases or bills via online methods.
- Mobile banking and internet banking use for paying or receiving money.

- Higher use of debit or credit card for making payments.
- Number of dormant accounts.
- Domestic and international remittances through a financial institution account or online banking account or exclusively in cash.
- Savings at a financial institution.
- Informal savings.
- Saving for any reasons like personal use or use at old age, borrowing from financial institutions.
- Higher use of credit cards.
- Borrowings from friends or family members or any other source.
- Unsettled housing loans.

1.6. Economic Growth

Economic growth is a measure of the financial soundness of a nation. It is measured as the "increase in the market value of goods and services at any point in time". It is also expressed in terms of growth or an increase in the "Real GDP" of a nation.

The economic growth of a nation gets affected by many factors and it doesn't occur in isolation. Any event which occurs in one part of the country affects other parts of the country as well. The economic growth of a nation gets affected by macro-economic factors.

Other factors affecting the economic growth of a country include:

1   Supply factors.
2   Demand factors.
3   Efficiency factors.

The human resources of a country have an important role in the development of a country. A well-skilled and qualified human resource leads to the economic growth of his own family as well as of his country. When people have enough financial resources with knowledge and importance of markets (financial markets), they will automatically come close to financial markets and financial products which empowers them and makes them a part of the growth of the country. Human resources, a determinant of economic growth, affect the economic growth of a country in two ways. One, by contribution to GDP and the other, by investing in financial products and getting extra income or benefits or support which helps in increasing their quality of life.

Denison (1962) affirmed that "economic growth is the increase of real GDP or GDP per capita, an increase of national product that is measured in constant prices". In India, the real GDP is used as a measure of economic growth.

1.7. Relationship between Household Debt and Financial Inclusion

Even the non-agriculture household debt is high but lower than agriculture households. The major reason for taking agriculture credit was the capital expenditure for agriculture purposes.

The households, though, still feel that the policy requirements related to the opening bank account and credit paperwork are a major obstacle to access to credit. Banks and other financial institutions are still conventional about the banking business. Alter *et al.* (2018) in their working paper talked about the relationship between debt, inclusion and economic growth. They found that extended debt harms household consumption and strengthens the chances of the banking crisis which disrupts the financial system. On the other hand, extended household debt leads to a fictitious picture in the mind of investors regarding the booming economy. Adding to it, a factor like financial inclusion dismiss this impact and further leads to an equilibrium between stability and inclusion which in turn has a negative impact on growth. Recently Herispon (2019) for his work in Indonesia found a significant relationship

between debt behavior, household consumption, and inclusion. Ravalo also found a similar relationship in his work for the Philippines.

The effect of financial inclusion can also be expressed in terms of financial exclusion. In a study, Gloukoviezoff has explained that over-indebtedness can be considered as the facets of financial exclusion as both are associated with banking glitches. Both have similar recursions of the scarcity of such services. As discussed earlier, the changing lifestyle of people has exposed them to over-indebtedness. Also, steps towards a cashless economy through changing technological patterns are also responsible for over-indebtedness and act as a catalyst for social exclusion. Due to technological developments in the financial sector, now there more access to credit but the wrong use of it.

1.8. Relationship between Financial Inclusion and Economic Growth

Financial inclusion is a key factor in economic growth (Dixit and Ghosh, 2013) and there is a positive relationship between the two as per the recent research (Sharma, 2016). It is also related to the HDI of a nation.

There is a positive association between financial inclusion and NSDP but negative with poverty (Anand and Chhikara, 2013). The positive impact of financial inclusion was found in the poor households on their income (Swamy, 2013). Contrary to this Garg and Agarwal (2014); Singh and Mishra (2014) found that government initiatives for financial inclusion are not yielding the expected results in India.

In the case of Malaysia, Ang and McKibbin (2005) found positive relationship of financial inclusion with economic growth; and for Nigeria, Nwanne (2015) with their study established a positive correlation of rural inclusion with economic growth and for Nigeria only, Okoye et al. (2017) and Valickova et al. (2013) established a positive relationship of economic growth and financial inclusion. Sarma and Pais (2008) also found a positive relationship between socioeconomic variables and infrastructure-related variables with inclusion.

Vilma and Lina (2014) also found a positive relationship between financial inclusion and economic growth for EU nations. Park and Mercado (2015) for Asian economies also found an influence of inclusion on per capita income, rule of law, and demographic structure significantly. But earlier in 2001, a study for low-income countries by Jalilian and Kirkpatrick (2001) indicated that financial development leads to reduction. Tuesta et al. (2015) for Argentina found income level and age as barriers to exclusion. Recently for emerging economies, it has been established that digital technologies have a positive impact on inclusion, Ozili (2018) and Femi-lawal (2017). Williams et al. (2017) have also established a positive relationship between economic growth and poverty reduction for developing economies and Kim et al. (2018) for OIC countries.

1.9. Relationship between Household Debt and Economic Growth

Post the nationalization of banks, financial inclusion was emphasized every time whenever policy changes were made. The real momentum in this area came in the year 2005 wherein it was made part of the policy statement by RBI. Financial inclusion is not only a financial indicator but also a social indicator and the fact is accepted worldwide. It is considered one of the pillars of the long-lasting growth of the economy.

The informal data sources now prove that through inclusion more than 62% of adults in hinterland now have a bank account which initially was only 40%. Financial inclusion has led to the penetration of branch, deposit, credit, and insurance in the deeper areas of the nation. The "Financial Access Survey 2017" conducted by the IMF has ranked India as indicated that the adult's loan accounts per 1000 adults have risen from 142.48 to 170.77 till 2017.

But there is another side of the picture too. Half of the bank accounts opened remained dormant for a long time. The Eastern, Central, and North-Eastern regions of India accounted for a total of 64% indebtedness from the farmer's side. A higher level of financial inclusion and economic growth of a nation has a positive, long term relationship. There is support from literature as well on this (Levine, 1998; Beck and Levine, 2004).

The relationship between a higher level of debt and economic growth is more mysterious in nature (Arcand *et al.*, 2015) and Sahay *et al.* (2015b). When there is more credit extension, the income group which gets more benefit is the higher one. It would be incorrect to say that low-income group families do not get affected but it is high-income group nations that get more benefits. Hence there is a difference in access to finance, there lies a difference in the ratios related to household debt and eventually underestimation of the true debt burden. Financial inclusion is a double-edged sword.

1.10. Objectives of the Study

To understand the relationship between financial inclusion and economic growth of India.

To understand the relationship between household debt and economic growth of India.

2. RESEARCH METHODOLOGY

The study was empirical in nature. The population of the study was of all the nations listed in the World Bank database. The research was done for India only. The timeframe for the study was from 2011 to 2017 for the financial inclusion and GDP relationship. The data for household debt as a percentage of nominal GDP was taken from 2008 for finding the relationship between GDP and household debt. The selected time frame was due to the availability of data. The dependent variable, economic growth, was measured through growth in Real GDP. The independent variable, financial inclusion, was measured through several indicators of financial inclusion as per the https://globalfindex.worldbank.org/. The secondary data is taken from https://globalfindex.worldbank.org/ and https://data.gov.in/catalog/gdp-India-and-major-sectors-economy-share-each-sector-gdp-and-growth-rate-gdp-and-other and tradingeconomics.com. Linear regression analysis was done to find cause and effect relationships between dependent and independent variables.

3. RESULTS AND DISCUSSION

a) *Linear Regression was applied to determine the extent of the linear relationship between GDP(dependent) and other dependent variables of Financial Inclusion.*

The linear relationship was simple in nature. The data of dependent and independent variables were continuous in nature.

Table-1. Summary of linear regression results.

Dependent Variable	Independent Variable	R^2	F Value @ Significance level	Beta	T Value @ Significance level	Regression Equation
GDP	Population of age 15 years or more had an Account	0.928	12.881 @ 0.173	0.963	3.589 @ 0.173	GDP = 2.455 + 0.160 * Population of age 15 years or more had an Account
GDP	Male of age 15 years or more had an Account	0.868	6.573 @ 0.237	0.932	2.564 @ 0.237	GDP = 0.026 + 0.180 * Male of age 15 years or more had an Account
GDP	Labor force of age 15 years or more had an Account	0.858	6.031 @ 0.246	0.926	2.456 @ 0.246	GDP = 0.259 + 0.175 * Labor force of age 15 years or more had an Account
GDP	Out of labor force population of age 15 years or more had an Account	0.973	35.425 @ 0.106	0.986	5.952 @ 0.106	GDP = 4.427 + 0.148 * Out of labor force population of age 15 years or more had an Account

GDP	Female of age 15 years or more had an Account	0.962	25.215 @ 0.125	0.981	5.021 @ 0.125	GDP = 4.507 + 0.143 * Female of age 15 years or more had an Account
GDP	Young adults of age 15-24 had an Account	0.948	18.155 @ 0.147	0.974	4.261 @ 0.147	GDP = 3.690 + 0.165 * Young adults of age 15-24 had an Account
GDP	Older adults of age 25 years or more had an Account	0.914	10.666 @ 0.189	0.956	3.266 @ 0.189	GDP = 1.966 + 0.160 * Older adults of age 25 years or more had an Account
GDP	Population of age 15 years or more having primary education or less had an Account	0.983	58.457 @ 0.083	0.992	7.646 @ 0.083	GDP = 3.237 + 0.165 * Population of age 15 years or more having primary education or less had an Account
GDP	Population of age 15 years or more having secondary education or more had an Account	0.998	486.276 @ 0.029	0.999	22.052 @ 0.029	GDP = -7.502 + 0.273 *Population of age 15 years or more having secondary education or more had an Account
GDP	40% poorest of age 15 years or more having income had an Account	0.959	23.364 @ 0.130	0.979	4.834 @ 0.130	GDP = 4.272 + 0.145 *40% poorest of age 15 years or more having income had an Account
GDP	60% richest of age 15 years or more having income had an Account	0.903	9.329 @ 0.201	0.95	3.054 @ 0.201	GDP = 0.856 + 0.157 * 60% richest of age 15 years or more having income had an Account
GDP	Account ownership in rural population more than 15 years of age	0.92	11.511 @ 0.182	0.959	3.393 @ 0.182	GDP = 2.883 + 0.157 * Account ownership in rural population more than 15 years of age
GDP	Population of age 15 years or more had an account ownership	0.928	12.881 @ 0.173	0.963	3.589 @ 0.173	GDP = 2.455 + 0.160 * Population of age 15 years or more had an account ownership
GDP	Male of age 15 years or more had an Account	0.887	7.875 @ 0.218	0.942	2.806 @ 0.218	GDP = -0.030 + 0.182 *Male of age 15 years or more had an Account
GDP	Financial institution account, in labor force (% age 15+)	0.877	7.152 @ 0.228	0.937	2.674 @ 0.228	GDP = 0.196 + 0.177 * Financial institution account, in labor force (% age 15+)
GDP	Out of labor force population of age 15 years or more had an account	0.973	35.425 @ 0.106	0.986	5.952 @ 0.106	GDP = 4.427 + 0.148 * Out of labor force population of age 15 years or more had an account
GDP	Female of age 15 years or more had an account	0.962	25.215 @ 0.125	0.981	5.021 @ 0.125	GDP = 4.507 + 0.143 * Female of age 15 years or more had an account
GDP	Young adults of age 15-24 had an account	0.948	18.155 @ 0.147	0.974	4.261 @ 0.147	GDP = 3.690 + 0.165 * Young adults of age 15-24 had an account
GDP	Older adults of age 25 years or more had an account	0.928	12.881 @ 0.173	0.963	3.589 @ 0.173	GDP = 1.974 + 0.160 * Older adults of age 25 years or more had an account

GDP	Population of age 15 years or more having primary education or less had an account	0.983	58.457 @ 0.083	0.992	7.646 @ 0.083	GDP = 3.273 + 0.165 * Population of age 15 years or more having primary education or less had an account
GDP	Financial institution account, secondary education or more (% age 15+)	0.998	486.276 @ 0.029	0.999	22.052 @ 0.029	GDP = -7.502 + 0.273 * Financial institution account, secondary education or more (% age 15+)
GDP	40% poorest of age 15 years or more having income owned account	0.967	29.601 @ 0.116	0.984	5.441 @ 0.116	GDP = 4.321 + 0.145 * 40% poorest of age 15 years or more having income owned account
GDP	60% richest of age 15 years or more having income owned account	0.903	9.329 @ 0.201	0.95	3.054 @ 0.201	GDP = 0.856 + 0.175 * 60% richest of age 15 years or more having income owned account
GDP	Rural population of age 15 years or more have account	0.92	11.511 @ 0.182	0.959	3.393 @ 0.182	GDP = 2.883 + 0.157 * Rural population of age 15 years or more have account
GDP	Population of age 15 years or more Saved at a financial institution	0.989	88.901 @ 0.067	0.994	9.429 @ 0.067	GDP = -2.377 + 0.901 * Population of age 15 years or more Saved at a financial institution
GDP	Male of age 15 years or more Saved at a financial institution	0.962	25.215 @ 0.125	0.981	5.021 @ 0.125	GDP = -11.170 + 1.211 * Male of age 15 years or more Saved at a financial institution
GDP	Labor force of age 15 years or more Saved at a financial institution	0.91	10.131 @ 0.194	0.954	3.183 @ 0.194	GDP = -8.376 + 1.025 * Labor force of age 15 years or more Saved at a financial institution
GDP	Saved at a financial institution out of labor force population more than 15 years of age	0.989	88.901 @ 0.067	0.994	9.429 @ 0.067	GDP = 2.129 + 0.901 * Saved at a financial institution out of labor force population more than 15 years of age
GDP	Female Of age 15 years or more Saved at a financial institution	0.975	38.526 @ 0.102	0.987	6.207 @ 0.102	GDP = 3.215 + 0.726 * Female Of age 15 years or more Saved at a financial institution
GDP	Young adults of age 15-24 Saved at a financial institution	0.928	12.881 @ 0.173	0.963	3.589 @ 0.173	GDP = -3.483 + 1.444 * Young adults of age 15-24 Saved at a financial institution
GDP	Older adults of age 25 years or more Saved at a financial institution	0.962	25.215 @ 0.125	0.981	5.021 @ 0.125	GDP = -2.286 + 0.808 * Older adults of age 25 years or more Saved at a financial institution

GDP	Population of age 15 years or more having primary education or less Saved at a financial institution	0.997	352.319 @ 0.034	0.999	18.770 @ 0.034	GDP = -5.648 + 1.424 * Population of age 15 years or more having primary education or less Saved at a financial institution
GDP	Population of age 15 years or more secondary education or more Saved at a financial institution	0.795	3.868 @ 0.299	0.891	1.967 @ 0.299	GDP = -12.413 + 1.101 * Population of age 15 years or more secondary education or more Saved at a financial institution
GDP	40% poorest of age 15 years or more having income Saved at a financial institution	0.51	1.041 @ 0.494	0.714	1.020 @ 0.494	GDP = 1.092 + 1.071 * 40% poorest of age 15 years or more having income Saved at a financial institution
GDP	60% richest of age 15 years or more having income Saved at a financial institution	0.825	4.727 @ 0.274	0.909	2.174 @ 0.274	GDP = 1.607 + 0.527 * 60% richest of age 15 years or more having income Saved at a financial institution
GDP	Rural population of age 15 years or more Saved at a financial institution	0.979	47.470 @ 0.092	0.99	6.890 @ 0.092	GDP = -3.057 + 1.036 * Rural population of age 15 years or more Saved at a financial institution
GDP	Population of age 15 years or more Saved using a savings club or a person outside the family	0.233	0.305 @ 0.679	0.483	0.552 @ 0.679	GDP = 7.662 + 0.567 * Population of age 15 years or more Saved using a savings club or a person outside the family
GDP	male of age 15 years or more Saved using a savings club or a person outside the family	0.205	0.259 @ 0.701	0.453	0.508 @ 0.701	GDP = 6.918 + 0.646 * male of age 15 years or more Saved using a savings club or a person outside the family
GDP	Labour force of age 15 years or more Saved using a savings club or a person outside the family	0.376	0.604 @ 0.580	0.614	0.777 @ 0.580	GDP = 6.479 + 0.573 * Labour force of age 15 years or more Saved using a savings club or a person outside the family
GDP	Saved using a savings club or a person outside the family, out of labor force population above 15 years of age	0.376	0.604 @ 0.580	0.614	0.777 @ 0.580	GDP = 6.765 + 1.003 * Saved using a savings club or a person outside the family, out of labor force population above 15 years of age
GDP	female of age 15 years or more Saved using a savings club or a person outside the	0.376	0.604 @ 0.580	0.614	0.777 @ 0.580	GDP = 7.624 + 0.573 * female of age 15 years or more Saved using a savings club or a person outside the family

	family					
GDP	young adults of age 15 -24 years Saved using a savings club or a person outside the family	0.103	0.115 @ 0.792	0.321	0.339 @ 0.792	GDP = 8.534 + 0.794 * young adults of age 15 - 24 years Saved using a savings club or a person outside the family
GDP	Older Adults of age 25 years or more Saved by using a savings club or a person outside the family	0.376	0.604 @ 0.580	0.614	0.777 @ 0.580	GDP = 6.097 + 0.668 * Older Adults of age 25 years or more Saved by using a savings club or a person outside the family
GDP	The population of age 15 years or more having primary education or less Saved using a savings club or a person outside the family	0.205	0.259 @ 0.701	0.453	0.508 @ 0.701	GDP = 7.565 + 0.646 * Population of age 15 years or more having primary education or less Saved using a savings club or a person outside the family
GDP	The population of age 15 years or more having secondary education or more Saved using a savings club or a person outside the family	0.376	0.604 @ 0.580	0.614	0.777 @ 0.580	GDP = 6.097 + 0.668 * Population of age 15 years or more having secondary education or more Saved using a savings club or a person outside the family
GDP	40% poorest of age 15 years or more having income Saved using a savings club or a person outside the family	0.962	25.215 @ 0.125	0.981	5.021 @ 0.125	GDP = 3.367 + 2.423 * 40% poorest of age 15 years or more having income Saved using a savings club or a person outside the family
GDP	60% richest people having an income of age 15 years or more Saved using a savings club or a person outside the family	0.187	0.230 @ 0.715	0.433	0.480 @ 0.715	GDP = 8.220 + 0.345 * 60% richest people having an income of age 15 years or more Saved using a savings club or a person outside the family
GDP	Rural population having age 15 years or more Saved by using a savings club or a person outside the family	0.376	0.604 @ 0.580	0.614	0.777 @ 0.580	GDP = 6.765 + 0.668 * Rural population having age 15 years or more Saved by using a savings club or a person outside the family
GDP	Population of age 15 years or more having debit card	0.806	4.160 @ 0.290	0.898	2.040 @ 0.290	GDP = 5.765 + 0.270 * Population of age 15 years or more having debit card

GDP	Ownership male of age 15 years or more having Debit card	0.724	2.627 @ 0.352	0.851	1.621 @ 0.352	GDP = 5.517 + 0.204 * Ownership male of age 15 years or more having Debit card
GDP	Labor force aged 15 years or more having debit card	0.762	3.199 @ 0.325	0.873	1.789 @ 0.325	GDP = 5.139 + 0.233 * Labor force aged 15 years or more having debit card
GDP	People aged 15 years or more having debit card among labor force	0.878	7.218 @ 0.227	0.937	2.687 @ 0.227	GDP = 6.110 + 0.372 * People aged 15 years or more having debit card among labor force
GDP	Females of age 15 years or more having debit card	0.953	20.283 @ 0.139	0.976	4.504 @ 0.139	GDP = 6.031 + 0.427 * Females of age 15 years or more having debit card
GDP	Youngsters of age 15-24 years having debit card	0.796	3.895 @ 0.299	0.892	1.974 @ 0.299	GDP = 5.373 + 0.320 * Youngsters of age 15-24 years having debit card
GDP	Older adults of age 25 years or more having debit card	0.806	4.160 @ 0.290	0.898	2.040 @ 0.290	GDP = 5.494 + 0.270 * Older adults of age 25 years or more having debit card
GDP	People with primary education or less of age 15 years or more having debit card	0.948	18.155 @ 0.147	0.974	4.261 @ 0.147	GDP = 4.845 + 0.660 * People with primary education or less of age 15 years or more having debit card
GDP	People with secondary education or more of age 15 years or more having debit card	0.914	10.592 @ 0.190	0.956	3.255 @ 0.190	GDP = 0.848 + 0.276 * People with secondary education or more of age 15 years or more having debit card
GDP	Poorest 40% people with some income and have debit card	0.796	3.895 @ 0.299	0.892	1.974 @ 0.299	GDP = 6.491 + 0.479 * Poorest 40% people with some income and have debit card
GDP	Richest 60% people with some income and have debit card	0.787	3.698 @ 0.305	0.887	1.923 @ 0.305	GDP = 5.350 + 0.215 * Richest 60% people with some income and have debit card
GDP	Rural people of age 15 years or more having debit card	0.654	1.887 @ 0.401	0.808	1.374 @ 0.401	GDP = 6.648 + 0.282 * Rural people of age 15 years or more having debit card
GDP	People aged 15 years or more had borrowed from financial institution	0.019	0.019 @ 0.913	-0.136	-0.138 @ 0.913	GDP = 15.048 + (-0.515) * People aged 15 years or more had borrowed from financial institution
GDP	Male people of age 15 years or more had borrowed from financial institution	0.376	0.604 @ 0.580	-0.614	-0.777 @ 0.580	GDP = 44.860 + (-4.010) * Male people of age 15 years or more had borrowed from financial institution
GDP	Labor force of age 15 years or more had borrowed from financial institution	0.858	6.031 @ 0.246	-0.926	-2.456 @ 0.246	GDP = 39.403 + (-3.495) * Labor force of age 15 years or more had borrowed from financial institution

GDP	People among the labor force of age 15 years or more had borrowed from financial institution	0.142	0.166 @ 0.754	0.377	0.407 @ 0.754	GDP = 4.870 + 1.233 * People among the labor force of age 15 years or more had borrowed from financial institution
GDP	Females of age 15 years or more had borrowed from financial institution	0.376	0.604 @ 0.580	-0.614	0.777 @ 0.580	GDP = 22.805 + (-2.005) * Females of age 15 years or more had borrowed from financial institution
GDP	Young adults of age 15-24 years had borrowed from financial institution	0.981	52.692 @ 0.087	0.991	7.259 @ 0.087	GDP = -16.615 + 6.475 * Young adults of age 15-24 years had borrowed from financial institution
GDP	Older adults of age 25 years or more had borrowed from financial institution	0.376	0.604 @ 0.580	-0.614	0.777 @ 0.580	GDP = 26.815 + (-2.005) * Older adults of age 25 years or more had borrowed from financial institution
GDP	People with primary education or less of or less aged 15 years or more had borrowed from financial institution	0.376	0.604 @ 0.580	-0.614	0.777 @ 0.580	GDP = 24.810 + (-2.005) * People with primary education or less of or less aged 15 years or more had borrowed from financial institution
GDP	People with secondary education or more of age 15 years or more had borrowed from the financial institution					
GDP	Poorest 40% people of age 15 years or more with some income and had borrowed from financial institution	0.019	0.019 @ 0.913	-0.136	-0.138 @ 0.913	GDP = 14.533 + (-0.515) * Poorest 40% people of age 15 years or more with some income and had borrowed from financial institution
GDP	Richest 60% people aged 15 years or more with some income and had borrowed from financial institution	0.376	0.604 @ 0.580	-0.614	0.777 @ 0.580	GDP = 40.850 + (-4.010) * Richest 60% people aged 15 years or more with some income and had borrowed from financial institution
GDP	Rural people of 15 years or more had borrowed from financial institution	0.376	0.604 @ 0.580	-0.614	0.777 @ 0.580	GDP = 40.850 + (-4.010) * Rural people of 15 years or more had borrowed from financial institution
GDP	People of age 15 years or more had borrowed from	0.444	0.800 @ 0.535	0.667	0.894 @ 0.535	GDP = 1.591 + 0.348 * People of age 15 years or more had borrowed

	family or friends					from family or friends
GDP	Males of 15 years or more had borrowed from family or friends	0.376	0.604 @ 0.580	0.614	0.777 @ 0.580	GDP = 1.984 + 0.308 * Males of 15 years or more had borrowed from family or friends
GDP	Labor force of age 15 years or more had borrowed from family or friends	0.428	0.748 @ 0.546	0.654	0.865 @ 0.546	GDP = 2.646 + 0.259 * Labor force of age 15 years or more had borrowed from family or friends
GDP	People among labor force of age 15 years or more had borrowed from family or friends	0.281	0.391 @ 0.644	0.53	0.626 @ 0.644	GDP = 2.653 + 0.406 * People among labor force of age 15 years or more had borrowed from family or friends
GDP	Females of age 15 years or more had borrowed from family or friends	0.376	0.604 @ 0.580	0.614	0.777 @ 0.580	GDP = 2.755 + 0.334 * Females of age 15 years or more had borrowed from family or friends
GDP	Youngsters of age 15-24 years had borrowed from family or friends	0.457	0.843 @ 0.527	0.676	0.918 @ 0.527	GDP = 1.373 + 0.420 * Youngsters of age 15-24 years had borrowed from family or friends
GDP	Older adults of age 25 years or more had borrowed from family or friends	0.376	0.604 @ 0.580	0.614	0.777 @ 0.580	GDP = 2.292 + 0.308 * Older adults of age 25 years or more had borrowed from family or friends
GDP	People with primary education or less of age 15 years or more had borrowed from family or friends	0.269	0.368 @ 0.653	0.519	0.607 @ 0.653	GDP = 4.705 + 0.225 * People with primary education or less of age 15 years or more had borrowed from family or friends
GDP	People with secondary education or more of age 15 years or more had borrowed from family or friends	0.552	1.234 @ 0.467	0.743	1.111 @ 0.467	GDP = 3.310 + 0.330 * People with secondary education or more of age 15 years or more had borrowed from family or friends
GDP	Poorest 40% people of age 15 years or more with some income and had borrowed from family or friends	0.518	1.077 @ 0.488	0.72	1.038 @ 0.488	GDP = -0.202 + 0.388 * Poorest 40% people of age 15 years or more with some income and had borrowed from family or friends
GDP	Richest 60% people of age 15 years or more with some income and had borrowed from family or friends	0.376	0.604 @ 0.580	0.614	0.777 @ 0.580	GDP = 3.614 + 0.286 * Richest 60% people of age 15 years or more with some income and had borrowed from family or friends
GDP	Rural people of age 15 years or more had borrowed from family or friends	0.254	0.340 @ 0.664	0.504	0.583 @ 0.664	GDP = 4.245 + 0.251 * Rural people of age 15 years or more had borrowed from family or friends

GDP	People of age 15 years or more and have credit card	0.019	0.019 @ 0.913	0.136	0.138 @ 0.913	GDP = 9.898 + 0.515 * People of age 15 years or more and have credit card
GDP	Males of age 15 years or more having credit card	0	0.00 @ 0.986	0.022	0.022 @ 0.986	GDP = 11.301 + 0.033 * Males of age 15 years or more having credit card
GDP	Labor force of age 15 years or more having credit card	0.003	0.003 @ 0.966	-0.053	-0.053 @ 0.966	GDP = 11.881+ (-0.131) * Labor force of age 15 years or more having credit card
GDP	People of age 15 years or more among labor force having credit card	0.376	0.604 @ 0.580	0.614	0.777 @ 0.580	GDP = 6.765 + 2.005 * People of age 15 years or more among labor force having credit card
GDP	Females of age 15 years or more having credit card	0.376	0.604 @ 0.580	0.614	0.777 @ 0.580	GDP = 4.760 + 4.010 * Females of age 15 years or more having credit card
GDP	youngsters of age 15-24 years having credit card	0.142	0.166 @ 0.754	-0.377	-0.407 @ 0.754	GDP = 13.498 + (-1.233) * youngsters of age 15-24 years having credit card
GDP	Older adults of age 25 years or more having credit card	0.376	0.604 @ 0.580	0.614	0.777 @ 0.580	GDP = 4.760 + 2.005 * Older adults of age 25 years or more having credit card
GDP	People with primary education or less of age 15 years or more having credit card	0.981	52.692 @ 0.087	0.991	7.259 @ 0.087	GDP = 2.810 + 6.475 * People with primary education or less of age 15 years or more having credit card
GDP	People with secondary education or more of age 15 years or more having credit card	0.435	0.770 @ 0.542	-0.66	-0.877 @ 0.542	GDP = 20.133 + (-1.629) * People with secondary education or more of age 15 years or more having credit card
GDP	Poorest 40% people of age 15 years or more with some income and have credit card	0.019	0.019 @ 0.913	0.136	0.138 @ 0.913	GDP = 10.413 + 0.515 * Poorest 40% people of age 15 years or more with some income and have credit card
GDP	Richest 60% people of age 15 years or more with some income and have credit card	0.103	0.115 @ 0.792	0.321	0.339 @ 0.792	GDP = 8.534 + 0.794 * Richest 60% people of age 15 years or more with some income and have credit card
GDP	Rural people of age 15 years or more having credit card	0.019	0.019 @ 0.913	0.136	0.138 @ 0.913	GDP = 10.413 + 0.515 * Rural people of age 15 years or more having credit card

The R^2 values representing the correlation between dependent and independent variables can be seen in Table

1 above. The R^2 values indicate how much of the total variation in the dependent variable was explained by the

independent variable. From the results, only a few variables, Population of age 15 years or more Saved using a

savings club or a person outside the family; male of age 15 years or more Saved using a savings club or a person outside the family; Labour force of age 15 years or more Saved using a savings club or a person outside the family; Saved using a savings club or a person outside the family, out of labor force population above 15 years of age; female of age 15 years or more Saved using a savings club or a person outside the family; young adults of age 15 - 24 years Saved using a savings club or a person outside the family; Older Adults of age 25 years or more Saved by using a savings club or a person outside the family; Population of age 15 years or more having primary education or less Saved using a savings club or a person outside the family; Population of age 15 years or more having secondary education or more Saved using a savings club or a person outside the family; 60% richest people having income of age 15 years or more Saved using a savings club or a person outside the family; People aged 15 years or more had borrowed from financial institution; Male people of age 15 years or more had borrowed from financial institution; People among the labor force of age 15 years or more had borrowed from financial institution; Older adults of age 25 years or more had borrowed from financial institution; People with primary education or less of or less aged 15 years or more had borrowed from financial institution; Poorest 40% people of age 15 years or more with some income and had borrowed from financial institution; Richest 60% people aged 15 years or more with some income and had borrowed from financial institution; Rural people of 15 years or more had borrowed from financial institution; People of age 15 years or more had borrowed from family or friends; Males of 15 years or more had borrowed from family or friends; Labor force of age 15 years or more had borrowed from family or friends; People among labor force of age 15 years or more had borrowed from family or friends; Females of age 15 years or more had borrowed from family or friends; Youngsters of age 15-24 years had borrowed from family or friends; Older adults of age 25 years or more had borrowed from family or friends; People with primary education or less of age 15 years or more had borrowed from family or friends; Richest 60% people of age 15 years or more with some income and had borrowed from family or friends; Rural people of age 15 years or more had borrowed from family or friends; People of age 15 years or more and have credit card; Males of age 15 years or more having credit card; Labor force of age 15 years or more having credit card; People of age 15 years or more among labor force having credit card; Female s of age 15 years or more having credit card; Youngsters of age 15-24 years having credit card; Older adults of age 25 years or more having credit card; People with secondary education or more of age 15 years or more having credit card; Poorest 40% people of age 15 years or more with some income and have credit card; Richest 60% people of age 15 years or more with some income and have credit card; Rural people of age 15 years or more having credit card, were having less than 50% R^2 value.

Variables related to credit card ownership for different categories were found to contribute least towards the GDP of the nation. Similarly, variables related to borrowing in different categories, also explained the least variation in the GDP. Variables related to independent and institutional accounts and savings at financial institutions contributed the most variation in GDP.

The beta coefficients indicated the standardized values of regression coefficients. The beta value was used to compare the relative strength of various predictors within the model whereby one unit change in the independent variable will lead to beta times change in the dependent variable. The highest beta value in the above table was for the variables: Population of age 15 years or more having secondary education or more had an account; Population more than 15 years of age having secondary education or more had an account at financial institution; and, Population of age 15 years or more having primary education or less saved at a financial institution. This indicated that the GDP would be the most affected by these variables.

The strength of the relationship can be checked through the T value and its significance level which again was found to be significant for these variables only.

There were certain variables for which the beta value is negative: People aged 15 years or more had borrowed from financial institution; Male people of age 15 years or more had borrowed from financial institution; Labor force

of age 15 years or more had borrowed from financial institution; Females of age 15 years or more had borrowed from financial institution; Older adults of age 25 years or more had borrowed from financial institution; People with primary education or less of or less aged 15 years or more had borrowed from financial institution; Poorest 40% people of age 15 years or more with some income and had borrowed from financial institution; Richest 60% people aged 15 years or more with some income and had borrowed from financial institution; Rural people of 15 years or more had borrowed from financial institution; Labor force of age 15 years or more having credit card; Youngsters of age 15-24 years having credit card; People with secondary education or more of age 15 years or more having credit card.

This indicated that borrowed funds from a financial institution by the male, labor force, females, older adults, people with primary education, poorest 40% people, richest 60% people and rural people negatively affected the GDP of the nation. Credit card ownership in the labor force, young adults and people with secondary education negatively affected the GDP of the nation.

b) *Linear Regression was applied to determine the extent of the linear relationship between GDP(dependent) and household debt*

Table-2. Regression summary.

Dependent Variable	Independent Variable	R^2	F Value @ Significance level	Beta	T Value @ Significance level	Regression Equation
Real GDP Growth	Household debt as Percentage of GDP	.001	.013@91.2%	-.036	-.114@91.2%	Real GDP Growth= 8.428+ (-.091)* Household debt as Percentage of GDP

From the above Table 2, it is clear that there is a poor relationship between GDP and Household debt. There is only .1 percent variation in GDP due to household debt. The beta value was only 1.036 which showed that 1 unit change in household debt leads to a 3.6 unit change in GDP in the opposite direction though this beta value was insignificant.

4. CONCLUSION

The research started with the objective of finding out the relationship between financial inclusion and economic growth of India. GDP was used as an indicator of economic growth and 96 variables were used as indicators of financial inclusion. Linear regression was applied to check the causal relationship between these variables.

A significant relationship was found for Population of age 15 years or more having secondary education or more had an Account; Population more than 15 years of age having secondary education or more had an account at Financial institution; and Population of age 15 years or more having primary education or less Saved at a financial institution.

The study done by Nwanne (2015) recommended increasing the intermediation of intermediaries like banks and microfinance institutions to increase the reach and use of formal financial products. Also, the government should assure the accessibility of financial products which will increase economic activities and lead to economic development and growth. This shows the importance of an account.

According to an article published in The Herald, banks accept deposit from whom have extra money and creates a large pool of fund and provide loans out of that pool of funds to who do not have enough money. These loans fuel economic activity by allowing businesses, agriculture, and trade to invest beyond their cash in hand. It also helps in increasing the role of the private sector by encouraging entrepreneurship. Therefore, saving at a financial institution plays a very significant role in the economic growth of any country.

According to the article titled *Financial inclusionin India: progress and prospects*, exclusion of a large number of people from formal banking are one of the biggest barriers to economic growth for the bottom of the pyramid. Therefore, financial inclusion is observed as a potential means of economic growth. The basic financial services are the provision of basic savings account and access to adequate credit at affordable costs to vulnerable groups.

Therefore, having an account helps in creating funds by savings and these savings will be used properly by a financial intermediary with which one has opened his/her account. Proper use of savings leads to economic development and results in the economic growth of that country.

Financial literacy, one of the pillars of financial inclusion, also affects the GDP of the country. Literacy and financial literacy are both important for understanding formal financial systems, financial products, and services. Therefore, people with secondary education or more having an account and saving significantly contribute towards the GDP of the country.

According to the results people with primary education or less saving in an account also significantly affected GDP. Generally, less educated people don't prefer to deposit their savings in bank accounts but during the time frame of our study, these peoples had also deposited in their bank accounts. The reason behind these deposits is Jan Dhan Yojana in which accounts were opened with no minimum balance scheme.

If we see the regression equations,

i. GDP = -7.502+0.273*Population of age 15 years or more having secondary education or more had an Account.

ii. GDP = -7.502+0.273* Population more than 15 years of age having secondary education or more had an account at Financial institution.

iii. GDP = -5.648+1.424*Population of age 15 years or more having primary education or less Saved at a financial institution.

We can observe the coefficient of the independent variable is largest for eq. (iii) This shows that this variable effects very significantly to GDP because most of the unbanked were less educated people and they got a bank account by the means of Jan Dhan Yojana and Jan Dhan Yojana was introduced in 2014, i.e. in-between time frame of our study.

According to an article published in Business Line, only access to financial products and services is not enough but regular usage of these financial products and services makes financial inclusionsuccessful. For making financial inclusiona success story people should be literate enough to understand the use and importance of different products and can make choice out of these.

According to a study done by Dutta and Dutta (2015) in India, neither only branch density nor only literacy can lead to financial inclusion. The states/union territories within thetop 20 percent in terms of financial inclusion with a given level of literacy, then increase in literacy percentage can lead to more financial inclusion in those state/union territories i.e. combination of awareness and access leads to proper financial inclusion.

Results also showed that the variables for borrowing from the financial institution by the male, female, in labor force, older adults, people with primary education or less, poorest 40% people, richest 60% people and rural people all had a significant negative relationship with India's GDP. The variables for credit card ownership in the labor force, young adults and people with secondary education or more also had a significant negative relationship with India's GDP.

There are many reasons for the negative effect of borrowing by these people. These are people who don't have a regular source of income or have an insufficient source of income or both. That's why the labor force, older adults, people with primary education or less, poorest 40% and rural people are not able to repay the loans taken by them and become NPA of financial institutions. Those who have a proper source of income such as the richest 60%, may not have adequate financial literacy to properly manage their money and debt or may have other motives.

Other reasons may be high unemployment, higher expenses than income, slow economy, high-interest rates, and the lack of due diligence, etc.

According to an article published in The Economic Times banks create problems by the lack of due diligence while providing loans to some people or business enterprises. We can see examples of loans provided to many big business houses without fulfilling requirements for providing loans.

India had announced a $33 billion recapitalization for banks in October 2017 which shows that loan amounts are not recovering.

Roy (2014) showed a trend thatfrom 1997-98 to 2013–14 bad loans were increasing with a lag in the GDP growth rates. This showed how borrowing leads to bad loans in India and this negatively affects the GDP of the country.

Similarly, credit card holders affect the GDP negatively.

According to another article published in The Economic Times, the average Indian's debt is increasing at a significant rate. The RBI data shows the outstanding amount on credit cardholders has increased from 27,000 crores in 2008 to 42,100 crores in May 2016. The outstanding annual interest is between 36 and 48 percent.

Another important finding of this research was the negative relationship between GDP and household debt though conceptually, there exists a positive relationship between debt and economic growth. But the results can be explained on the basis of an argument that yonder an edge debt level can be susceptible to the financial system as well as the individual (Harari, 2017; Raut, 2018) though the household debt in India is far lower than in other economies.

At the end of the 2018 financial year, the loans extended by financial institutions had increased by 72% as per the reports published by the RBI. Increased focus on consumer lending by banks, consumers themselves becoming less averse to credit and poor growth after demonetization are the reasons for increased household debt in India.

Recent studies have suggested that higher debt is associated with lower production (Jordà *et al.*, 2016; Mian and Emil, 2017; Alter *et al.*, 2018). This further increases the chances of an economic crisis. Rising debt is a matter of great concern globally. These results should be taken into consideration by policymakers of the nation for the formulation of policies regarding financial inclusion among the needy section of the society.

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