Antecedent Effect of Financial Literacy and Financial Technology on Financial Inclusion

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Abstract

Purpose – The study aims to reveal a relation between financial technology and Financial Literacy to Financial Inclusion of individual investors in Delhi, India.

Design/methodology/approach –This descriptive study was grounded on primary information gathered using a well-designed questionnaire, which was circulated through the Internet. There were five-point scales for all variables whether dependent or independent in nature. The baseline data for the current study were collected by means of purposive technique of sampling from a sample of 684 participants. The GIF which is goodness of fit was verified by AMOS- analysis of moments structures using SEM- structural equation modeling approach.

Findings –The results revealed that the Financial Literacy and financial technology had a considerable connection with the Financial Inclusion of an individual investors.

Practical implications– On the basis of findings of this study Government departments may make rigorous efforts in promoting Financial Literacy amongst population by holding seminars, workshops, discussion sessions etc. In a changing financial climate, the current effort delivers evolving decent practices for policymakers, controllers, and depositors.

Originality/value – The results of the study clearly indicated a robust connection amongst Financial Literacy and Financial Inclusion. According to the findings of the study it is utmost essential on the part of policy makers to come up with economic reforms or other practises which can empower common person to participate in the financial or capital markets with more knowledge, for ensuring robust financial growth.

Keywords: Financial Literacy, individual investors, Financial Inclusion, financial products, financial technology

Introduction

Financial Inclusion (FI) cannot be achieved without sufficient Financial Literacy (FL). It is imperative to understand that FL is a crucial aspect of

the demand side of FI. Without it, the supply side cannot function properly. It is regarded as an essential ally for progressing FI, development, and ultimately monetary steadiness. As economic marketplaces have grown up extra multifaceted and the average person discovers it increasingly problematic to make educated judgements, it has taken on greater relevance in current ages, specifically since 2002. FL can affect people's ability to live comfortably and the fairness and excellence of the markets. It can give people the fundamental mechanism aimed at planning, assist them in developing the culture to save, and thereby guarantee that one can live respectably after retirement. Assuming the small rate of literacy and the ample populace which is still not a fragment of the recognized monetary scheme, predominantly in countryside regions, India has a great requirement for FL. Unfortunately, even college graduates in India lack true FL. If the average man does not become a cleverer depositor and is not shielded from misconduct, capital formation for the depositor and the economy will continue a dreamy vision. A country of savers must develop a country of depositors.

Financially savvy customers can also help the economy by nurturing actual struggle, this makes the service providers develop new products and raise their efficiency levels. Over the previous few ages, the Indian government has tried to provide its citizens with FL and education through a number of different agencies, including the State Bank of India, SEBI, NABARD, and others. Numerous conversations have taken place in this direction. But do we actually practise what we preach? This study will examine several facets of FL in India.

FL and FI have become a topic of persistent and growing attention in academia as a result of the development organisations' increased emphasis on it and the fact that the demand by the economies around the world is increasing(Lusardi & Mitchell, 2011; Milian et al., 2019). The world is changing quickly, and digital technology is advancing as well. India, one of the world's developing nations, must contend with the expansion of innovative digital technologies. A new business model called fintech mixes financial services with technology. The existing conventional banking system was altered by its growth. It provides equal possibilities for everyone so that everyone is able access the financial services, especially who are under banked and unbanked. It is trying its level best to make the customers access a wide range of financial services which they can easily afford, such as credit, payment, and savings or investment services. (Nanda & Kaur, 2016). In this paper, the author tries to explore the strength of association amid FL and FI. Similarly, study likewise tries to discover the association amongst financial technology and FI.

Figure 1: Hypothesized Model
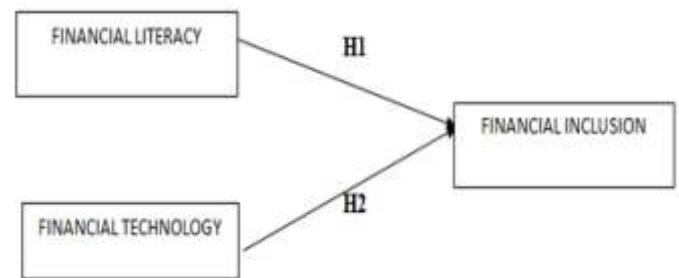
Objectives Of The Study

The foremost objective of this research work is to determine the extent of relationships between FL level, financial technology and FI.

Literature Review

FL and FI

Pandey (2022) through his research presented that digitization and FinTech have been recognised as the most necessary drivers of FI. Their work tried to measure the impact drivers of FI has on the sustainable growth patterns along with checking the indirect influence through the transfer of FL. This displays the importance of FL to highlight the influence of leverage on the pattern of sustainable growth. Though, economic initiatives have a positive impact on sustainable growth in the North Indian area as well. Akpene et al (2022) narrated the positive role of FL on the level of FI. Likewise, specified that financial participation in savings accounts has a significant influence on contribution in the stock market. Their findings also highlighted that FI and the level of FL did not have any significant effect on the stock market participation. Asvik et

al (2022)in their work found that the financial behaviour of individuals and FL level has a positive and noteworthy outcome on the extent of FI. The level of intellectual capital possessed by individuals was also found to account for the robust association between financial behaviour and engagement in the level of FL. This finding is of great importance to stakeholders seeking to improve the financial behaviour concept of unbanked individuals in all developing countries.

Hussain et. al. (2021) through their findings highlighted that FL and the quality of management have an optimistic result on FI. The findings of this study also explained that the quality of governance reinforces the result of FL level on the extent of FI. The results also judiciously indicate an optimistic result of financial in dependence on FI, though government excellence acts as a substance for their association.

Okello et al (2020) concluded that social network meaningfully and positively mediates the association between FL level and the extent of FI of the deprived folk in microfinance banks in emerging nations. Additionally, FL too has a direct, momentous, and optimistic influence on FI. Together, the findings indicate that the existence of a social network mediates the outcome of fiscal literacy in microfinance banks in developing countries on the extent of FI of the deprived.

Morgan (2020) concluded that extent of FL statistically has a positive outcome on both, the level of FI along with the investment level. Furthermore, the effects of FL on diverse measures of FI differ. Additionally, he specified that persons with higher levels of FL attract more investments in formal and informal forms as compared to those who hold lesser FL scores, even after we consider the income and education levels as constant. Adetunji (2019) stated that literacy level strongly affects investment design with both recognized and unrecognized financial institutions; however, income solely influences the frequency of informal savings. The findings also highpoint demographic clusters that would benefit from FL and additional initiatives intended at growing monetary access. Bire et al. (2019) stated that financial education has served as a bridge between FL level and FI. Results highlighted the importance of increasing the frequency of financial training for MSMEs actors in Kupang, Indonesia in the future

Grohmann et al (2018) through their study presented that an advanced level of FL has a strong positive result. Financial infrastructure and financial knowledge are mostly considered alternatives for "access to finance." However, when it comes to the "use of financial services," more FL reinforces the outcome of better financial complexity. Furthermore, FL has a positive influence across economic stages and abundant subcategories inside nations. Shen (2018) concluded that FL and digital economic product usage have a momentous optimistic connection with the range of FI. Digital monetary products usage turns into a bond between FL level and the extent of FI. Thus, digital financial invention use is related to cyberspace usage, which assists as a manifold mediator between FL & FI. In a nutshell, the usage of technical economic products mediated the association between Internet usage &FI. The conclusions too recommended that growing people's FL & commercializing cyberspace practice can inspire the consumption of digital fiscal products and advance FI. Kodongo (2018) conducted research in Kenya and elaborated on increasing FL efforts, loosening customer identification requirements in cases where they may threaten FI initiatives, and stabilising the macroeconomic environment to counteract the unanticipated negative consequences of macro prudential rules.

Hypothesis 1 (H1): There is no significant association between FL&FI.

Financial Technology and FI

Alrabei et al (2022) conducted research in Jordan and initiated that them-reimbursement scheme plays a significant part in the growing level of FI and is suggested to be involved in entire banks. M-currency acceptance, FI and the replace ability of m-currency with old-style finance are challenges that necessitate the highest consideration of strategy makers. Tay et al (2022)through their findings stated that there is a continuing disparity in developing nations amid gender, the well-off and the deprived, and city and rural parts in terms of access to and usage of digital monetary facilities. The findings aimed at strengthening

digital infrastructure, simplifying cumbersome banking procedures, and highlighting the position of financial teaching in order to ease the smooth application of digital FI among nations. Goswami et al (2022) through their study found that social influence variables have a beneficial impact on behavioural intentions to adopt management technology in India's rural sector. The usage of financial skill schemes and facilities by end operators has a favourable connection with behavioural aims. Factors persuading apparent ease of use of financial technology are absolutely related to system serviceability. Demir et al (2022) stated that FinTech influences disparity directly &/or indirectly through the level of FI. The study adopted QR i.e., quantile regression investigation to inspect whether its effect varies across nations with dissimilar levels of revenue disparity. The outcomes showed FI is a key channel for which FinTech decreases pay disparity. Likewise, it was specified that FI meaningfully lessens disparity due to inequality distribution which effects are generally related to higher income nations. Chinoda and Mashamba (2021) conducted their study in Africa and FI mediates the association amid fintech and income disparity, thus playing a crucial role in dropping income dissimilarity. Irman et al (2021) concluded that the level of FI mediates the connection between fintech and income inequality, thus playing an important part in plummeting income disparity.

Babajide et al (2020) stated that financial technology has the ability to drive FI; with increased internet, electricity, and mobile phone penetration, more states will meet the 20% financial exclusion objective by 2020. Chatterjee (2020) showed that ICT is an important factor in FI. The study used panel data from 41 countries to examine whether economic inclusion and ICT diffusion affect the growth processes of countries. The results show that FI and ICT, both separately and together, can increase the growth of the country.

Hypothesis 2 (H2): There is no significant association between financial technology & FI.

Research Methodology

Research Design: This descriptive study was grounded on primary information gathered using a well-designed questionnaire, which was circulated on the Internet. The objective of this study was attained by measurement of different statistics like reliability, validity, along with assessing variable structures of FL and financial technology and their association with the extent of FI.

Research Instrument

In this study primary information was gathered by using a well-designed questionnaire, which was circulated through the Internet. There were five-point scales for all variables whether dependent or independent in nature. The baseline data for the current study were collected by means of the purposive technique of sampling from a sample of 684 participants. The focus of this study was on investors from all over Delhi. Delhi is chosen as it is convenient to the researcher. Moreover, Delhi is a place where people from all other states reside. To measure the statistics of reliability for the gathered data, a preliminary study was performed on 60 investors. The value of Cronbach's alpha(CA) was measured as above 0.7, implying reliable data. Nearly843 surveys (online questionnaires) were disseminated to investors. Out of these distributed questionnaires only 740correct &positive responses were received. All the absent records were eliminated and total684 responses were transcribed into SPSS for 20 additional studies. The sample size of nearly 684 respondents was eligible as recommended by Kline (2011) with a least of 10 replies per instance/question and 13 questions covering the survey. The sample included many investors of unequal income levels, professions, age groups and genders. Most of the respondents in the sample were women with 50.14% of respondents while males were equal to 49.85%. Respondents majorly belongs to age group of 34-44 years with 30.70% while minimum were from the age group of above 52 years. In terms of education, 31.43% of the investors had a university degree. Detailed The demographic profiles of different respondents are shown in Table

Sample Size: The baseline data for the current study were collected by means of purposive technique of sampling from a sample of 684 participants.

Table1: Demographic Profiles

Demographic (D)	N	%
Education		
Higher secondary (HS)	150	21.92%
Graduate (G)	215	31.43%
PG, Postgraduate	200	29.23%
Another category	119	17.39%
Gender		
Male (M)	341	49.85%
Female (F)	343	50.14%
Age		
24years -34 years	155	22.66%
34 years –44 years	210	30.70%
44 years –54 years	195	28.50%
Above 54 years	124	18.12%
Income Individual/Family (p.a)		
2 -6 lakh	160	23.39%
6–12 lakh	205	29.97%
12–16 lakh	210	30.70%
Above 16lakhs	109	15.93%
Marital Criteria (MC)		43.85%
Married	300	56.14%
Unmarried	384	

Table 2:Measurement Scale and Constructs

Construct	Measurement Scale	Source
FL (FLL)	FLL 1: An Investment with high return financial product is likely to be highly risky	(Bhushan & Medury,2014; Hasler & Lusardi, 2017)
	FLL 2: Buying a stock mutual fund usually provides a safer return than a single company's stock	
	FLL 3: High inflation means that the cost of living increases rapidly	
	FLL 4: Comparing returns before making an investment in long -term financial products is essential	
	FLL 5: Preparing a personal budget to control long -term and monthly expenses of households are essential	
Financial Technology (FT)	FT 1 : Use of financial technology will improve level of FI.	(Goswami et al ,2022)
	FT 2 : I prefer fintech based financial services for FI	
	FT 3 : Fintech based FI services are easy to use.	
	FT 4 : I always prefer to use fintech services for FI.	
FI of Individual (FII)	FII 1 : Opening a savings/loan/current account with any financial institution leads to FI.	(Wafula , 2017)
	FII 2 : Accessing financial product or service twice a month leads to greater FI .	
	FII 3 : Availing loan services from any financial institution leads to FI.	
	FII 4 : Mobile banking will increase FI	
	FII 5 : Easy access to financial products will lead to FI	

Source:Authors' Own

Data Collection Method

This research is based on primary information; however, some secondary data have also been used for reference purpose. The primary data was gathered by using a well-designed questionnaire, which was circulated through the Internet. There were five-point scales for all variables whether dependent or independent in nature.

Tools for Data Analysis

Confirmatory factor analysis has been used to establish the relationship between dependent and independent factors. Both AMOS and SPSS version 20.0 software have been used for this purpose.

Construct Validity &Discriminant Validity Analysis from CFA

To assess construct reliability along with validity measures, a confirmatory factor analysis (CFA) model was builtby means ofAMOS i.e., analysis of moments structures version 20, and regressionexamination was used to assess the association between exogenous and endogenous variables. In all, 740 responses were typed into SPSS for data processing like removing outliers, screeningand cleaning, and 56 responses were discarded during this process. The researchers were able to examine individual factor reliability and validity, as shown in Table 3.The composite reliability (CR), Average variance explained (AVE), standard error (SE), and Beta factors of all the factors were found valid and reliable as per standard parameters.

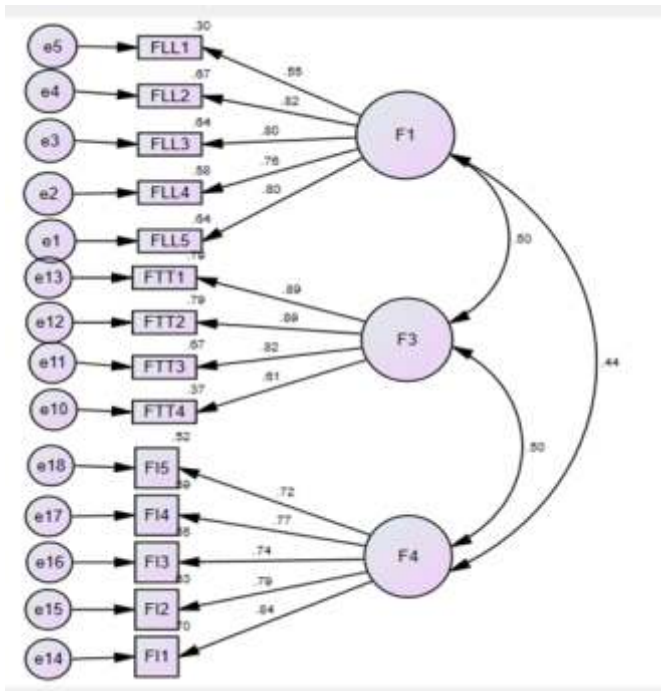### Table 3: Summary of CFA i.e., Confirmatory Factor Analysis

Variables	Label	SL	R2	CR	AVE	SMC
Financial Technology (FT)	FT 1	.89	.79			.71
	FT 2	.89	.79			.65
	FT 3	.82	.67			.67
	FT 4	.61	.37	0.883	0.657	.37
FL (FLL)	FLL 1	.55	.30			.49
	FLL 2	.81	.65			.63
	FLL 3	.81	.65			.69
	FLL 4	.77	.59			.57
	FLL 5	.79	.62	0.865	0.566	.56
FI (FII)	FII 1	.84	.70			.66
	FII 2	.79	.62			.71
	FII 3	.74	.54			.50
	FII 4	.77	.77	0.917	0.662	.51
	FII 5	.72	.70			

Source: Authors Own

Model fitness was characterized as CFA i.e., confirmatory factor analysis (CFA; Ho, 2006) for examining the facets of the variables of the proposed hypothesised model, and the fit for the model was confirmed to have suitable statistics. Table 3 shows the CFA results, in terms of scale validity and goodness of fit, while Figures 2 show the regression of distinct constructs with their factors. All output generated through the AMOS confirms that all of the variables have good goodness of fit and that no variations are essential. A decent model fit indices include a good value of chi-square/degree of freedom (CMIN/df), along with good statistical value of goodness-of-fit indicators (GOF) such as

GFI (goodness-of-fit index) and AGFI (adjusted goodness-of-fit index), along with considerable value of badness-of-fit indicators (BOF) such as RMSEA. All the indicators in this model was found to be fit as per the standard parameters which is consistent with past studies (Steiger, 2007; Hooper et. al., 2008). Figure 2 represents co-variance and co-relation among different factors of hypothesized model. The results of this analysis showed satisfactory results as compared with the standard norms. Table 4 represents co-variance and Table 5 presents co-relation among FL, Financial Technology and FI. The p value of all these factors found to be satisfactory (p> 0.05) which means these factors have strong positive co-relation.

Figure 2: First-Order Confirmatory Factor Analysis (CFA):

Source: Authors own (F1: FL, F3: Financial Technology, F4: FI)

CMIN/df = 4.57, value of Comparative Fit Index stood at = 0.95, whereas the value of Goodness-of-fit index of model fit stood at = 0.93, while the statistcis of Tucker-Lewis index stood at =0.94, RMSEA which is badness of fit indicated = 0.072, RMR =.045.

Figure 3: Structural Model and Path Analysis

Source: Authors own (F1: FL, F3: Financial Technology, F4: FI)

Table 4: Covariances among factors (First Order CFA)

			Estimate	S.E.	C.R.	P
F1	<-->	F3	.178	.020	9.117	***
F1	<-->	F4	.215	.024	9.019	***
F3	<-->	F4	.177	.019	9.179	***

Source:Authors Own

Table 5: Correlation among factors

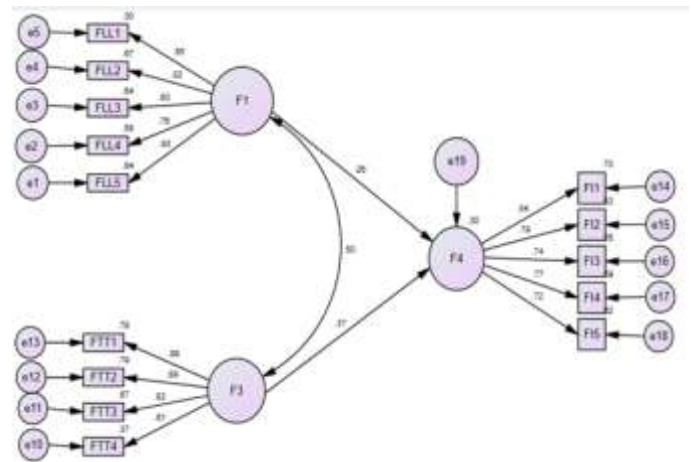|	AVE	MSV	ASV	FI	FL	FT
FI	0.662	0.146	0.133	0.770		
FL	0.566	0.375	0.274	0.381	0.765	
FT	0.657	0.288	0.227	0.382	0.522	0.772

Source:Authors Own

Model Fit Indices

All the values of model fit indicators were found as per the recommended value in the model which represents a sound fit of the data (Steiger, 2007: Hooper, Coughlan, & Mullen, 2008).The p-value is <0.001. Chi-square = 338, df = 74,

To put the framed hypothesis into the investigation, a path investigation was performed. Table 4 displays the outcome of the path analysis. The following table shows the weights of regression along with values of the critical ratio, which show that the level of FL (***, p 0.05) and the extent of financial technology (***, p 0.05) have a considerableconnection with individual FI. Consequently, the outcomes of this examination support both Hypothesis 1 and Hypothesis 2, implying that H1 and H2 are acceptable.

Table 6: Results of Structural Model

Path	Estimates	S.E.	C.R.	P
FI<---FL	.239	.043	5.54	***
FI<--- FT	.465	.063	7.37	***

Source:Authors Own

Discussion

FI, the endeavour to ensure universal access to financial services and products, is a complex challenge that intersects with various factors, including FL and the advancements

brought about by financial technology (FinTech). Research shows that individuals with higher levels of FL are more likely to engage with formal financial systems, make informed decisions, and manage their finances effectively. Improved FL positively influences individuals' usage of financial services (Grohmann et al (2018). It underscores how individuals who understand concepts such as interest rates, inflation, and compound interest are more likely to save, invest, and participate in banking systems.Hasan & Hoque (2021) identified several variables that have a significant impact on overall access to finance, including profession, income level, knowledge of depositing and withdrawing money, and understanding of interest rates.FL interventions can bridge the gap between individuals' knowledge and financial access, leading to increased participation in formal financial systems (Arun & Kamath, 2015). In addition, FinTech, the application of technology to financial services, has revolutionized the accessibility and reach of financial services. By leveraging digital platforms, mobile applications, and innovative solutions, FinTech has the potential to overcome traditional barriers to FI. Karagiannaki et al. (2017), while analysingthe role of FinTech in promoting FI in Greece, highlighted how FinTech solutions like mobile banking, digital payments, and peer-to-peer lending can extend financial services to underserved populations, often bypassing the need for physical infrastructure.

FL and FinTech are not mutually exclusive; they often complement and reinforce each other. Improved FL equips individuals with the knowledge to utilize FinTech solutions effectively, while FinTech widens the avenues through which FL education can be disseminated.

Conclusion

The results of the study clearly indicated a robust connection betweenFL and FI. Based on the findings of the study it is of utmost essential on the part of policymakers to come up with economic reforms or other practices which can empower a common person to participate in the financial or capital markets with more knowledge, for ensuring robust financial growth.It is a dire need to understand FL asa core skill inculcated in each individual to ensure smooth FI across the country. Government departments must make rigorous efforts to promoteFL amongst the population by holding seminars,workshops, discussion sessions etc. In a changing financial climate, the current effortdeliversevolvingdecent practices for policymakers, controllers, and depositors. It presents empirical research in order to establish a vital success component as well as an additionalgrowingchauffeur for FinTech facilities. The findings would aid the mobile service business in discovering an economy of scope in offering services at a cheap cost while giving optimum social benefits. The study will assist financial institutions with insights into how to deliver finance services via cell phones in order to handle cross-border businesses for low-income customers in isolated areas.In policy, the research calls on decision-makers and controllers to develop strategies that promote Fintech development and FI.

Limitation and Future Scope

The study is from Delhi only which may not be applicable in other states ofIndia. Further, only a few demographic variables have been used like age, marital status, education, and occupation; however other variables like the family background of respondents, type of occupation etc. may also be used for future study. In future, data from different states can becollected for in-depth understanding and policy formulation. Moreover, the impact of only two variables is investigated in the present study. In future, more variables and their association with FI can be examined.

References

- Adetunji, O. M., & David-West, O. (2019). The relative impact of income and FL on FI in Nigeria. *Journal of International Development*, *31*(4), 312-335.

- Akpene Akakpo, A., Amidu, M., Coffie, W., & Abor, J. Y. (2022). FL, FI and participation of individual on the Ghana stock market. Cogent Economics & Finance, 10(1), 2023955.

- Alrabei, A. M., Al-Othman, L. N., Al-Dalabih, F. A., Taber, T. A., & Ali, B. J. (2022). The impact of mobile payment on the FI rates. Information Sciences Letters, 11(4), 1033-1044.

- Asyik, N. F., Wahidahwati, N. L., Laily, N., & Wahidahwati, W. (2022). The role of intellectual capital

in intervening financial behavior and FL on FI. *WSEAS Transactions on Business and Economics*, *19*, 805-814.

- Babajide, A. A., Oluwaseye, E. O., Lawal, A. I., & Isibor, A. A. (2020). Financial technology, FI and MSMEs financing in the south-west of Nigeria. Academy of Entrepreneurship Journal, 26(3), 1-17.

- Bhushan, P., & Medury, Y. (2014). An empirical analysis of inter linkages between financial attitudes, financial behavior and financial knowledge of salaried individuals. Indian Journal of Commerce and Management Studies, 5(3), 58.

- Bire, A. R., Sauw, H. M., & Maria, M. (2019). The effect of FL towards FI through financial training. *International journal of social sciences and humanities*, *3*(1), 186-192.

- Chatterjee, A. (2020). FI, information and communication technology diffusion, and economic growth: a panel data analysis. Information Technology for Development, 26(3), 607-635.

- Chinoda, T., & Mashamba, T. (2021). Fintech, FI and income inequality nexus in Africa. Cogent Economics & Finance, 9(1), 1986926.

- Demir, A., Pesqué-Cela, V., Altunbas, Y., & Murinde, V. (2022). Fintech, FI and income inequality: a quantile regression approach. The European Journal of Finance, 28(1), 86-107.

- Gabor, D., & Brooks, S. (2020). The digital revolution in FI: international development in the fintech era. In Material Cultures of Financialisation (pp. 69-82). Routledge.

- Goswami, S., Sharma, R. B., & Chouhan, V. (2022). Impact of financial technology (Fintech) on FI (FI) in Rural India. Universal Journal of Accounting and Finance, 10(2), 483-497.

- Goswami, S., Sharma, R. B., & Chouhan, V. (2022). Impact of financial technology (Fintech) on FI (FI) in Rural India. Universal Journal of Accounting and Finance, 10(2), 483-497.

- Grohmann, A., Klühs, T., & Menkhoff, L. (2018). Does FL improve FI? Cross country evidence. *World Development*, *111*, 84-96.

- Hasler, A., & Lusardi, A. (2017). The gender gap in FL: A global perspective. Washington, DC: Global FL Excellence Center, The George Washington University School of Business.

- Ho, R. (2006). Handbook of univariate and multivariate data analysis and interpretation with SPSS. Boca Raton, FL: CRC Press.

- Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural equation modelling: Guidelines for determining model fit. Electronic Journal of Business Research Methods, 6(1), 53–60.

- Hussain, M., Yahya, F., & Waqas, M. (2021). Does strong governance stimulate the effect of economic freedom and FL on FI? a cross-country evidence. *Future Business Journal*, *7*(1), 1-10.

- Individual Differences, 42(5), 893–898.

- Irman, M., Budiyanto, B., & Suwitho, S. (2021). Increasing FI through FL and financial technology On MSMEs. International Journal of Economics Development Research (IJEDR), 2(2), 126-141.

- Kodongo, O. (2018). Financial regulations, FL, and FI: Insights from Kenya. *Emerging Markets Finance and Trade*, *54*(12), 2851-2873.

- Lusardi, A., & Mitchell, O. S. (2011). FL around the world: An overview. Journal of Pension Economics & Finance, 10(4), 497

- Milian, E. Z., Spinola, M. D. M., & de Carvalho, M. M. (2019). Fintechs: A literature review and research agenda. Electronic Commerce Research and Applications, 34, 100833

- Morgan, P. J., & Long, T. Q. (2020). FL, FI, and savings behavior in Laos. *Journal of Asian Economics*, *68*, 101197.

- Nanda, K., & Kaur, M. (2016). FI and human development: a cross-country evidence. Management and Labor Studies, 41(2), 127-153.

- Okello Candiya Bongomin, G., Mpeera Ntayi, J., & Akol Malinga, C. (2020). Analyzing the relationship between FL and FI by microfinance banks in developing

countries: social network theoretical approach. *International Journal of Sociology and Social Policy*, *40*(11/12), 1257-1277.

- Pandey, A., Kiran, R., & Sharma, R. K. (2022). Investigating the impact of FI drivers, FL and financial initiatives in fostering sustainable growth in North India. *Sustainability*, *14*(17), 11061.

- Shen, Y., Hu, W., &Huang, C. J. (2018). The effects of FL, digital financial product usage and internet usage on FI in China. In *MATEC Web of Conferences* (Vol. 228, p. 05012). EDP Sciences.

- Steiger, J. H. (2007). Understanding the limitations of global fit assessment in structural equation modelling. Personality and

- Tay, L. Y., Tai, H. T., & Tan, G. S. (2022). Digital FI: A gateway to sustainable development. Heliyon.

- Wafula, I. W. (2017). The effect of FL on FI among Small-Scale Farmers in Trans Nzoia County.

- Hasan, M., Le, T. & Hoque, A. How does FL impact on inclusive finance?. Financ Innov 7, 40 (2021). https://doi.org/10.1186/s40854-021-00259-9

- Arun, T., & Kamath, R. (2015). FI: Policies and practices. IIMB Management Review, 27(4), 267-287.

- Karagiannaki, A., Vergados, G., & Fouskas, K. (2017). The impact of digital transformation in the financial services industry: Insights from an open innovation initiative in fintech in Greece.

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