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Empowerment Unleashed: How Financial Inclusion, Fintech, and Women's Financial Well-being Intersect

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Abstract

This research investigates the interconnectedness of Financial Inclusion (FI), Fintech Adoption (FA), and "women's financial well-being" in the context of Women's Empowerment (WE). Through purposive sampling, data were collected from 300 employed women across various districts of Haryana via a questionnaire. PLS SEM was used in the study to examine the data. The study looks at how variables, including Government Support (GS), Technological Innovativeness (TI), and Financial Literacy (FL) affect Financial Inclusion (FI) and Fintech Adoption (FA), which in turn affects Women's Financial Well-Being (WFWB). It also looks into how these factors work together to empower women. The results highlight the critical role that FA and FI play in enhancing WFWB and enabling their empowerment. The findings imply that to improve women's financial well-being and empower them even more, the Indian government should develop and put into effect laws that support financial inclusion and fintech adoption.

Keywords: Fintech Adoption, Financial Inclusion, Financial Well-being, Women Empowerment

1. Introduction

According to Annan *et al.* (2021), Hosseini-Nezhad *et al.* (2022), Malekan (2015), Eisend (2010), and others, women's empowerment encompasses initiatives to increase the self-worth of women, their independence in decision-making, and their right to affect social change for both themselves and other people. It can be characterised in several ways, such as valuing and actively seeking out the perspectives of women, elevating their status via training, education, and literacy initiatives, and giving them chances to rethink gender and other social roles (Meier zu Selhausen, 2016; Danquah *et al.*, 2021; Makita, 2010). This redefining of roles could give women more flexibility to pursue their goals. Through economic empowerment, women can gain control over and advantage from resources, assets, and income. This is one route to women's empowerment. Nations, businesses, communities, and groups can beneficially implement programs and policies to empower women. Women's greater access to resources benefits their families and themselves (Duflo, 2012; Mayoux, 1998). This entails reallocating spending and placing their kids' welfare first, which improves their health and academic performance (Doss, 2013; Hashemi *et al.*, 1996). Therefore, the benefits of women's empowerment go beyond just the individual women and benefit many people in their families and communities. Underdevelopment and gender inequality are intimately related worldwide (Jayachandran, 2015). According to Munoz *et al.* (2018), women are more likely than men to live in poverty and to have little influence over financial resources in many developed nations. For example, many married women in developing countries have little control over household economics and mainly depend on their spouses to make crucial financial decisions (United Nations, 2015).

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Furthermore, the majority of women aren't asked when using the economic resources of their households (United Nations, 2015). In addition, women have many obstacles while trying to obtain an education, find work outside the home, own land or properties, and inherit assets (Kabeer, 2001). India is not exempt from these difficulties. India ranked 127th out of 146 countries worldwide in 2023, with an overall "gender gap index" score of 0.64 (World Economic Forum, 2023). The nation's low score of 36.7% in economic participation and opportunity is especially problematic since it shows significant obstacles preventing women from accessing financial resources and exercising their economic agency. These facts emphasize how crucial it is to investigate methods for empowering women, which is this research's main objective.

On the other hand, the empirical question of whether women's financial empowerment is influenced by "financial inclusion", fintech adoption, and their financial well-being is still open. Research that is already done reveals essential gaps in the literature. First, research on the connections between "women's economic empowerment", "financial inclusion", "fintech adoption", and "financial well-being" is scarce. More research is required to fully comprehend the significance of WFWB in achieving economic empowerment. Similarly, little research has been done on the factors influencing women's financial security in developing nations like India.

Lastly, it is critical to recognize that most of the research that has been done thus far on women's financial inclusion, well-being, and adoption of fintech in developing nations is experimental and frequently depends on techniques like randomized control trials. Because of this restricted scope, it is unclear whether encouraging results can be applied to situations other than the particular environments in which the trials were carried out. For instance, a woman in India may find a savings tool less beneficial than one that helps women in Kenya (Dupas & Robinson, 2013). To answer these questions, it is necessary to conduct contextual, factor-based, nation-specific studies. There is a shortage of empirical research in the Indian context examining how "fintech adoption", "financial inclusion", and "financial well-being" might empower Indian women, particularly in Haryana. This study uses data from several regional districts to explore the relationship between "women's economic empowerment", "financial inclusion", adoption of fintech, and "women's financial well-being" in Haryana, India. The study uses the PLS-SEM methodology to establish causal inference. The results show a positive correlation between "women's economic empowerment", "financial inclusion", fintech adoption, and "financial well-being". The study also finds several significant indicators of financial well-being in India, such as technological innovation, government support, and financial literacy. These findings suggest that to enhance women's financial well-being and advance women's empowerment, the Indian government should create and execute laws that support financial inclusion and fintech adoption. To further understand the methods by which women's financial well-being boosts their economic empowerment, more research is necessary. Implementing financial well-being projects aimed at women requires cooperation between financial institutions, other stakeholders and development agencies. To make sure that these interventions are effective in advancing women's empowerment, it is also crucial to assess their effects.

The paper structure is as follows: The theoretical framework and evolution of the hypotheses are developed in Section 2. Section 3 presents the conceptual framework and research methods. The results of the data analysis are shown in Section 4. Section 5 presents the debate and implications.

2. Conceptual Background and Hypothesis Development

2.1 Financial Literacy (FL) and Financial Inclusion (FI)

Effective financial planning and decision-making are required (Ramakrishnan, 2012). Lusardi and Mitchell (2014) propose that persons with solid FL exhibit excellent financial planning and financial management proficiency. According to Lusardi *et al.* (2017), those who are financially literate have a greater understanding of how to manage, invest, save

and spend money. Grohmann *et al.* (2018) connected increased Financial Inclusion (FI) and better financial literacy to the growth of bank branches in urban and rural locations. Worldwide, researchers contend that improving financial abilities and FL can lead to FI. Atkinson and Messy (2013), however, believe that a lack of financial literacy and expertise is the reason behind lower levels of financial inclusion in any economy. They advise legislators to support banks and other financial organizations in implementing training initiatives to raise FI levels. Research on financial literacy frequently examines the connection between it and wise financial decision-making (Lusardi & Mitchell, 2014). As evidenced by the accumulation of savings (Miller *et al.*, 2015; Berry *et al.*, 2018), wealth (Rooij *et al.*, 2012), and the financial practices of microentrepreneurs (Drexler *et al.*, 2014), they show how financial literacy promotes financial inclusion. Micro-level research proves that better financial behavior results from increased financial literacy (*e.g.*, Jamison *et al.*, 2014; Lusardi & Mitchell, 2014; Kaiser & Menkhoff, 2017).

H1a: Financial literacy positively affects financial inclusion.

2.2 Financial Literacy and Fintech Adoption

An individual's comprehension of fundamental financial management principles is called financial literacy. It relates to comprehending ideas like risk diversification, inflation, and compound interest in this study (Lusardi, 2019). Previous research by Morgan and Thinh (2020) and Jünger and Mietzner (2020) has demonstrated a positive correlation between adopting fintech and financial literacy. The costs and rewards of obtaining knowledge substantially impact the likelihood of participating in risky financial conduct. Hsiao and Tsai (2018) and other researchers contend that knowledge and comprehension of financial products are essential for making decisions about their use. When collecting and absorbing financial information, those with higher financial literacy may pay less in fixed expenses than people with lower financial literacy. Higher financial literacy makes it simpler for people to partake in riskier financial activities.

Research conducted by Guiso and Jappelli (2005) and Vissing-Jorgensen (2003) indicates a favourable correlation between financial literacy and the adoption of investment instruments such as stocks. Similar risks attach to the use of fintech (financial technology) products. According to Morgan *et al.* (2019), utilizing digital financial services comes with risks in addition to those connected to conventional financial products. Compared to the risks associated with traditional financial products and services, these threats are more varied and less apparent. Phishing, pharming, spyware, and SIM card swapping are only a few risks. Digital footprints are dangerous as well. Despite the lack of research, higher financial literacy may make it easier for people to adopt fintech products and services. In addition, research indicates that an individual's behavioural traits impact financial decisions (Van Rooji *et al.*, 2011; Xiao & O'Neil, 2018).

H1b: Financial literacy positively affects women's fintech adoption.

2.3 Technological Innovativeness and Women's Financial Inclusion

Technological innovativeness is the readiness to use new technology to acquire financial services, and this study investigates the relationship between women's technological innovation and their financial inclusion. This link has received little research attention. Rastogi and Ragabiruntha (2018) and Ramakrishna and Trivedi (2018) have emphasized the beneficial impact of technology on financial inclusion. Furthermore, Al-Mudimigh and Anshari (2020) argue that by addressing current institutional and infrastructural challenges and reaching those in need directly, innovation and technology, when combined with literacy, can improve financial inclusion.

H2a: Technological innovativeness positively affects women's financial inclusion.

2.4 Technological Innovativeness and Fintech Adoption

The degree to which people are likely to accept innovations—such as new products, technology, or services—early is known as user innovativeness.

Highly innovative people have a more positive desire to use the innovation and are more prepared to cope with uncertainty. To put it another way, they are more open to technological innovation and less prone to see risks (Leicht *et al.*, 2018; Hu *et al.*, 2019). According to Adeiza *et al.* (2017), innovation is a basic human trait that reflects people's degree of curiosity in novel subjects. In the same way, Hu *et al.* (2019) characterize user innovation as each person's degree of acceptance of novel goods, services, or technologies. The main factor influencing the acceptance of new technology is one's readiness to accept it. According to this study, TI is characterized by a desire to experiment with Fintech services, an intention to try new technologies, and an early adoption of the newest technology. Prior studies have indicated a favourable correlation between user innovativeness and the adoption of technology (Zhang *et al.*, 2018; Hu *et al.*, 2019; Leicht *et al.*, 2018; Morosan & DeFranco, 2014). Drawing from prior research, the consequent hypothesis is put forth:

H2b: Innovativeness positively affects women's fintech adoption.

2.5 Government Support and Women's Financial Inclusion

To support finance and capital markets, the government provides a range of direct financial and administrative aid, including subsidies, research centers, and universities. The body of literature's empirical data has repeatedly demonstrated the significant impact of GS on FI (Aggarwal & Klapper, 2013; Sanderson *et al.*, 2018; Staschen & Nelson, 2013). GS has been important in India, as the Reserve Bank of India's report on the nation's financial inclusion index shows. In the fiscal year 2023, the score was 60.1. Compared to 43.4 in 2017, this represents an improvement, demonstrating increased financial inclusion. The Government of India launched the "Pradhan Mantri Jan Dhan Yojana (PMJDY)" to promote financial inclusion and ensure access to financial services. Additionally, several other financial inclusion schemes have been implemented in India, such as the "Jeevan Suraksha Bandhan Yojana", "Pradhan Mantri Vaya Vandana Yojana", "Pradhan Mantri Mudra Yojana", "Stand Up India scheme", "Venture Capital Fund for Scheduled Castes", "Pradhan Mantri Suraksha Bima Yojana (PMSBY)", "Atal Pension Yojana (APY)", "Varishtha Pension Bima Yojana (VPBY)", "Credit Enhancement Guarantee Scheme (CEGS)" for scheduled castes, and "Sukanya Samriddhi Yojana". Nevertheless, there is a dearth of empirical data regarding the impact of government support on financial inclusion in India, even in the face of these policies. As a result, research is required to determine how government support affects financial inclusion in India. Based on this, we can hypothesise.

H3a: Government support has a positive relationship with financial inclusion.

2.6 Government Support and Fintech Adoption

Support from the government is essential to the growth of the Fintech sector. The implementation of rules by the government can facilitate the expansion of the Fintech sector, hence providing benefits to investors, Fintech companies, and service customers. In their study, Goo and Heo (2020) show how the government's proactive involvement reduces uncertainty, promoting Fintech development. In the same way, research by Marakarkandy *et al.* (2017) shows a positive correlation between government support and technological adoption. The term "government support" in this report refers to the government's efforts to help the Fintech sector by enacting favourable rules and regulations and building infrastructure, such as internet networks.

H3b: Government support positively affects women's fintech adoption.

2.7 Financial Inclusion and Women's Financial Well-Being (WFWB)

The definition of FWB is the ability to achieve financial goals and attain financial independence (Collins & Urban, 2021) According to Mahendru (2021), a person's financial well-being is determined by their attitude toward financial freedom in the present and their ability to satisfy their future requirements and current obligations. It has been demonstrated that greater financial inclusion for women includes access to credit cards and bank accounts (Cabeza-García

et al., 2019). By giving socially and economically underprivileged groups equal access to financial services, FI as a strategy seeks to create inclusive growth (Thorat, 2007). The impoverished and those living in rural areas can benefit from financial inclusion in different ways worldwide (Allen *et al.*, 2012).

Furthermore, the socioeconomic well-being of primitive tribal households is significantly impacted by financial inclusion (Nandru & Rentala, 2020). Financially included rural households have economic advantages over unbanked households by accessing financial services (Dupas *et al.*, 2017). In light of the previous conversation, the following theory is put forth:

H4a: FI positively affects WFWB

2.8 Fintech Adoption and Women's Financial Wellbeing

Fintech adoption in this study relates to how women use digital financial technology for their financial transactions, including online payment platforms, mobile banking apps, and UPI services. According to several studies (Gorham & Dorrance, 2017; Agarwal & Chua, 2020; Hasan *et al.*, 2023), fintech makes it easier for everyone to obtain financial services. It has brought new dimensions to the financial sector and significantly reshaped financial services and processes (Agarwal & Chua, 2020; Lyons & Kass-Hanna, 2021; Chen *et al.*, 2023). Fintech adoption is therefore anticipated to impact people's social and financial spheres (Tai *et al.*, 2023; Panos & Wilson, 2020). Research indicates that adopting fintech improves people's financial well-being by removing obstacles and facilitating the process of obtaining financial services from the market (Lyons & Kass-Hanna, 2021; Chen *et al.*, 2023).

H4b: Fintech adoption will positively impact the WFWB.

2.9 WFWB and Women Empowerment

According to Dash *et al.* (2016), FWB plays a role in rural women's engagement in financial decision-making and economic empowerment. It establishes whether women are capable of making decisions regarding domestic affairs, such as buying assets for the home and managing finances, and whether they have access to banking services, future financial security, decision-making ability, and sufficient assets to conduct daily financial transactions (Dash *et al.*, 2016; Deka, 2015; Haque *et al.*, 2016; Bonga *et al.*, 2016). Therefore, FWB in this study is defined as the ability of women to meet all of their financial responsibilities, both current and future, to feel secure about their financial future, and to make choices that allow them to enjoy life.

H5a: Women's financial well-being positively affects women's empowerment.

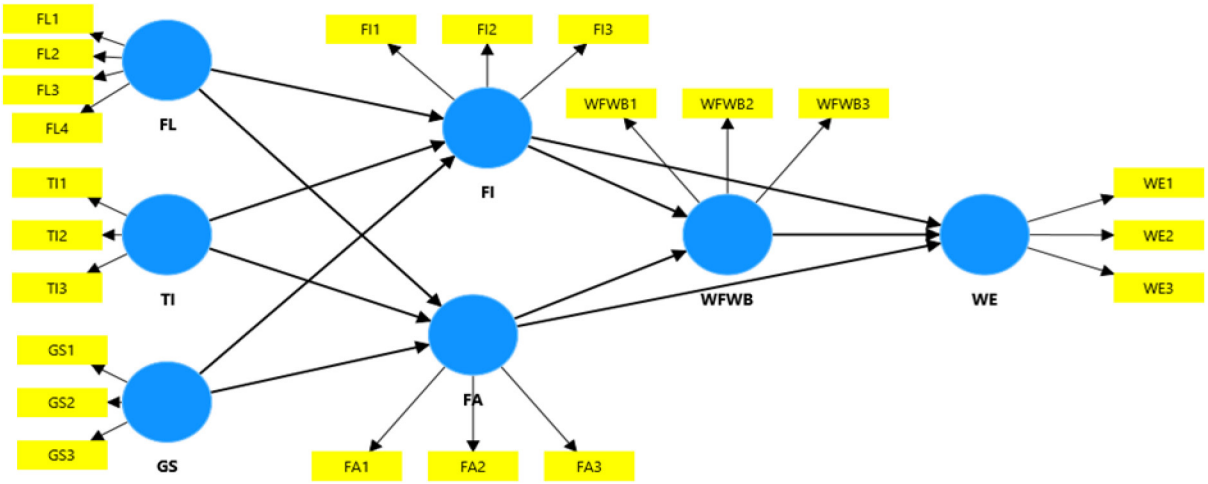


Figure 1. Conceptual framework for the study.

3. Research Methodology: Research Framework for the Study

The research model depicted in Figure 1 illustrates the various hypotheses regarding how FL, GS, and TI predict FI and FA. Additionally, it demonstrates how FA and FI predict WFWB and how all three factors—FI, FA, and WFWB—affect women's empowerment.

The study's measurement variables were taken from previous studies. The "financial literacy" scale items were modified from Rastogi and Ragabiruntha (2018) and Noor *et al.* (2020). The "financial inclusion" measuring items came from research by Nandru and Rentala (2020). The questions used to gauge the degree of Fintech adoption were taken from Cheng *et al.* (2006) and Kim *et al.* (2010). The "women empowerment" measuring questions were borrowed from Postmus *et al.* (2013), and the "financial well-being" measurement items were obtained from Collins and Urban (2021). The government assistance elements were taken from Marakarkandy *et al.* (2017), and the scale for technological innovation has been adapted from Zhang *et al.* (2018). These items were changed or reworded to reflect better the study's core issue and the working women's context and to ensure the content validity of the questionnaire. The scale used to anchor the instrument was a seven-point scale, which ranged from "strongly disagree" (1) to "strongly agree" (7). The questionnaire also inquired about demographic details such as age, education level, monthly income, etc.

3.1 Data

Data from working women were gathered for this study using a structured questionnaire and a cross-sectional approach. The period of data gathering was December 2023–February 2024. The working women from several Haryana, India, districts made up the study's population. A survey using a 7-point Likert scale was used in the investigation. The questionnaire was first given to a convenience sample of 35 respondents, including academics and business professionals, to guarantee the content validity of the survey. The pilot group's input helped to improve the questionnaire. An 80% response rate was achieved out of the 375 questionnaires that were issued and the 300 responses that were returned. As demonstrated in Table 1, the sample comprised women from urban and rural areas, a range of educational backgrounds, and both self-employed and service-oriented careers to guarantee representation of the total population.

Out of 300 respondents, the age distribution indicates that 35 respondents (11.67%) are below the age of 25, 98 respondents (32.67%) are aged between 25 and 35, 117 respondents (39.00%) fall in the age group of 35-45, and 50 respondents (16.67%) are above the age of 45. Regarding educational qualifications, out of the total respondents, 47 (15.67%) have a high school education, 103 (34.33%) are graduates, 98 (32.67%) have a post-graduate degree, and 52 (17.33%) have completed professional courses. In terms of annual income, 39 respondents (13.00%) earn below 3 lacs annually, 118 respondents (39.33%) have an income between 3 lacs and 5 lacs, 99 respondents (33.00%) earn between 5 lacs and 7 lacs, and 44 respondents (14.67%) earn above 7 lacs annually. Finally, the occupation of the respondents is as follows: 119 respondents (39.67%) are private employees, 104 respondents (34.67%) work in government jobs, and 77 respondents (25.67%) are self-employed.

Table 1. Demographics

Characteristics	Frequency(f)	Percentage
Age		
Below 25	35	11.67
25-35	98	32.67
35-45	117	39
Above 45	50	16.67
Educational Qualification		
High school	47	15.67
Graduate	103	34.33
Post graduate	98	32.67
Professional Courses	52	17.33
Annual Income		
Below 3 lacs	39	13
3 lacs-5 lacs	118	39.33
5 lacs to 7 lacs	99	33
Above 7 lacs	44	14.67
Occupation		
Private employee	119	39.67
Government employee	104	34.67
Self employed	77	25.67
Location		
Urban	157	52.33
Rural	143	47.67
Total	**300**	**100**

4. Data Analysis and Results

"PLS SEM was used in this study's data analysis to assess the women's empowerment model and evaluate pertinent hypotheses (Sarstedt *et al.*, 2016). It is commonly acknowledged that PLS-SEM is a proper statistical method in social science research. To the most recent suggestions and pertinent studies in the field of empowerment research (Ali *et al.*, 2019; Hair *et al.*, 2017) the statistical approach PLS-SEM was utilized in this study to examine the data. PLS-SEM enables the measurement and structural models of "women's financial empowerment" to be analyzed simultaneously.

(i) A **measurement model** that uses average variance extracted, Cronbach's alpha, standardized factor loadings, composite reliability, and discriminant validity to assess the validity and reliability of the measurement model.

(ii) A **structural model** that not only investigates the connections between independent and dependent constructs but also tests hypotheses, evaluates collinearity issues, and predicts capability (R2) and predictive relevance (Q2). This comprehensive analysis provides valuable insights into the factors influencing women's financial empowerment, thereby informing policy and practice in this crucial area.

4.1 Measurement Model

The measurement model's validity and reliability are evaluated based on the standardized factor loadings, composite reliability, Average Variance Extracted (AVE), Cronbach's alpha, Dijkstra-Henseler's rho, and discriminant validity of its constituent parts. According to Fornell and Larcker (1981), standardized factor loadings of 0.70 with a two-tailed $p \leq 0.05$ are reliable. Factor loadings in our research are statistically significant and exceed 0.70, indicating the reliability of each item. "Cronbach's alpha (α)," "Dijkstra-Henseler's rho (ρA)", and "Composite Reliability (CR)" are used to measure construct reliability. It quantifies the degree to which the construct explains variance in an item. A reliability value of ≥0.70 is deemed significant in all three cases. For every construct, the values of α, ρA, and CR surpass 0.70, signifying an acceptable level of construct reliability within the measurement model (Table 2). With a suggested threshold of 0.50, the "Average Variance Extracted (AVE)" measures the

Table 2. Construct reliability and validity

Constructs	Codes	Factor Loading	Cronbach's alpha	CR (rho_a)	CR (rho_c)	AVE
Fintech Adoption	FA1 FA2 FA3	0.819 0.883 0.871	0.82	0.82	0.893	0.736
Financial Inclusion	FI1 FI2 FI3	0.858 0.82 0.845	0.795	0.807	0.879	0.708
Financial Literacy	FL1 FL2 FL3 FL4	0.788 0.848 0.83 0.765	0.823	0.827	0.883	0.653
Government Support	GS1 GS2 GS3	0.824 0.816 0.792	0.741	0.746	0.852	0.658
Technological Innovativeness	TI1 TI2 TI3	0.867 0.718 0.844	0.748	0.792	0.853	0.66
Women Empowerment	WE1 WE2 WE3	0.809 0.827 0.833	0.762	0.762	0.863	0.677
Women Financial well-being	WFWB1 WFWB2 WFWB3	0.84 0.83 0.856	0.796	0.8	0.88	0.709

total variance a concept gains from its linked items about the measurement variance (Fornell & Larcker, 1981). The AVE values for each construct are above the minimal threshold level for significance, indicating high convergent validity in the measurement model (Table 2).

Discriminant validity is evaluated using the "Heterotrait-Monotrait (HTMT)" approach and the "Fornell-Larcker criterion". The correlations between the constructs and the square root of the AVE are compared using the "Fornell–Larcker criterion". The AVE values are shown below the diagonal in Table 3. When each construct's square root of AVE is more significant than its association with any other construct, discriminant validity is verified.

Furthermore, the HTMT methodology is utilized. According to Henseler *et al.* (2015), the acceptable minimum threshold range is occupied by the HTMT values, which are significantly below 0.85. According to Table 4, each construct in the measuring model demonstrates discriminant validity.

4.2 Structural Model

Evaluating collinearity, "predictive capability (R2)", "predictive relevance (Q2)", and hypothesis testing are all part of the structural model validation process. Multicollinearity in the structural model is investigated to address any bias in the path coefficient model. The Variance Inflation Factor (VIF) technique is utilized to evaluate multicollinearity. Given that all of the VIF values in Table 5 (Hair *et al.*, 2017) are below 3.00, multicollinearity is not a concern in the structural model.

The coefficient of determination (R2) is used for each dependent construct to assess the structural model's predictive power. Together, the three separate concepts of "technological innovativeness," "financial literacy," and "government support" account for 40% of the variation in "fintech adoption." Similarly, 25% of the variance in "financial inclusion" may be explained by these three independent factors. Furthermore, a combined 23% variation in "women's financial well-being" may be explained by "fintech adoption" and "financial inclusion." In conclusion, Table 6 shows that adopting fintech, financial inclusion, and women's financial well-being together account for 51% of the variance in women's empowerment. The blindfolding approach is also used to evaluate the structural model's predictive relevance (Q2). According to Hair *et al.* (2017), the Q2 values in Table 6 are significantly above zero, meaning that the structural model has verified predictive relevance.

Hypothesis Testing: This study employed the bootstrapping technique, and Table 7 and Figure 2 present the results of statistically significant hypotheses. The analysis revealed that all proposed hypotheses are accepted. Consistent with previous research, the findings of Partial Least Squares Structural Equation Modeling (PLS-SEM) indicate that FL positively and significantly influences both FI (H1a; $\beta = 0.228$; $t = 2.899$) and FA (H1b; $\beta = 0.329$; $t = 4.268$), supporting H1a and H1b. Similarly, technological innovation has a positive and significant impact on both FI (H2a; $\beta = 0.189$; $t = 2.845$) and FA (H2b; $\beta = 0.167$; $t = 2.577$), supporting H2a and H2b. Additionally, GS significantly affects both FI (H3a; $\beta = 0.202$; $t = 2.444$) and FA (H3b; $\beta = 0.277$; $t = 3.574$), confirming H3a and H3b.

Table 3. Fornell–Larcker matrix

	FA	FI	FL	GS	TI	WE	WFWB
FA	0.858						
FI	0.514	0.841					
FL	0.555	0.424	0.808				
GS	0.518	0.398	0.539	0.811			
TI	0.425	0.372	0.459	0.384	0.812		
WE	0.521	0.421	0.369	0.257	0.231	0.823	
WFWB	0.459	0.359	0.281	0.195	0.169	0.662	0.842

Table 4. HTMT Matrix

	FA	FI	FL	GS	TI	WE	WFWB
FA							
FI	0.629						
FL	0.674	0.515					
GS	0.658	0.509	0.685				
TI	0.522	0.461	0.558	0.483			
WE	0.659	0.534	0.466	0.338	0.296		
WFWB	0.566	0.444	0.345	0.248	0.208	0.848	

Table 5. VIF Values

FA -> WE	1.541
FA -> WFWB	1.36
FI -> WE	1.396
FI -> WFWB	1.36
FL -> FA	1.575
FL -> FI	1.575
GS -> FA	1.458
GS -> FI	1.458
TI -> FA	1.311
TI -> FI	1.311
WFWB -> WE	1.301

Table 6. R square and Q square value

	R2	R2 adjusted	Q-square
FA	0.397	0.391	0.368
FI	0.247	0.24	0.219
WE	0.509	0.504	0.119
WFWB	0.232	0.226	0.064

Table 7. Hypothesis Testing

	O	M	SD	T	P values	Decision
H1a: FL -> FI	0.228	0.231	0.079	2.899	0.004	Supported
H1b: FL -> FA	0.329	0.333	0.077	4.268	0.000	Supported
H2a: TI -> FI	0.189	0.191	0.067	2.845	0.004	Supported
H2b: TI -> FA	0.167	0.169	0.065	2.577	0.01	Supported
H3a: GS -> FI	0.202	0.198	0.083	2.444	0.015	Supported
H3b: GS -> FA	0.277	0.273	0.077	3.574	0.000	Supported
H4a:FI -> WFWB	0.167	0.169	0.069	2.431	0.015	Supported
H4b: FA -> WFWB	0.374	0.368	0.07	5.316	0.000	Supported
H5a: WFWB -> WE	0.518	0.522	0.061	8.462	0.000	Supported
H5b: FI -> WE	0.122	0.122	0.056	2.187	0.029	Supported
H5c: FA -> WE	0.22	0.214	0.059	3.751	0.000	Supported

O= Original sample, M= Sample mean, SD= Standard Deviation

Moreover, FI positively influences WFWB (H4a; β = 0.167; t = 2.431), and FA has a significant positive effect on WFWB (H4b; β = 0.374; t = 5.316), supporting H4a and H4b. Furthermore, WFWB significantly impacts WE (H5a; β = 0.518; t = 8.462). Additionally, FI (H5b; β = 0.122; t = 2.187) and FA (H5c; β = 0.22; t = 3.751) also positively influence WE, supporting H5a, H5b, and H5c. Lastly, the "Standardised Root-Mean-square Residual (SRMR)" value of 0.066 confirms the overall goodness-of-fit of the structural model, meeting the recommended threshold of less than 0.08 (Hair *et al.*, 2017).

5. Discussion

Our study findings align with previous research, confirming the significant positive impact of "financial literacy" on both "financial inclusion" and "fintech adoption." This underscores the crucial role of financial literacy in facilitating access to financial services and promoting the adoption of financial technology among women (Lusardi & Mitchell, 2014; Jamison *et al.*, 2014; Berry *et al.*, 2018; Jünger & Mietzner, 2020; Morgan & Thinh, 2020). Similarly, we found that technological innovation positively influences both financial inclusion and fintech adoption, highlighting the importance of technological advancements in expanding access to financial services, particularly among women (Al-Mudimigh & Anshari, 2020; Rastogi & Ragabiruntha, 2018; Ramakrishna & Trivedi, 2018; Hu *et al.*, 2019; Morosan & DeFranco, 2014; Zhang *et al.*, 2018). Additionally, our results indicate

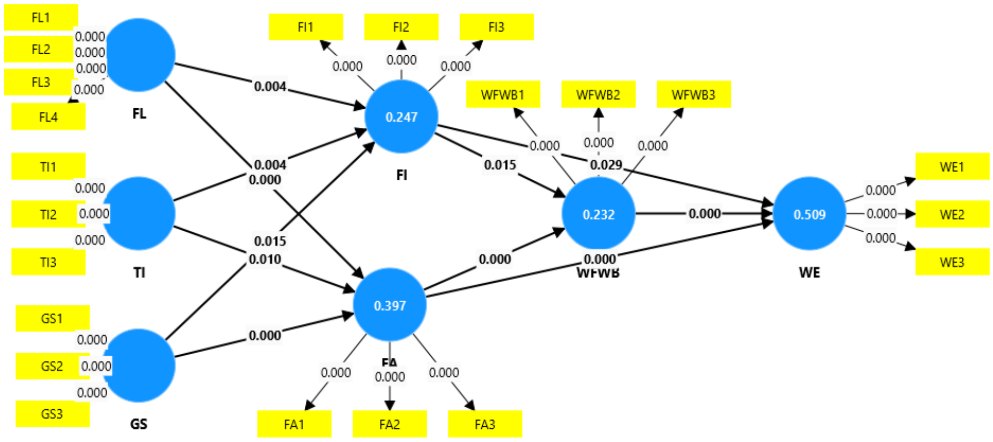


Figure 2. The structural model.

that government support significantly contributes to enhancing both financial inclusion and fintech adoption, underlining the importance of supportive government policies and initiatives in promoting "financial inclusion" and fostering the "adoption of financial technology" among women (Aggarwal & Klapper, 2013; Staschen & Nelson, 2013; Marakarkandy *et al.*, 2017; Goo & Heo, 2020; Sanderson *et al.*, 2018).

Furthermore, our study reveals the significant positive impact of "financial inclusion" on "women's financial well-being", suggesting that increasing access to financial services can substantially improve the financial well-being of women (Allen *et al.*, 2012; Dupas *et al.*, 2017). Additionally, fintech adoption significantly affects women's financial well-being, indicating the potential of financial technology to enhance women's financial well-being by providing access to innovative and convenient financial services (Hasan *et al.*, 2023; Gorham & Dorrance, 2017; Lyons & Kass-Hanna, 2021). Moreover, our findings show that women's financial well-being significantly influences their empowerment, suggesting that improving women's financial well-being can enhance their overall empowerment (Deka, 2015; Haque *et al.*, 2016; Bonga *et al.*, 2016). Finally, our results demonstrate that financial inclusion and fintech adoption significantly contribute to women's empowerment, highlighting the transformative potential of increasing access to financial services and promoting the adoption of financial technology in empowering women and fostering their socio-economic advancement.

6. Conclusion

The findings of our study have several important implications for policymakers, financial institutions, and development practitioners. Firstly, our results underscore the importance of promoting FL among women to enhance their financial inclusion and foster the adoption of financial technology. Additionally, our findings highlight the need for supportive government policies and initiatives to promote financial inclusion and fintech adoption among women. Furthermore, our results emphasize the potential of financial inclusion and fintech adoption in improving women's financial well-being and empowerment.

In conclusion, this study provides empirical evidence supporting the significant impacts of financial literacy, technological innovation, government support, financial inclusion, and fintech adoption on women's financial well-being and empowerment. By addressing these factors, policymakers and stakeholders can work towards promoting gender equality and women's empowerment through enhanced access to financial services and technology.

7. References

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