

Fiscal Rules, Digitalization and Sustainable Financing for Women's Empowerment at the Local Level

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Abstract

Women's empowerment at the local level requires sustained and equitable financial support, particularly through effective fiscal management and inclusive public investment. With the accelerating rate of digital transformation, digital financial services and governance approaches appear to have a key role to play in promoting fiscal transparency, better resource mobilization and allocation, and the provision of finance opportunities for the empowerment of women at all levels. These are opportunities that can be maximized through the effective use of fiscal rules and the potential afforded by digital transformation, and sustainable financing frameworks to foster local women's economic and social empowerment.

The present study examines the role of fiscal rules, digitalization, and sustainable financing in promoting women's empowerment at the local level. A mixed descriptive and causal research design was adopted to assess the existing status of these factors and analyze their influence on women's empowerment. The study was conducted among adult women in Noida City, and a sample of 429 respondents was selected using purposive sampling. Primary data were collected through a structured questionnaire comprising sections on demographic profile, nature of fiscal rules towards women's empowerment, digitalization status among women, women's access to sustainable financing, status of women's empowerment, and challenges in accessing digital financial services and sustainable finance. The collected data were analyzed using mean, standard deviation, coefficient of variation, and Chi-square test. The findings revealed that the majority of respondents perceived fiscal rules as supportive, reported a high level of digitalization and access to sustainable financing, and exhibited a high level of women's empowerment. The Chi-square analysis confirmed that fiscal rules, digitalization, and sustainable financing each have a statistically significant influence on women's empowerment, leading to the rejection of all three null hypotheses. Furthermore, difficulty in obtaining loans, fear of online fraud, social restrictions, and lack of awareness of government schemes emerged as the major challenges faced by women

in accessing digital financial services and sustainable finance. The study concludes that strengthening gender-responsive fiscal policies, promoting digital inclusion, and expanding access to sustainable financial services can substantially enhance women's empowerment at the local level.

Key Words: Fiscal Rules; Digitalization; Sustainable Financing; Women's Empowerment.

Introduction:

Women's empowerment at the local level is increasingly recognized as a critical component of inclusive and sustainable development. Despite significant progress in women's participation in education, employment, entrepreneurship, and local governance, women continue to face structural barriers in accessing financial resources, productive assets, public services, and decision-making opportunities. Local governments and decentralized institutions play an important role in addressing these inequalities through gender-responsive budgeting, targeted welfare programmes, livelihood initiatives, and investments in education, health, infrastructure, and social protection. However, the effectiveness of such interventions depends substantially on the availability, allocation, and sustainability of public financial resources.

Fiscal rules provide crucial means to fiscal discipline, prudent expenditure, and financial stability in the long run. At the local level, appropriate fiscal rules help allocate the limited financial resources effectively to develop spending which may directly or indirectly facilitate the empowerment of women in developing priorities. A strict regime of fiscal discipline may however compromise the role of local government to make gender-related expenditures especially in regions with poor economic background. Accordingly, adequate fiscal space at the local level as against austerity or harsh fiscal discipline need a balance in order to allow development expenditures lead an equitable growth which caters to empowerment of women.

Simultaneously, the expansion of digitalization is altering the production and consumption of public financial management and accountability. The proliferation of digital payment systems, electronic governance platforms, fin-tech, digital banking, big-data assisted budgeting can

enhance transparency, lower transaction costs, strengthen public accountability and give women access to financial products and benefits from public providers. When combined with the adoption of sustainable financing instruments and gender-responsive fiscal policies digital innovation could create local and innovative financial markets for everyone but particularly women. Thus this paper aims at the potential role that the combination of fiscal rules, digitalization, and sustainable finance might play in fostering the local economic, social, and institutional empowerment of women.

Review of Literature:

Uddin et al. (2026) explored the digital empowerment of women entrepreneurs in post-COVID-19. Focus is on how Islamic Microfinance and Financial Innovation can empower women's entrepreneurial ventures and contribute toward sustainable development. Published as chapter 13 in *Islamic Finance and Financial Innovation: Cultural, Regulatory and Technological Challenges*, the article depicts how digital transformation has transformed the way finance is delivered, thereby creating novel avenues for women entrepreneurs toward finance access, markets, information and business support. The article suggests how Islamic Finance institutions can empower women entrepreneurs through digitally empowered inclusive and Shariah compliant services, highlighting the fact that "digital empowerment should not simply be reduced to accessing technology, but rather to women's abilities to harness digital technologies for entrepreneurship, decision-making, and economic engagement." This article also adds value to sustainable development since women's financial and digital empowerment contributes to poverty alleviation, entrepreneurial creation and to SDG performance through fostering gender equality and socio-economic inclusion.

Pranitasari et al. (2026) proposed a sustainable gender-responsive digital and financial inclusion model for women-led MSMEs in Indonesia, to measure the digitalization and financial inclusion of women entrepreneurs in Indonesia and build a empowerment-focused framework for inclusive economic growth. Employing convergent mixed methods, Pranitasari et al. Conducted surveys with 250 women entrepreneurs from

MSMEs located in West Java and then complemented the findings with an exploratory analysis with interviews with the participation of representatives from financial institutions, government bodies, and business groups. They revealed that although the penetration of digital services and access to finance empowers women entrepreneurs in their entrepreneurial capabilities, access to finance, and participation in economic activities, gender inequalities persist, preventing a fuller utilization of these positive impacts. Therefore, the researchers underlined that an integrative framework of digital technologies, financial inclusion, institutional support, capacity building and gender responsive policy is necessary. The finding thus contributes as a theoretical framework for the study of gender empowerment as a multifaceted procedure where digital and finance inclusion reinforce women in sustainable entrepreneurship.

A study by Yusnaini and Sinaga (2025) explored the role of good financial governance and financial digitalization on the sustainability of women-managed household industries at Medan Sunggal, Indonesia. This research focus is the problems on practices of women entrepreneur: limited of capital, low levels of financial knowledge, and low financial management. Methods used on research are of the mix-methods with questioner survey the data of sample of 100 women entrepreneur were combined by observation and interview. Result of research shows that good of financial management provide of effective contribution on business sustainability while financial digitalization has provided the moderate effect and positive for the sustainability of women-managed household industry. The article then put forward an integration of an investment framework of the development of financial governance, digital innovation, investment services, and capacity building and adaptive governance for sustainability of wown-run business. The results show digital innovation cannot exist if without the right financial manage capability and the good mechanism of financial institution system it. Therefore, the research shows relationship of investment on financial governance toward women-run business local economy development.

Lailiyah et al. (2025) investigated the extent to which digital financial innovation can enhance women's

economic empowerment and contribute to the implementation of Sustainable Development Goals, in particular SDG 5: achieving gender equality and empowering all women and girls and SDG 8: Decent work and economic growth. By using qualitative descriptive research with strategic analysis technique, the authors explored the practices of women entrepreneurs related to digital financial products and services. The results confirmed that digital financial innovation has the potential to facilitate access to funding and business capital for women while at the same time enhancing the efficiency and financial literacy of various transaction processes. On the other hand, the study points out ongoing challenges that need to be overcome such as lack of internet infrastructure in rural areas; limited understanding of digital risks involved; algorithmic bias in financial product decision making; and persistent gender disparities. Against this backdrop, the authors call for financially literacy programs at the community level, the development of responsible and inclusive fintech products and services; and financial and fiscal incentives to support pro-poor and gender-inclusive fintech development; and finally, strong partnership between government agencies, the private sector, and the communities. This is indeed a study that establishes that women's economic empowerment through digital financial innovation would only succeed if accompanied by inclusive institutional and policy framework.

Agyemang and Bokpin (2025) explored the link between digital financial services (DFS) and women's economic empowerment, while considering the roles of social networks, risk preference, and time preferences. They collected primary survey data from 500 respondents and used chi-square analysis and binary logistic regression analysis. Results indicate a positive relationship between digital financial services and the economic empowerment of women. The majority of respondents in the study were found to be empowered with women's awareness and use of digital finance positively associated with empowerment. In their principle analyses, risk and time preferences were not identified as significant factors. The authors concluded that digital literacy, affordability, awareness, and accessibility of digital financial services can improve women's economic participation, but challenges such as the gender

digital divide and lack of gender sensitive policies require attention.

In rural India, Pal et al. (2025) examined the adoption of digital financial services and its association with sustainable women's empowerment using a machine learning based framework. The authors of this article investigate the continued difficulties women face in obtaining, using and adopting digital financial services, as more women gaining access to digital financial inclusion. First, they employed a ML based Self-Efficacy-Value Adoption Model to investigation how and in which capacity these factors (self-efficacy and perceived value) affect the intended use of digital financial services and second, a ML-based threshold decision analysis to analyze the relation between access of digital services and different sustainable dimensions of empowerment. "They have demonstrated through this study that increasing user experiences and awareness for new product offerings leads to a greater chance of women's adopting digital financial services which in turn significantly contribute to their economic, social and mental well-being". The research extends prior research as it has demonstrated how advanced modeling techniques can identify conditions where digital inclusion turns into substantial empowerment and supports the development of gender-sensitive frameworks for the economic emancipation of rural women.

Uddin et al. (2025) investigated that digital innovations in digital microfinance help to enhance women entrepreneurship in this new post COVID era. The analysis of the Islamic microfinance institutions has facilitated better use and increased participation of female-entrepreneurs in digitally enabled online business during, post covid-19 era also in the implementation of the goal of sustainable development as a whole. The qualitative data collecting using in this study was through the conducting of the interviews with personnel in Islamic Microfinance Institution (IsMFI), related interested people, and beneficiary women who are gaining benefits from Digital Financial Services (DFS). According to Uddin and et al. (2025), post-pandemic increasing the digitalization has created new prospects of growing the capacity of women entrepreneurs on the other hand, these can also give to rise the institutional, technical, digital, and gender-based

obstacles. These findings suggest that the integration of digital innovations to Islamic Microfinance Instruments and services have more impact on enabling the ease in accessing the financial inclusion, entrepreneurial support, market information and digital channels by women; the findings particularly recommend effective, and responsive Islamic Microfinance Programs and policy of gender-sensitive digital entrepreneurship training as the well as providing technological capabilities. The findings of the paper connect with the idea that Islamic microfinance's role in Digital empowerment and entrepreneurship development will lead to ensure the development Goal. In this research also proposed the integrated relationship between Islamic Microfinance (IMF), digital empowerment and entrepreneurship development which ensures the goals of sustainable Development: IMF. Therefore, it is evidence that the availability and use of technology to address poor women's need through institutional support is the core in transforming Digital access to the real empowerment of women.

Alom et al. (2025) examined how Digital finance contribute to women's empowerment, their entrepreneurship, and alleviation of their poverty. Focusing on time series data on the macro-level data of Bangladesh for a period of 2011 to 2023, this paper analyses the transformative effect of digital financial systems for women entrepreneurs and sustainable development. This research provides evidence that the digitally financial access promotes women's entry into markets as entrepreneurs, enable business growth and also support poverty reduction by providing easier and cheap access to financial products and entrepreneur support which are normally inaccessible in traditional financial markets. This study also provides insights on how we can reduce a number of conventional impediments related to geographical, cultural and financial aspects to engage more women in lucrative economic activities and business operations The researchers integrate digital finance and its three outcome—namely, financial empowerment of women, enhancement of women entrepreneurship, and poverty reduction within a context of sustainable development goals and thus this is relevant to developing countries where digital financial market, women's access to Digital Finance and inclusive economic growth.

Ajide et al (2025) explored the effect of financial inclusion and women empowerment on informal economy. Using data of 39 African countries for the 2004-2020 period and relying on the use of the Driscoll and Kraay consistent standard errors and the Instrumental Variables Generalized Method of Moments (IV-GMM) to allow for cross section dependence and potential endogenous effect, the authors find that whereas gender political inclusion decreases female informal sector participation, gender economic inclusion increased participation of women in informal sectors. The paper finds that the gender interaction between financial inclusion and women empowerment affects female informal sector participation to be negative such that financial inclusion enabled empowerment of women has implication of reducing the sizes of informal sectors of economies. On regional analysis the study shows interaction of financial inclusion and gender women empowerment are also important in reducing formal sector participation in North, Central and South Africa. Also it notes that financial inclusion has no significance on reducing informal-sector size in West Africa. Thus, the findings confirm that the relationship between financial inclusion and empowerment of women and reduction of informal sectors varies in different contexts, regions and other economic setting.

Verma and Banerjee (2024) reviewing the issues of sustainable developments and empowerment of women found that women empowerment is integral for equitable and sustainable developments. They define sustainable development as encompassing not only the goals for economic growth but social inclusion, access to opportunities, equality of opportunities, reduction of socioeconomic inequalities and thus achieving all the targets, social, economic and environmental, set by it for holistic societal developments. Moreover, the findings highlight the relationship between the women empowerment and sustainable development. They argue, however, women empowerment is an essential attribute to the global development process especially in the socio-economic context due to economic growth through improved productivity and employment from female economic inclusion in various socio economic institutions; in addition technological development leads towards

inclusion of digitalization in which inclusive utilization and easy access for all sections of women would leads towards social parity; also due to growing opportunities of women's increased role. Also in this regard one can assert that various socio economic development projects can address gender disparities among all sectors, in which women empowerment is significant for all such developments and would assist attain the required development objectives and goals. This review will serve as general background framework to subsequently applied research studies on the issues concerning: digitalization, Financial inclusion, sustainable financing and Women empowerment.

Sharma (2024) explored the contribution of women's empowerment to development, by investigating policies and practices. He argues that empowering women is not just an issue of social justice or gender equality, but also an essential requirement of inclusive and sustainable economic development. He highlights the significance of government policies, institutions, education, employment, access to finance and participative decision-making for improving the socio-economic conditions of women. Sharma (2024) noted that despite various policy initiatives undertaken by developing countries towards empowering women and achieving gender equality, a significant gap persists between policy formulation and its effective implementation and women's integration into development processes faces obstacles due to socio-cultural barriers, unequal access to resources and lack of economic opportunities and institutional support. He therefore stresses that integrated gender sensitive policies that addresses structural inequalities and improve the economic, social and political capacity of women are required, thereby providing a comprehensive, policy-oriented basis for the recognition of women's empowerment as crucial for sustainable development.

Showkat et al. (2024) examined whether digital finance services will bring about financial empowerment and gender equality, and contribute to Sustainable Development Goal 5. They emphasize the critical role of digital finance services in promoting financial inclusion and women's economic self-reliance in the digital age. They contend that digital banking, mobile money, digital savings, digital credit and lending services and all other

technology-driven financial tools can ease the constraints that women have often face to utilize formal financial institutions, empower women to manage financial resources, saving and investment capacity and make their own financial decision-making choices independently. However, they acknowledge that the growth of digital financial services alone doesn't reduce gender inequality because unequal access to digital technology, lack of digital literacy, affordability constraints, limited financial knowledge and socio-cultural expectations will not empower women to reap its full potential. Showkat et al. (2024) strongly advocate the need for gender-responsive digital financial policy, improvement of women's digital literacy, access to affordable digital finance services and enabling institutional support to ensure financial empowerment.

Gibson et al. (2024) reviewed how digital finance, financial inclusion and gender equality connect and provided suggestions on how digital financial systems could serve the economic empowerment of women. The article framed digital finance under the larger financial inclusion agenda and outlined how technological innovation could help surmount traditionally significant barriers to female access to formal financial services. Digital payment systems, mobile money services, digital credit, online savings, and digital payment products reduce transaction costs, physical distance constraints and enable more agency on part of the user over their financial activities. However, authors noted how only technological advancements alone will not suffice; it requires appropriate legislative frameworks, regulations, and appropriate infrastructure. The digital division, lack of equal access, inadequate financial and digital literacy, issues of privacy, discriminatory practices among other things would be major constraint in leveraging the potential benefits of digital financial innovations for the empowerment of women. Gibson et al. (2024) therefore called for a multifaceted policymaking approaches such as investment on infrastructure, financial inclusion, consumers' safety, regulation aimed at women empowerment, capacity development. It was noted from the study how innovative technological developments targeting at women can provide great economic assistance when put towards development of gender equality goals.

Mpofu (2023) assessed disparity in gender terms related to the use of digital finance among and across countries and impact of the disparity on how developing countries can make progress toward Sustainable Development goals. It was realized how digital financial inclusion plays significant role in terms of access to various financial services across population that were formally deprived from formal financial systems. It was observed from the study that disparities in access to digital services, as well as digital accounts, financial products, digital services in the digital context and technologies that could help boost various economic transactions still existed between genders, specifically that women have less access to the above services compared to men. As a result of that discrepancy, women have been denied the opportunity to actively participate in entrepreneurial ventures, acquire wealth and financial, get access to credit facility and obtain autonomy in deciding on major economic choices of life. Mpofu (2023) highlighted that without addressing the gender gap in digital financial access and penetration in developing countries, countries would continue struggling to make progress toward poverty reduction, sustainable economic development and gender equality related targets set in the SDGs. The authors suggest governments and financial institutions should increase availability of financial services, promote digital and literacy, increase availability of cost-effective financial products and put in place regulatory provisions to curb on bias against gender in terms of usage of services related to financial digital access.

Karami et al. (2023) investigated the role that FinTech can play in enhancing financial inclusion and empowering women financially. Their research explores how FinTech has the power to overcome the conventional challenges which prevent women from having access to, and using, formal financial services. With FinTech digital platforms, payments, savings, credit, investment products and various other services are made available to women without having to rely solely on traditional banks and traditional institutions. They find that easier access to finance is likely to make them stronger in financial terms, better equipped to manage their own and household resources and participate in the economy. However they also acknowledge that

financial literacy and digital competences are necessary to complement technological accessibility, so that women are able to harness the full benefit of FinTech and build more resilient, diversified FinTech ecosystems along with supportive policies can assist to achieve women's financial empowerment. Hence Karami et al. (2023) argued that FinTech could become an important mechanism to narrow financial inclusions, helping with women empowerment.

Rahman (2016) reviewed the role of ICT in empowering women entrepreneurs in Bangladesh along with recent trends and prospects for the use of information and communication technologies for entrepreneurial development. Information access, access to information about various markets, clients, cash availability for various transactions and financing opportunities for them, networking channels to get connected with other potential business associates/clients/peers and entrepreneurial skills are some of the potential benefits derived from the use of ICT for the empowerment of women entrepreneurs. With mobile phones, internet- access, telecommunication networks, e-commerce channels, and other digital technologies, women entrepreneurs can break through the geographical barrier and widen access to clients far beyond the narrow local market. However, it continues, that there are still obstacles such as shortage of ICT infrastructure, insufficient digital and technical skills and training for them and prohibitive costs of ICT for access. Thus, he emphasizes that action would need to be coordinated and coordinated for effective delivery of ICT solutions to empower women Entrepreneurs. For, a number of years the work has begun by researchers towards understanding of ICT use by women entrepreneurs in terms of its role in their entrepreneurship, its empowering effect (which we often label as entrepreneurial empowerment which also relates to economic participation and individual agency for women's in general). For example, the contribution of this study is significant for providing us an initial overview of the potential value of ICT for empowering women entrepreneurs in an early stage of the research agenda on this theme.

Kim and Evans (2015) focused on how women's health is a crucial dimension of the overarching aims and objectives of the overarching development framework, and a key

prerequisite for sustainable development. They highlight that gains in women's health not only result in well-being improvements for women themselves, but lead to benefits that cascade through families, communities and national economies. Poor health limits women's ability to participate in education, employment, entrepreneurial activities and the public decision-making arenas, entrenching existing inequalities between men and women. Improvements in women's access to health and related health services, education and resources have the potential to enable them to expand their economic productivity and social participation, to make informed decisions, to acquire skills and enhance self-worth (Kim & Evans, 2015). They further assert that, at all levels and stages, women's health and equity must become a focal point for sustainable development planning not a marginal health sector matter. This is not a study of FinTech and digitally enabling solutions, but it plays an important role for broader framing of women's empowerment which includes their well-being, the enhancement of their decision-making autonomy, their social roles, economic self-sufficiency and general agency.

Srivastava (2015) looked into the possibility of women from the rural unorganized sector benefiting from digital transformation. This study focuses on the women from rural India, who typically don't operate within the framework of organized work or finance, thus are significantly at a disadvantage when dealing with markets, finances, and information networks, the required skills, and institutional help. Srivastava (2015) posits digital transformation as a crucial avenue for mitigating a segment of these structural challenges by bringing women in the rural sector in touch with financial service providers, government initiatives, markets, and money-making avenues via its information infrastructure and capabilities. In turn, a strengthening of women's entrepreneurial capacity, improved informational access, and opportunities of earning an income would occur. The transformative power of such a digital framework is conditional on factors such as women having access to affordable technology, being digitally adept, and being supported by a conducive organizational framework. Accordingly, this study highlighted the requirement of nurturing digital skills among rural women and building a support ecosystem for it

by promoting education, training, the creation of essential infrastructure, and backing with appropriate policy provisions. The study provided an earliest link between the development of digital transformation and the women empowerment in unorganized and rural sectors and is significant in that sense, providing an initial groundwork for various later studies focusing upon issues related to digital financial inclusions for empowerment of women and promotion of sustainable women entrepreneurship.

Research Gap

The existing literature establishes that digitalization, financial inclusion, FinTech, and ICTs can enhance women's empowerment; however, limited research has examined these factors together with fiscal rules and sustainable financing at the local level. Previous studies have largely focused on national or regional contexts, with insufficient attention to how local fiscal policies influence women's empowerment and how digitalization and sustainable finance jointly strengthen women's economic and social participation. Moreover, challenges in accessing digital financial services and sustainable finance remain underexplored. The present study addresses these gaps by examining the influence of fiscal rules, digitalization, and sustainable financing on women's empowerment, while also identifying the barriers women face in accessing digital financial and sustainable financial services.

Objectives

1. To examine the influence of fiscal rules on women's empowerment at the local level.
2. To assess the role of digitalization in enhancing women's empowerment.
3. To investigate the impact of sustainable financing on women's economic and social empowerment.
4. To identify the challenges faced by women in accessing digital financial services and sustainable finance.

Hypotheses

1. Fiscal rules have no significant influence on women's empowerment.
2. Digitalization has no significant influence on women's empowerment.

3. Sustainable financing has no significant influence on women's empowerment

Research Methodology

Research Design: he research has initially accessed the status of fiscal rules, digitalization and sustainable financing and further it has analyzed the impact of fiscal rules, digitalization and sustainable financing on women empowerment so a mix of descriptive and causal research design has been adopted.

Sampling: he population of the study consists of the adult women of Noida city and by using purposive sampling method a sample of 429 women was taken.

Data Collection Tool: data collected by using the questionnaire method. The questionnaire was divided into following sub-sections:-

- Demographic profile
- Nature of Fiscal Rules towards women empowerment
- Digitalization status among women
- Women's access to sustainable financing
- Status of women empowerment
- Challenges in accessing digital financial services and sustainable finance

Data Analysis Tool: he collected data has been analyzed by applying mean, standard deviation, coefficient of variation and chi-square test.

Analysis of Data

Demographic Profile of Respondents

Table 1 presents the demographic profile of the 429 respondents included in the study. The findings indicated that the largest proportion of respondents belonged to the 35–45 years age group (37.06%), followed by those aged 25–35 years (32.17%), suggesting that the majority were in their economically active years. In terms of education, 44.76% of the respondents were postgraduates, while 29.60% were graduates, indicating a relatively well-educated sample. Regarding occupation, private employees (28.21%) constituted the largest group, followed by government employees (21.91%) and students (17.25%), reflecting representation from diverse occupational backgrounds. With respect to monthly

income, the highest proportion of respondents (38.93%) reported earning Rs.25,001–Rs.50,000 per month, followed by 28.21% earning Rs.50,001–Rs.75,000. Overall, Table 1 shows that the study sample predominantly comprised middle-

aged, educated, and economically active respondents from varied occupational and income groups, providing a suitable demographic base for analyzing fiscal rules, digitalization, sustainable financing, and women's empowerment at the local level.

Table 1: Demographic Profile of Respondents

Age	N	Percentage
18 to 25 Years	69	16.08
25 to 35 Years	138	32.17
35 to 45 Years	159	37.06
45 to 55 Years	34	7.93
55 Years and above	29	6.76
Total	429	100
Education	N	Percentage
Up to School Level	51	11.89
Graduate	127	29.60
Postgraduate	192	44.76
Other	59	13.75
Total	429	100
Occupation	N	Percentage
Student	74	17.25
Government Employee	94	21.91
Private Employee	121	28.21
Self employed	52	12.12
Homemaker	46	10.72
Retired	42	9.79
Total	429	100
Monthly Income	N	Percentage
Up to Rs. 25000	94	21.91
Rs. 25001 to 50000	167	38.93
Rs. 50001 to 75000	121	28.21
More than Rs. 75000	47	10.96
Total	429	100

Nature of Fiscal Rules towards women empowerment

Table 2 presents respondents' perceptions regarding the nature of fiscal rules towards women's empowerment using mean, standard deviation, coefficient of variation, and response level. The findings indicated an overall positive perception of fiscal rules, as all statements received mean scores above 3.40. The highest mean score was recorded for the statement "Government financial policies promote gender equality" (Mean = 4.25, SD = 1.05), indicating strong agreement among respondents. This was followed by "Local government spending benefits women in my community" (Mean = 4.14) and "Public financial resources are fairly distributed among women" (Mean = 4.09),

reflecting respondents' agreement regarding the positive role of government fiscal measures. Similarly, respondents agreed that fiscal policies encourage women's entrepreneurship (Mean = 4.04) and that government budget allocations adequately support women's welfare (Mean = 3.88). Comparatively lower mean scores were observed for transparency in the use of funds for women's development (Mean = 3.71), government subsidies improving women's livelihoods (Mean = 3.52), and awareness of government financial schemes among women (Mean = 3.42), although these also fell within the "Agree" category. The coefficient of variation ranged from 0.21 to 0.30, indicating reasonable consistency in respondents' opinions. Overall, Table 2 suggests that respondents hold

favorable perceptions of fiscal rules and government financial policies in promoting women's empowerment at the local level, while highlighting relatively lower

awareness of financial schemes and perceptions of transparency as areas requiring further attention.

Table 2: Nature of Fiscal Rules towards women empowerment

Nature of Fiscal Rules towards women empowerment	Mean	S.D.	C.V.	Result
Government budget allocations adequately support women's welfare	3.88	1.12	0.29	Agree
Local government spending benefits women in my community.	4.14	0.97	0.23	Agree
Government financial policies promote gender equality.	4.25	1.05	0.25	Strongly Agree
Local authorities ensure transparent use of funds for women's development.	3.71	1.11	0.30	Agree
Public financial resources are fairly distributed among women.	4.09	1.08	0.26	Agree
Government subsidies help improve women's livelihoods.	3.52	0.74	0.21	Agree
Fiscal policies encourage women's entrepreneurship.	4.04	1.05	0.26	Agree
Women are aware of government financial schemes.	3.42	0.98	0.29	Agree

Table 3 presents the overall perception of respondents regarding the nature of fiscal rules towards women's empowerment. The findings reveal that a substantial majority of the respondents, 398 (92.77%), perceived fiscal rules as supportive of women's empowerment, whereas only 31 respondents (7.23%) considered them not

supportive. The results indicate a strong positive perception among respondents regarding the role of government fiscal policies, budget allocations, subsidies, and financial initiatives in promoting women's welfare and empowerment at the local level.

Table 3: Overall Nature of Fiscal Rules towards women empowerment

Overall Nature	N	Percentage
Not supportive	31	7.23
Supportive	398	92.77
Total	429	100

Digitalization status among women

Table 4 presents respondents' perceptions regarding the status of digitalization among women. The findings indicated a favorable perception of digitalization, as all statements received mean scores above 3.40, reflecting respondents' agreement. The highest mean score was observed for "I feel confident using mobile banking" (Mean = 4.09, SD = 1.06), followed by "Internet access has improved my economic opportunities" (Mean = 4.01, SD = 0.88) and "I regularly use digital payment systems" (Mean = 3.94, SD = 0.99). Respondents also agreed that digital

technology has improved their financial independence (Mean = 3.81) and that digital literacy programs have benefited them (Mean = 3.74). Moderate agreement was reported for digital platforms increasing awareness of government schemes (Mean = 3.62), easy access to government services online (Mean = 3.58), and digital banking making financial transactions easier (Mean = 3.43). The coefficient of variation ranged from 0.20 to 0.33, indicating a reasonable degree of consistency in responses, with the greatest variation observed for perceptions regarding digital banking. Overall, Table 4 suggests that

respondents hold a positive view of digitalization, recognizing its contribution to financial inclusion, economic opportunities, and access to digital financial

services, while indicating comparatively lower satisfaction with online government services and the ease of digital banking..

Table 4: Digitalization status among women

Digitalization status among women	Mean	S.D.	C.V.	Result
I regularly use digital payment systems.	3.94	0.99	0.25	Agree
I can easily access government services online.	3.58	1.05	0.29	Agree
Digital banking has made financial transactions easier.	3.43	1.12	0.33	Agree
Digital technology has improved my financial independence.	3.81	0.85	0.22	Agree
Digital literacy programs have benefited me.	3.74	0.74	0.20	Agree
I feel confident using mobile banking.	4.09	1.06	0.26	Agree
Digital platforms have increased my awareness of government schemes.	3.62	1.09	0.30	Agree
Internet access has improved my economic opportunities.	4.01	0.88	0.22	Agree

Table 5 presents the overall status of digitalization among women based on respondents' perceptions. The findings reveal that the majority of the respondents, 382 (89.04%), reported a high level of digitalization, whereas only 47

respondents (10.96%) indicated a low level of digitalization. The results suggest that a large proportion of women have adopted digital technologies and are actively utilizing digital platforms, including digital payment systems, mobile banking, and online services.

Table 5: Overall Digitalization status among women

Overall Status	N	Percentage
Low	47	10.96
High	382	89.04
Total	429	100

Women's access to sustainable financing

Table 6 presents respondents' perceptions regarding women's access to sustainable financing based on mean, standard deviation, coefficient of variation, and response level. The findings indicate that respondents generally agreed with all the statements, as the mean scores ranged from 3.42 to 3.92. The highest mean score was recorded for "Savings programs improve my financial stability" (Mean = 3.92, SD = 1.05), suggesting that respondents perceived savings initiatives as the most significant contributor to their financial well-being. This was followed by easy access to formal financial institutions (Mean = 3.81) and adequate support from financial institutions to women entrepreneurs (Mean = 3.74), indicating positive perceptions regarding financial accessibility and

institutional support. Respondents also agreed that affordable loans are available for women (Mean = 3.62) and that financial inclusion has enhanced their quality of life (Mean = 3.49). The comparatively lowest mean score was observed for "Microfinance services have improved my livelihood" (Mean = 3.42, SD = 0.93), although it also reflected agreement. The coefficient of variation ranged from 0.18 to 0.27, indicating a relatively high degree of consistency in respondents' opinions, with the least variation observed for the statement on financial inclusion improving quality of life. Overall, Table 6 suggests that respondents hold favorable perceptions regarding women's access to sustainable financing, particularly in terms of savings programs, access to financial institutions, and institutional support, while indicating comparatively lower perceived benefits from microfinance services..

Table 6: Women's access to sustainable financing

Women's access to sustainable financing	Mean	S.D.	C.V.	Result
I have easy access to formal financial institutions.	3.81	0.84	0.22	Agree
Microfinance services have improved my livelihood.	3.42	0.93	0.27	Agree
Financial institutions provide adequate support to women entrepreneurs.	3.74	0.87	0.23	Agree
Affordable loans are available for women.	3.62	0.82	0.23	Agree
Savings programs improve my financial stability.	3.92	1.05	0.27	Agree
Financial inclusion has enhanced my quality of life.	3.49	0.62	0.18	Agree

Table 7 presents the overall level of women's access to sustainable financing. The findings revealed that a majority of the respondents, 359 (83.68%), reported a high level of access to sustainable financing, while 70 respondents (16.32%) indicated a low level of access. The results suggested that most women perceive themselves as having adequate access to formal financial institutions, savings

programs, affordable credit, and other financial services that contribute to their economic well-being. Although a small proportion of respondents still experience limited access, the overall findings indicate that sustainable financing mechanisms are accessible to the majority of women in the study area.

Table 7: Women's overall access to sustainable financing

Overall Access	N	Percentage
Low	70	16.32
High	359	83.68
Total	429	100

Status of women empowerment

Table 8 presents respondents' perceptions regarding the status of women's empowerment based on mean, standard deviation, coefficient of variation, and response level. The findings indicate that respondents generally held positive views regarding women's empowerment, with most statements receiving mean scores within the "Agree" category. The highest mean score was recorded for "I feel financially independent" (Mean = 3.87, SD = 1.05), followed by "I can independently access financial services" (Mean = 3.74, SD = 0.74) and "I participate in important household financial decisions" (Mean = 3.72, SD = 0.74), suggesting that respondents perceived themselves as

financially independent and actively involved in household financial matters. Respondents also agreed that they have control over their personal income (Mean = 3.52) and believe they have equal economic opportunities (Mean = 3.42). However, neutral responses were observed for participation in community activities (Mean = 3.33) and confidence in starting a business (Mean = 3.39), indicating comparatively lower levels of social participation and entrepreneurial confidence. The coefficient of variation ranged from 0.20 to 0.34, reflecting a reasonable degree of consistency in responses, with the greatest variation found in participation in community activities.

Table 8: Status of women empowerment

Status of women empowerment	Mean	S.D.	C.V.	Result
I participate in important household financial decisions.	3.72	0.74	0.20	Agree
I feel financially independent.	3.87	1.05	0.27	Agree
I have control over my personal income.	3.52	0.88	0.25	Agree
I actively participate in community activities.	3.33	1.12	0.34	Neutral

Status of women empowerment	Mean	S.D.	C.V.	Result
I have confidence in starting a business.	3.39	0.91	0.27	Neutral
I can independently access financial services.	3.74	0.74	0.20	Agree
I believe I have equal economic opportunities.	3.42	0.95	0.28	Agree

Table 9 presents the overall status of women's empowerment among the respondents. The findings reveal that a majority of the respondents, 337 (78.55%), reported a high level of women's empowerment, while 92 respondents (21.45%) indicated a low level of empowerment. The results suggest that most women perceive themselves as

financially independent, capable of accessing financial services, and actively participating in household financial decision-making. Although nearly one-fifth of the respondents reported a low level of empowerment, the overall findings indicate that women in the study area experience a relatively high level of empowerment..

Table 9: Overall Status of women empowerment

Overall Status	N	Percentage
Low	92	21.45
High	337	78.55
Total	429	100

Influence of Fiscal Rules, Digitalization and Sustainable Financing on Women's Empowerment

To check the influence of fiscal rules on women following hypothesis has been taken:-

H01: Fiscal rules have no significant influence on women's empowerment.

Ha1: Fiscal rules have significant influence on women's empowerment.

To examine the influence of fiscal rules on women's empowerment, a Chi-square test was performed, and the results are presented in Table 10. The findings indicate that among the respondents who perceived fiscal rules as not supportive, 25 respondents reported a low level of women's empowerment, while only 6 respondents reported a high level of empowerment. In contrast, among those who

perceived fiscal rules as supportive, 331 respondents reported a high level of women's empowerment, whereas 67 respondents reported a low level of empowerment. The calculated Chi-square statistic was 69.514 with a p-value of 0.000, which is less than the prescribed level of significance (0.05). Therefore, the null hypothesis (H_{01}) is rejected, and the alternative hypothesis (H_{a1}) is accepted. This indicates that there is a statistically significant association between fiscal rules and women's empowerment. The findings suggest that supportive fiscal rules are positively associated with higher levels of women's empowerment, implying that effective government fiscal policies and financial support mechanisms play an important role in enhancing women's socio-economic empowerment at the local level.

Table 10: Chi-Square t-test result to measure influence of fiscal rules on women empowerment

Fiscal Rules	Women's Empowerment			Chi - Statistic	p-value	Result
	Low	High	Total			
Not Supportive	25	6	31	69.514	0.000	Significant
Supportive	67	331	398			
Total	92	337	429			

Level of Significance=5%

To check the influence of digitalization on women following hypothesis has been taken:-

H₀₂: Digitalization has no significant influence on women's empowerment

H_{a2}: Digitalization has significant influence on women's empowerment

To examine the influence of digitalization on women's empowerment, a Chi-square test was conducted, and the results are presented in Table 11. The findings reveal that among respondents with a low level of digitalization, 39 respondents reported a low level of women's empowerment, while only 8 respondents reported a high level of empowerment. Conversely, among respondents with a high level of digitalization, 329 respondents reported

a high level of women's empowerment, whereas 53 respondents reported a low level of empowerment. The calculated Chi-square statistic was 118.634 with a p-value of 0.000, which is lower than the specified level of significance (0.05). Therefore, the null hypothesis (H_{02}) is rejected, and the alternative hypothesis (H_{a2}) is accepted. This indicates that there is a statistically significant association between digitalization and women's empowerment. The findings suggest that higher levels of digitalization are positively associated with greater women's empowerment, implying that increased access to digital technologies, digital financial services, and online platforms contributes significantly to enhancing women's socio-economic empowerment at the local level.

Table 11: Chi-Square t-test result to measure influence of digitalization on women empowerment

Digitalization	Women's Empowerment			Chi - Statistic	p-value	Result
	Low	High	Total			
Low	39	8	47	118.634	0.000	Significant
High	53	329	382			
Total	92	337	429			

Level of Significance=5%

To check the influence of sustainable financing on women following hypothesis has been taken:-

H₀₃: Sustainable financing has no significant influence on women's empowerment

H_{a3}: Sustainable financing has significant influence on women's empowerment

To examine the influence of sustainable financing on women's empowerment, a Chi-square test was conducted, and the results are presented in Table 12. The findings reveal that among respondents with low access to sustainable financing, 59 respondents reported a low level of women's empowerment, while only 11 respondents reported a high level of empowerment. In contrast, among respondents with high access to sustainable financing, 326 respondents reported a high level of women's

empowerment, whereas 33 respondents reported a low level of empowerment. The calculated Chi-square statistic was 196.081 with a p-value of 0.000, which is less than the prescribed level of significance (0.05). Therefore, the null hypothesis (H_{03}) is rejected, and the alternative hypothesis (H_{a3}) is accepted. This indicates that there is a statistically significant association between sustainable financing and women's empowerment. The findings suggest that greater access to sustainable financing is positively associated with higher levels of women's empowerment, implying that access to formal financial institutions, affordable credit, savings programs, and other sustainable financial services plays a significant role in strengthening the socio-economic empowerment of women at the local level.

Table 12: Chi-Square t-test result to measure influence of sustainable financing on women empowerment

Sustainable financing	Women's Empowerment			Chi - Statistic	p-value	Result
	Low	High	Total			
Low	59	11	70	196.081	0.000	Significant
High	33	326	359			
Total	92	337	429			

Level of Significance=5%

Challenges in accessing digital financial services and sustainable finance

Table 13 presents the major challenges faced by respondents in accessing digital financial services and sustainable finance based on mean scores, standard deviation, coefficient of variation, and ranking. The findings indicate that difficulty obtaining loans emerged as the most significant challenge (Mean = 3.87, SD = 1.05, Rank = 1), suggesting that respondents perceive access to affordable and timely credit as the primary barrier to financial inclusion. The second most important challenge was the fear of online fraud (Mean = 3.74, SD = 0.97, Rank = 2), followed by social restrictions (Mean = 3.63, SD =

0.88, Rank = 3) and lack of awareness of government schemes (Mean = 3.59, SD = 0.98, Rank = 4). Comparatively, poor internet connectivity (Mean = 3.39, Rank = 5), complex banking procedures (Mean = 3.31, Rank = 6), and low digital literacy (Mean = 3.26, Rank = 7) were perceived as relatively less severe challenges. The coefficient of variation ranged from 0.23 to 0.27, indicating a reasonable level of consistency in respondents' opinions across the identified barriers. Overall, Table 13 suggests that while women encounter multiple challenges in accessing digital financial services and sustainable finance, financial barriers such as obtaining loans and concerns about online security are perceived as the most critical obstacles, followed by social and informational constraints.

Table 13: Challenges in accessing digital financial services and sustainable finance

Challenges	Mean	S.D.	C.V.	Rank
Poor internet connectivity	3.39	0.93	0.27	5
Low digital literacy	3.26	0.74	0.23	7
Lack of awareness of government schemes	3.59	0.98	0.27	4
Difficulty obtaining loans	3.87	1.05	0.27	1
Complex banking procedures	3.31	0.85	0.26	6
Social restrictions	3.63	0.88	0.24	3
Fear of online fraud	3.74	0.97	0.26	2

Conclusion

1. The findings reveal that respondents generally perceived fiscal rules as supportive of women's empowerment, with most agreeing that government financial policies, budget allocations, and fiscal initiatives contribute positively to women's socio-economic development.
2. The study found a high level of digitalization among women, indicating that the majority of respondents regularly use digital payment systems, mobile banking, and online services, thereby enhancing their financial accessibility and independence.
3. Women's access to sustainable financing was found to

be satisfactory, as most respondents reported easy access to formal financial institutions, savings programs, and financial support mechanisms, although access to microfinance services was comparatively less favorable.

4. The overall level of women's empowerment was high, with respondents reporting greater financial independence, participation in household financial decision-making, and independent access to financial services. However, comparatively lower confidence was observed in entrepreneurship and community participation.
5. The Chi-square analysis confirmed that fiscal rules have a significant influence on women's empowerment. Women perceiving fiscal policies as supportive were significantly more likely to report higher levels of empowerment, leading to the rejection of the null hypothesis.
6. The study also established that digitalization significantly influences women's empowerment, demonstrating that increased adoption of digital technologies and digital financial services is associated with higher levels of empowerment among women.
7. Similarly, sustainable financing was found to have a significant positive influence on women's empowerment, indicating that better access to affordable financial services and institutional support strengthens women's economic participation and overall empowerment.
8. The major challenges identified by respondents were difficulty in obtaining loans, fear of online fraud, social restrictions, and lack of awareness of government schemes, suggesting that addressing these barriers can further improve women's financial inclusion and empowerment at the local level.

Implications of the Study:

These findings have key implications for local authorities, politicians, financiers and development organizations committed to empowering women. Firstly, the positive perception towards fiscal rules and importance of fiscal policies on empowerment shows the need for local

authorities to give more attention to gender-responsive budgeting, well targeted public expenditure and enabling fiscal measures. Considering the positive and very high influence of digitalization on empowering women, efforts should be put more effort towards strengthening women's ability to use mobile payments, electronic wallets, bank online, Government online and other mobile and digital banking services. Considering the positive relationship between sustainable financing and the impact on empowering women, local and regional authorities should also make more effort towards increasing accessibility of women to loans, and savings opportunities, grants etc., specifically formal credit facilities, however special care should be paid to access towards microfinance services since the microfinance sector was found as weaker point on empowering women. More focus should be placed in linking with fiscal support, digital finance facilities, and sustainable financing.

Besides the policy and programmatic lessons, this study offers critical lessons about grassroots implementation and capacity development efforts. While women showed strong overall empowerment, their relatively low self-confidence in entrepreneurship and their moderate community participation indicate that access to capital alone is not enough. Women need a portfolio of skills beyond just financial literacy including entrepreneurship skills, Mentorship, leadership capacity, and voice in their communities. Constraints in loan access, fear of online fraud, socio cultural restrictions and information gap on govt programs point to the need to simplify credit processes, build women's self-efficacy and digital financial literacy, capacity on digital security, make a deliberate outreach to them and communicate govt initiatives and support systems in ways they understand and relate with them. Local institutions and financial service providers can develop women-focused support mechanisms that combine financial literacy, digital skills, credit facilitation, and entrepreneurship development. Such integrated interventions can help translate fiscal and digital opportunities into sustained improvements in women's economic participation, financial autonomy, and community-level empowerment.

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