COMMUNITY-BASED DIGITAL EMPOWERMENT OF RURAL WOMEN IN SIDENRNEG RAPPANG: INTEGRATING LOCAL WISDOM AND INSTITUTIONAL SUPPORT FOR SUSTAINABLE MSMES

Abstract

The empowerment of rural women through community-based digitalization has emerged as a crucial agenda in the context of inclusive and sustainable development. Despite its potential to enhance women's participation in entrepreneurship and village governance, empowerment efforts are often constrained by structural barriers, patriarchal norms, and a persistent digital divide. This study aims to analyze the dynamics of rural women's empowerment by integrating community participation, digital literacy, and local wisdom into a single framework. Employing a qualitative approach, the research combines phenomenological and ethnographic methods through in-depth interviews, focus group discussions, and participatory observation. Additional data were obtained from policy documents, community actors, and media sources. Data analysis was conducted using NVivo 12 Plus through thematic coding and network analysis to map actors, relationships, and supporting factors. The findings reveal that rural women's micro and small enterprises (MSMEs) are embedded within a collaborative ecosystem shaped by local wisdom, community participation, and governmental support. Local wisdom plays a central role in sustaining cultural identity and product innovation, while empowerment initiatives strengthen financial literacy and market access. Digitalization, although still limited, emerges as a catalyst for expanding entrepreneurial opportunities and strengthening community-based collaboration. Network analysis highlights the indirect but significant role of local governments and communities in reinforcing empowerment and digital adoption among women entrepreneurs. This study concludes that integrating community-based empowerment with digitalization and local cultural resources fosters an inclusive, adaptive, and sustainable development model. The research contributes to the discourse on gender and digital transformation by demonstrating how empowerment strategies can simultaneously address socio-cultural constraints, economic marginalization, and technological disparities in rural contexts.

1

2 ……………………………………………………………………………………………….....

3 **Introduction:-**

4 Village women's empowerment through community-based digitalization is becoming an increasingly urgent topic to
5 be researched because of its impact on social, economic, and cultural transformation. Studies in China show that the
6 digital economy increases women's participation in rural tourism, while in Indonesia digital literacy has been proven
7 to expand the entrepreneurial capacity of rural women [1]. However, the gender-layered digital divide is still a
8 significant barrier, especially in the Global South region [2]. The novelty of this research emphasizes the
9 simultaneous integration of community, technology, and gender equality. Village women still face various structural
10 and cultural obstacles that hinder their empowerment process. Patriarchal norms and cultural values often limit
11 women's access to education, credit, and paid work, as is the case in Ghana and Pakistan [3]. In Indonesia, similar
12 obstacles can be seen in limited access to land and financial capital [4]. In addition, the digital divide and low
13 technological literacy further worsen the position of women in village development [5][6] . These obstacles point to
14 the complexity of the problem that needs to be addressed immediately. Although the empowerment of village
15 women has been extensively researched, various limitations still hinder its effectiveness. Skills development
16 programs are often not aligned with job creation, making it difficult for women to use their skills productively [7].
17 The measurement index of women's empowerment is still partial and lacking multidimensional [8]. In addition,
18 traditional gender roles limit women's autonomy and decision-making capacity in rural communities [9]. The
19 ongoing digital divide further deepens the social exclusion of rural women[10] [11].

20 Village women face layered barriers that hinder their empowerment, ranging from limited access to resources,
21 gender discrimination, to the digital divide. Skills programs are often not connected to job creation, making women's
22 potential not optimal [12]. The existing empowerment index is also still partial and does not reflect the complexity

23   of rural realities [13]. In addition, traditional norms limit women's autonomy and decision-making capacity [14],
24   while the digital divide exacerbates their social exclusion [15] [16]. Village women's empowerment still faces
25   aumber of fundamental problems that need to be addressed immediately. First, upskilling programs are often
26   inaligned with the creation of decent jobs, so women are unable to make the most of their economic potential [17].
27   Second, existing empowerment measures are still partial and do not capture the complexity of rural social realities
28   [18]. In addition, traditional gender roles limit women's autonomy and decision-making capacity [19], while the
29   digital divide further exacerbates their exclusion from development [20] [21]. The main problem in community-
30   based village women's empowerment and digitalization lies in limited access to economic, political, and social
31   resources. The existing empowerment index is still partial and does not fully reflect the complexity of rural realities
32   [22]. Another obstacle can be seen from the lack of sustainable entrepreneurial opportunities due to structural and
33   cultural constraints [23]. In addition, the low political participation of village women in self-help groups limits their
34   autonomy in decision-making [24], while access to rural credit remains a significant challenge [25].

35   Research on community-based village women's empowerment and digitalization has high significance because it
36   contributes directly to economic, social, and sustainability development. Women's empowerment has been shown to
37   increase household income, decision-making capacity, and community well-being [26] [27] . The novelty of this
38   research lies in the simultaneous integration of digital and community approaches, which was rarely done before.
39   Studies also show that digital literacy and entrepreneurship can strengthen women's participation in village
40   economic transformation [28][29], while promoting sustainable gender equality [30].

41

Materials and methods

43   This research approach uses qualitative methods to explore in depth the experiences and dynamics of community-
44   based village women's empowerment and digitalization. Phenomenological study through semi-structured
45   interviews effectively understands the adoption of digital technology by rural women entrepreneurs [31] . The
46   ethnographic approach highlights the digital literacy practices of village women in the local social and economic
47   context, thus showing the significant role of digital literacy in the sustainability of life [32]. In addition, a case-based
48   analysis of rural digital economy shows the economic and technological dimensions as the core of women's
49   empowerment [33]. The data collection techniques in this study combine several complementary qualitative
50   approaches. In-depth interviews were used to explore the experiences and challenges of village women in running
51   entrepreneurship and understand the influence of socio-cultural factors [34][35]. Focus Group Discussions (FGDs)
52   are held to gather collective views and assess community needs in a participatory manner [36]. In addition,
53   participatory observation is applied to capture the dynamics of social interaction and the implementation of
54   community-based empowerment programs in a more comprehensive local context [37].

55   The sources of information in community-based village women's empowerment research and digitalization can be
56   classified into three main categories. First, regulations and policies that include government reports and official
57   documents are used to assess the implementation and impact of empowerment programs [38]. Second, information
58   from field actors, such as local governments and communities, is important to understand the dynamics as well as
59   institutional coordination [39]. Third, the media and publications, including popular communication channels such
60   as radio and mobile phones, play a role in disseminating information for village women [40]. The data analysis
61   technique in this study was carried out through a thematic coding process to identify patterns of experiences and
62   perceptions of village women related to digital empowerment and community [41]. The collected data is then
63   analyzed using NVivo software to make it easier to organize, categorize, and discover relationships between themes
64   [42]. In addition, network analysis is used to map the relationships between actors in the empowerment process,
65   thereby revealing the social influences and power structures that shape inclusive digital practices [43].
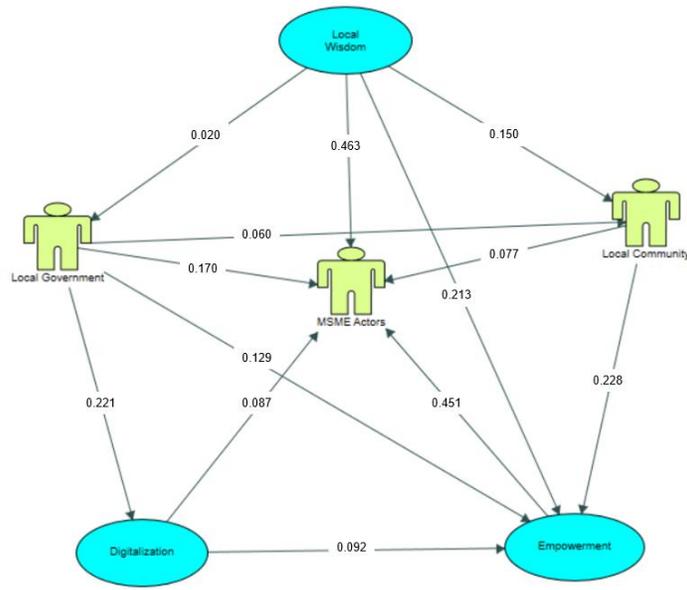
66

Results and discussion

Figure 2. Word Cloud based on analysis of policy documents, interviews, and news about MSME Empowerment

Source: Results of NVivo 12 Plus data processing by researchers (2025)

74

Figure 2 shows a visualization of MSME empowerment networks that are interconnected through actors and supporting factors. Local Wisdom is the foundation of culture that flows to communities, governments, and business actors, shaping product identity and innovation. Governments and local communities play a role as facilitators and drivers of participation, while digitalization and empowerment serve as catalysts for transformation. MSME Actors are at the center of the network, receiving influence from various directions that strengthen economic and social capacity. This pattern of relationships shows adaptive collaborative dynamics, forming an inclusive and sustainable locally-based development system.

The influence of local governments on MSME actors of 0.170 and the influence of local communities of 0.213 reflect the synergistic role in supporting the empowerment of village micro businesses. The government facilitated the promotion of traditional products at the Sidrap Night Market and Apkasi Expo, while local communities actively participated in cultural preservation and solidarity strengthening. The narrative from MSME actors such as cindolo and coconut ice sellers shows how this support increases household income and opens up space for collaboration and market access. The involvement of these two actors forms an inclusive ecosystem, strengthening MSMEs economically and socially in a sustainable manner.

Three main supporting factors showed influence on MSME actors, namely local wisdom (0.463), empowerment (0.451), and digitalization (0.087). Local wisdom encourages MSMEs to utilize traditional recipes and products such as cindolo, pipang, and Bugis weaving as identity and competitiveness. Empowerment strengthens the economic welfare of village women through financial literacy and promotional spaces such as Dhikr Akbar and Night Market. Digitalization has begun to open market access and collaboration through palm sugar PKM and Sidrap FGD. The coding narrative shows that these three variables form an innovative, inclusive, and sustainable MSME ecosystem.

The indirect relationship with MSME Actors shows that several elements play a role as strategic links that strengthen the position of MSMEs through other variable channels. For example, Local Wisdom has an influence on Empowerment of 0.228 and on Digitalization of 0.221, both of which then have an impact on MSMEs through Empowerment (0.451) and Digitalization (0.092). Similarly, Local Government affects Empowerment (0.129) and Digitalization (0.087), which indirectly strengthen MSMEs. Local Community also contributes to Empowerment

4

102 (0.077), which is a path of influence to MSMEs. Thus, values such as Local Wisdom and the role of government and
103 communities not only have a direct impact, but also strengthen MSMEs through empowerment and digitalization,
104 forming an ecosystem that is interconnected and systemically supportive.

105

Conclusions

107 This study underscores that the empowerment of rural women through community-based digitalization is not merely
108 an economic intervention but a multidimensional transformation encompassing socio-cultural, political, and
109 technological dimensions. The integration of local wisdom, digital literacy, and participatory empowerment
110 programs has proven to create an inclusive ecosystem that strengthens women's entrepreneurial capacity while
111 preserving cultural identity. Findings from thematic and network analyses demonstrate that local governments and
112 communities act as crucial enablers, facilitating access to markets, financial resources, and collective spaces for
113 innovation. At the same time, digitalization although still in its early stages emerges as a strategic catalyst that
114 expands collaboration, opens broader market opportunities, and supports the sustainability of micro and small
115 enterprises (MSMEs) managed by rural women.

116 However, persistent challenges such as patriarchal norms, partial empowerment indices, and the digital divide
117 continue to hinder optimal outcomes. These barriers indicate that empowerment initiatives must move beyond skills
118 training to include structural reforms, access to credit, and sustainable entrepreneurial pathways. Strengthening
119 women's autonomy in decision-making, coupled with targeted digital inclusion strategies, will be essential to ensure
120 long-term impact. In conclusion, this research contributes to the academic discourse on gender and digital
121 transformation by presenting an integrated model of empowerment that aligns community participation, cultural
122 resources, and technological adoption. The model offers practical implications for policymakers, development
123 practitioners, and local institutions seeking to design more inclusive, adaptive, and sustainable programs that
124 promote gender equality and rural development.

125

126

133

References

135 [1]Fauzia, A., &Hidayati, S. (2023). Improving Digital Literacy of Rural Women Entrepreneurs in Indonesia. *2023*
136 *11th International Conference on Cyber and IT Service Management, CITSM 2023*, 1–5.
137 https://doi.org/10.1109/CITSM60085.2023.10455473

138 [2] Ojo, T. A., Sotunsa, M. E., Fox, D. J., Carpenter, K., & Dunn, L. L. (2025). The Gendered Digital Divide: G20
139 Initiatives for Gender Equality, Inclusion, and Sustainability. *Journal of International Women's Studies*, *27*(3).
140 https://vc.bridgew.edu/jiws/vol27/iss3/9/

[3]Gyan, C., Malik, M., & Siddique, A. (2022). Barriers to the participation of women in community development process in rural Ghana: a regression analysis. *Development in Practice*, *32*(4), 448–459. https://doi.org/10.1080/09614524.2021.1937541

[4]Harianto, S., &Listyani, R. H. (2025). Empowering marginalised women in rural Indonesia: a multifaceted approach. *International Journal of Sociology and Social Policy*, 1–22. https://doi.org/10.1108/IJSSP-02-2025-0111

[5]Hoyos, J. A., Valencia, D. C., Piedrahita, L. B., & Jiménez, E. S. (2023). Characterization of digital inclusion processes in rural communities in the context of the SDGs. *RISTI - Revista Iberica de Sistemas e Tecnologias de Informacao*, *2023*(E56), 182–194. https://journals.sagepub.com/doi/10.1177/10185291251343357

[6]Nohuddin, P. N. E., Abdkadir, Z., & Noordin, N. A. (2025). A Framework for Bridging the Digital Divide: Improving Connectivity and Opportunities in Rural Malaysia. In *Technology for Societal Transformation: Exploring the Intersection of Information Technology and Societal Development* (pp. 215–233). Springer Nature Singapore. https://doi.org/10.1007/978-981-96-1721-0_14

[7]Gupta, S., Wei, M., Tzempelikos, N., & Shin, M. M. (2024). Women empowerment: challenges and opportunities for sustainable development goals. *Qualitative Market Research*, *27*(4), 608–630. https://doi.org/10.1108/QMR-11-2023-0160

[8]Ishfaq, S., Abedullah, &Kouser, S. (2023). Measurement and Determinants of Rural Women's Empowerment in Pakistan. *Global Social Welfare*, *10*(2), 139–152. https://doi.org/10.1007/s40609-023-00275-w

[9]Albornoz-Arias, N., Rojas-Sanguino, C., &Santafe-Rojas, A.-K. (2025). Empowerment of Rural Women Through Autonomy and Decision-Making. *Social Sciences*, *14*(8), 469. https://doi.org/10.3390/socsci14080469

[10] Mwansa, G., Ngandu, M. R., &Mkwambi, Z. (2025). Bridging the digital divide: exploring the challenges and solutions for digital exclusion in rural South Africa. *Discover Global Society*, *3*(1), 54. https://doi.org/10.1007/s44282-025-00189-2

[11] Wagg, S., Cooke, L., &Simeonova, B. (2020). Digital inclusion and women's health and well-being in rural communities. In S. J. Yates & R. E. Rice (Eds.), *The Oxford Handbook of Digital Technology and Society* (pp. 111–135). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780190932596.013.5

[12] Maurya, R. K., Maurya, S. R., &Yewale, V. (2025). Closing the Digital Gap. In *Startup-Driven E-Government* (pp. 147–182). IGI Global. https://doi.org/10.4018/979-8-3373-0817-3.ch007

[13]Islam, M. A., Olivier, P., & Varghese, D. (2024). Leaving No One Behind: An Agenda for Voice-based Engagement of Remote Communities. *Proceedings of the 13th International Conference on Information & Communication Technologies and 27 Development*, 175–191. https://doi.org/10.1145/3700794.3700812

[14]Hayden, C., & Ball-Rokeach, S. J. (2007). Maintaining the digital hub: Locating the community technology center in a communication infrastructure. *New Media and Society*, *9*(2), 235–257. https://doi.org/10.1177/1461444807075002

[15]Divekar, P., Bhatia, A., Divekar, R., & Chandani, A. (2025). Empowering Rural Women in South Asia Through Fintech: Contribution to Sustainable Development Goals and Entrepreneurial Growth. In K. M.S., X. J., & R. V.S. (Eds.), *Lecture Notes in Networks and Systems: Vol. 1319 LNNS* (pp. 1–12). Springer Science and Business Media Deutschland GmbH. https://doi.org/10.1007/978-981-96-4145-1_1

178 [16]Thomas, A. (2024). Empowering rural women in harnessing entrepreneurship for sustainable development goals
179 in the digital era. In *Empowering Women Through Rural Sustainable Development and Entrepreneurship* (pp. 179–
180 200). IGI Global. https://doi.org/10.4018/979-8-3693-6572-4.ch009

181 [17] Rakočević, L., Knežević, M., & Vujko, A. (2025). Empowering Women in Rural Montenegro: a Pathway To
182 Sustainable Rural Tourism Development. *Geojournal of Tourism and Geosites*, *59*(2), 920–929.
183 https://doi.org/10.30892/gtg.59236-1468

184 [18] Dong, H., & Khan, M. S. (2023). Exploring the Role of Female Empowerment in Sustainable Rural Tourism
185 Development: an Exploratory Sequential Mixed-Method Study. *International Journal of Professional Business
186 Review*, *8*(4), e01651. https://doi.org/10.26668/businessreview/2023.v8i4.1651

187 [19] Sarjiyanto, S., Sarwoto, S., Dio, P. E., Kadir, J. A., & Firdaus, R. B. R. (2026). The Role of Community
188 Empowerment as Mediator on the Relationship Between Psychological, Social, and Financial Capital on Rural
189 Community Well-Being. *Journal of Population and Social Studies*, *34*, 99–117.
190 https://doi.org/10.25133/JPSSv342026.006

191 [20]Domènech, T. C. (2025). The Gender Digital Divide: Some Elements to Consider. In *Palgrave Studies in
192 Digital Inequalities: Vol. Part F742* (pp. 23–41). Palgrave Macmillan. https://doi.org/10.1007/978-3-031-83479-0_2

193 [21] Nielsen, M. M., &Makpor, M. E. (2021). Digital inclusion and gender-associated indicators: A critical review
194 of post-2010 literature. In L. E. (Ed.), *ACM International Conference Proceeding Series* (pp. 123–128). ACM.
195 https://doi.org/10.1145/3494193.3494211

196 [22] Ishfaq, S., Abedullah, &Kouser, S. (2023). Measurement and Determinants of Rural Women's Empowerment
197 in Pakistan. *Global Social Welfare*, *10*(2), 139–152. https://doi.org/10.1007/s40609-023-00275-w

198 [23]Divekar, P., Bhatia, A., Divekar, R., & Chandani, A. (2025). Empowering Rural Women in South Asia Through
199 Fintech: Contribution to Sustainable Development Goals and Entrepreneurial Growth. In K. M.S., X. J., & R. V.S.
200 (Eds.), *Lecture Notes in Networks and Systems: Vol. 1319 LNNS* (pp. 1–12). Springer Science and Business Media
201 Deutschland GmbH. https://doi.org/10.1007/978-981-96-4145-1_1

202 [24] Mahato, T., & Jha, M. K. (2025). Does participation in self-help groups affect the political empowerment of
203 tribal women? Evidence from India. *International Journal of Social Economics*, *52*(3), 359–374.
204 https://doi.org/10.1108/IJSE-06-2023-0489

205 [25] Da Luz Carvelli, C., & Parente, T. G. (2024). (Dis)Empowerment of Rural Women in the State of Tocantins
206 Through Access To the Public Rural Credit Policy "Pronaf." *Revista Brasileira de Gestao e Desenvolvimento
207 Regional*, *20*(2), 227–247. https://doi.org/10.54399/rbgdr.v20i2.7380

208 [26]Banerjee, S., & Alok, S. (2023). Trickle-down effect of upbringing conditions on women empowerment: A
209 study of rural India. In *Women's Empowerment for a Sustainable Future: Transcultural and Positive Psychology
210 Perspectives* (pp. 227–241). Springer International Publishing. https://doi.org/10.1007/978-3-031-25924-1_15

211 [27]Dong, H., & Khan, M. S. (2023). Exploring the Role of Female Empowerment in Sustainable Rural Tourism
212 Development: an Exploratory Sequential Mixed-Method Study. *International Journal of Professional Business
213 Review*, *8*(4), e01651. https://doi.org/10.26668/businessreview/2023.v8i4.1651

214 [28] Alshebami, A. S., Fazal, S. A., Aljarodi, A. M., Zarin, N., Ali Seraj, A. H., & Alzain, E. (2025). The influence
215 of access to technology and digital literacy on female empowerment and digital entrepreneurial intentions. *Problems
216 and Perspectives in Management*, *23*(3), 1–12. https://doi.org/10.21511/ppm.23(3).2025.01

217   [29]Javed, A., Ashraf, M. Z., & Shahbaz, S. (2025). Digital Transformation and Its Influence on Women's
218   Economic Empowerment in Pakistan. *Sustainable Futures*, *10*, 101092. https://doi.org/10.1016/j.sftr.2025.101092

219   [30]Pawluczuk, A., Lee, J. H., &Gamundani, A. M. (2021). Bridging the gender digital divide: an analysis of
220   existing guidance for gender digital inclusion programmes' evaluations. *Digital Policy, Regulation and Governance*
221   ,*23*(3), 287–299. https://doi.org/10.1108/DPRG-11-2020-0158

222   [31] Reyes Ayala, L., Morales Sáenz, F. I., & Silva Lavín, A. H. (2025). Digital empowerment in the countryside:
223   Technological experiences of rural women entrepreneurs. *Revista de CienciasSociales*, *31*(11), 112–124.
224   https://www.emerald.com/ijoa/article-abstract/doi/10.1108/IJOA-01-2025-5120/1268324/Digital-empowerment-of-
225   women-entrepreneurs-in?redirectedFrom=fulltext

226   [32] Zimba, J. (2024). Literacies and learning: An exploration into women's digital literacy practices and sustainable
227   livelihoods in rural Zambia. *Australian Journal of Adult Learning*, *64*(3), 324–346.
228   https://ajal.net.au/downloads/literacies-and-learning-an-exploration-into-womens-digital-literacy-practices-and-
229   sustainable-livelihoods-in-rural-zambia/

230   [33]Wang, M., Su, M., Wang, Y., Dong, H., & Zhang, M. (2025). Influence of the digital economy on women's
231   empowerment in rural tourism destinations: A case study of Yudong Village in Quzhou City, Zhejiang Province.
232   *Resources Science*, *47*(4), 757–770. https://doi.org/10.18402/resci.2025.04.07

233   [34] Karami, M., Karimi, Y. M., Akbari, M., &Gnoth, J. (2024). Rural women entrepreneurship: when femininity
234   compensates for institutional hurdles. *Asian Business and Management*, *23*(5), 738–766.
235   https://doi.org/10.1057/s41291-024-00283-4

236   [35] Nguyen, C., Frederick, H., & Nguyen, H. (2014). Female entrepreneurship in rural Vietnam: An exploratory
237   study. *International Journal of Gender and Entrepreneurship*, *6*(1), 50–67. https://doi.org/10.1108/IJGE-04-2013-
238   0034

239   [36]Poultourtzidis, I., Marina Katsouli, A., Anastasiades, S., Makroglou, S., Sidiropoulos, E., &Bamidis, P. D.
240   (2022). Supporting Digital Inclusion and Web Accessibility for People with Cognitive Disabilities. In S. B., W. P.,
241   D. F., G. C., L. J.-D., L. J.-D., L. J.-D., P. S., P. A., R. B., R. B., S. L., U. A., U. A., B. A., & G. P. (Eds.), *Studies in*
242   *Health Technology and Informatics* (Vol. 294, pp. 619–623). IOS Press BV. https://doi.org/10.3233/SHTI220543

243   [37] Afnan, D., Wijaya, M., Kartono, D. T., & Wibowo, A. (2025). Community empowerment model in the refuse-
244   derived fuel waste management program in Indonesia. *Cleaner Waste Systems*, *12*, 100364.
245   https://doi.org/10.1016/j.clwas.2025.100364

246   [38]Ray, N., Patra, N., Sharma, S., Ghosh, D., Bose, I., & Kler, R. (2025). Empowering women: Challenges,
247   progress. In *Indigenous Empowerment through Human-Machine Interactions: The Challenges and Strategies from*
248   *Business Lenses* (pp. 19–33). Emerald Publishing Limited. https://doi.org/10.1108/978-1-83608-068-820251002

249   [39]Mamu, A., Rakhmat, Yunus, &Allorante, A. I. (2020). Policy model implementation for village community
250   empowerment in Wajo Regency. *International Journal of Innovation, Creativity and Change*, *10*(12), 129–139.
251   https://www.ijicc.net/images/vol10iss12/101212_Mamu_2020_E_R.pdf

252   [40]Guite, F., Scholar, P. D. R., Hangsing, D. P., Deb, J., & Scholar, P. D. R. (2021). Rural Women Health
253   Information Sources and Channels in Manipur, North East India. *Library Philosophy and Practice*, *2021*, 1–18.
254   https://digitalcommons.unl.edu/libphilprac/4686/

255   [41] Kandpal, V. (2022). Socio-economic development through self-help groups in rural India – a qualitative study.
256   *Qualitative Research in Financial Markets*, *14*(5), 621–636. https://doi.org/10.1108/QRFM-10-2021-0170

257 [42]López-Estrada, P., Fernández-Mora, Lady, & Pérez-Hidalgo, E. (2023). Empowered Women in a Rural
258 Community: A Case Study in Sarapiquí, Costa Rica. *Qualitative Report*, *28*(10), 2848–2870.
259 https://doi.org/10.46743/2160-3715/2023.6677

260 [43] Verhoeven, D., Musial, K., Hambusch, G., Ghannam, S., & Shashnov, M. (2022). Net effects: examining
261 strategies for women's inclusion and influence in ASX200 company boards. *Applied Network Science*, *7*(1), 48.
262 https://doi.org/10.1007/s41109-022-00490-y

263

264