

THE IMPACT OF KERALA STARTUP MISSION ON STRENGTHENING THE DIGITAL ENTREPRENEURIAL ECOSYSTEM FOR WOMEN IN KERALA

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Abstract

This study examines Kerala Start-up Mission's (KSUM) contribution to the development of Kerala's digital entrepreneurial ecosystem for women. Women entrepreneurs confront challenges like poor networks, restricted access to capital, and technological barriers in the context of the growing digital transformation. Primary data were collected from 100 women entrepreneurs who were registered with KSUM across sectors such as IT, fintech, edtech, and digital services. Statistical techniques such as ANOVA, mean analysis, and correlation were used to assess the efficacy of institutional support systems. The findings show that KSUM significantly improves leadership and digital skills, strengthens entrepreneurial abilities, and makes it easier to reach market and financial opportunities. The most effective ecosystem components were found to be networking and incubation assistance. The study also shows that enhanced sustainability and entrepreneurial performance are correlated with increased institutional support. The study offers policymakers useful information to support women-led digital businesses and emphasises the significance of structured institutional interventions in fostering gender-inclusive entrepreneurship.

Keywords:- Digital Entrepreneurial Ecosystem, Women Entrepreneurs, Start-up Policy, Institutional Support, Kerala Start-up Mission.

The transformation of global economies through digital technology has profoundly transformed the nature of entrepreneurship, giving rise to digital entrepreneurial ecosystems that support innovation, scalability, and knowledge-driven growth. In emerging economies, digital startups have become major

engines of economic expansion, employment generation, and technological advancement.

Women entrepreneurs are a growingly significant yet underrepresented group in this changing environment. Women still encounter a number of obstacles when starting and maintaining digital businesses, despite advancements in education and

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digital access. These obstacles include restricted exposure to high-growth technological sectors, weaker professional networks, limited access to financing, and lower risk tolerance influenced by socio-cultural norms. Strong institutional structures that encourage equitable involvement in innovation ecosystems are necessary to address these obstacles.

Over the past ten years, Kerala's start-up environment has grown rapidly as a result of progressive legislation and infrastructural development. Kerala Start-up Mission (KSUM), the Kerala government's go-to organization for entrepreneurship development and incubation initiatives, is a crucial institutional player in this change. Through incubation centres, innovation awards, seed capital facilitation, mentorship programs, networking platforms, and support for digital infrastructure, KSUM strategically contributes to the growth of the start-up ecosystem. The company wants to foster innovation in industries like information technology, finance, edtech, biotechnology, and digital services by establishing a dynamic and welcoming entrepreneurial environment.

Although KSUM has implemented a number of focused initiatives to promote women entrepreneurs, such as specialized mentorship and financial support systems, there is still a dearth of empirical research on how well these interventions support the digital entrepreneurial ecosystem for women in particular. Access to capital, operational scalability, market penetration, technology acceptance, and sustainability are all issues that women-led digital companies frequently face. Assessing

whether ecosystem assistance mechanisms effectively address these gender-specific issues and significantly improve firm performance and long-term growth is therefore crucial.

The influence of Kerala Start-up Mission on boosting the digital entrepreneurial ecosystem for women in Kerala is the main emphasis of this study. The research attempts to offer evidence-based insights into the efficacy of state-led programs by examining digital preparedness, financial accessibility, entrepreneurial competencies, institutional support mechanisms, and sustainability results. By emphasising how institutional support can lessen structural disparities and increase women's involvement in innovation-driven businesses, the study contributes to the wider discussion on gender-inclusive entrepreneurial ecosystems. It is anticipated that the results will help policymakers, academics, and ecosystem stakeholders create more inclusive and responsive initiatives that encourage women in emerging economies to engage in sustainable digital entrepreneurship.

Review of Literature

Entrepreneurial ecosystems are essential for promoting innovation and business growth. The significance of human capital, innovation infrastructure, and institutional quality in fostering entrepreneurship is emphasised by Audretsch and Belitski (2017).

Isenberg (2011) presented the ecosystem approach, emphasising important areas including markets, policy, finance, and culture. Brush, de Bruin, and

Welter (2009) developed the 5M framework in the context of women entrepreneurs, integrating social and cultural aspects into entrepreneurial analysis. According to Minniti and Naudé (2010), cultural norms and institutional quality have a big impact on women's involvement in entrepreneurship. Biswas (2021) observed that, when assisted by supportive institutional frameworks, Indian women entrepreneurs exhibit significant potential for innovation.

Malecki (2018) emphasised how local networks and ecosystems influence entrepreneurial success on a regional level. According to reports from KSUM (2023) and the Government of Kerala (2023), Kerala has created a supportive startup environment with measures specifically for women, such as funding, incubation support, and mentorship.

This study aims to address the lack of empirical data regarding the efficacy of such institutional initiatives for women-led digital companies.

Need and Significance of the Study

In emerging nations, the swift expansion of digital entrepreneurial ecosystems has created new opportunities for innovation, job creation, and inclusive economic growth. Nonetheless, there are still many structural obstacles that women entrepreneurs must overcome, such as restricted financial resources, a lack of digital skills, a lack of networking opportunities, and socio-cultural limitations. Through financial facilitation, mentorship, incubation support, and improved digital infrastructure, Kerala Start-up Mission (KSUM) is a key player

in promoting start-up development in Kerala. Despite these efforts, little empirical study has been done to determine how well KSUM supports the ecosystem of digital entrepreneurship for women in particular. As a result, this study is important because it assesses how institutional support systems might encourage gender-inclusive entrepreneurship. The findings will provide valuable insights for policymakers, academic researchers, and ecosystem stakeholders to design targeted interventions that enhance women's participation, improve start-up sustainability, and promote inclusive economic growth.

Statement of the Problem

Despite the establishment of many institutional mechanisms aimed at fostering entrepreneurship in Kerala, women-led digital companies still encounter difficulties in obtaining funding, expanding their operations, breaking into competitive markets, and efficiently using digital technologies. Although KSUM has put in place a number of initiatives to foster innovation and start-up expansion, it is still unknown how much of these impediments are gender-specific. The effectiveness of ecosystem support mechanisms, such as finance assistance, networking platforms, mentorship, and incubation, in enhancing women's digital entrepreneurial talents and business success has not been thoroughly examined. Examining how well KSUM's programs improve resource accessibility, entrepreneurial competency, digital preparedness, and sustainability outcomes for women-led digital enterprises in Kerala

is the primary concern that this study intends to address.

Scope of the Study

The scope of the study is limited to women entrepreneurs who are registered with the Kerala Startup Mission who operate in digital sectors like fintech, edtech, IT, and digital services. The study focuses on evaluating important aspects such as start-up performance outcomes, networking opportunities, digital preparedness, access to financing, entrepreneurial skill development, and institutional support mechanisms. It uses a quantitative research methodology, supported by relevant secondary sources and primary data gathered via structured questionnaires. The study's geographical scope is restricted to Kerala, and its analytical focus is on assessing KSUM's contribution to boosting the digital entrepreneurial ecosystem for women, without going into more general national or international comparisons.

Objectives of the Study

1. To assess the role of Kerala Startup Mission in enhancing the digital and leadership skills of women entrepreneurs.
2. To examine the effectiveness of KSUM's ecosystem support mechanisms such as incubation, mentorship, networking, and funding facilitation for women-led start-ups.
3. To evaluate the level of entrepreneurial competency among women entrepreneurs supported by KSUM.

4. To analyse the accessibility of financial resources and market opportunities for women-led digital enterprises under KSUM.

Research Methodology

This study employs a quantitative and analytical research design to evaluate Kerala Start-up Mission's (KSUM) contribution to the assistance of women entrepreneurs in the digital industry. Using stratified random sampling, a structured questionnaire was used to gather primary data from 100 women entrepreneurs who were registered with KSUM.

Likert-scale questions measuring market opportunities, financial accessibility, entrepreneurial skills, and institutional support were included in the questionnaire. Journals, government papers, and KSUM publications were the sources of secondary data.

With the help of SPSS software, statistical techniques including percentage analysis mean, standard deviation, correlation, and one-way ANOVA were used to examine the data. The study is restricted to Kerala and only looks at KSUM-supported women-led digital businesses.

Results and Discussion

The analysis and interpretation of the study are as follows: -

The Pearson correlation analysis was employed to assess the relationship between KSUM institutional support and the enhancement of digital and leadership skills among women entrepreneurs. The results show a strong positive correlation

between KSUM support and digital skills ($r = 0.618, p < 0.01$), indicating that higher levels of incubation, mentorship, and training assistance are associated with improved digital competencies (Table 1).

Similarly, a moderate positive correlation was shown between KSUM support and leadership skills ($r = 0.574, p < 0.01$), suggesting that institutional support mechanisms significantly contribute to the development of leadership capabilities among women entrepreneurs.

Moreover, digital skills and leadership skills show a strong positive correlation ($r = 0.689, p < 0.01$), indicating that enhancement in digital proficiency is positively associated with leadership development. Since all relationships are

statistically significant at 1 per cent level, the null hypothesis of no relationship is rejected. Therefore, it can be concluded that Kerala Start-up Mission plays a significant role in enhancing both digital and leadership skills of women entrepreneurs.

The mean score ranking shows that networking support is ranked first, indicating that it is perceived as the most effective ecosystem support mechanism provided by KSUM (Table 2). Incubation support ranks second, indicating strong structural and infrastructural assistance extended to women entrepreneurs. Although mentorship and funding facilitation are also rated positively, they rank comparatively lower than networking and incubation support. However, it is

Table 1
Correlation between KSUM Support and Skill Enhancement among Women Entrepreneurs

Variables	Mean	SD	1	2	3
KSUM Institutional Support	3.82	0.65	1		
Digital Skills	3.90	0.60	0.618**	1	
Leadership Skills	3.85	0.63	0.574**	0.689**	1

Source: Primary Data ** Correlation is significant at the 0.01 level (2-tailed)

Table 2
Effectiveness of KSUM’s ecosystem support mechanisms

Support Mechanism	Mean Score	Rank
Networking Support	3.91	1
Incubation Support	3.88	2
Mentorship Support	3.81	3
Funding Facilitation	3.80	4

Source: Primary Data

important to note that the entire mean scores fall within the “High Effectiveness” range (3.41–4.20), representing that each ecosystem support mechanism provided by KSUM is perceived as highly effective by the respondents.

The overall mean score (3.77) indicates that women entrepreneurs supported by the Kerala Startup Mission demonstrated a moderately high level of entrepreneurial competency (Table 3). This indicates that the respondents generally agreed that they possess key competencies such as opportunity identification, risk-taking ability, innovation, adaptability, networking skills, and strategic planning capability.

The calculated F value (41.15) is significant at the 5per cent level ($p < 0.05$) (Table 4). This indicates that there is a statistically significant difference in entrepreneurial competency levels among women entrepreneurs based on the level of support received from KSUM. Higher levels of institutional support are associated with higher entrepreneurial competency scores.

The majority of respondents (65 per cent) either agreed or strongly agreed that financial resources are accessible under Kerala Start-up Mission. Only 17 per cent expressed dissatisfaction (Table 5). This indicates a generally positive perception regarding financial accessibility, though a

Table 3
Descriptive Statistics – Entrepreneurial Competencies

Statement (Short Title)	N	Mean	Std. Deviation
Opportunity Identification	100	3.74	0.68
Risk-Taking Ability	100	3.61	0.72
Problem-Solving Skill	100	3.89	0.64
Networking Ability	100	3.70	0.70
Adaptability to Change	100	3.95	0.59
Innovative Thinking	100	3.82	0.66
Strategic Planning Ability	100	3.68	0.71
Overall Competency Score	100	3.77	0.52

Source: Primary Data

Table 4
One-Way ANOVA – Entrepreneurial Competencies

Source of Variation	Sum of Squares	df	Mean Square	F Value	Sig. (p-value)
Between Groups	12.84	2	6.42	41.15	0.000
Within Groups	15.13	97	0.156		
Total	27.97	99			

Source: Primary Data

moderate percentage (18 per cent) remained neutral.

A significant majority (75 per cent) of women entrepreneurs agreed or strongly agreed that KSUM provides adequate market opportunities (Table 6). Only 11 per cent expressed negative opinions. This suggests that market access support is perceived to be strong and effective.

Major Findings of the Study

- 1. Strong positive correlations show that KSUM significantly contributes

to women entrepreneurs’ development of digital and leadership abilities.

- 2. Ecosystem support mechanisms such as networking, incubation, mentorship, and funding facilitation are perceived as highly effective, with networking support ranked highest.
- 3. Women entrepreneurs have a moderately high degree of entrepreneurial competency, especially in terms of flexibility, creativity, and problem-solving.

Table 5
Accessibility of Financial Resources

Response Category	Frequency	Percentage
Strongly Disagree	5	5
Disagree	12	12
Neutral	18	18
Agree	40	40
Strongly Agree	25	25
Total	100	100

Source: Primary Data

Table 6
Market Opportunities

Response Category	Frequency	Percentage
Strongly Disagree	3	3
Disagree	8	8
Neutral	14	14
Agree	45	45
Strongly Agree	30	30
Total	100	100

Source: Primary Data

4. The results of the ANOVA show that entrepreneurial competency levels have undergone significant improvement by higher institutional support.
5. A majority of respondents felt they had good access to financial resources, while some said that finance accessibility needed to be increased.
6. KSUM's market potential support is regarded as strong, suggesting strong ecosystem interconnections.

Recommendations

- Gender-specific funding programs with simplified access procedures should be implemented by KSUM.
- Advanced digital skill training programs like AI, data analytics, fintech tools etc. should be developed.
- To enhance market access, strengthen industry-start-up collaboration platforms.
- Establish special incubation hubs for women in each district.
- Enhance the mentorship quality by connecting entrepreneurs with industry experts and successful founders.
- Provide incentives for women-led enterprises to grow through performance-based investment.
- Conduct awareness campaigns in rural and semi-urban areas to increase participation.

- Encourage global exposure programs for women entrepreneurs by forming partnerships.

Conclusion

The study concludes that Kerala Start-up Mission plays a crucial and transformative role in strengthening the digital entrepreneurial ecosystem for women in Kerala. The findings clearly indicate that its ecosystem support mechanisms such as incubation, mentorship, networking platforms, and funding facilitation are perceived as highly effective by women entrepreneurs. The overall high mean scores and positive responses regarding financial accessibility and market opportunities demonstrate that KSUM has successfully created an enabling environment that supports innovation, skill development, and business expansion among women-led digital startups.

Furthermore, the statistical analysis confirms that higher levels of institutional support are significantly associated with stronger entrepreneurial competencies. Women entrepreneurs receiving greater support from KSUM exhibit better adaptability, problem-solving ability, and strategic orientation, which are essential for sustaining digital enterprises in competitive markets. Although the findings are positive, there remains scope for enhancing customized financial instruments and advanced mentorship initiatives. Overall, the study affirms that structured state-led interventions can effectively reduce gender disparities and promote inclusive, innovation-driven economic growth.

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