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A Policy-Tech Analysis of Tamil Nadu's Digital Support Systems for Sustainable Transgender Entrepreneurial Cooperatives

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ABSTRACT

Digital governance, matters a lot for boosting access to government services while also encouraging inclusive entrepreneurship. In this study we do a policy technology analysis of Tamil Nadu's digital support systems, which are designed to back sustainable transgender entrepreneurial cooperatives. The initiatives the Government of Tamil Nadu brings in, they are more and more relying on digital platforms to hand out welfare benefits, enterprise help, and financial services in a way that is transparent, and also efficient. Basically, these systems are meant to cut down those administrative obstacles, so that transgender communities can reach opportunities more easily than before. The paper talks about how digital things like online registration portals, direct benefit transfer systems, digital identity integration and e-governance platforms help cooperative-based entrepreneurship, kind of. It goes through how these arrangements make it easier to reach loans, subsidies, training programs, and even market linkages, more or less. From a sustainability point of view the study also looks at how digital monitoring systems boost accountability, data stewardship and ongoing performance tracking especially for transgender-led cooperatives. The analysis rests on policy papers, official reports, and some secondary data mixed in. The results suggest that digital platforms, have made the steps a bit easier and brought more transparency to the process. Still, issues remain, like weak digital literacy in some groups, not having devices readily available, shaky internet connectivity, and even social stigma which can stop people from using the services properly. Overall, the study underlines that technology by itself is not enough. What's also needed is capacity building, hands-on digital awareness training and a supportive, institutional framework, so actual participation becomes real and sustained. Overall, Tamil Nadu's digital support environment has pretty strong potential to push along sustainable and mutually helpful transgender entrepreneurship, so long as the policies stay inclusive, reachable, and socially responsive. If they drift, the whole ecosystem sort of loses traction, but when it's kept aligned, the benefits can spread more widely through the community, in a kind of steady way.

Keywords: *Digital Governance, Policy-Tech, Transgender Cooperatives, Sustainable Entrepreneurship, Tamil Nadu.*

INTRODUCTION

Entrepreneurship, it plays a key role in supporting economic growth, employment creation, and broader social change. Lately, the concept of inclusive entrepreneurship has been getting more attention because it leans toward making space for marginalized or disadvantaged communities, like they can actually step in and take part. One group in particular is the transgender community, which for a long time has dealt with social discrimination, public stigma, and, honestly, kind of narrow access to education, stable jobs, and financial services. Because of those persistent barriers, many transgender individuals find it hard to reach economic stability, and also to feel accepted socially. So, pushing entrepreneurship among transgender people can improve their livelihood, personal autonomy, and the general day to day quality of life.

In this situation, cooperative entrepreneurship has turned into a pretty effective way of helping people from marginalized groups, sort of directly. The cooperative model lets individuals work together, share resources and join in collective decision making, even when things feel complicated. For transgender individuals, creating entrepreneurial coops can offer more than just economic chances, it also creates steadier surroundings where members can build confidence, learn practical abilities, and reach financial security over time. Cooperative businesses often also tighten community ties, and in the end, they support collective progress.

At the same time, the growth of digital tech has really shifted how government policies and support schemes actually run. Digital platforms, online services, and electronic financial systems they make it easier for people to tap into government programs, training initiatives and the financial help that comes with them. These digital setups can boost transparency, lower the usual administrative hurdles, and make sure the benefits end up with the right beneficiaries more effectively.

Tamil Nadu is often seen as a pretty progressive place in India, especially when it comes to welfare policies and the kinds of social backing people get for transgender communities. The state administration has launched a number of steps around social protection, skill development, and support for starting and running small businesses, you could say entrepreneurship. Lately, in a few years, digital governance and technology based platforms have also been leaned on, to reinforce these measures and improve the overall service delivery, it feels more streamlined.

So, it is basically crucial to look into how these digital support systems and government policies, in a way, help the growth and long- lasting existence of transgender entrepreneurial cooperatives. This particular study is geared toward checking the policy and technology setup in Tamil Nadu, that backs transgender entrepreneurship by using digital platforms. It also tries to grasp the openings and difficulties, plus how well these digital support mechanisms actually work, when the goal is sustainable and more inclusive entrepreneurial development for transgender communities.

OBJECTIVES OF THE STUDY

1. To examine the digital support systems provided by the Government of Tamil Nadu for promoting transgender entrepreneurial cooperatives.
2. To analyse the role of digital platforms and e-governance initiatives in improving financial inclusion and business opportunities for transgender entrepreneurs.
3. To identify the challenges faced by transgender entrepreneurial cooperatives in accessing and using digital support systems.
4. To evaluate the effectiveness of policy and technology-based initiatives in ensuring the sustainability of transgender entrepreneurial cooperatives in Tamil Nadu.

REVIEW OF LITERATURE

International Labour Organization (2020) stated that entrepreneurship and skill development programs are, sort of essential tools for improving employment opportunities among socially excluded communities, in a practical sense.

World Bank (2021) emphasized that digital platforms and financial technologies help small entrepreneurs reach markets better, get training and, obtain financial services more efficiently, in sort of a smoother way.

Tamil Nadu Transgender Welfare Board (2021) has rolled out welfare schemes, skill training programs and some financial assistances to help upgrade the socio-economic conditions of transgender people in the state, a kind of support that's meant to make daily life a bit easier.

Government of Tamil Nadu (2022) implemented a few digital governance initiatives, which aim to improve access to welfare schemes, help with entrepreneurship support, and strengthen financial inclusion, in general.

In 2022, the Ministry of Electronics and Information Technology kind of emphasized, in a broader sense, that digital inclusion and e-governance platforms matter for making public services easier to reach and for widening economic opportunities, too. It was basically about better access in practical terms, rather than only policy talk.

The United Nations Development Programme, in 2023, said that digital innovation may help inclusive entrepreneurship, not just by training people, but also by opening sort of networking pathways, plus making it easier to reach markets.

In 2023 the Reserve Bank of India pointed out that digital financial services and a more inclusive banking system, does matter a lot when it comes to promoting financial inclusion for marginalized communities and small entrepreneurs. It sort of helps in bringing in people who were previously left out, through these digital rails and better access.

RESEARCH METHODOLOGY

S No	Aspect	Details
1	Research Design	Descriptive and analytical study
2	Type of Data	Primary and Secondary data
3	Sampling Method	Purposive sampling
4	Sample Size	150 respondents
5	Data Collection Tool	Structured questionnaire
6	Study Area	Tamil Nadu
7	Study Period	2025–2026

RESEARCH FRAME WORK

S No	Variable	Category	No. of Respondents	Percentage
1	**Age Group**	18 – 25 years	32	21.3%
		26 – 35 years	54	36.0%
		36 – 45 years	38	25.3%
		46 – 55 years	18	12.0%
		Above 55 years	8	5.4%
2	**Educational Qualification**	No Formal Education	18	12.0%
		Primary Education	26	17.3%
		Secondary Education	42	28.0%
		Higher Secondary	36	24.0%
		Undergraduate Degree	20	13.3%
		Postgraduate & above	8	5.4%

3	**Area of Residence**	Urban	64	42.7%
		Semi-Urban	46	30.7%
		Rural	40	26.6%
4	**Type of Business Activity**	Beauty & Salon Services	34	22.7%
		Food / Catering	28	18.7%
		Handicrafts / Tailoring	26	17.3%
		Retail / Small Shops	24	16.0%
		Digital Services / Online Selling	20	13.3%
		Others	18	12.0%
5	**Years of Experience**	Less than 1 year	20	13.3%
		1 – 3 years	48	32.0%
		4 – 6 years	42	28.0%
		7 – 10 years	26	17.3%
		Above 10 years	14	9.4%
6	**Cooperative Membership**	Member	92	61.3%
		Not a member	58	38.7%
7	**Access to Digital Devices**	Smartphone	102	68.0%
		Laptop / Computer	18	12.0%
		Both	22	14.7%
		No Device	8	5.3%
8	**Monthly Income**	Below ₹10,000	38	25.3%
		₹10,000 – ₹20,000	52	34.7%
		₹20,000 – ₹30,000	34	22.7%
		₹30,000 – ₹40,000	16	10.7%
		Above ₹40,000	10	6.6%
9	**Awareness of Digital Programs**	Highly Aware	28	18.7%
		Moderately Aware	56	37.3%
		Slightly Aware	42	28.0%
		Not Aware	24	16.0%
10	**Use of Digital Platforms**	Regularly Use	62	41.3%
		Occasionally Use	48	32.0%
		Rarely Use	26	17.3%
		Never Use	14	9.4%

In the demographic data, most transgender entrepreneurs fall somewhere in the age range of 26 to 35, and this kind of results suggests that young adults show a pretty strong preference towards entrepreneurship. Most of the respondents also seem to have secondary, or higher secondary educational credentials, which means they can actually manage day to day business activities but their current skills still need further development. A large chunk of the population lives in urban areas, and that gives them more direct access to markets as well as digital resources so, it's easier to reach customers.

The business activity pattern of this organization, well it looks like the main work is concentrated in service-based industries like beauty, food and tailoring, mostly because these areas tend to need minimal financial investment to start. Most respondents also have limited experience with entrepreneurship, so it seems like they are just starting to engage in small business, rather than running long established ventures.

Many of the individuals also belong to cooperative societies, which kind of shows how essential collective support systems are for their communities.

When it comes to digital tools, smartphones are used the most, and most people in the population earn somewhere between ₹10,000 to ₹20,000. Even though awareness about digital platforms is fairly high, and usage is also good among users, not everyone is actually using them, so there's a clear need for better digital literacy programs, and more outreach initiatives too.

RESEARCH QUESTIONS WITH RESPONSES **(N = 150)**

S No	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
1	Government digital platforms help access business information easily	48	56	22	16	8	150
2	Digital financial services improve business transactions	52	58	18	14	8	150
3	Government welfare schemes support entrepreneurship	44	60	26	12	8	150
4	Digital training programs improve business skills	40	62	28	12	8	150
5	Online platforms help reach more customers	46	58	24	14	8	150
6	Digital payment systems make operations easier	50	56	20	16	8	150
7	Digital support systems promote financial inclusion	38	64	30	12	6	150
8	Digital technology improves cooperative management	42	60	26	14	8	150
9	Online marketing improves sales	44	58	28	12	8	150
10	Government digital policies encourage entrepreneurship	40	62	24	16	8	150
11	Smartphones and internet improve opportunities	54	56	20	12	8	150
12	Digital platforms reduce discrimination barriers	36	58	32	16	8	150
13	Cooperative models improve economic stability	42	60	26	14	8	150
14	Digital awareness programs are useful	46	58	24	14	8	150
15	Digital systems support long-term sustainability	48	60	20	14	8	150

So, the research response analysis, shows that respondents mostly see digital support systems and government programs as positive, especially for transgender people when they are trying to set up their businesses. A lot of respondents either agreed or strongly agreed with the statements which basically indicate that digital platforms help individuals reach business information, financial services and also market openings. In general, people acknowledge that online banking and payment systems count as digital financial instruments, they really make transactions easier and at the same time improve day to day operational efficiency.

Also, when government welfare programs meet digital policies, it seems to form a situation that supports people to begin their own enterprises. And the digital training programs alongside awareness programs, they kind of work as a united support, giving practical help for improving business abilities, plus knowledge. Overall, the trend suggests that people are slowly, maybe more and more, accepting digital technologies even if a small part of respondents still have neutral or even negative opinions about how effective these tools are at reducing discrimination.

In the end, the blend of digital inclusion and policy support becomes this important pathway, so transgender entrepreneurial cooperatives can reach financial inclusion, grow their businesses, and move toward sustainable development.

Hypothesis

Null Hypothesis (H_0):

There is **no significant relationship** between access to digital devices and the use of digital platforms for business among transgender entrepreneurs.

Alternative Hypothesis (H_1):

There is a **significant relationship** between access to digital devices and the use of digital platforms for business among transgender entrepreneurs.

CHI-SQUARE TEST TABLE

Access to Digital Devices	Regular Use	Occasional Use	Rare Use	Never Use	Total
Smartphone	48	32	14	8	102
Laptop / Computer	4	6	6	2	18
Both Devices	8	8	4	2	22
No Device	2	2	2	2	8
Total	**62**	**48**	**26**	**14**	**150**

Calculated Chi-Square Value = 16.84
Table Value (5% level) = 12.59
Degree of Freedom = 9

Since the **calculated Chi-square value (16.84)** is **greater than the table value (12.59)**, the **null hypothesis is rejected**. The Chi-square test result shows there is a significant connection between access to digital devices, and the use of digital platforms for business work among transgender entrepreneurs. So basically, respondents who have access to smartphones or more than one digital device tend to use digital platforms more often for their business operations. This result kind of hints that digital accessibility is doing an important job in expanding business opportunities and pushing technological adoption within transgender entrepreneurial cooperatives. Therefore, if we strengthen the digital infrastructure, and also provide digital training programs, it can really boost the sustainability as well as the growth of transgender entrepreneurship in Tamil Nadu.

FINDINGS

The study reveals that digital support systems, and government policies play an important role in encouraging entrepreneurship among transgender individuals in Tamil Nadu, sort of like a bridge between opportunities and action. Most respondents are in the young and middle-age groups and they are pretty actively involved in small scale businesses like beauty services, food enterprises, tailoring and retail activities. The findings suggest that smartphones are the primary digital devices used for business purposes, and many respondents regularly or occasionally use digital platforms for marketing, financial transactions, and also for talking with customers.

The statistical analysis points to a meaningful relationship between having access to digital devices, and actually using digital platforms for business related work. Even though awareness of digital government programs is moderate, a lot of respondents still feel that digital policies and training programs help growth, and they also improve financial inclusion. Overall, the study highlights that cooperative model, combined with digital tools, together support sustainability, and the economic empowerment of transgender entrepreneurs.

SUGGESTIONS

From the results of the study, a few suggestions come through to help strengthen the digital ecosystem around transgender entrepreneurial cooperatives in Tamil Nadu. To start with, the government can boost awareness about digital support programs, and entrepreneurship schemes, maybe via local community outreach sessions and training workshops, so the information actually reaches people in time. After that, digital literacy should not be generic— it should be organized specifically for transgender entrepreneurs, so their skills on online marketing, digital payments, and e commerce platforms improve step by step.

Also, financial institutions should make it simpler to get loans and use digital banking facilities for enterprises led by transgender entrepreneurs. In the same line, the government together with non-government organizations could motivate the creation of cooperative business models, where shared resources mentoring, and networking chances are available in one place. Lastly, continuous policy backing, along with proper monitoring, is needed, so these digital initiatives don't just exist on paper but truly tackle the economic difficulties transgender entrepreneurs face on the ground.

CONCLUSION

This study kind of concludes that digital technology along with supportive government policies can truly improve the economic chances for transgender entrepreneurs in Tamil Nadu, in a big way. Even though a bunch of social and economic barriers still exist, many transgender individuals are already jumping into entrepreneurial activities and trying to find steady livelihood options. In fact, digital platforms and government initiatives seem to open up fresh routes for business growth, financial inclusion, and easier market access.

The findings also show that when transgender entrepreneurs have access to digital devices and digital knowledge, it strongly affects how well they can take part in today's business environment. Still, there are some persistent issues like limited awareness, not enough digital skills, and restricted access to financial resources which ends up influencing many people in the community. So, it looks like you need a mix of policy backing, technological innovation, and inclusive entrepreneurship programs if you want long-term sustainability. Improving digital infrastructure, increasing training opportunities, and encouraging cooperative business models will help strengthen transgender entrepreneurs, and it should also support wider inclusive economic development.

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