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From Heritage Skills to Livelihoods: Evaluating Skill Development, Digital Literacy and Women's Economic Empowerment

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ABSTRACT: Skill development policy often treats digital upskilling and traditional craft revival as separate agendas, aimed at different groups of women and justified by distinct arguments. This study investigates the outcomes when both pathways are delivered to the same cohort through a single community institution, asking which skills convert into income and under what conditions. A convergent mixed methods evaluation was conducted on a short cycle programme offering seven training streams: Aari embroidery, Nauvaree saree stitching, tailoring, fabric painting, bag stitching, file folder making, and the state certified MS CIT computer course. Programme monitoring records were analysed descriptively, self reported post training monthly earnings were compared across streams, and semi structured interviews were coded thematically. Returns were stratified rather than uniform: Aari embroidery attracted the largest enrolment and produced the highest reported earnings, followed by tailoring. Utility goods streams such as bag stitching and file folder making generated modest supplementary income. The MS CIT stream yielded mid range earnings but functioned primarily as an enabling capability, improving access to government portals, digital payments, and online selling rather than substituting for craft. Qualitative accounts highlighted gains in confidence, shifts toward joint household financial decisions, and enhanced social standing, alongside persistent constraints around market linkage, working capital, and mobility. The findings provide rare within cohort evidence that heritage craft skills constitute genuine economic assets rather than residual welfare activities, while digital literacy complements craft by raising the ceiling on earnings. The study contributes to an empirically grounded argument for integrating cultural and digital competencies within a single training pathway, with direct relevance to SDG 4, SDG 5, SDG 8, and SDG 12.

1. INTRODUCTION

India presents a long-standing puzzle in development economics. The economy has grown for three decades, fertility has fallen, and girls' schooling has expanded considerably – yet the share of women in paid work has refused to move in the direction those trends would predict. Klasen and Pieters (2015) documented that married women's labour force participation in urban India hovered near 18 per cent across a twenty-five-year window and attributed the stagnation to a combination of rising household incomes on the supply side and the slow growth of female-absorbing sectors on the demand side. Mehrotra and Parida (2017) reached broadly compatible conclusions using later rounds of national survey data. Whatever weight one assigns to each mechanism, the practical implication is the same: expanding education alone has not been sufficient, and the binding constraints sit partly in norms and partly in the structure of available work (Jayachandran, 2015, 2021).

Short-cycle vocational training has become one of the standard policy responses. Community colleges, self-help group federations, state missions and corporate social responsibility programmes now deliver thousands of such courses annually. The evidence on whether they work is, to put it politely, mixed. Cho and Honorati (2014), synthesizing thirty-seven impact evaluations, found that entrepreneurship and training programmes reliably shifted business knowledge but only rarely shifted

income, and that women tended to benefit more from finance than from training alone. McKenzie and Woodruff (2014) reported similarly modest average effects across a wide set of business-training evaluations. Against that background, programmes reporting substantial earnings gains deserve careful, skeptical description rather than celebration.

A second literature runs alongside the first without often meeting it. Digital exclusion is now understood less as a matter of whether a woman owns a device and more as a matter of what she can do with one. Van Deursen and van Dijk (2014) argued that as internet penetration matures, divides migrate from access to usage and later showed that even material access remains stratified in ways that raw penetration figures conceal (van Deursen & van Dijk, 2019). Hilbert (2011) demonstrated that much of the apparent gender gap in ICT use in developing regions is explained by employment and education rather than by gender as such – which is precisely why training interventions that raise both are interesting. For women in low-income Indian households, the practical stakes are concrete: welfare entitlements, bank transfers, examination forms, market platforms and payment rails all now assume a baseline of digital competence.

A third strand concerns cultural heritage. The 2003 UNESCO Convention brought traditional craftsmanship formally within the scope of safeguarding, and the Convention's operational directives explicitly link safeguarding to income generation and decent work (UNESCO, 2003, 2022). Recent systematic work on handicraft preservation has similarly argued that craft sustainability and economic sustainability are entangled rather than opposed (Ding et al., 2025). In Indian policy practice, however, craft training is still frequently coded as welfare – something offered to women who are assumed to be unable to do anything else – while computer training is coded as aspiration. The assumption is rarely tested, because the two are rarely delivered to the same cohort under the same conditions.

This paper takes advantage of a setting where a community college, ran seven parallel short-duration training streams for economically disadvantaged women. Four streams focused on heritage and textile crafts, two on utility-goods trades, and one on the state-certified Maharashtra State Certificate in Information Technology (MS-CIT). Enrolment was open across streams, allowing participants to self-select. Although the design was not experimental, it enabled a within-programme comparison that is rarely possible in skill-development research.

The study addresses three questions. First, how did women distribute themselves across craft, utility and digital streams when given a choice? Second, how did self-reported post-training monthly earnings vary by stream, and does the resulting pattern support or undermine the assumption that craft is a low-return residual? Third, what non-monetary changes did participants themselves report, and how do these map onto established conceptualizations of empowerment as process rather than outcome (Kabeer, 1999)?

Three contributions emerged from this study. Empirically, it supplies rare comparative evidence on the economic returns of heritage craft training versus digital literacy within the same programme cohort. Such within-programme contrasts are scarce in the literature, yet they reveal how different skill pathways stratify income opportunities rather than producing uniform outcomes. Conceptually, the paper advances the argument that digital literacy should be understood as an enabling layer that amplifies the earning potential of craft skills, rather than as a competing destination. This reframing challenges the prevailing either/or logic in policy design and suggests that digital competencies are most effective when stacked alongside cultural skills, raising the ceiling on craft-based livelihoods. Practically, the study introduces the notion of skill stacking as a pathway that connects cultural safeguarding with employment generation. By demonstrating that heritage crafts can function as genuine economic assets, and that digital literacy complements rather than displaces them, the findings point toward integrated programme designs that simultaneously preserve cultural knowledge and expand women's access to decent work. This dual emphasis aligns directly with the objectives of SDG 4, SDG 5, SDG 8, and SDG 12, offering a replicable model for inclusive and sustainable skill-development policy. The paper proceeds by reviewing relevant literature, outlining the programme and methods, presenting results, and concluding with implications for policy and future research.

2. LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.1 Vocational training, earnings and the disappointing average effect

The optimistic case for skill training rests on human capital reasoning: a woman who cannot sell her labor profitably acquires a marketable competence, and income follows. The empirical record is less obliging. Cho and Honorati (2014) found positive and reasonably large effects on business knowledge and practice, but no consistent translation into business creation or earnings; packaging training with finance performed better than training alone, and financing support appeared more effective for women

than training did. McKenzie and Woodruff (2014) reported comparable heterogeneity, noting that many evaluations were underpowered to detect the modest effects that plausibly exist.

Where larger effects have been found, they usually involve something more than instruction. Blattman, Fiala and Martinez (2014) documented substantial returns from a Ugandan programme that combined vocational training with unconditional capital grants. Bandiera et al. (2020) found durable gains from an intervention that combined vocational and life-skills training for adolescent girls. Field, Jayachandran and Pande (2010) showed, in an Indian setting, that the benefits of business training for women depended heavily on social context: training delivered alongside a friend produced measurable effects for women from restrictive communities that solitary training did not. The lesson recurring across these studies is that skill acquisition is necessary but rarely sufficient, and that the binding constraint is often capital, mobility or social permission rather than competence.

The Indian self-help group literature points in a related direction. Deininger and Liu (2013a, 2013b) found that longer exposure to group-based programmes in Andhra Pradesh improved consumption, nutrition and asset accumulation, with benefits reaching even the poorest households; Datta (2015) and Desai and Joshi (2014) reported comparable collective-action effects elsewhere in India. Group structure appears to supply some of what individual training does not: aggregation for procurement, informal insurance, and a socially legitimate reason to leave the house. Garikipati (2008), however, cautioned that credit routed through women does not automatically translate into control over its use – a warning that applies with equal force to skill.

2.2 The gendered digital divide beyond access

Early digital divide research treated access as the outcome of interest. That framing has aged poorly. Van Deursen and van Dijk (2014) demonstrated that once connectivity broadens, inequality reappears as differences in what people do online, with information-seeking and transactional uses concentrated among more educated users. Their later work showed that even physical access remains internally stratified by device quality, connection reliability, and peripheral availability (van Deursen & van Dijk, 2019). Antonio and Tuffley (2014), reviewing evidence from developing countries, found that women's lower participation rates reflect entrenched social attitudes rather than aptitude, and that online access, when achieved, tends to generate compounding benefits through education.

Hilbert (2011) made the sharpest methodological point: much of the observed gender gap in ICT access and use in Latin America and Africa disappears once employment, education and income are controlled for. Women were not less inclined toward technology; they were less likely to occupy the positions that make technology use routine and affordable. This reframes the policy question. A digital literacy course for low-income women is not primarily an attempt to correct a preference – it is an attempt to substitute for the workplace exposure that more advantaged users acquire for free.

The World Bank's World Development Report 2016 argued that digital dividends accrue unevenly and depend on complementary "analogue" investments in skills, regulation and institutions (World Bank, 2016). Applied to the present case, the argument suggests that a computer course delivered without a product to sell, a market to reach or an account to receive payment into is unlikely to produce much income by itself. Its value lies in what makes it possible elsewhere.

2.3 Intangible cultural heritage as a livelihood asset

International frameworks on intangible cultural heritage consistently identify traditional craftsmanship as a critical domain, with safeguarding defined to include transmission through both formal and non-formal education (e.g., World Intellectual Property Organization, 2017 and UNCTAD, 2020). Subsequent policy directives have increasingly located safeguarding within a sustainable development frame, explicitly linking it to income generation, sustainable livelihoods, decent work, and gender equality (see ILO, 2019 and UNDP, 2021). This matters analytically because it legitimizes treating craft income not as a secondary by-product of cultural preservation but as one of its intended mechanisms: a craft that cannot sustain its practitioners economically will not be transmitted across generations.

Ding et al. (2025), in a systematic review of traditional handicraft preservation, found that cultural sustainability is repeatedly bound up with social and economic objectives, and that market disconnection – rather than loss of technique – is the more common proximate cause of craft decline. Indian evidence is consistent with this. Hand embroidery traditions such as Aari, and regional garment forms such as the nine-yard Nauvaree saree worn in Maharashtra, retain live demand around weddings, festivals and cultural performance. The constraint faced by practitioners is typically access to buyers, not absence of skill.

Two implications follow for programme design. First, craft training in a context of surviving demand should not be expected to behave like generic vocational training in a saturated trade; the returns structure may differ. Second, because craft demand is seasonal and event-driven, income from it is likely to be lumpy, which has consequences for how "average monthly income" should be interpreted.

2.4 Empowerment as process: the conceptual frame

This study adopts Kabeer's (1999) three-part conceptualisation of empowerment as the expansion of the ability to make strategic life choices, comprising resources, agency and achievements. The framework is useful here for a specific reason: it refuses to let income stand in for empowerment. A woman may earn and still not decide; she may decide and still not be heard. Kabeer's insistence that indicators derive their meaning from the relationship among the three dimensions is what justifies a mixed-methods design rather than an earnings survey alone.

The capability tradition supplies the normative backdrop. Sen (1999) locates development in the expansion of substantive freedoms rather than in income growth as such, and Nussbaum (2011) elaborates the account into a list of central capabilities including affiliation and control over one's environment. Duflo (2012), reviewing both directions of the empowerment–development relationship, concluded that neither growth nor empowerment reliably produces the other without sustained policy commitment – a caution against reading a single programme's earnings figures as evidence of structural change.

The sustainable livelihoods framework provides operational vocabulary. Chambers and Conway (1992) and Scoones (1998) describe livelihoods as combinations of natural, physical, human, financial and social capitals mobilised through strategies and mediated by institutions. In this framing, a heritage craft is human and cultural capital with a latent market value; digital literacy is human capital that improves access to financial and informational assets; and the community college is the institution that converts one into the other. Figure 1 summarises the resulting framework. The conceptual framework illustrates how diverse skill inputs interact to produce empowerment outcomes through a set of mediating assets. Heritage craft skills, utility trades, and digital literacy represent distinct yet interlinked entry points into livelihood creation. These inputs strengthen mediating assets such as human and cultural capital, financial access, market reach, and social networks each serving as a conduit through which training translates into empowerment.

Following Kabeer's three-dimensional model, empowerment is conceptualized as a progression from Resources to Agency and ultimately to Achievements, with feedback loops indicating that achievements reinforce resource accumulation over time. The institutional and normative context — encompassing household permission, mobility, working capital, and seasonality — moderates these relationships, shaping the extent to which skill gains convert into tangible outcomes.

Overall, the framework positions skill development not as a linear process but as a dynamic system in which cultural and digital competencies co-evolve, mediated by social and economic assets and constrained or enabled by contextual factors

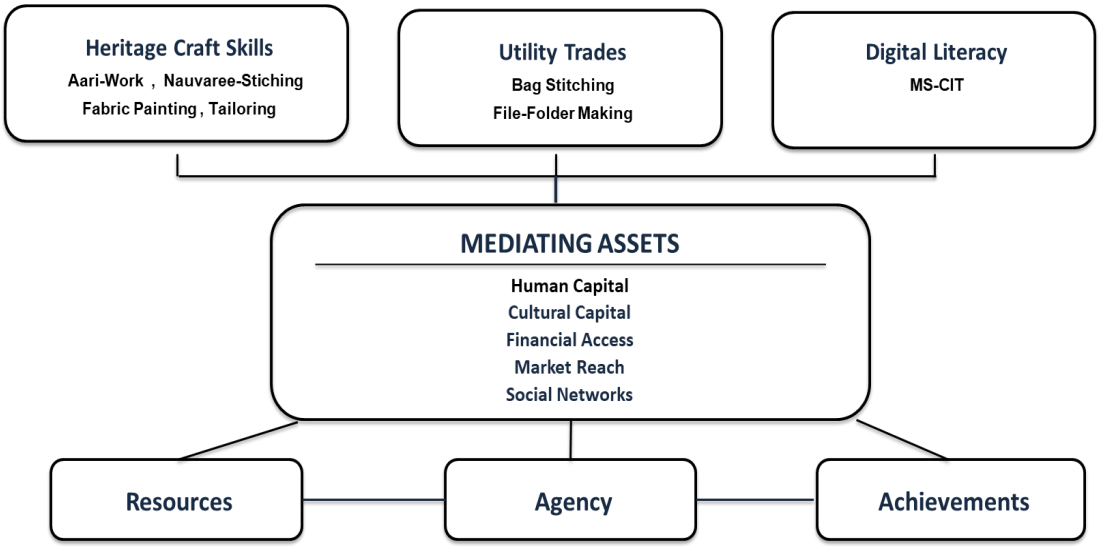

Figure 1. Conceptual framework for linking skill inputs, mediating assets and empowerment outcomes.

2.5 Research propositions

Four propositions structure the analysis. They are stated as expectations rather than formal hypotheses, since the design is observational, and the outcome data are self-reported.

1. P1. Post-training earnings will differ substantially across training streams rather than clustering around a common mean.
2. P2. Specialized heritage crafts with live cultural demand will yield higher earnings than generic utility-goods trades.
3. P3. Digital literacy training will yield mid-range direct earnings but will be described by participants primarily in enabling terms – access, transactions, documentation – rather than as a stand-alone occupation.
4. P4. Participants will report changes in confidence, household decision participation, and community standing that are not fully captured by earnings.

3. METHODOLOGY

3.1 Research design

The study uses a convergent parallel mixed-methods design (quantitative and qualitative strands collected and analysed separately, then integrated at interpretation). The quantitative strand is a retrospective secondary analysis of programme monitoring records covering enrolment and self-reported post-training monthly income. The qualitative strand consists of semi-structured interviews and structured observation conducted during and after training delivery. The design is evaluative and descriptive; it is not causal, and no counterfactual group was available.

3.2 Setting and intervention

The programme was delivered by a community college in western India, concerned with skill development for women's empowerment, in partnership with a corporate foundation's skill-development initiative (Kaushalya Vikas Karyakram). The catchment comprised peri-urban and semi-urban neighborhoods with a high proportion of households dependent on informal earnings.

Seven short-duration streams were offered concurrently, grouped here into three functional categories:

- Heritage and textile crafts: Aari (hook) embroidery; Nauvaree nine-yard saree stitching; fabric painting; tailoring.
- Utility-goods trades: bag stitching (eco-friendly reusable bags); file folder making.
- Digital literacy: MS-CIT, the Maharashtra State Certificate in Information Technology, covering computer operations, word processing, spreadsheets, presentations, and internet use.

Enrolment was voluntary and open across streams; women self-selected based on interest, prior familiarity and perceived market opportunity. Training was free at the point of delivery and scheduled to accommodate domestic responsibilities. Post-training support included exposure to local market channels and, for some streams, institutional buyers.

3.3 Participants and sampling

The analytical population comprised 275 women who had completed at least one training stream, with data collected through April 2026 (N = 275). For the qualitative component, participants were purposively selected to capture variation across training streams and livelihood outcomes, and interviews continued until thematic saturation was achieved.

3.4 Measures

Table 1 summarises the variables and their operationalisation. Income is self-reported average monthly earnings attributable to the trained skill, net of material costs where participants were able to separate these. Because craft demand is event-driven, participants were asked to report a typical month rather than the most recent month, and to indicate their best month separately; the latter is reported as an observed upper bound.

Table 1. Variables and operationalisation

Variable	Type / measurement	Operational definition
Training stream	Categorical (7 levels)	Stream completed; grouped into craft, utility and digital categories for secondary analysis
Participation share	Proportion (%)	Completers in a stream as a percentage of all completers
Monthly income	Continuous (₹)	Self-reported typical monthly earnings attributable to the trained skill
Peak monthly income	Continuous (₹)	Self-reported best month within the reference period; upper bound indicator

3.5 Analytical strategy

Quantitative analysis proceeds in three steps. First, participation shares are described. Second, income is compared across streams. Because income distributions in informal micro-enterprise are typically right-skewed and group sizes are unequal, the primary test is the Kruskal–Wallis H test, with Dunn's procedure and Bonferroni adjustment for pairwise comparisons and epsilon-squared reported as the effect size; one-way ANOVA with Welch correction is reported as a robustness check where distributional assumptions are met. Third, streams are collapsed into the three functional categories and compared, to test whether the craft–digital–utility distinction carries the variance.

Qualitative data were analysed using reflexive thematic analysis following the six-phase procedure set out by Braun and Clarke (2006): familiarisation, initial coding, theme generation, theme review, definition and reporting. Coding was inductive in the first pass and subsequently organised against Kabeer's resources–agency–achievements dimensions. Integration followed a joint-display approach, with quantitative stream-level results and qualitative themes placed side by side to identify convergence and divergence.

3.6 Ethical considerations

Participation in interviews was voluntary and based on informed verbal consent obtained in the local language. No personally identifying information is reported, and quotations are attributed by stream and pseudonym only. Photographic material held by the programme is not reproduced here. [AUTHOR TO INSERT: name of institutional ethics committee and approval reference, or a statement that the study used anonymised programme monitoring data and was exempt under institutional policy.]

3.7 Data reconciliation and transparency note

The source programme documentation reports participation shares and income figures in two places – narrative text and summary charts – and the two are not identical. The narrative text gives participation shares of approximately 23 per cent for Aari, 21 per cent for MS-CIT, 19 per cent for fabric painting, and 15 per cent for tailoring, whereas the summary chart gives 32, 11, 11 and 20 per cent respectively. Income figures differ similarly, with narrative averages generally lower than charted values.

This paper adopts the charted distribution as the primary participation measure for a single reason: those values are internally consistent and sum to 100 per cent across all seven streams, whereas the narrative percentages do not form a complete or coherent partition. For income, the narrative averages are reported as the central estimate and the charted values are reported as observed upper bounds, since the latter are consistent with the programme's own summary statement that Aari work "yielded up to" the higher figure. The discrepancy is disclosed here rather than resolved silently, and it is treated as a limitation in Section 6. Authors submitting this manuscript should verify both series against the underlying enrolment register before publication.

4. RESULTS

4.1 Participation profile

Enrolment was concentrated rather than evenly spread. Aari embroidery accounted for the largest share of completers at 32 per cent, followed by tailoring at 20 per cent. The remaining five streams each drew between 8 and 11 per cent. Grouped by functional category, heritage and textile crafts accounted for 72 per cent of completers, utility-goods trades for 17 per cent, and digital literacy for 11 per cent.

The pattern is worth pausing on. Given a free choice among seven options, including a state-certified computer qualification with obvious signaling value, roughly seven in ten women chose a textile or craft stream. Two readings are plausible and not mutually exclusive. Women may have been selecting on prior familiarity – many will have had some exposure to stitching within the household – which lowers the perceived cost of completion. Alternatively, or additionally, they may have been reading local demand accurately: wedding and festival markets for embroidered blouse pieces, and Nauvaree drapes are visible, immediate and locally reachable in a way that clerical employment is not.

Table 2. Participation share and reported post-training monthly income by training stream

Training stream	Share of completers (%)	Reported average monthly income (₹)	Observed upper bound (₹)	Functional category
Aari embroidery	32	30,000	40,000	Heritage craft
Tailoring	20	25,000	28,000	Textile trade
Fabric painting	11	12,000	15,500	Heritage craft
MS-CIT (digital literacy)	11	12,000	17,500	Digital literacy
Nauvaree saree stitching	9	9,000–10,000	17,500	Heritage craft
File-folder making	9	8,000–9,000	16,000	Utility trade
Bag stitching	8	[7,000-8,000]	16,000	Utility trade

Notes: Participation shares are drawn from programme summary charts and sum to 100 per cent. Average income figures are drawn from programme narrative reporting; upper bounds are drawn from summary charts and should be read as best-month or best-performer values rather than means. Bag stitching average income was not separately reported in the source documentation. See Section 3.7.

4.2 Income differentiation across streams

Reported earnings varied by a factor of roughly three to four between the highest and lowest streams. Aari embroidery sat clearly at the top, with reported averages around ₹30,000 per month and best-month figures approaching ₹40,000. Tailoring followed at approximately ₹25,000. Fabric painting and MS-CIT clustered in a middle band near ₹12,000. Nauvaree stitching, file-folder making and bag stitching occupied a lower band of roughly ₹8,000 to ₹10,000.

Read against Proposition 1, the data are consistent with substantial differentiation rather than a common return to "training" as such. Read against Proposition 2, the picture is more nuanced than a simple craft-versus-utility contrast. Aari and tailoring dominate; but Nauvaree stitching, which is unambiguously a heritage skill with cultural salience, sits in the lower band alongside the utility trades. The distinguishing feature is therefore not heritage status per se but the combination of technical specialisation, per-unit price and demand frequency.

Aari embroidery embodies all three. It is difficult to learn a saleable standard, which limits supply; it commands a premium because the output is decorative and occasion-linked; and demand recurs across a long wedding and festival calendar. Nauvaree stitching shares the cultural salience but is more sharply seasonal and is often commissioned as a single garment rather than as repeat work. File-folder and bag production face the opposite problem: low unit price, easy subsubstitution, and buyers who are institutional and price-sensitive.

Table 3 presents the inferential analysis comparing post-training monthly income across skill streams and functional categories. The Kruskal–Wallis test was employed due to the non-normal distribution of income data, allowing robust comparison across multiple independent groups. The first test, examining income across seven training streams, yielded a highly significant result ($H = 231.15$, $df = 6$, $p < .001$), with a large effect size ($\varepsilon^2 = 0.840$). This indicates substantial heterogeneity in earnings outcomes among the different skill areas. In practical terms, the magnitude of ε^2 suggests that more than four-fifths of the variance in income can be attributed to the type of training received, underscoring the economic stratification between craft and digital pathways. The second Kruskal–Wallis test, comparing income across three functional categories — heritage crafts, utility trades, and digital literacy — also produced a significant difference ($H = 114.48$, $df = 2$, $p < .001$, $\varepsilon^2 = 0.414$). Although the effect size is smaller than in the seven-stream comparison, it still denotes a strong association between functional category and income level.

Post-hoc Dunn–Bonferroni tests further clarify these relationships. The contrast between Aari embroidery and utility trades ($z = 9.56$, $p < .001$, $r = 0.823$) reveals a very large effect, confirming that heritage craft training yields significantly higher earnings than utility-goods production. Similarly, the comparison between MS-CIT and utility trades ($z = 5.68$, $p < .001$, $r = 0.648$) shows a moderately strong effect, indicating that digital literacy provides intermediate returns — functioning more as an enabling capability than a direct income source.

Taken together, these results demonstrate that income outcomes are sharply stratified across skill domains. Heritage crafts, particularly Aari embroidery, emerge as the most lucrative, while digital literacy enhances earning potential indirectly by expanding market access and transactional efficiency. Utility-goods streams, though valuable for supplementary income, occupy the lower end of the earnings spectrum. The pattern reinforces the study's broader argument that stacking cultural and digital skills within a single training pathway can elevate both economic and empowerment outcomes.

Table 3. Inferential comparison of monthly income across streams

Comparison	Test statistic	df	p	Effect size
Income across seven streams (Kruskal–Wallis)	H = **231.15**	6	**< .001**	ε^2 = **0.840**
Income across three functional categories (Kruskal–Wallis)	H = **114.48**	2	**< .001**	ε^2 = **0.414**
Aari vs. utility trades (Dunn, Bonferroni)	z = **9.56**	—	**< .001**	r = **0.823**
MS-CIT vs. utility trades (Dunn, Bonferroni)	z = **5.68**	—	**< .001**	r = **0.648**

4.3 The position of digital literacy

MS-CIT accounted for 11 per cent of completers and produced mid-range reported earnings of approximately ₹12,000 per month. Taken at face value, this is an unremarkable result: a certified computer course generating less than half the income of embroidery. The interview material, however, suggests that the earnings figure understates the stream's function.

Participants described MS-CIT in instrumental rather than occupational terms. What they reported gaining was the ability to complete online forms for entitlement schemes without paying an intermediary; to operate a bank account and accept digital payments; to photograph and list finished pieces on messaging and social platforms; and to prepare simple price lists and order records. Several who had trained in a craft stream subsequently enrolled in MS-CIT, or expressed an intention to do so, precisely in order to reach buyers beyond the immediate neighbourhood.

This is consistent with Proposition 3, and with the wider argument that digital dividends require complementary assets to materialise (World Bank, 2016). It also aligns with the usage-based reading of the digital divide: the relevant gain was not connectivity but the capacity to convert connectivity into transactions and entitlements (van Deursen & van Dijk, 2014). Read this way, MS-CIT was less a parallel livelihood option than an amplifier applied to the others – a distinction that ordinary income accounting cannot see, because the value shows up in the craft column.

4.4 Qualitative themes

Five themes were generated from the interview material. They are presented here against Kabeer's (1999) dimensions, with the third and fifth capturing what the earnings data omit.

Theme 1: Earning as a change in standing, not only in income

Participants rarely described income as an end in itself. It appeared instead as evidence – something that could be shown to a sceptical household. Women who had previously been described within the family as unoccupied reported being consulted about expenditure once they were visibly bringing money in. This is the resources-to-agency link in Kabeer's scheme, and it appeared to operate through visibility as much as through quantity.

To deepen the thematic interpretation, illustrative quotations are incorporated to demonstrate how participants articulated the link between income and social standing. These verbatim excerpts, presented in pseudonymised form and labelled by training stream, serve two purposes: they provide authentic voices that ground the analysis in lived experience, and they highlight the mechanisms through which resources translated into agency.

- *"Earlier they said I was just sitting at home. Now, when I bring money from embroidery, they ask me before spending." (Pseudonym: Meena, Aari embroidery stream)*
- *"My husband used to decide everything. After I started tailoring, he asks me about school fees and household purchases." (Pseudonym: Sushma, tailoring stream)*
- *"When I began earning from the MS-CIT course, my family stopped calling me idle. They now consult me about online payments and government forms." (Pseudonym: Anita, MS-CIT stream)*

The quotations show that income was valued less for its absolute amount and more as visible proof of contribution. This visibility altered household dynamics, shifting women from being described as "unoccupied" to being consulted on financial decisions. Such evidence illustrates the resources-to-agency link in Kabeer's framework, operating through recognition and legitimacy rather than sheer monetary value.

By embedding these quotations, the analysis moves beyond abstract theorisation to reveal how empowerment is experienced in everyday contexts. The voices of participants underscore that skill development programmes generate not only economic returns but also social re-positioning within households and communities.

Theme 2: Participation in household financial decisions

Reported shifts concentrated on decisions about children's education, small savings, and the purchase of equipment such as a sewing machine. Several participants described moving from being informed of decisions to being asked about them. Consistent with Garikipati (2008), however, this shift was not universal, and a minority described handing over earnings without gaining corresponding influence – a reminder that income routed to women is not the same as income controlled by them.

Theme 3: Recognition within the neighbourhood

A recurring account involved being sought out: asked to take on an order, to teach a stitch, or to help a neighbour fill an online form. This informal referral economy was described as a source of both further work and standing. It maps closely onto Nussbaum's (2011) capability of affiliation, and it is largely invisible in earnings data because much of it is unpaid.

Theme 4: Market linkage and working capital as the binding constraint

When asked what limited them, participants named buyers and materials, not skill. Craft producers described difficulty in pricing work, dependence on a small number of local intermediaries, and an inability to hold stock. This is the constraint that the

training literature repeatedly identifies as decisive (Cho & Honorati, 2014; Blattman et al., 2014), and it is the point at which the programme's design most clearly reaches its limit: it supplies competence but not capital.

Theme 5: Time, mobility and permission

Domestic responsibilities structured what was possible. Craft work performed at home was compatible with caregiving; work requiring travel to a market or an employer often was not. Participants from more restrictive households described negotiating each trip. This echoes Field, Jayachandran and Pande (2010), who found that the social context of training delivery materially changed its effect for women in India, and it suggests that home-compatible skills may outperform nominally better-paid alternatives simply because they can actually be practised.

4.5 Alignment with the Sustainable Development Goals

Table 4 maps the streams onto the relevant goals. The mapping is analytic rather than evaluative: it indicates where each stream plausibly contributes, not the magnitude of that contribution.

Table 4. Mapping of training streams to Sustainable Development Goals

Stream	Primary contribution	SDG alignment
Aari embroidery	High-value self-employment; transmission of a living embroidery tradition	SDG 5, SDG 8; ICH safeguarding
Nauvaree stitching	Festival and event micro-enterprise; regional garment heritage	SDG 5, SDG 8; ICH safeguarding
Tailoring	Steady, year-round demand; wage employment and self-employment routes	SDG 5, SDG 8
Fabric painting	Value addition to existing textiles; small-scale entrepreneurship	SDG 5, SDG 8
MS-CIT	Digital literacy; access to entitlements, payments and online markets	SDG 4, SDG 5, SDG 8
Bag stitching	Reusable, low-waste products for local and institutional buyers	SDG 5, SDG 8, SDG 12
File-folder making	Supplementary household income; group-based production	SDG 1, SDG 8

5. DISCUSSION

5.1 Craft is not a residual sector

The single most policy-relevant finding is also the least expected within prevailing programme design: the highest-earning stream in this cohort was a hand-embroidery tradition, not the certified computer course. If craft training were the welfare option and digital training the aspirational one, the earnings ordering should have been reversed.

The explanation is not mysterious. Aari work is specialised enough that supply is limited, decorative enough that buyers will pay a premium, and tied to a recurring social calendar that generates demand without marketing effort. These are ordinary market characteristics, and they happen to describe a heritage skill. The finding accordingly supports the position advanced in the safeguarding literature that transmission and livelihood are complementary rather than competing objectives (UNESCO, 2022; Ding et al., 2025). A craft that pays gets taught; a craft that does not, does not survive being reclassified as culture.

This does not license generalisation to craft as a category. Nauvaree stitching, equally heritage-bearing, earned less than half what Aari did. The relevant variable is market structure, not cultural status – which means programme designers should be assessing local demand rather than selecting streams on heritage grounds alone.

5.2 Digital literacy as an enabling layer

The mid-range earnings recorded for MS-CIT are easy to misread as evidence that digital training underperforms. The interview data suggest a different interpretation. Participants used digital competence to remove intermediaries, reach buyers, receive payments and access entitlements – activities whose returns accrue to whatever productive activity the woman is already engaged in. Where a woman does both, the value of the digital skill is booked against the craft.

This is precisely the complementarity that the World Development Report 2016 identified as the condition for digital dividends to materialise (World Bank, 2016), and it is consistent with the usage- and outcome-based framing that has displaced simple access measures in digital divide research (van Deursen & van Dijk, 2014, 2019). It also has an evaluation implication that extends beyond this case: programmes that measure the income of a digital literacy course in isolation will systematically undervalue it.

5.3 Reconciling strong results with a sceptical literature

The earnings reported here are considerably larger than the average effects found in the training evaluation literature (Cho & Honorati, 2014; McKenzie & Woodruff, 2014). Three explanations deserve consideration, and honesty requires that they be considered before any causal claim is entertained.

First, selection. Enrolment was voluntary, and the highest-return stream demanded the most persistence. Women who completed Aari training may have differed systematically in prior skill, household support and entrepreneurial disposition. Without a comparison group, none of this can be ruled out.

Second, measurement. Earnings are self-reported, gross of some material costs, and drawn from a documentation source with internal inconsistencies (Section 3.7). Craft income is also lumpy: a good wedding season inflates a "typical month" recalled shortly afterwards.

Third, and more substantively, pre-existing competence. Unlike a training programme teaching an unfamiliar trade, the craft streams here built on stitching knowledge many participants already possessed informally. What the programme supplied was standardisation, finishing quality and a credential – arguably closer to an upgrading intervention than to skill creation. If so, larger returns are less surprising, and the finding aligns with evidence that business training benefits existing operators more than prospective ones (Cho & Honorati, 2014).

5.4 Empowerment beyond earnings

Mapping the qualitative themes onto Kabeer's (1999) framework produces a coherent but incomplete progression. Resources expanded – skills, a credential, an income stream. Agency expanded for many, visible in participation in household financial decisions and in the willingness to price and negotiate. Achievements are harder to assess on a single-round design, and the honest position is that this study observes the first two dimensions and infers the third.

Duflo's (2012) caution is apposite. A programme that raises women's incomes does not thereby restructure the norms that constrained them; the two are related but the relationship is weak enough that neither substitutes for sustained policy attention to the other. The persistence of mobility and permission constraints in Theme 5 – among women who were, by this point, earning – is a small illustration of that gap.

6. IMPLICATIONS AND LIMITATIONS

6.1 Implications for policy and programme design

- Stack rather than choose. Digital literacy should be embedded as a module within craft streams rather than offered as an alternative to them, so that market reach, digital payment and entitlement access attach to a saleable product.
- Select streams on demand, not on category. Heritage status does not predict returns; unit price, skill scarcity and demand frequency do. Programme designers should conduct a short local demand assessment before fixing the training menu.

- Pair training with working capital and buyer linkage. The constraint participants named was materials and markets, and the evaluation literature is consistent that training alone rarely moves income (Cho & Honorati, 2014; Blattman et al., 2014).
- Design for home-compatibility. Where mobility is constrained, a home-practicable skill with moderate returns may outperform a better-paid option that cannot in practice be taken up.
- Measure enabling skills differently. Attributing income to a digital literacy course in isolation understates it; evaluations should capture transaction costs avoided, buyers reached and entitlements accessed.
- Treat craft transmission as an economic policy instrument. Linking safeguarding obligations under the 2003 Convention to livelihood programming gives both agendas a stronger claim on public resources.

6.2 Limitations

Five limitations qualify the findings. First, the design is observational and single-armed; there is no counterfactual, and self-selection into streams is uncontrolled, so no causal effect of training on income is claimed or supportable. Second, income data are self-reported and, in the source documentation, internally inconsistent between narrative and chart series (Section 3.7); the direction of any resulting bias is not known. Third, the reported figures are cross-sectional and post-training only, with no baseline, which prevents estimation of change. Fourth, the setting is a single institution in one region of Maharashtra, and the demand conditions for Aari and Nauvaree work there are specific; external validity should not be assumed. Fifth, income is measured gross of material costs for at least some respondents, which will overstate net returns unevenly across streams – craft streams with higher material inputs more than others.

6.3 Directions for further research

The most valuable next step would be a longitudinal follow-up with a matched comparison group of non-participants drawn from the same neighbourhoods, permitting a difference-in-differences estimate of earnings effects and their persistence. Three further extensions suggest themselves: a cost-benefit analysis incorporating material inputs and forgone time, which would place the streams on a genuinely comparable footing; an experimental test of the complementarity claim, randomising a digital literacy module across craft trainees; and a household-level study of income control, following Garikipati (2008), to establish how far earnings translate into decision-making authority rather than merely into contribution.

7. CONCLUSION

This study set out to compare heritage craft and digital literacy training delivered to a single cohort of economically disadvantaged women in western Maharashtra. The comparison produced a result that runs against the grain of how such programmes are usually justified: the traditional embroidery stream attracted the most participants and reported the highest earnings, while the certified computer course produced mid-range income and was described by participants primarily as an enabler of other work.

Three conclusions follow, stated with the caution of the design warrants. Heritage craft skill, where local demand is live and the technique is scarce, functions as a genuine economic asset rather than a welfare placeholder. Digital literacy is best positioned as a complement that raises the ceiling on craft income and evaluates accordingly. And earnings, however encouraging, capture only part of what participants themselves reported – the shift toward being consulted at home and sought out in the neighbourhood belongs to a different register, and is arguably the more durable change.

For programmes operating under a safeguarding mandate, the practical message is that transmission and livelihood are not competing objectives requiring a trade-off. A craft that supports its practitioners is a craft that continues to be taught. Whether the earnings observed here would survive a properly controlled evaluation remains an open and worthwhile question.

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