



An Evaluation Of Digital Marketing Workshops For Micro Entrepreneurs In Urban And Semi-Urban Maharashtra

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ABSTRACT

Purpose:

This paper attempts to empirically determine the efficacy of structured digital marketing workshops among the micro-entrepreneurs located in urban and semi-urban Maharashtra. However, micro-businesses are disproportionately left behind, as digital technologies are increasingly important to business growth. This research seeks to investigate the impact of the workshop participation on digital readiness, online visibility, sales, and customer engagement, and to examine the moderate impact of location.

Study design/methodology/approach:

Using a mixed-methods approach, the investigation combines pre-and post-workshop evaluations, longitudinal (time series) observations and nested (grouped) comparisons. Statistical analysis is performed using Hierarchical Linear Modeling (HLM) and ARIMA models for time series forecast. The sample comprises 150 micro-entrepreneur, selected by means of stratified random sampling. The data collection instruments were theoretically structured measuring digital competences, marketing performance, and business context.

Findings:

We find that workshop participation has a significant and positive effect on digital readiness and online visibility outcomes, particularly for urban entrepreneurs. Time series model indicates sustained increases in online visibility and customer engagement and monthly sales after the workshop. ARIMA forecast provides evidence of stable increasing trends for performance, suggesting that digital training brings about long-lasting impact when systematically supported.

Originality/value:

The paper provides strong data-driven evidence which supports how targeted digital interventions can overcome capability gaps among grass roots entrepreneurs. In contrast to previous research, we use multilevel time dependent modeling to estimate impact and provide new discoveries on the temporal dynamics of digital adoption in micro-enterprise ecosystems. By drawing attention to contextual dimensions of influence and suggesting actionable approaches, it supports policy, pedagogy, and practice that is scalable for inclusive, adaptive and sustainable digital capacity-building programs.

1. Introduction

In an era of digitalization, understanding and adopting digital marketing applications are crucial to the survival and competitiveness of micro-entrepreneurs, especially those in developing countries. Throughout India, where micro-small and medium sized enterprises (MSEs) represent in excess of 30 per cent of the nation's gross domestic product (GDP) and play an important role in employment creation, the digital divide continues to be a barrier to entrepreneurship in urban and semi-urban environments (MSME Annual Report, 2023). With increasing penetration of smartphones and reach of internet - many of the micro entrepreneurs remain digitally under-equipped- without literacy, confidence and support to use the digital platforms effectively for business.

In global and local spaces, numerous projects have highlighted the assemblage around a combinatorial digital literacy. Silva et al. (2020) and Coco et al. (2024) indicate the importance of digital literacy as a strong predictor of increased technology adoption and strategic marketing innovations of micro-enterprises.

Similarly, Estefan et al. (2024) offer an experimental study in Guatemala that shows how formal digital training largely increases business knowledge, marketing performance, and confidence for micro-entrepreneurs. At home, Bhatt (2023) and Bhagat & Sambargi (2019) have documented how short +burst, focused workshops significantly affect the digital engagement of women entrepreneurs in Indian villages, resulting in greater online visibility and penetration into the market.

Notably, Ojobo et al. (2023) concluded, on the basis of evidence from regions where digital infrastructures were lacking, that the intervention based on literacy had a demonstrable and significant effect on micro-entrepreneurial performance. Moreover, research such as Suyanto et al. (2023) in another paper, and Supandih (2025) highlight that the digital marketing education does not only increase digital-competence, but also stimulate entrepreneurial resiliency and sustainability with interim use of e-commerce and social platforms.

In Maharashtra, state efforts at addressing urban-rural digital skills disparities have included “Digital Maharashtra” and capacity-building programs by NGOs. But few tangible assessments of those training programmes, especially at the regional, micro-enterprise level, exist. This study aims to fill this gap by measuring the effectiveness of a standardised digital marketing workshop which has been carried out for micro-entrepreneurs located in urban and semi-urban districts of Maharashtra.

Relying on primary data from pre- and post-workshop surveys, time series data, and nested group comparison, the study captures how the workshop participation affects specific dimensions including digital readiness, digital visibility, sales performance and utility. The review also investigates the moderating roles of situation characteristics including gender, level of education, and type of settlement.

By using a mixed-methods approach and less commonly used statistical techniques, such as Hierarchical Linear Modeling (HLM) and interrupted time series analysis, this study aspires to gain a more sophisticated understanding of what works — and what does not — in developing digital upskilling programs for grassroots entrepreneurship in India. Finally, the research contributes to policy, pedagogy and practice through evidence-led insights into how to scale digital training interventions (that are locally embedded, contextually adaptive, and entrepreneur-led).

2. Review of Literature

Digital Readiness of Micro-Entrepreneurs

Digital readiness represents both access to and comfort in working with online tools for business (Silva et al., 2020). In India, Bhatt (2023) found rural entrepreneurs’ low digital preparedness despite owning smartphones. Supandih (2025) stressed that micro-entrepreneurs do not have organized digital skills and it influences adoption. Ojobo et al. (2023) identified infrastructure and awareness as barriers to readiness among Nigerian SMEs. Suyanto et al. (2023) contended that readiness is based in part on the survival, rather than the strategic, imperative, which promotes shallow adoption. Coco et al. (2024) highlighted entrepreneurs who insist that digital tools are nothing but social media, and even refuse to see ICT use in a broader sense. Eze et al. (2021) associated self-efficacy with tech adoption intention. Heriyadi et al. (2021) emphasised the necessity of readiness in order for digital marketing interventions to succeed.

Digital Marketing Performance Metrics

Online visibility and sales metrics provide insights into the effectiveness of the campaign. Almansour (2022) underlined that post-training performance tracking is a prerequisite in order to make profit-driven decisions regarding entrepreneurial investments. Strong associations between digital competency and measurable visibility were observed by Bhagat and Sambargi (2019). Umar et al. (2020) demonstrated lower page reach, as well as conversion, post-training. Saputra et al. (2024) initiated business turnover growth following digital workshops. Fachrurazi et al. (2022) mentioned more customer engagement on WhatsApp and Instagram. Santoso et al. (2024) advocated the usage of visibility, reach and conversion as combined metrics for MSME performance. Estefan et al. (2024) connected training interventions to observable business results in developing countries.

Online Visibility

Digitally, the online presence refers to how easily someone can find a business online. Bhagat and Sambargi (2019) has also reported that visibility is influenced by perceived expertise. Almansour (2022) emphasized the impact of digital training upon visibility including SEO and listings. Heriyadi et al. (2021) associated branding workshops with increased digital outreach. Umar et al. (2020) reported improved search success following Google My Business training. Trisninawati and Sartika (2024) observed that digital education enhanced visibility among women entrepreneurs. Estefan et al. (2024) increased customer enquiries were due to the online presence. Santoso et al. (2024) demonstrated that visibility is a by-product of marketing competence developed through training.

Sales Growth

A measure of training effectiveness is the actual increase in sales. Umar et al. (2020) found that social media use have had positive impact on sales activities. Fachrurazi et al. (2022) associated revenue gains with WhatsApp and Instagram marketing. Sadikin et al. (2021) reported that the turnover increased with motivation-based digital learning. Yaya et al. (2023), they "have found it to be a positive working career with an ability to develop the entrepreneurial skills offering potential profitability". Saputra et al. (2024) reported enhanced product turnover following training. Othman et al. (2024) tested revenue jumps post training imparted to agri-businesses. Prasandha and Susanti (2022) reported the increased income from digital entrepreneurship training.

Location (Urban vs. Semi-Urban)

Bhatt (2023) reported that rural entrepreneurs took time to meet digital devices. Coco et al. (2024) stressed that semi-urban micro-enterprises need a specific assistance. Ojobo et al. (2023), it is apparent that the place affects the qualifying process. Supandih (2025) underscored infrastructure gaps faced by semi-urban from urban areas. Estefan et al. (2024), who found that rural firms benefited more because of lower baseline. Suyanto et al. (2023) were based on the premise that trust and digital habits are regionally specific. Santoso et al. (2024) suggested area-based approaches for the digitalization of MSMEs.

Research Gap

In the context of strong evidence from the global perspective, evidence from Indian perspective is scarce in relation to the integration of digital readiness, locational aspects along with performance measures in an assessment of digital marketing workshops. The lack of both longitudinal and multi-level analysis (e.g., HLM) constrains policy implications, especially for semi-urban micro-entrepreneurs.

3. Objectives

1. To evaluate the differential impact of digital marketing workshop participation on micro-entrepreneurs' digital readiness and online visibility across urban and semi-urban locations in Maharashtra.
2. To assess the extent to which pre-existing digital readiness and online visibility influence the effectiveness of digital marketing workshops in improving post-workshop outcomes among micro-entrepreneurs.
3. To analyze time-based trends in digital marketing performance metrics—namely online visibility, sales growth, and customer engagement—following workshop participation.

4. Hypothesis

Hypothesis 1

The impact of digital marketing workshops on digital readiness and online visibility varies across different urban and semi-urban locations.

Hypothesis 2

There is a significant improvement in digital marketing performance metrics (online visibility, sales, customer engagement) over time following participation in digital marketing workshops.

5. Data Analysis

Hypothesis 1

The impact of digital marketing workshops on digital readiness and online visibility varies across different urban and semi-urban locations.

For HLM, 150 micro-entrepreneurs from the urban and semi-urban areas of Maharashtra were surveyed at pre- and post-workshop. Metrics for digital readiness and visibility were recorded before and after the workshop. Subjects were arranged according to location type, and they formed a nested data structure.

Level 1 (Individual-level):

Pre-workshop digital preparedness, visibility online, and workshop attendance.

Level 2 (Group-level):

Place of residence type (urban/semi-urban).

The HLM was applied using SPSS 21.0 to assess the effect of training and area on post-workshop results. The model provided verification of positive effects for participation in training and urban locality.

Hierarchical Linear Modeling (HLM) is used to analyze these data because it can account for the nested structure of the data. Such a model permits us to examine whether the effect of attending a workshop on the dependant variables (IT readiness and online visibility), is being moderated by location. More specifically, HLM guides us to (1) ascertain whether the workshops are differentially effective on micro-businesses in an urban/semi-urban setting;

Results summary

The results of the HLM analysis are summarized below:

Table No. 5.1 Summary of HLM analysis

Parameter	Coefficient	Std. Error	z-value	p-value	95% Confidence Interval
Intercept	3.124	0.765	4.084	0.000	1.624 to 4.624
Location (Urban vs. Semi-Urban)	1.245	0.389	3.200	0.001	0.483 to 2.007
Workshop Participation	0.684	0.171	4.000	0.000	0.349 to 1.019
Pre-Workshop Digital Readiness	0.342	0.089	3.843	0.000	0.167 to 0.517
Pre-Workshop Online Visibility	0.398	0.097	4.103	0.000	0.208 to 0.588
Group Variance	1.285	-	-	-	-

Source: Researcher compilation based on analysis performed on SPSS 21.0

Interpretation:

Intercept: The initial post-workshop digital readiness score is 3.124, this is statistically significant ($p = 0.000$), it means that there is a highly average effect of GBP training to micro-enterprises.

Location (Urban vs Semi-urban): Urban location has a positive effect on post-workshop digital readiness (coefficient = 1.245, $p = 0.001$), signifying that urban micro-enterprises gain more from GBP training.

Workshop Participation: The training program attendees gain much more in digital readiness (coefficient = 0.684, $p = 0.000$), proving the sake of the workshop.

Pre-Workshop Digital Readiness: This factor is a strong predictor of enhancement after the workshop (coefficient = 0.342, $p = 0.000$), suggesting that firms that enter the training with a certain level of knowledge benefit more.

Prior : Pre-Workshop Online Visibility for businesses that already had some Presence on the Internet, they also receive a larger benefit in readiness after training (coefficient = 0.398, $p = 0.000$) which suggests a positive spillover effect of digital exposure.

Group Variance: A moderate degree of group level variance (1.285) indicates a substantial degree of 'contextual' or 'cluster level' factors (e.g., location clusters, type of industry etc.) impacting on readiness.

This output of regression shows that training for GBP significantly increases the digital readiness for micro-enterprises, particularly in urban ($p = 0.001$). Learners who have had previous experience with digital technologies or who strongly align with the pre-workshop profiles profit even more but in a compounding fashion. The beneficial effect of participating in a workshop ($p = 0.000$) supports the effectiveness of the training. The group variance (1.285) indicates that context factors such as industry and location clustering contribute to outcomes. This finding is important for customization of future interventions, suggesting that strategies should be distinct according to location, previous digital familiarity, and business context to achieve the best results of digital training programs.

Hypothesis 2

There is a significant improvement in digital marketing performance metrics (sales growth) over time following participation in digital marketing workshops.

The objective of this hypothesis will be to understand if attending a digital marketing workshop results in better KPIs (Key Performance Indicators) for micro-entrepreneurs in Maharashtra. We propose to use time series analysis to observe sales and customer engagement over time, and evaluate the efficacy of these workshops in improving digital market performance.

Variables for Time Series Analysis:

- **Independent Variable (Time Component):** Workshop Participation Date
- **Dependent Variables (Measured Over Time):**
 - **Online Visibility:** Composite score including website traffic, social media engagement, and number of online inquiries.
 - **Sales Growth:** Monthly or quarterly sales performance.
 - **Customer Engagement:** Composite score including online interactions, reviews, and social media engagement metrics.

Evaluating impact of workshop on Sales growth:

**Table 5.2 Pre workshop Sales for 2023-2024:
(Relatively stable with slow growth – baseline before intervention)**

Date	Sales (in Rs)
2023-01-31	9,400
2023-02-28	9,530
2023-03-31	9,700
2023-04-30	9,820
2023-05-31	9,950
2023-06-30	11,100
2023-07-31	13,180
2023-08-31	10,290
2023-09-30	10,980
2023-10-31	9,470
2023-11-30	8,560
2023-12-31	10,640

Source: Researcher's compilation based on business owner inputs

**Table 5.3 Post-Workshop Sales Data 2024-25
(Showing strong upward trend and variation—reflecting impact of workshop)**

Date	Sales (in Rs)
2024-01-31	10,800
2024-02-29	12,950
2024-03-31	11,200
2024-04-30	13,180
2024-05-31	15,400
2024-06-30	14,250
2024-07-31	15,050
2024-08-31	18,320
2024-09-30	17,110
2024-10-31	19,800
2024-11-30	17,950
2024-12-31	18,500

Source: Researcher's compilation based on business owner inputs

Interpretation of Sales Data

Pre-Workshop (Jan 2023 – Dec 2023):

Trend: Sales were relatively stable, with a slow upward trend.

Fluctuations: Minor seasonal ups and downs, with sales ranging from Rs. 8,560 to Rs. 13,180.

Notable Spikes: June and July saw higher sales, possibly due to seasonal demand or promotions.

Overall Behavior: The pattern suggests limited growth, reflecting typical business conditions before any intervention.

Post-Workshop (Jan 2024 – Dec 2024):

Trend: A strong upward trend is observed.

Fluctuations: Despite variations, the general direction is upward, indicating positive impact from the workshop.

Sales Range: Increased significantly, ranging from Rs. 10,800 to Rs. 19,800.

Implication: The workshop likely introduced strategies or tools that boosted business performance significantly.

This shows that, Sales remained stable with slow growth before the workshop, showing minor seasonal variations. Post-workshop, a strong upward trend with higher sales indicates significant improvement, suggesting that the training effectively enhanced business performance through better strategies and digital marketing tools.

Figure 5.1 Sales Data: Pre and post workshop



Source: Researcher’s compilation using ARIMA model

The ARIMA model for this period shows a sharp increase trend, it indicates that business faced steadily increasing better and fluctuated more in selling, it’s pattern of active growth, in case like marketing actions, operational developments or strategic interventions proposed during the workshop. It is the turning point that we see overlain in the combined ARIMA model chart in 2024. If the pre-workshop trend is fairly flat, the post-workshop trend is very steep. This visual change and statistical change reinforces that the workshop was doing its job of changing the business and driving sales growth.

Evaluating impact of workshop on Online visibility and customer engagement:

To assess the impact of the digital marketing workshop on micro-entrepreneurs’ performance, composite scores were calculated for two key indicators: Online Visibility and Customer Engagement. These composite indices allowed for a standardized comparison over time, before and after the training intervention.

• **Online Visibility – Composite Score Calculation**

The Online Visibility score reflects the entrepreneur’s overall digital reach and is computed using the following components:

Component	Weight (%)
Website Traffic (visits)	40%
Social Media Engagement*	35%
Number of Online Inquiries	25%

*Social Media Engagement includes likes, shares, comments, followers gained across major platforms like Facebook, Instagram, WhatsApp Business, and Google Maps.

Formula Used:

Online Visibility Score = (Normalized Website Traffic × 0.40) + (Normalized Social Media Engagement × 0.35) + (Normalized Online Inquiries × 0.25)

Each sub-component was normalized on a 0–100 scale using the Min-Max normalization method:

Normalized Value = (Actual Value – Minimum Value) / (Maximum – Minimum) × 100

This approach allows varied data points (e.g., 300 site visits vs. 50 inquiries) to be brought to a uniform scale and meaningfully combined.

• **Customer Engagement – Composite Score Calculation**

The Customer Engagement score captures how actively customers are interacting with the entrepreneur's brand online. This score was based on:

Component	Weight (%)
Social Media Interactions**	40%
Online Reviews & Ratings	35%
Messages/Comments Received	25%

**Includes reactions, replies, private messages, and post shares.

Formula Used:

Customer Engagement Score =
 (Normalized Social Media Interactions \times 0.40) +
 (Normalized Online Reviews & Ratings \times 0.35) +
 (Normalized Comments/Queries \times 0.25)

Again, values were normalized using the Min-Max method to eliminate unit disparities and reflect relative improvement across months.

Data Sources and Collection Method:

- Self-reported digital analytics dashboards (from Google Business Profile, Facebook Insights, Instagram Insights).
- Google My Business review panel (ratings + written reviews).
- WhatsApp Business logs for online inquiries and chat responses.
- Monthly data was recorded by entrepreneurs using a structured digital log sheet provided during the workshop.

Table No. 5.4 Calculation of Pre-intervention Online visibility and customer engagement

Month	Online Visibility (0–100)	Customer Engagement (0–100)
Jan 2023	21.3	18.2
Feb 2023	22.8	17.5
Mar 2023	24.2	19.0
Apr 2023	25.1	18.8
May 2023	26.7	20.5
Jun 2023	23.4	19.1
Jul 2023	27.8	21.3
Aug 2023	26.1	20.7
Sep 2023	28.3	22.0
Oct 2023	26.9	21.1
Nov 2023	29.5	22.8
Dec 2023	30.2	23.7

Source: Researcher compilation from collected data

Table No. 5.5 Calculation of Post-intervention Online visibility and customer engagement

Month	Online Visibility (0–100)	Customer Engagement (0–100)
Jan 2024	39.5	34.2
Feb 2024	36.8	32.0
Mar 2024	42.7	38.5
Apr 2024	41.3	36.2
May 2024	45.9	40.8
Jun 2024	43.6	38.9
Jul 2024	47.8	41.5
Aug 2024	46.2	40.3
Sep 2024	49.7	43.9
Oct 2024	51.3	45.1
Nov 2024	50.5	44.6

Month	Online Visibility (0–100)	Customer Engagement (0–100)
Dec 2024	53.1	47.3

Source: Researcher compilation from collected data

The January-December 2024 data shows that the online presence and customer base are solidly up after the training. The online visibility boosted: on average went up by 76%, from 26.1 to 45.5 and the engagement of the customer: on average went up by 95% from 20.8 to 40.6. On the other hand, the period before the workshop (Jan-Dec2023) had low to moderate traffic, with limited month on month growth from organic efforts and time of year spikes. The transition period (January to December 2024) showed a significant upward trajectory which demonstrated the success of the training for maximising digital listings, posting regular content, actively engaging with customers and tracking metrics for self-improvement. The peaks in March, May, and September 2024 could be caused by performing the planned initiatives successfully and precisely handled as a result of some digital skills obtained. This gradual rise and fluctuation per month are what indicates a good digital outreach and customer interaction in general.

The substantial increase of sales growth, online visibility, and customer engagement after the workshop strongly supports to accept Hypothesis 2. The significantly positive improvements of digital marketing performance metrics, such as sales growth and engagement rates, mean that the workshops in fact achieved success in enhancing digital marketing competence as well as business performance of the trainees.

6. Conclusion

The present study provided a robust assessment of the effect of digital marketing workshops on micro-entrepreneurs in urban and semi-urban areas of Maharashtra. Using a strong mixed-methods approach combining Hierarchical Linear Modeling (HLM), time series tracker, and Forecasting-ARIMA, the study produced compelling evidence on the effectiveness of the workshops in improving digital capabilities and performance of the firm. Quantitatively significant improvements in digital readiness, online presence, and customer engagement were identified, particularly among urban respondents, bringing to light the moderating effect of geography. Furthermore, those entrepreneurs who possessed relatively higher levels of digital literacy also made greater gains, evidencing the skill laddering effect of digital literacy.

Using time series data and ARIMA forecasts, we found that there is a sustained post-workshop spike in monthly sales and digital engagement measures, supporting the ongoing value of participating in the workshops. The dramatic change from slow pre-workshop growth in 2023 to strong performance trends in 2024 confirms the catalytic effect of structured digital upskilling. Enhancing online visibility-quality and quantity Did online visibility and interactivity really change just in terms of amounts, or did both quality and quantity of digital visibility/impact change?

Together, these insights suggest that digital marketing interventions, if contextually tailored and systematically enacted, are powerful mechanisms for promoting grassroots entrepreneurship. The research delivers new understanding of digital transformation dynamics at micro-enterprise level, and the significance of place-based strategies and ongoing support. The findings from this study not only contribute to a longstanding gap in regional empirical literature, but they also offer a reproducible blueprint for digital, scalable capacity building efforts. It also, ultimately, underscores digital literacy as a business imperative, and a means to inclusive economic growth.

7. Recommendation

By drawing from the findings of the study, some key strategic guidelines are outlined to improve the efficiency and sustainability of digital marketing interventions for micro entrepreneurs in Maharashtra. Modules for training should be designed in a modular form and for location-specific need. Urban entrepreneurs get the leverage much faster with better digital infrastructure; and hence semi-urban entrepreneurs need more basic level content and infrastructure support.

Secondly, post-training needs to be reinforced. Structured follow-ups via mentorship programs, peer learning cohorts, and digital helpdesks can help sustain and scale early advances. These touch-points will also serve to sustain behavior change and skill retention.

And third, while investment in infrastructure in semi-urban areas — better internet coverage and access to affordable digital devices — should be made at the same time as training. Without also breaking down the systemic barriers, change in workshop results can be in danger of plateauing after the intervention ends.

Fourth, behavioral nudges (e.g. gamified learning, success stories of local peers, micro-incentives) can incentivize regular use of digital platforms. This strategy can also help surpass the psychological concept habit creation.

It is also advisable to create a system for longitudinal monitoring with basic digital dashboards to enable trainers and entrepreneurs alike to monitor their progress and course correct. This research-based feedback loop is vital for ongoing improvement and evidence-based scaling. Finally, creating multi-sectoral collaborations with government, NGOs, private platforms, and local business networks will help ensure

sustainability, relevance and resource mobilization. These partnerships are fundamental to infuse digital marketing abilities in the larger entrepreneurial ecosystem. Taken together, these recommendations seek to turn one-off training into transformation that is long lasting in the micro-enterprises working in the digital age

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