



GENERATIVE AI AND WOMEN-LED
BUSINESSES IN INDIA: REGIONAL RESEARCH SERIES

Business Powered by GenAI

Experiences of Women
Entrepreneurs in Northeast India



REPORT 1 — NORTHEAST INDIA



Business Powered by GenAI

Experiences of Women Entrepreneurs in Northeast India

Prepared by



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India

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Acknowledgement

Quantive Advisory LLP gratefully acknowledges the women entrepreneurs across Northeast India who participated in this study and shared their experiences of using Generative AI in their businesses. We also thank the researchers, field investigators and contributors whose support made this report possible.

We hope the findings of this study contribute to a better understanding of how Generative AI can strengthen women-led businesses and support more inclusive, responsible and locally relevant digital entrepreneurship across the region.

Executive Summary

Generative Artificial Intelligence (GenAI) is rapidly transforming the way businesses create content, communicate with customers, make decisions and improve operational efficiency. For women-led micro, small and medium enterprises (MSMEs), particularly those operating with limited financial and human resources, GenAI offers an opportunity to strengthen productivity, expand market reach and reduce dependence on external professional services. While national discussions on AI adoption continue to grow, limited evidence exists on how women entrepreneurs are using these technologies in practice, particularly in Northeast India. This report seeks to address that gap by examining the experiences, opportunities and challenges of GenAI adoption among women-led businesses across the region.

The study adopted a mixed-methods approach comprising a quantitative survey of 800 women entrepreneurs (100 respondents from each of the eight Northeastern states) and 80 in-depth qualitative interviews. This approach enabled the research to combine statistical evidence on adoption patterns with detailed insights into entrepreneurs' lived experiences, business practices and support requirements.

The findings indicate that GenAI has already moved beyond experimentation and is becoming an increasingly important business enabler for women entrepreneurs. ChatGPT (70%), Canva AI (51.3%) and Google Gemini (45%) emerged as the most widely used platforms, with nearly 63 per cent of respondents using GenAI at least weekly. Adoption is currently strongest in customer-facing activities such as social media content creation, branding, product descriptions and customer communication, while use for business planning, market research and decision

support is steadily increasing. Entrepreneurs reported significant benefits in terms of time savings, improved marketing effectiveness, enhanced customer engagement and greater confidence in managing their businesses. Nearly two-thirds of respondents reported measurable reductions in the time required for routine business tasks, demonstrating GenAI's growing contribution to enterprise productivity.

The qualitative findings further demonstrate that women entrepreneurs increasingly perceive GenAI as a practical business partner rather than simply a technology tool. Six recurring themes emerged from the interviews: improving productivity and time efficiency; strengthening marketing and customer reach; building entrepreneurial confidence and decision-making; addressing the importance of local relevance; ensuring trust, accuracy and verification; and the need for stronger ecosystem support. Entrepreneurs consistently emphasised that while GenAI enables them to work more independently and professionally, its long-term value depends on locally relevant content, responsible use, practical skills and continuous institutional support.

Despite the positive outlook, the study also identifies several barriers limiting deeper adoption. The most frequently reported challenges include inaccurate or misleading AI-generated responses, difficulty verifying information, generic advice that does not adequately reflect local market conditions, limited regional-language support, affordability of advanced AI tools and inadequate digital skills. These findings suggest that future interventions should focus not only on expanding access to AI technologies but also on improving trust, contextual relevance, verification capabilities and responsible AI practices.

Based on these findings, the report proposes a comprehensive set of recommendations centred on practical AI training, sector-specific use cases, regional-language support, verification and digital safety, affordable access to advanced tools, local mentoring ecosystems, stronger integration with entrepreneurship programmes and improved digital infrastructure. These recommendations are supported by a phased implementation roadmap that outlines immediate actions to build foundational capabilities, medium-term interventions to expand institutional support and long-term priorities for developing an inclusive AI ecosystem across Northeast India.

The report concludes that Generative AI has the potential to become a significant catalyst for women-led entrepreneurship across Northeast India. However, achieving this potential will require moving beyond technology adoption towards building an enabling ecosystem that combines practical skills, trusted guidance, local relevance, affordable access and sustained collaboration among governments, technology companies, academic institutions, financial organisations and business support agencies. By investing in these foundations, GenAI can become an important driver of productivity, innovation, business resilience and inclusive economic growth, enabling women entrepreneurs across the region to thrive, compete and participate more effectively in India's evolving digital economy.

1. Introduction

Generative Artificial Intelligence (GenAI) is rapidly moving from a specialised technological capability to an increasingly accessible business resource. Tools capable of generating text, images, designs, translations, presentations and business insights are now being used to support marketing, customer communication, product development, research, documentation and routine administrative work. For micro, small and medium enterprises (MSMEs) operating with limited staff, time and financial resources, GenAI can lower the cost of activities that previously required specialised expertise or external professional support¹. Its significance therefore lies not only in technological innovation, but also in its potential to expand the productive capacity of resource-constrained enterprises.

Women entrepreneurs are increasingly participating in this shift. Across India, women-led businesses are using digital tools to promote products, maintain customer relationships, access markets and manage day-to-day operations. The scale of women's participation in the MSME economy is already substantial, as of November 2024, more than 2.20 crore women-owned MSMEs had registered on the Udyam Registration and Udyam Assist platforms. Earlier official data also indicated that women-owned enterprises constituted approximately 20.5 per cent of Udyam-registered MSMEs and accounted for 18.73 per cent of employment generated by registered units².

Women-owned enterprises are also important generators of employment and local economic activity beyond the formally registered segment. The World Bank estimates that women-owned rural enterprises in India provide employment to approximately 22-27 million people. Yet many of these enterprises remain small, self-financed and constrained by limited access to formal credit, markets, technology, professional networks and tailored business-development services³. Digital technologies, including GenAI, can therefore serve not merely as

¹ <https://www.pwc.in/assets/pdfs/unlocking-the-ai-edge-for-msmes.pdf>

² <https://www.pib.gov.in/PressReleasePage.aspx>

³ <https://www.worldbank.org/en/news/feature/2024/11/21/giving-a-boost-to-rural-women-entrepreneurs>

productivity tools but as mechanisms for improving business visibility, resilience, creativity and access to new markets.

For women entrepreneurs, the value of GenAI can be particularly practical. A business owner may use it to draft social-media posts, create product descriptions, translate promotional content, prepare customer responses, generate packaging ideas, develop training material or structure business documents. These applications can reduce dependence on external service providers and enable entrepreneurs to undertake activities that may otherwise be delayed or unaffordable. GenAI may also strengthen confidence by helping first-generation entrepreneurs convert business ideas into more professional and market-ready outputs.

However, access to GenAI does not automatically translate into meaningful or equitable adoption. Women continue to face disparities in digital access, device ownership, connectivity and advanced digital skills. The latest GSMA evidence shows that women in low- and middle-income countries remain 12 per cent less likely than men to use mobile internet, representing approximately 200 million fewer women online⁴. Although this figure covers developing economies collectively rather than India alone, it illustrates the wider gendered digital environment within which women entrepreneurs engage with emerging technologies.

These inequalities can be compounded by the cost of internet access, limited digital confidence, language barriers and concerns about safety and privacy. For entrepreneurs, the implications extend beyond initial access. Effective use of GenAI requires the ability to frame clear instructions, evaluate outputs, protect confidential business information and distinguish credible information from inaccurate or fabricated responses. Without suitable guidance, entrepreneurs may use GenAI only for basic content generation and remain unable to unlock higher-

⁴ <https://www.gsma.com/gender-gap>

value applications such as market analysis, business planning, process improvement and decision support.

These dynamics assume particular importance in Northeast India. Women entrepreneurs across the region play a visible role in handloom and handicrafts, food processing, agriculture and allied activities, retail, tourism, creative industries and professional services. Many of these enterprises are locally rooted, small in scale and geographically dispersed. Limited access to specialised business services, fragmented markets, connectivity constraints and distance from major commercial centres can restrict their ability to expand. At the same time, accessible GenAI tools can help women entrepreneurs create promotional materials, engage customers, translate content, experiment with new products, improve documentation and reach markets beyond their immediate locations.

The policy environment is also becoming more supportive of digital and AI-led enterprise development. More than 5.70 crore MSMEs were registered on the Udyam Registration and Udyam Assist platforms by June 2025, underscoring the size of the enterprise base that could potentially benefit from digital transformation. The Government of India has also introduced the MSME-TEAM initiative with an outlay of ₹277.35 crore to support the digital empowerment of five lakh micro and small enterprises, including a target of 2.5 lakh women-owned MSEs⁵

At the broader technology-policy level, the IndiaAI Mission was approved with an outlay of ₹10,371.92 crore to expand access to computing, datasets, skills, innovation support and safe and trusted AI⁶. Government initiatives are increasingly recognising that the diffusion of AI must extend beyond large companies and technology start-ups to include MSMEs and other resource-constrained organisations. This creates an important opportunity to examine whether women-led enterprises are able to participate meaningfully in India's emerging AI ecosystem and what forms of support would enable them to do so.

⁵ <https://www.pib.gov.in/PressNoteDetails.aspx>

⁶ <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2178092®=3&lang=2>

The present report builds upon Quantive Advisory LLP's earlier nationwide study, *Mapping Generative AI Adoption Across India's MSME Ecosystem*⁷. Based on a survey of 14,000 MSMEs across 26 Indian states, that research found that only 27 per cent of surveyed enterprises were using GenAI tools. Adoption was comparatively stronger in digitally mature markets such as Delhi NCR, Maharashtra, Telangana, Gujarat and Karnataka, while enterprises across several eastern, central and northeastern states demonstrated lower levels of adoption.

The earlier study also found that GenAI use among MSMEs was concentrated primarily in marketing and content creation, with considerably less penetration into analytics, automation and decision-support functions. Non-adoption appeared to be driven less by a lack of perceived value than by limited technical knowledge, inadequate training, uncertainty about appropriate use, and concerns relating to privacy, security and accuracy. At the same time, both users and non-users expressed a strong expectation that government, industry and ecosystem institutions should provide structured support for responsible AI adoption.

During the nationwide research, however, the study team encountered a number of women-led MSMEs in Northeast India that were already using GenAI in meaningful and innovative ways. These entrepreneurs were applying the technology to real business requirements such as creating marketing content, engaging customers, generating product ideas, translating materials, preparing documents and improving their digital presence. Their experiences demonstrated that women entrepreneurs are not merely potential beneficiaries of AI adoption; many are already experimenting with these tools, adapting them to local business needs and deriving tangible value despite limitations in infrastructure, training and ecosystem support.

These experiences provided the motivation for *Business Powered by GenAI: Experiences of Women Entrepreneurs in Northeast India*. Rather than focusing only on adoption rates, the report documents how women entrepreneurs are using GenAI in practice, the benefits they are obtaining and the challenges they continue

⁷ <https://quantiveadvisory.com/publications>

to encounter. It highlights examples of increased productivity, reduced costs, enhanced creativity, improved customer communication, stronger market visibility and greater confidence in business decision-making.

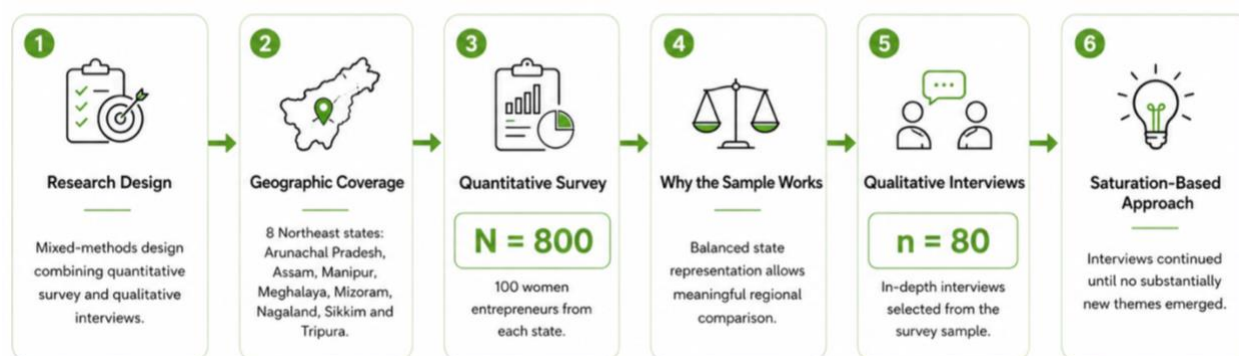
The report also examines the constraints that may limit deeper and more responsible use, including language and connectivity barriers, lack of structured training, difficulty verifying AI-generated information, privacy and security concerns, affordability of premium tools and limited institutional guidance. By placing women entrepreneurs' voices and business experiences at the centre of the analysis, the study seeks to move beyond general claims regarding AI's transformative potential and generate grounded evidence on where GenAI is already creating value and where targeted support remains necessary.

The findings are intended to inform policymakers, technology companies, financial institutions, business associations, academic institutions and development organisations seeking to promote inclusive digital entrepreneurship. More specifically, the report aims to support the design of locally relevant training, regional-language resources, verification and digital-safety guidance, affordable access mechanisms and ecosystem partnerships that can help women-led enterprises across Northeast India use GenAI confidently, productively and responsibly.

2. Approach and Methodology

The methodology was designed to capture both the scale of GenAI use and the lived experiences of women entrepreneurs across Northeast India. A mixed-methods approach was adopted, combining a structured quantitative survey with qualitative interviews. This enabled the study to identify broader patterns of adoption, business use, perceived benefits and operational challenges, while also exploring the motivations, concerns and local realities shaping how entrepreneurs engage with GenAI.

Figure 1: Overview of the Mixed-Methods Research Methodology



Source: Generated by Authors

The research covered all eight northeastern states, with equal state-level representation to support balanced regional analysis. The quantitative survey included 800 women entrepreneurs, while 80 respondents were selected for in-depth interviews. The qualitative component followed a saturation-based approach, with interviews continuing until no substantially new themes emerged. Together, these methods provided both breadth and depth, allowing the study to develop a grounded understanding of GenAI use among women-led businesses in the region.

2.1 Research Design

The study adopted a mixed-methods research design to examine how women-led MSMEs across Northeast India are using GenAI and to understand the benefits, challenges and business outcomes associated with its use. The methodology combined a large-scale quantitative survey with in-depth qualitative interviews,

allowing the study to capture both measurable patterns and the lived experiences of women entrepreneurs.

The quantitative component provided evidence on the scale, nature and variation of GenAI use across the region, while the qualitative component explored entrepreneurs' experiences, perceptions and decision-making processes in greater depth. This combination enabled the study to examine not only whether and how GenAI was being used, but also the business circumstances, confidence levels, practical constraints and support needs shaping its adoption.

2.2 Geographic Coverage

The study covered all eight states of Northeast India. Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura.

An equal number of respondents was included from each state to ensure balanced regional representation. This approach prevented findings from being disproportionately influenced by states with larger populations or more developed entrepreneurial ecosystems and allowed for meaningful comparison across different state contexts.

2.3 Quantitative Survey

The quantitative component covered 800 women entrepreneurs, comprising 100 respondents from each of the eight northeastern states. All respondents were women founders, co-founders, owners or principal decision-makers of businesses that had already used GenAI tools for business-related activity.

The state-level allocation of 100 respondents provided a sufficiently broad base to identify regional patterns while maintaining equal representation across all eight states.

2.4 Appropriateness of the Sample Size

A quantitative sample of 800 respondents offered sufficient breadth to assess variations across business sectors, age groups, enterprise sizes, operating models

and levels of GenAI use. It also enabled the study to identify recurring patterns in the business applications, perceived benefits and challenges associated with the technology.

The equal allocation of respondents across states strengthened the regional character of the research. Although the eight northeastern states differ considerably in population size, digital infrastructure and enterprise ecosystems, the balanced sample ensured that the experiences of entrepreneurs from smaller states were not overshadowed by those from relatively larger markets.

The study is therefore intended to provide a robust regional assessment of the experiences of women entrepreneurs who are already engaging with GenAI tools. It does not seek to estimate the overall prevalence of GenAI adoption among all women-led MSMEs in Northeast India.

2.5 Qualitative Interviews

To complement the quantitative findings, 80 respondents were selected from the survey sample for in-depth qualitative interviews. The qualitative component explored issues that could not be fully captured through structured survey questions.

The interviews enabled respondents to explain how GenAI was being used within their specific business environments and how its usefulness varied according to enterprise needs, digital capabilities and local conditions.

2.6 Saturation-Based Approach

The qualitative interviews followed a saturation-based approach. Interviews continued until the research team observed that no substantially new themes, experiences or concerns were emerging from the discussions. This ensured that the qualitative component captured a sufficiently diverse range of perspectives while avoiding unnecessary repetition.

The integration of quantitative breadth and qualitative depth enabled the study to present both measurable trends and contextualised business experiences. The quantitative findings identify the broader patterns of GenAI adoption, while the qualitative evidence helps explain why those patterns exist and how they are experienced by women entrepreneurs across Northeast India.

3. Quantitative Insights

The findings present a detailed picture of how women entrepreneurs across Northeast India are integrating GenAI into their business activities. They examine the tools being used, the purposes for which GenAI is applied, the frequency of use, and the perceived effects on productivity, marketing, customer engagement, creativity and decision-making. The analysis also highlights the practical constraints that continue to shape adoption, including gaps in digital skills, language limitations, connectivity challenges, concerns about accuracy and privacy, and limited access to structured training.

The findings show that GenAI use among women-led MSMEs is already extending beyond experimentation. Many respondents are applying these tools to routine and commercially relevant business functions, particularly content creation, digital marketing, customer communication and idea generation. At the same time, adoption remains uneven in depth, with considerable scope to strengthen entrepreneurs' ability to use GenAI for more advanced functions such as business planning, data analysis, automation and strategic decision support.

3.1 Generative AI Tools Used for Business

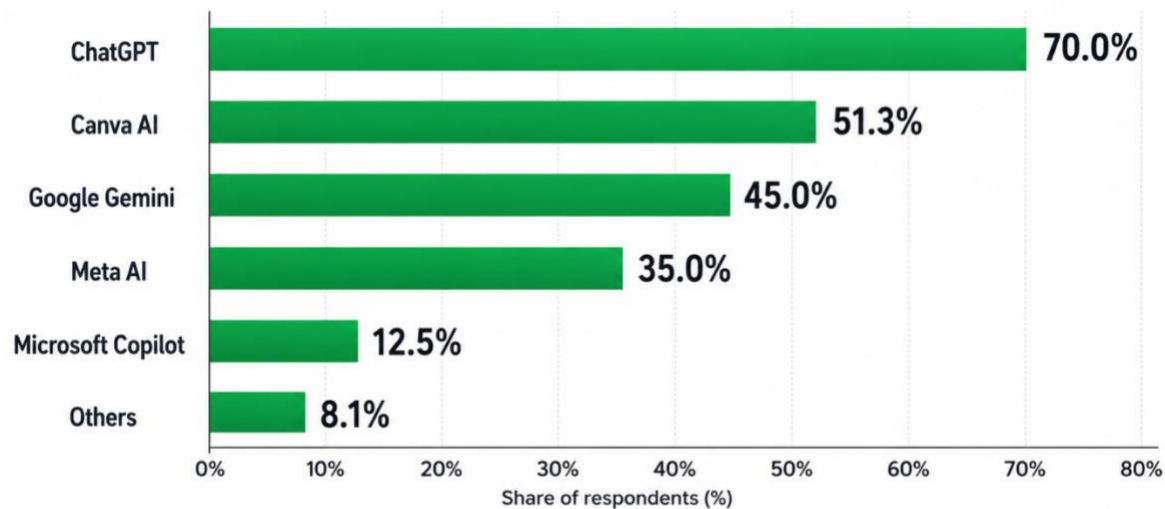
Respondents were asked to identify the GenAI tools they currently use for business purposes. As this was a multiple-response question, participants could select more than one platform.

Figure 2 show that ChatGPT is the most widely used GenAI tool, reported by 70.0 per cent of respondents. Its strong adoption suggests that women entrepreneurs value platforms that can support a wide range of business activities, including content creation, customer communication, research, idea generation and preparation of business documents.

Canva AI is the second most commonly used tool, at 51.3 per cent, reflecting the importance of visual communication and digital marketing for women-led enterprises. Its substantial use indicates that entrepreneurs are applying GenAI to create social-media content, promotional materials, product catalogues and other

visual assets without relying extensively on professional design services. Google Gemini is used by 45.0 per cent of respondents, indicating considerable demand for tools that combine information discovery, content generation and general business assistance.

Figure 2: GenAI tools currently being used for business (n=800)



Note: Respondents could select more than one GenAI tool. Therefore, the percentages represent the share of respondents using each tool and do not add up to 100 per cent.

Source: Author's Analysis

Meta AI is used by 35.0 per cent of respondents, which may partly reflect its accessibility through commonly used social-media and messaging platforms. By comparison, Microsoft Copilot has a considerably lower adoption rate of 12.5 per cent, possibly because its applications are more closely associated with formal workplace software and productivity ecosystems that may be less widely used by MSMEs. Other GenAI tools collectively account for 8.1 per cent of respondents.

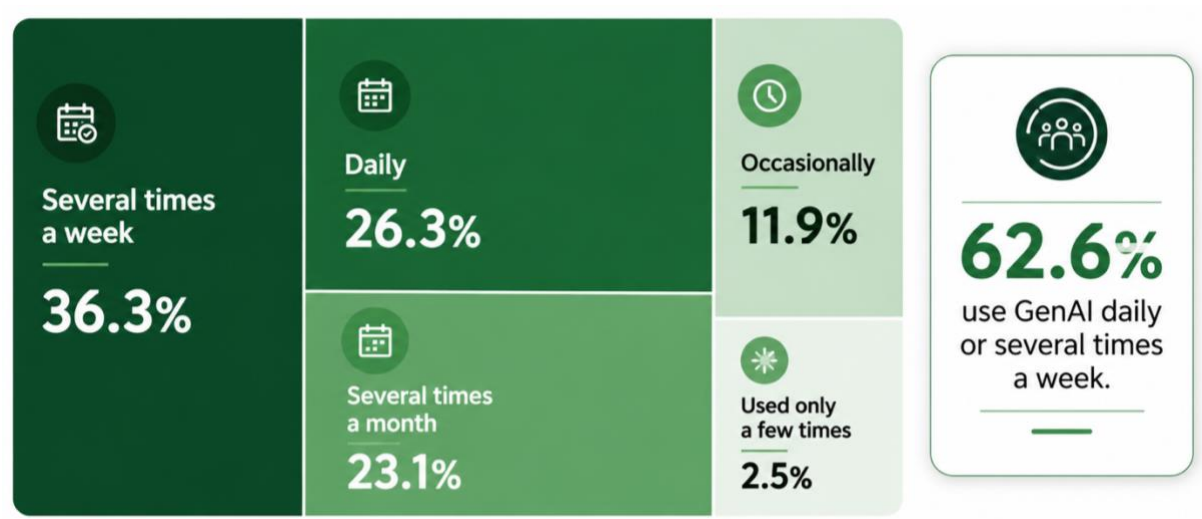
So, the pattern indicates that adoption is concentrated around accessible, multipurpose and content-oriented platforms. The relatively high use of ChatGPT, Canva AI and Google Gemini suggests that women entrepreneurs are currently prioritising immediate business needs such as marketing, communication, content development and research. The lower use of productivity- and enterprise-oriented tools also highlights an opportunity for capability-building programmes that help

entrepreneurs move towards higher-value applications, including business planning, workflow improvement, data analysis and decision support.

3.2 Frequency of GenAI Use for Business

Respondents were asked how frequently they use GenAI tools for business-related purposes. The frequency of use provides an indication of the extent to which GenAI has become integrated into entrepreneurs’ regular business practices rather than remaining an occasional or experimental tool.

Figure 3: Frequency of GenAI Use for Business (n=800)



Source: Author’s Analysis

Figure 3 show that 36.3 per cent of respondents use GenAI several times a week, making this the most common pattern of use. A further 26.3 per cent use GenAI daily. Together, these groups account for 62.6 per cent of respondents, indicating that nearly two-thirds of the surveyed women entrepreneurs use GenAI frequently and have incorporated it into their routine business activities.

Another 23.1 per cent use GenAI several times a month, suggesting periodic use for specific requirements such as preparing promotional content, developing product ideas, communicating with customers or completing administrative tasks.

Meanwhile, 11.9 per cent use GenAI only occasionally, and just 2.5 per cent reported having used it only a few times.

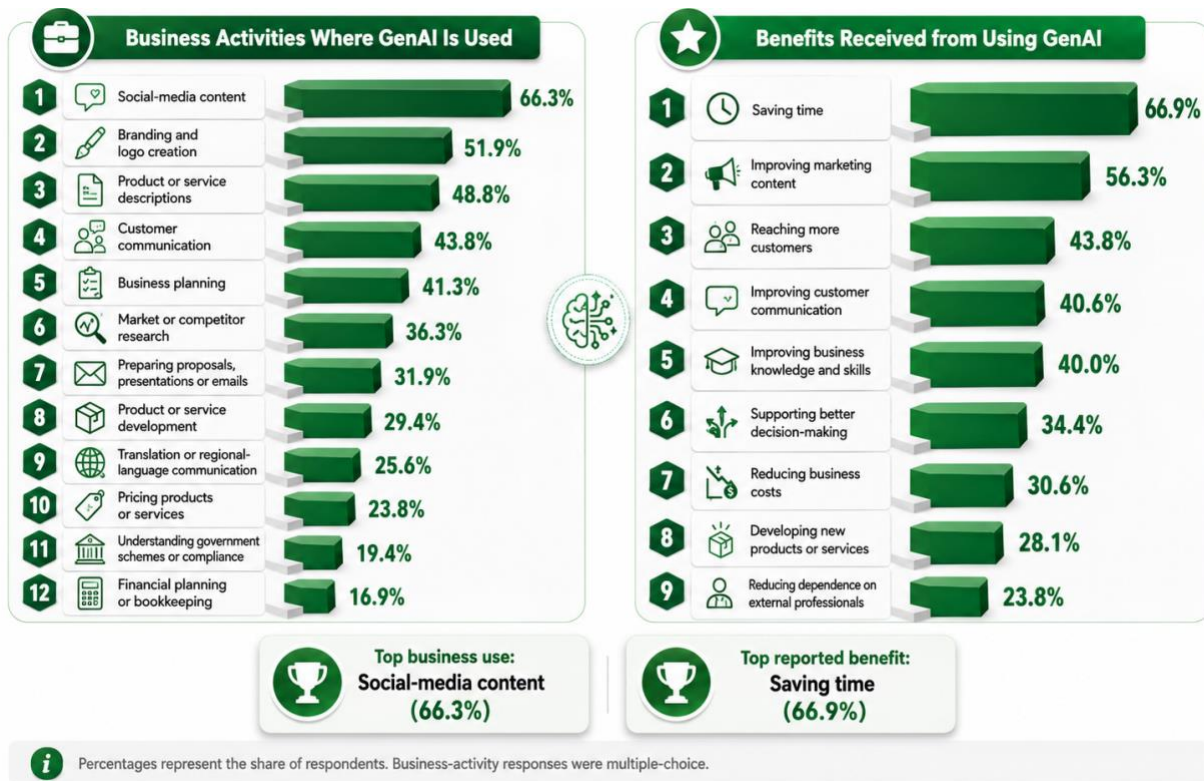
The findings demonstrate that GenAI use among the surveyed entrepreneurs is not limited to one-time experimentation. The high proportion of daily and weekly users suggests that these tools are becoming a recurring part of business operations. However, the presence of less-frequent users also indicates variation in confidence, business relevance, digital skills and awareness of potential applications. Targeted training and practical demonstrations could help occasional users identify more consistent and higher-value uses of GenAI within their enterprises.

3.3 Business Activities for Which GenAI is Used and Key Benefits Reported

Respondents were asked, first, to identify the business activities for which they currently use Generative AI and, second, to indicate the most important benefits they have received from using these tools. These findings provide a clearer picture of both the practical uses of GenAI in women-led MSMEs and the value entrepreneurs believe it is generating.

Figure 4 show that GenAI is used most heavily for social-media content creation, reported by 66.3 per cent of respondents. This makes it the single most common business use, highlighting the central importance of digital visibility, online promotion and customer-facing communication for women-led MSMEs. Other major uses include branding and logo creation (51.9 per cent), product or service descriptions (48.8 per cent) and customer communication (43.8 per cent). These patterns suggest that GenAI is being used primarily in areas that support marketing, communication and presentation, enabling entrepreneurs to produce professional-looking outputs more quickly and at lower cost.

Figure 4: How Women Entrepreneurs Use GenAI and What Benefits They Receive



Source: Author's Analysis

Note: The business-activity question was multiple-response in nature, so percentages represent the share of respondents selecting each activity and do not add up to 100 per cent.

A second tier of applications reflects more strategic and knowledge-oriented uses. Business planning is reported by 41.3 per cent of respondents, while market or competitor research is cited by 36.3 per cent. In addition, 31.9 per cent use GenAI for preparing proposals, presentations or emails, and 29.4 per cent use it for product or service development. These findings indicate that women entrepreneurs are not using GenAI only for outward-facing promotional tasks, but are also beginning to apply it to business thinking, planning and internal decision-support functions.

At the same time, some business uses remain comparatively less common. Translation or regional-language communication is reported by 25.6 per cent of

respondents, pricing products or services by 23.8 per cent, understanding government schemes or compliance by 19.4 per cent, and financial planning or bookkeeping by 16.9 per cent. This suggests that while GenAI adoption is broadening, its use is still concentrated more strongly in communication- and content-related functions than in technical, financial or compliance-oriented tasks.

The reported benefits closely mirror these usage patterns. The most frequently cited benefit is saving time, identified by 66.9 per cent of respondents. This strongly suggests that entrepreneurs view GenAI as a practical productivity tool that helps them complete business tasks faster and with less effort. The second most common benefit is improving marketing content (56.3 per cent), reinforcing the finding that GenAI is especially valuable in helping businesses strengthen their promotional and communication activities.

Other important benefits include reaching more customers (43.8 per cent), improving customer communication (40.6 per cent) and improving business knowledge and skills (40.0 per cent). These findings indicate that GenAI is not only helping women entrepreneurs produce content but is also supporting broader business development by improving engagement, learning and confidence. In addition, 34.4 per cent report that GenAI supports better decision-making, while 30.6 per cent say it helps in reducing business costs.

Further, 28.1 per cent of respondents report that GenAI is helping them in developing new products or services, and 23.8 per cent say it is reducing dependence on external professionals. This is particularly significant for small businesses with limited access to specialised services, as it suggests that GenAI may be helping entrepreneurs perform tasks internally that might otherwise require outside support in areas such as writing, design, ideation or communication.

The findings show that GenAI is creating value for women-led MSMEs primarily by strengthening marketing effectiveness, saving time, improving communication and supporting business learning. The strong concentration of use in social-media content, branding and product descriptions shows that adoption is currently most mature in customer-facing business functions. However, the presence of

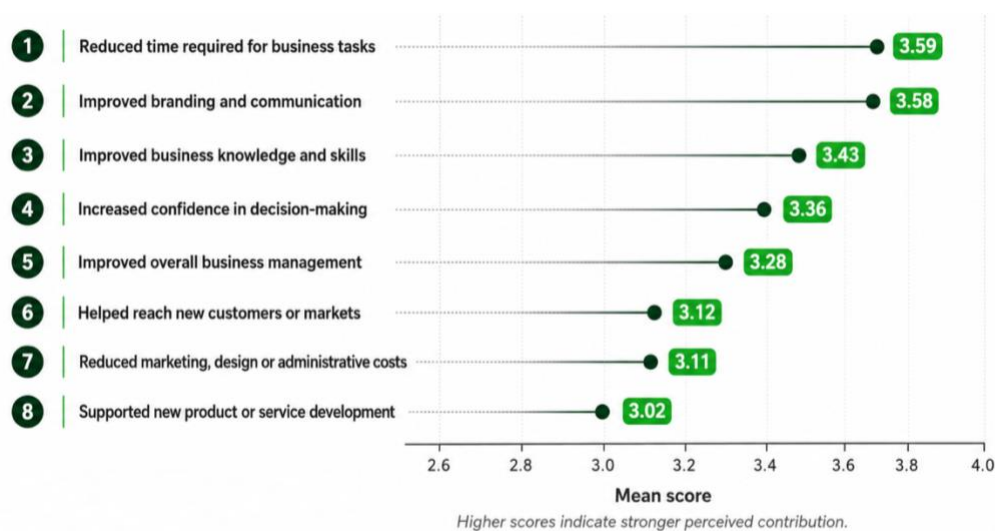
meaningful use in planning, research, product development and decision-making also suggests that GenAI is beginning to move beyond basic content generation and toward more strategic business applications.

3.4 Perceived Contribution of GenAI to Business Performance

Respondents were asked to assess the extent to which Generative AI had contributed to different areas of their businesses. The mean scores show that entrepreneurs perceive GenAI as making a positive contribution across all eight dimensions examined, with scores ranging from 3.02 to 3.59. This indicates that the technology is already generating practical value, although the strength of that contribution varies across business functions.

As shown in figure 5, the strongest contribution is reported in reducing the time required for business tasks, with the highest mean score of 3.59. This finding reinforces the earlier evidence that time savings are among the most immediate and visible benefits of GenAI. Women entrepreneurs appear to be using these tools to complete content creation, communication, research and administrative tasks more efficiently, thereby easing pressure on businesses that often operate with limited staff and resources.

Figure 5: Perceived Business Contribution of GenAI Tools



Source: Author’s Analysis

The second-highest contribution is improved branding and communication, with a mean score of 3.58. This closely aligns with the high use of GenAI for social-media content, branding, product descriptions and customer interaction. It suggests that entrepreneurs view GenAI as particularly effective in strengthening how their businesses present themselves, communicate with customers and maintain a more professional market presence.

GenAI also contributes meaningfully to business knowledge and skills, which received a mean score of 3.43, and to confidence in decision-making, with a score of 3.36. These results indicate that its value extends beyond task execution. By helping entrepreneurs access information, explore alternatives and structure ideas, GenAI may also support learning, problem-solving and greater confidence in managing business decisions.

The contribution to overall business management is moderately positive, with a mean score of 3.28. This suggests that some entrepreneurs are beginning to integrate GenAI into broader managerial activities, although adoption at this level may still be less developed than its use for content and communication. Similarly, the scores for reaching new customers or markets (3.12) and reducing marketing, design or administrative costs (3.11) show positive but comparatively weaker effects.

The lowest mean score is recorded for supporting new product or service development, at 3.02. While still positive, this indicates that GenAI is currently being used more extensively to improve existing business processes than to drive innovation or diversification. This may reflect limited familiarity with advanced applications, lower confidence in using AI for product development, or a lack of sector-specific guidance.

So, the results suggest that GenAI's strongest current contribution lies in efficiency, branding and communication, while its role in market expansion, cost reduction and innovation remains comparatively less developed. The findings point to an important transition. Women entrepreneurs are already deriving immediate

operational benefits from GenAI, but further training and tailored support could help them move towards more strategic and growth-oriented applications.

3.5 Perceived Contribution of GenAI to Business Performance

Respondents were asked to identify the measurable outcomes they had experienced after using Generative AI in their businesses. The findings show that GenAI is generating tangible benefits across a wide range of operational, marketing and growth-related areas, although the strength of these outcomes differs considerably.

As shown in figure 6, the most widely reported outcome is a reduction in the time required for business tasks, cited by 65.0 per cent of respondents. This confirms that efficiency remains the clearest and most immediate benefit of GenAI adoption. By helping entrepreneurs prepare content, draft communications, conduct research and complete routine administrative work more quickly, GenAI appears to be easing operational pressure on women-led MSMEs that often function with limited staff and resources.

The second most common outcome is an improvement in branding or social-media presence, reported by 55.0 per cent of respondents. This closely reflects the strong use of GenAI for social-media content, branding and visual communication. It suggests that women entrepreneurs are using these tools to strengthen the professionalism, consistency and reach of their digital presence.

Figure 6: Measurable Outcomes Experienced After Using GenAI Tools



Source: Author's Analysis

A substantial proportion of respondents also reported improvements in customer-facing outcomes. Improved customer communication was identified by 45.6 per cent, while 40.0 per cent experienced an increase in customer enquiries. In addition, 33.8 per cent reported reaching customers beyond their local markets. Together, these findings indicate that GenAI is helping women-led businesses improve both the quality and reach of customer engagement, potentially enabling them to move beyond geographically limited markets.

GenAI is also contributing to internal business capability. Improved business decision-making was reported by 37.5 per cent of respondents, suggesting that entrepreneurs are beginning to use AI not only for execution but also for information gathering, problem-solving and evaluating business options. At the same time, 30.0 per cent experienced reduced marketing or administrative costs, highlighting the potential of GenAI to substitute for certain external services or reduce the time and resources required for routine business functions.

More growth-oriented outcomes are visible, but at lower levels. Increased sales or revenue was reported by 28.8 per cent of respondents, while 24.4 per cent had launched a new product or service after using GenAI. These results are important because they show that the technology is beginning to contribute not only to efficiency and communication, but also to commercial expansion and innovation. However, the lower incidence of these outcomes suggests that translating GenAI use into direct revenue growth or product development may require greater capability, sustained use and more sector-specific support.

Only 3.1 per cent of respondents reported that they had not yet experienced any measurable outcome, while 5.0 per cent selected other outcomes. This indicates that the overwhelming majority of surveyed entrepreneurs were able to identify at least one practical benefit arising from GenAI use.

So, the pattern reveals a clear progression in how value is being realised. The strongest outcomes are currently concentrated in time savings, branding and communication, followed by customer reach and decision-making, while effects on revenue growth and new product development are present but less widespread. This suggests that GenAI is first creating value by improving existing business processes, with more advanced commercial outcomes emerging as entrepreneurs gain confidence and deepen their use of the technology.

3.6 Time Saved Per Week Through the Use of GenAI Tools

Respondents were asked to estimate how much time GenAI saves them during a typical week. The findings indicate that time savings are substantial for a large proportion of women entrepreneurs, reinforcing the earlier evidence that efficiency is one of the most important benefits of GenAI adoption.

As shown in figure 7, the largest group of respondents, 36.3 per cent, reported saving between one and three hours per week, while a further 28.8 per cent estimated savings of four to six hours. Together, these groups account for 65.1 per cent of respondents, showing that nearly two-thirds save between one and six hours in a typical week. For small businesses with limited staff, even a few hours of

weekly time savings can be significant, particularly when entrepreneurs manage marketing, communication, administration and customer engagement themselves.

A further 15.6 per cent reported saving between seven and ten hours per week, while 6.9 per cent estimated savings of more than ten hours. This means that 22.5 per cent of respondents save at least seven hours each week. For these entrepreneurs, GenAI appears to be functioning as a more deeply embedded productivity tool, potentially replacing a substantial amount of manual work across content creation, research, communication and business administration.

At the lower end, 12.5 per cent reported saving less than one hour per week. This may reflect limited frequency of use, narrower applications, lower confidence or the early stage of adoption. An equal share, 12.5 per cent, could not estimate their time savings, suggesting that some entrepreneurs may recognise the usefulness of GenAI without systematically tracking its effect on their workload.

Figure 7: Time Saved Per Week With GenAI Tools



Source: Author's Analysis

The findings show that GenAI is delivering a meaningful productivity dividend for most respondents. The concentration of responses in the one-to-six-hour range suggests that the technology is helping women entrepreneurs recover valuable time without necessarily requiring advanced technical use. These savings can allow business owners to focus more attention on customers, product development, planning and other higher-value activities.

3.7 Main Challenges Faced While Using GenAI Tools for Business

Respondents were asked to identify the main challenge they face when using Generative AI for business purposes. The results show that the most significant barriers are not related simply to access, but to the quality, reliability and relevance of AI-generated outputs. This suggests that many women entrepreneurs are

already able to access GenAI tools, but face difficulty using them with sufficient confidence for real business decisions.

As shown in figure 8, the most frequently reported challenge is inaccurate or misleading responses, identified by 46.3 per cent of respondents. Closely related to this, 41.9 per cent reported difficulty verifying AI-generated information. Together, these findings highlight a major trust and validation problem. Entrepreneurs may find AI useful for generating ideas or drafting content, but uncertainty about whether the output is factually correct can limit its use in areas such as pricing, compliance, financial planning or strategic decision-making.

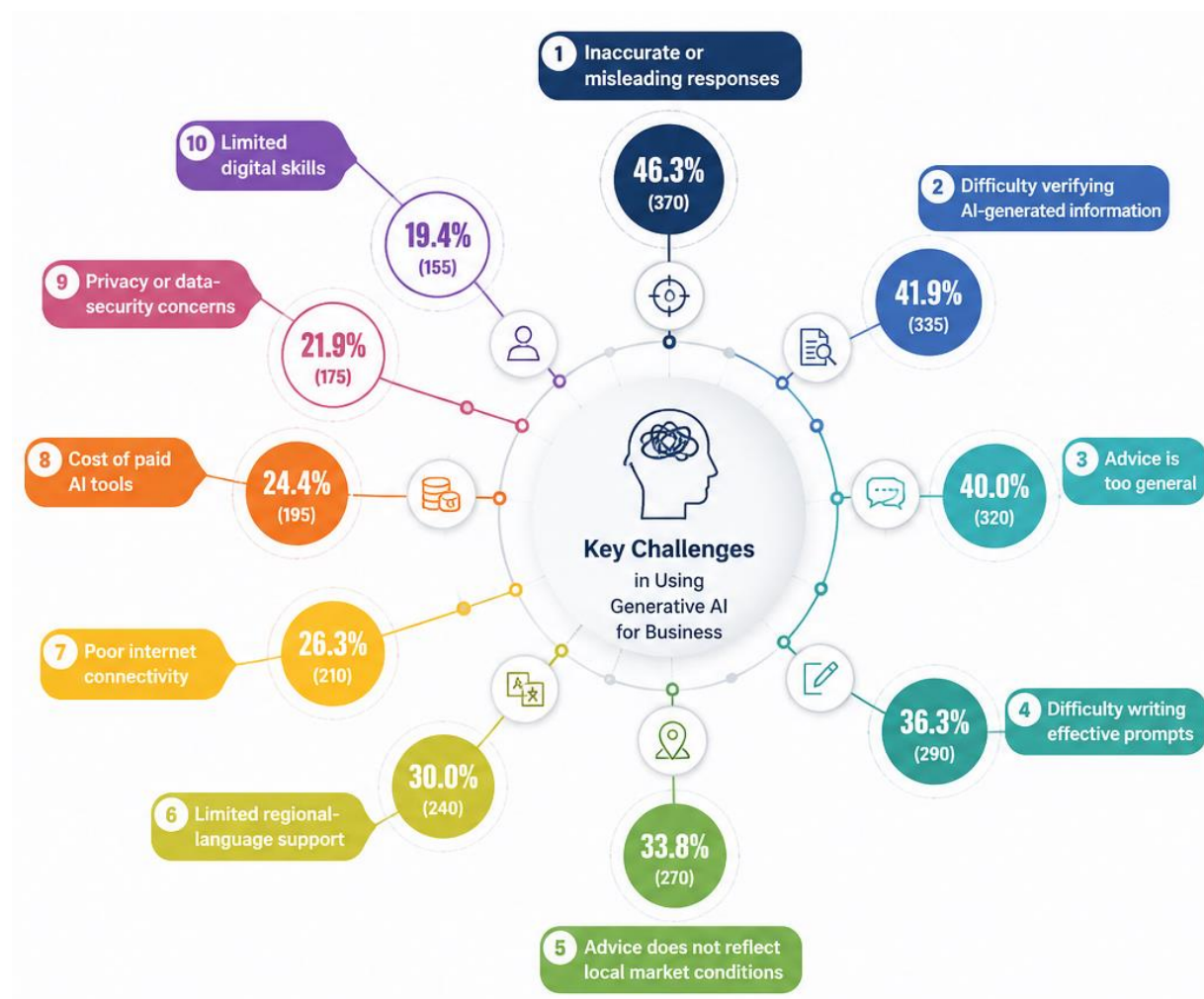
A second group of challenges concerns the relevance and usability of AI-generated advice. Forty per cent of respondents said that the advice provided is too general, while 33.8 per cent felt that it does not adequately reflect local market conditions. This is particularly important in Northeast India, where businesses often operate in geographically dispersed, culturally diverse and highly localised markets. Generic recommendations may therefore have limited practical value unless entrepreneurs are able to adapt them to specific customer preferences, languages and business environments.

The findings also point to a capability gap in how entrepreneurs interact with GenAI. Difficulty writing effective prompts was reported by 36.3 per cent of respondents, while 19.4 per cent identified limited digital skills as a challenge. This indicates that effective adoption depends not only on access to the technology, but also on the ability to ask precise questions, refine outputs and judge whether the response is suitable for business use.

Language and infrastructure constraints remain important as well. Limited regional-language support was reported by 30.0 per cent, while 26.3 per cent cited poor internet connectivity. These barriers can reduce the accessibility and usefulness of GenAI for entrepreneurs operating outside major urban centres or those who are more comfortable conducting business in regional languages.

Affordability and trust-related concerns are also evident. The cost of paid AI tools was identified by 24.4 per cent of respondents, while 21.9 per cent expressed privacy or data-security concerns. These findings suggest that even where free tools are available, access to more advanced features may remain limited, while uncertainty about how business information is stored or used may discourage entrepreneurs from sharing sensitive data.

Figure 8: Main Challenges Faced While Using GenAI Tools for Business



Source: Author's Analysis

The results show that the principal challenge is not a lack of interest in GenAI, but the absence of sufficient trust, verification skills, local relevance and practical guidance. The barriers are therefore interconnected, weak prompting skills can

produce generic responses, generic responses are difficult to apply locally, and limited verification capacity increases the risk of relying on inaccurate information.

4. Qualitative Insights

While the quantitative survey provides evidence on the extent and patterns of Generative AI adoption, it does not fully capture how women entrepreneurs experience the technology in their day-to-day business operations. To address this, the study conducted in-depth qualitative interviews with 80 women entrepreneurs drawn from across the eight states of Northeast India. These conversations explored how entrepreneurs first discovered GenAI, the ways in which they integrated it into their businesses, the benefits they perceived, the constraints they encountered, and the forms of support they considered necessary for more meaningful adoption.

Rather than viewing GenAI solely as a technology, participants discussed it as a practical business resource that interacts with the realities of running a small enterprise in geographically dispersed and resource-constrained environments. Their experiences revealed that the value of GenAI extends beyond simple automation or content generation. For many entrepreneurs, it has become a tool for improving productivity, strengthening customer engagement, building confidence, supporting independent decision-making, and enabling them to perform tasks that previously required specialised knowledge or external professional assistance.

At the same time, the interviews also highlighted that deeper adoption remains constrained by concerns relating to trust, verification, local relevance, language support, and digital capability. Although entrepreneurs generally expressed optimism about the potential of GenAI, most emphasised that technology alone cannot transform businesses without appropriate ecosystem support, practical training, mentorship and locally contextualised guidance.

Figure 9: Qualitative Insights Model



Source: Author's Analysis

Across all interviews, six recurring themes consistently emerged. Together, these themes provide a comprehensive understanding of how women entrepreneurs perceive, use and evaluate Generative AI within the specific economic and social context of Northeast India. Rather than representing isolated observations, they reflect common experiences shared across different sectors, enterprise sizes and states, and collectively illustrate both the opportunities and the limitations shaping the next phase of AI-enabled entrepreneurship in the region.

4.1 Productivity and Time Efficiency

The most consistently expressed benefit across the interviews was the significant improvement in productivity and the ability to complete routine business activities more efficiently. Many entrepreneurs explained that GenAI has become an everyday operational assistant, enabling them to perform tasks that previously consumed considerable time or required external support. Activities such as writing product descriptions, preparing marketing captions, responding to customer

enquiries, drafting business documents, creating presentations, translating promotional material and generating business ideas could now be completed within minutes rather than hours.

For businesses operating with very small teams, where owners often perform multiple roles simultaneously, these time savings were viewed as particularly valuable. Entrepreneurs described using the additional time to engage with customers, improve product quality, expand their digital presence or focus on strategic aspects of their businesses rather than routine administrative work. Several respondents also noted that GenAI had reduced their dependence on freelancers or external agencies for basic content creation and communication tasks, allowing them to manage these activities independently while lowering operating costs.

The interviews therefore suggest that productivity gains represent the most immediate and tangible contribution of GenAI. Rather than replacing entrepreneurs, the technology is enabling them to work more efficiently and make better use of limited time and resources.

4.2 Stronger Marketing and Customer Reach

A second major theme concerned the role of GenAI in improving marketing capability and expanding customer engagement. Entrepreneurs consistently reported that AI-enabled tools had strengthened their ability to communicate with customers, develop attractive promotional content and maintain a more professional digital presence across online platforms.

Many participants explained that before adopting GenAI, producing marketing material was often difficult due to limited design skills, lack of professional writers or financial constraints. AI-powered tools now enable them to generate social media posts, advertising copy, product catalogues, promotional images and customer communication materials with significantly less effort. Several entrepreneurs believed that these improvements had increased customer

enquiries, enhanced brand visibility and helped them present their businesses more professionally.

However, respondents also recognised that stronger digital visibility does not automatically translate into immediate increases in sales. Instead, they viewed GenAI as improving the quality of customer interactions, strengthening brand credibility and gradually expanding market reach. For many women-led enterprises, particularly those operating from smaller towns and rural locations, improved online visibility was considered an important first step towards accessing wider regional and national markets.

4.3 Confidence, Independence and Decision Support

Beyond operational efficiency, many women entrepreneurs described GenAI as contributing to greater confidence in managing their businesses. First-generation entrepreneurs, in particular, explained that AI tools often serve as an accessible starting point for exploring unfamiliar business topics, generating ideas and organising information before making decisions.

Respondents reported using GenAI to understand marketing strategies, explore pricing approaches, prepare business proposals, structure presentations and learn about new business opportunities. Several participants noted that having immediate access to explanations and suggestions reduced their hesitation when undertaking unfamiliar tasks and encouraged greater experimentation and innovation within their enterprises.

Importantly, entrepreneurs did not perceive GenAI as replacing human judgement. Instead, they consistently described it as a decision-support tool that complements their own knowledge and experience. Final business decisions continued to rely on personal judgement, customer feedback and local market understanding. In this sense, GenAI was viewed as strengthening entrepreneurial confidence rather than substituting entrepreneurial capability.

4.4 Gaps in Local Relevance

Although respondents generally appreciated the usefulness of GenAI, many also expressed concern that AI-generated responses often lacked sufficient local context. Entrepreneurs explained that while the technology performs well when providing general business guidance, its recommendations frequently fail to account for the unique economic, cultural and commercial realities of Northeast India.

Participants highlighted examples where marketing suggestions reflected metropolitan consumer preferences rather than regional markets, or where recommendations did not adequately consider local festivals, cultural traditions, indigenous products or state-specific business conditions. Businesses operating in sectors such as handicrafts, tourism, agriculture and food processing felt that AI-generated content often required substantial modification before it became relevant to their customers.

Language was identified as another important dimension of local relevance. Although GenAI performs reasonably well in English and Hindi, respondents indicated that support for several regional languages remains inconsistent, limiting its accessibility for entrepreneurs who prefer communicating with customers in local languages.

These findings suggest that future improvements in regional-language capabilities and locally contextualised business knowledge will be essential for enabling more inclusive AI adoption across Northeast India.

4.5 Trust, Accuracy and Verification

Trust emerged as one of the most significant factors influencing continued use of GenAI. While entrepreneurs recognised the technology's ability to generate useful information quickly, many expressed caution regarding the accuracy, reliability and completeness of AI-generated outputs.

Participants frequently reported verifying AI-generated information before using it for business purposes, particularly when dealing with financial matters, legal compliance, taxation, government schemes or strategic business decisions. Many respondents viewed GenAI as an effective starting point for gathering ideas rather than as a definitive source of information. Several entrepreneurs explained that they routinely cross-check AI-generated content through official government websites, professional advisors or independent online sources before acting upon it.

The interviews indicate that responsible adoption depends not only on technological capability but also on entrepreneurs' ability to critically evaluate AI-generated outputs. Strengthening verification skills and promoting responsible AI use therefore emerged as equally important as expanding access to AI tools themselves.

4.6 Support Needed for Wider Impact

The final and perhaps most forward-looking theme concerned the type of support entrepreneurs believe is necessary for broader and more meaningful GenAI adoption. Participants consistently emphasised that awareness alone is insufficient; what is needed is practical, hands-on support that enables entrepreneurs to integrate AI into real business operations.

Rather than theoretical training programmes, respondents expressed a preference for sector-specific workshops demonstrating how GenAI can be applied to everyday business challenges. Many entrepreneurs suggested that training should include prompt writing, content verification, responsible AI use, digital marketing applications, customer communication, financial management and business planning. Others highlighted the importance of mentorship, peer-learning opportunities and ongoing technical support, particularly for first-time users.

Respondents also stressed the need for greater affordability of advanced AI tools, improved regional-language functionality, better digital connectivity and stronger collaboration between government agencies, technology companies, academic

institutions and business associations. Such ecosystem-level support was viewed as essential for ensuring that women-led enterprises are able not only to access AI technologies but also to use them confidently, responsibly and strategically.

These qualitative findings reveal that women entrepreneurs across Northeast India increasingly view Generative AI not merely as a technological innovation but as a practical business enabler. Its greatest value currently lies in improving productivity, strengthening marketing capability and enhancing entrepreneurial confidence. However, the interviews also demonstrate that the long-term impact of GenAI will depend on addressing challenges related to local relevance, trust, verification, language support and digital capability. The findings therefore suggest that the next phase of AI adoption should move beyond improving access to technology and focus on building a supportive ecosystem that enables women entrepreneurs to apply GenAI confidently, responsibly and in ways that reflect the unique realities of Northeast India's entrepreneurial landscape.

Case Study: From Business Idea to Market Through Generative AI

A first-generation woman entrepreneur from Northeast India had long aspired to build a business around locally produced handicrafts and artisanal products but lacked the experience and resources needed to transform her idea into a viable enterprise. While she possessed strong knowledge of local products and understood the market potential, she had little exposure to business planning, branding, marketing or digital commerce. Financial constraints also meant that hiring consultants, designers or marketing professionals was not a practical option. As a result, the business remained only an idea despite her entrepreneurial aspirations.

After discovering Generative AI tools through online resources and entrepreneurship programmes, she began using platforms such as ChatGPT and Canva AI to support the early stages of business development. GenAI helped her refine her business concept, develop a brand identity, create a logo, prepare product descriptions, design promotional materials and generate social media content. It also assisted in drafting business proposals, developing presentations, researching competitors, exploring pricing strategies and creating professional customer communication. Tasks that would previously have required specialised expertise or significant financial investment could now be completed independently within a relatively short period.

The entrepreneur gradually transformed her concept into a market-ready business with a professional digital presence. Instead of relying on external agencies, she was able to create marketing content, establish an online brand and communicate more confidently with customers and potential buyers. The time and cost savings enabled her to focus greater attention on improving product quality, strengthening customer relationships and expanding her business. More importantly, the technology significantly increased her confidence as an entrepreneur. Rather than feeling uncertain about unfamiliar business processes, she used GenAI as a learning and decision-support tool that enabled her to explore new ideas, organise information and make more informed business decisions.

This example illustrates that the value of Generative AI extends beyond improving operational efficiency. For many first-generation women entrepreneurs, GenAI can reduce the knowledge barriers associated with starting a business by enabling them to convert ideas into professional, market-ready enterprises. While entrepreneurial judgement, creativity and local knowledge remain essential, GenAI can serve as an accessible business companion that enhances confidence, reduces dependence on external expertise and empowers women entrepreneurs to participate more effectively in the digital economy.

5. Recommendations: Building and Inclusive GenAI Ecosystem for Women Entrepreneurs in Northeast India

The findings of this study demonstrate that women entrepreneurs across Northeast India are already recognising the value of Generative AI in improving productivity, strengthening marketing capabilities, enhancing customer engagement and supporting business decision-making. However, the research also highlights that the next phase of AI adoption will depend less on awareness of the technology and more on the availability of practical skills, trusted guidance, locally relevant solutions and an enabling support ecosystem.

The quantitative findings show that entrepreneurs are using GenAI primarily for communication, branding and routine business operations, while the qualitative interviews reveal persistent challenges relating to local relevance, verification, language support, digital capability and affordability. These barriers indicate that expanding AI adoption requires a coordinated ecosystem approach involving governments, technology companies, industry associations, financial institutions, academic organisations and entrepreneurship support agencies.

Based on the evidence generated through this study, twelve strategic recommendations are proposed to support more inclusive, responsible and business-oriented adoption of Generative AI among women-led MSMEs across Northeast India.

5.1 Practical GenAI Training

The study highlights a strong demand for hands-on, application-oriented training rather than introductory awareness programmes. Future capacity-building initiatives should focus on practical business use cases, including digital marketing, customer communication, content creation, proposal writing, product descriptions, business planning and day-to-day enterprise management. Training

programmes should enable entrepreneurs to integrate GenAI directly into routine business operations rather than treating AI as a standalone technological concept.

5.2 Promote Sector-Specific AI Applications

Women entrepreneurs operate across diverse sectors including handloom, handicrafts, food processing, tourism, retail, beauty and wellness, education and professional services. Generic AI guidance often fails to address sector-specific business requirements. Future interventions should therefore develop industry-specific AI use cases, prompt libraries and implementation guides tailored to the operational realities of individual sectors. Such contextualised resources would significantly improve the practical relevance and commercial value of GenAI.

5.3 Strengthen Regional-Language and Local Context Capabilities

One of the most consistent findings from the qualitative interviews was the limited local relevance of AI-generated outputs. Technology providers should prioritise improving the performance of GenAI models in regional languages while strengthening their understanding of local markets, cultural contexts, indigenous products and state-specific business environments. Better localisation would enable entrepreneurs to produce more relevant marketing content, communicate effectively with local customers and generate recommendations that reflect the unique characteristics of Northeast India's economy.

5.4 Promote Verification Skills and Responsible AI Use

Although entrepreneurs recognise the usefulness of GenAI, concerns regarding inaccurate information and verification remain widespread. Capacity-building initiatives should therefore include structured training on fact-checking, responsible AI use and critical evaluation of AI-generated outputs. Particular emphasis should be placed on applications involving taxation, financial management, government schemes, regulatory compliance and legal documentation, where verification is essential before business decisions are made.

5.5 Enhance Digital Safety and Privacy Awareness

As businesses increasingly rely on AI-enabled platforms, entrepreneurs require greater awareness of digital safety, privacy and responsible data management. Training programmes should educate users on protecting confidential business information, handling customer data securely, recognising AI-enabled fraud and understanding the risks associated with sharing sensitive information with AI systems. Strengthening digital trust will encourage more confident and responsible adoption of GenAI across women-led enterprises.

5.6 Improve Affordable Access to Advanced AI Tools

While free AI tools have expanded access considerably, many advanced capabilities remain available only through paid subscriptions. Governments, incubators, entrepreneurship development organisations and industry associations should explore mechanisms such as subsidised licences, shared institutional subscriptions or discounted access programmes to enable women entrepreneurs to benefit from premium AI features without significant financial barriers.

5.7 Establish Local AI Support and Innovation Hubs

Entrepreneurs consistently expressed the need for continuous support rather than one-time training. District-level or institution-based AI support centres could provide practical guidance on prompt writing, digital marketing, AI tool selection, troubleshooting and business implementation. Such centres could also facilitate peer learning, mentorship and knowledge sharing, creating sustainable local ecosystems for AI-enabled entrepreneurship.

5.8 Integrate AI Capacity Building with Mentoring and Market Access

Technology adoption alone is unlikely to generate sustained business growth unless it is linked to broader enterprise development initiatives. AI capacity-building programmes should therefore be integrated with business mentoring,

branding support, digital commerce onboarding, export readiness, networking opportunities and market access initiatives. Combining technological capability with commercial support will help entrepreneurs translate AI adoption into measurable business outcomes.

5.9 Improve Digital Infrastructure and Device Accessibility

Reliable internet connectivity and access to appropriate digital devices remain important prerequisites for effective AI adoption, particularly in remote and geographically dispersed areas of Northeast India. Continued investment in broadband connectivity, digital infrastructure and affordable smart devices will be essential to ensure that women entrepreneurs can access cloud-based AI applications without significant technological constraints.

5.10 Integrate GenAI into Existing Entrepreneurship Programmes

Rather than creating entirely new initiatives, policymakers should incorporate GenAI capability-building within existing entrepreneurship and MSME support programmes. AI modules can be embedded into women entrepreneurship schemes, MSME development initiatives, startup incubation programmes, tourism promotion, handicraft development and digital commerce initiatives. This integrated approach would enable wider outreach while leveraging existing institutional infrastructure.

5.11 Encourage Co-Design with Women Entrepreneurs

The qualitative findings indicate that many existing AI tools are developed without sufficient understanding of the practical realities faced by women-led MSMEs in emerging regional markets. Technology companies should adopt participatory design approaches by engaging women entrepreneurs directly in the development, testing and refinement of AI tools and interfaces. Such collaboration would improve usability, local relevance and overall effectiveness while ensuring that future AI solutions better reflect the needs of end users.

5.12 Monitor Business Outcomes Rather than Adoption Alone

Success should not be measured solely by the number of entrepreneurs using GenAI. Monitoring frameworks should instead assess tangible business outcomes such as improvements in productivity, time savings, cost reductions, customer engagement, business growth, market expansion, revenue generation and responsible AI practices. Focusing on business impact rather than technology adoption will provide a more meaningful assessment of AI's contribution to women-led entrepreneurship and support evidence-based policy improvements over time.

The findings of this study suggest that Northeast India is well positioned to leverage Generative AI as a catalyst for inclusive entrepreneurship and regional economic development. However, achieving this potential will require moving beyond technology access towards building an enabling ecosystem that combines practical skills, local relevance, trusted guidance, affordable tools, supportive infrastructure and sustained institutional collaboration.

By implementing these recommendations, policymakers and ecosystem stakeholders can help ensure that Generative AI becomes not merely a digital innovation, but a transformative business capability that empowers women entrepreneurs to grow, compete and participate more effectively in India's evolving digital economy.

6. Implementation Roadmap

The findings of this study suggest that enabling meaningful and sustained adoption of Generative AI among women entrepreneurs requires a phased approach rather than isolated interventions. While awareness of GenAI is steadily increasing, the research demonstrates that entrepreneurs continue to face multiple constraints relating to digital capability, local relevance, affordability, infrastructure and institutional support.

Addressing these challenges will therefore require coordinated action over time, involving governments, technology providers, industry associations, financial institutions, academic institutions and entrepreneurship support organisations.

The proposed implementation roadmap organises the recommendations into three sequential phases.

The immediate phase focuses on developing foundational knowledge and responsible AI practices among women entrepreneurs. The medium-term phase expands access to tools, mentoring and institutional support that enable businesses to integrate GenAI into their growth strategies. The long-term phase aims to strengthen the broader ecosystem through investments in local AI capabilities, digital infrastructure and multi-stakeholder partnerships that can sustain inclusive AI-driven entrepreneurship across the region.

Figure 10: Implementation Roadmap



Source: Author's Analysis

6.1 Immediate Priorities (0–12 Months): Building the Foundation

The immediate priority should be to equip women entrepreneurs with the practical knowledge and confidence required to use Generative AI effectively in their everyday business operations. Although many entrepreneurs have already begun experimenting with AI tools, the findings indicate that adoption remains concentrated in basic applications such as content creation and marketing. Greater emphasis is therefore needed on practical capability building that enables entrepreneurs to integrate GenAI into routine business management.

Training programmes should focus on prompt writing, customer communication, digital marketing, business planning, research, documentation and content creation through hands-on demonstrations using real business scenarios. Alongside technical skills, equal importance should be placed on developing entrepreneurs' ability to verify AI-generated information, protect confidential business data and understand privacy, security and responsible AI practices.

Given the diverse linguistic and cultural landscape of Northeast India, training materials should also be developed in regional languages wherever feasible and supported by locally relevant examples drawn from sectors such as handloom, handicrafts, food processing, tourism, retail, education and professional services. Such contextualised learning resources will improve both understanding and practical adoption while making AI more accessible to first-generation entrepreneurs.

6.2 Medium-Term Priorities (1–3 Years): Expanding Access and Institutional Support

Once foundational capabilities have been established, the next phase should focus on strengthening the institutional ecosystem that enables sustained and more sophisticated use of GenAI. A major priority during this stage is improving access to advanced AI tools through subsidised licensing, shared institutional subscriptions, innovation grants or entrepreneurship support programmes that reduce financial barriers for women-led enterprises.

District-level AI support and mentoring hubs should also be established to provide continuous guidance beyond one-time training programmes. These centres can offer technical assistance, prompt engineering support, business mentoring, troubleshooting services and peer-learning opportunities while encouraging the exchange of practical experiences among entrepreneurs.

At the same time, AI capability-building should be integrated with existing entrepreneurship support mechanisms, including access to finance, business incubation, digital commerce onboarding, branding assistance and market linkage programmes. Connecting AI adoption with broader enterprise development initiatives will significantly improve the likelihood that technology adoption translates into measurable business growth rather than remaining a stand-alone digital intervention.

Developing peer-learning networks among women entrepreneurs should also become a strategic priority. Communities of practice where entrepreneurs can share successful use cases, discuss implementation challenges and exchange practical knowledge can accelerate learning while strengthening confidence in AI-enabled business transformation.

6.3 Long-Term Priorities (3–5 Years): Building a Sustainable AI Ecosystem

The long-term objective should be to create an enabling ecosystem that supports inclusive, locally relevant and sustainable AI adoption across Northeast India. This requires moving beyond enterprise-level interventions towards broader investments in technology, infrastructure and institutional collaboration.

Technology developers should invest in improving the performance of AI models in regional languages while strengthening their understanding of local cultures, products, markets and business environments. AI systems that better reflect the realities of Northeast India will produce more accurate, context-sensitive and commercially useful outputs for local entrepreneurs.

Equally important is the development of high-quality regional datasets covering products, customer behaviour, pricing, logistics, tourism, government schemes and local market conditions. Such datasets can substantially improve the relevance and reliability of AI-generated recommendations while supporting innovation tailored to regional economic priorities.

Continued investment in digital infrastructure will also remain essential. Reliable internet connectivity, improved access to digital devices and stronger digital public infrastructure are necessary conditions for ensuring that women entrepreneurs, particularly those operating in rural and remote areas, can benefit fully from cloud-based AI technologies.

Finally, sustained progress will depend upon long-term partnerships among governments, technology companies, universities, financial institutions, startup incubators, business associations and women's entrepreneurship organisations. Collaborative initiatives that combine technology development, research, capacity building and enterprise support will help create a resilient innovation ecosystem capable of supporting inclusive AI adoption over the coming decade.

The implementation roadmap reflects a progression from awareness to capability, from capability to institutional support, and ultimately from institutional support to ecosystem transformation. While immediate interventions should prioritise practical skills and responsible AI use, medium-term investments must strengthen mentoring, finance and market access, and long-term efforts should focus on building locally relevant AI capabilities, digital infrastructure and collaborative partnerships. Together, these phased actions provide a practical pathway for ensuring that Generative AI evolves from a productivity tool into a strategic driver of inclusive entrepreneurship, business resilience and regional economic development across Northeast India.

7. Conclusion

GenAI is no longer an emerging technology confined to large corporations or technology-intensive industries. The findings of this study demonstrate that women entrepreneurs across Northeast India are already integrating GenAI into their businesses in practical and commercially meaningful ways. From creating marketing content and strengthening customer engagement to improving productivity, supporting business planning and building entrepreneurial confidence, GenAI is beginning to reshape how women-led enterprises operate and compete in an increasingly digital economy.

The evidence suggests that the greatest value of GenAI currently lies not in replacing human decision-making, but in augmenting entrepreneurial capability. For businesses operating with limited financial resources, small teams and constrained access to specialised professional services, GenAI provides an opportunity to perform a wide range of business functions more efficiently while enabling entrepreneurs to focus greater attention on innovation, customer relationships and long-term business growth. In this sense, the technology represents more than a productivity tool; it is emerging as an important enabler of business resilience, digital inclusion and enterprise development.

At the same time, the study demonstrates that meaningful adoption extends beyond access to technology. The experiences of women entrepreneurs consistently highlight the importance of trust, verification, local relevance, digital capability and institutional support. Challenges relating to inaccurate information, limited regional-language performance, generic business advice, affordability of advanced tools and digital infrastructure indicate that sustained adoption will depend upon a supportive ecosystem rather than technological availability alone. The future of AI-enabled entrepreneurship will therefore be shaped as much by investments in people, institutions and local innovation as by advances in AI itself.

The recommendations and implementation roadmap presented in this report recognise this broader reality. Building practical AI capability, improving regional-language performance, strengthening responsible AI practices, expanding

affordable access, creating local mentoring ecosystems and fostering partnerships among governments, academia, technology companies and industry organisations together provide a pathway for enabling more inclusive and sustainable adoption of GenAI across Northeast India. Such interventions have the potential not only to improve enterprise productivity but also to expand economic opportunities for women entrepreneurs who have traditionally faced structural barriers relating to markets, finance, technology and business support.

More broadly, the findings carry important implications for India's digital transformation agenda. As the country advances through initiatives such as the IndiaAI Mission, Digital India and MSME digitalisation programmes, ensuring that emerging technologies benefit women-led enterprises and geographically diverse regions will be critical to achieving inclusive economic growth. Northeast India offers a unique opportunity to demonstrate how locally contextualised AI adoption can strengthen entrepreneurship while preserving the region's distinctive cultural, linguistic and economic diversity. Women entrepreneurs, many of whom are already adopting GenAI with remarkable creativity and resilience, should therefore be recognised not merely as beneficiaries of digital transformation but as active contributors to India's emerging AI economy.

Ultimately, the success of Generative AI should not be measured solely by the number of businesses adopting new technologies, but by the extent to which those technologies improve livelihoods, strengthen enterprises and expand opportunities for inclusive growth. When supported by practical skills, trusted guidance, locally relevant AI solutions and a collaborative innovation ecosystem, Generative AI has the potential to become a powerful catalyst for women-led entrepreneurship across Northeast India. By enabling entrepreneurs to work more productively, compete more effectively and innovate with greater confidence, GenAI can contribute meaningfully to building a more resilient, competitive and inclusive regional economy.

The journey from digital adoption to digital transformation has already begun. The challenge now is to ensure that no entrepreneur is left behind, and that the

opportunities created by Generative AI are translated into sustainable business growth, stronger local economies and a more inclusive future for women entrepreneurs across Northeast India.

ANNEXURE

1. Age group

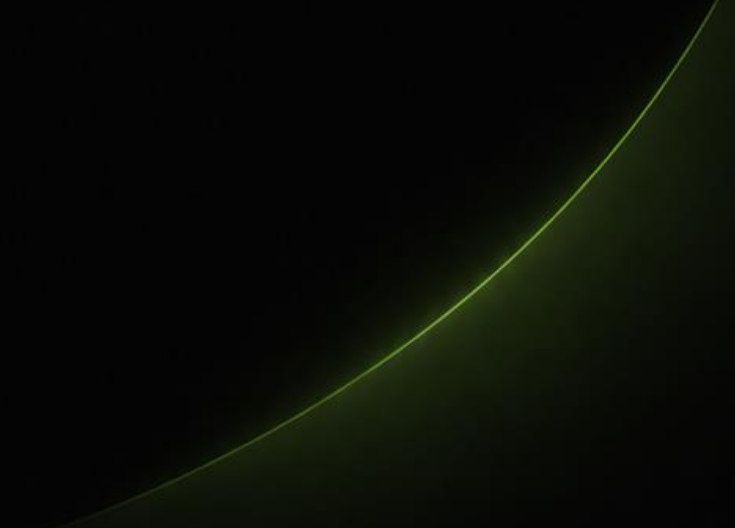
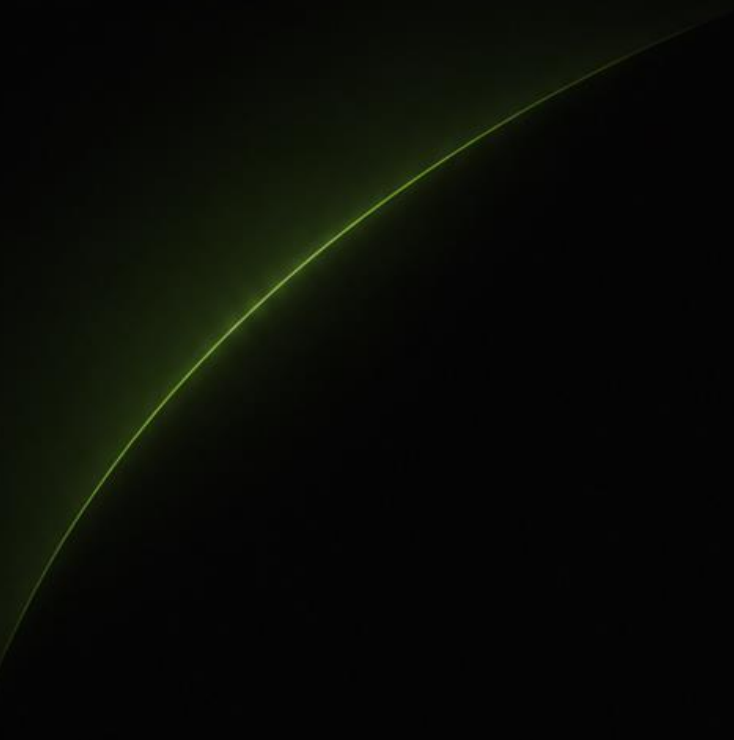
Age group	Frequency	Percentage
Below 25 years	100	12.5%
25–34 years	330	41.3%
35–44 years	240	30.0%
45–54 years	95	11.9%
55 years and above	35	4.4%
Total	800	100%

2. For how long has your business been operating?

Business operating period	Frequency	Percentage
Less than 1 year	120	15.0%
1–3 years	310	38.8%
4–5 years	180	22.5%
6–10 years	125	15.6%
More than 10 years	65	8.1%
Total	800	100%

3. What is the primary sector of your business?

Primary business sector	Frequency	Percentage
Retail or trading	160	20.0%
Food, catering or food processing	140	17.5%
Handloom, handicrafts or textiles	110	13.8%
Agriculture, horticulture or livestock	70	8.8%
Tourism, hospitality or homestay	70	8.8%
Beauty, wellness or personal care	70	8.8%
Education or training	60	7.5%
Professional or consulting services	50	6.3%
Technology, digital or creative services	50	6.3%
Others	20	2.5%
Total	800	100%



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