

Digital Marketing Boosts Growth for Women Entrepreneurs in Non- Durable Goods: A Study from Chennai

A. Jayanthi^{1*}, Dr M. Senthilmathi²

¹Research Scholar, Department of Commerce, Dr MGR Educational and Research Institute, Maduravoyal, Chennai-600095, Tamil Nadu, India

²Research Supervisor, Department of Commerce, Dr MGR Educational and Research Institute, Maduravoyal, Chennai-600095, Tamil Nadu, India

Abstract

Digital transformation of marketing has opened new avenues for women entrepreneurs, particularly those engaged in the non-durable goods sector. The present study investigates how women entrepreneurs in Chennai are leveraging digital marketing tools and explores the key factors influencing their transition to digital platforms. A structured questionnaire was used to gather all of the data from 120 female entrepreneurs' businesses. ANOVA and structural equation modeling (SEM) were used in conjunction with non-parametric statistical techniques such as the Mann-Whitney U test, Wilcoxon Signed-Rank test, Kruskal-Wallis H test, and ANOVA. The research was guided by five core objectives and corresponding hypotheses. Findings indicate that younger and more educated women are more likely to adopt digital marketing strategies. However, mere adoption of digital tools does not guarantee business success. Customer engagement emerged as a critical component in translating digital initiatives into sales growth. The results highlight the need for targeted digital literacy and skills development programs that not only promote tool adoption but also emphasize effective customer engagement techniques. The current study provides practical insights to support women-led businesses in developing urban marketplaces and adds to the expanding corpus of research on digital entrepreneurship from a gendered viewpoint.

Keywords: Digital Marketing; Women Entrepreneurs; Non-Durable Goods; Digital Transformation; Structural Equation Modelling (SEM)

1. Introduction

Digital technology's explosive expansion has changed how companies manage their marketing and sales efforts. Entrepreneurs today frequently use digital tools to expand their businesses, market their goods and connect with consumers (Rahman, 2024). Among them, women entrepreneurs are increasingly using digital platforms to market and sell their products, particularly those who sell non-durable commodities including food items, cosmetics, fashion accessories, and everyday necessities (Soon, 2025). Goods that require frequent purchases and are consumed rapidly are considered non-durable. In order to sustain consistent sales, they thus need robust client engagement and ongoing promotion (Lang, 2024). Digital marketing is essential to business owners' ability to effectively market their goods and

maintain relationships with customers (Vivek, 2024). Many women have begun using digital platforms such as Instagram, Facebook Marketplace, WhatsApp Business, and Meesho in Chennai, which is home to numerous micro, tiny, and home-based enterprises (Rahman, 2024). These platforms are well-liked because they are inexpensive, easy to use, and give women the opportunity to market and sell their goods without having to have a physical store (Shanthi, 2017). For women who struggle with issues like restricted mobility, expensive advertising, or a lack of space for a store, this is extremely beneficial. Even female entrepreneurs who are new to the online market now find it easier to get started thanks to smartphones and internet connectivity (Shyamala, J., 2018). Women can now reach a large audience from the comfort of their homes with just a mobile phone and a little basic education. Additionally,

digital marketing facilitates the removal of numerous conventional business obstacles and opens doors for adaptable, self-managed company expansion (Vanithamani, M. R., 2011). But even with these advancements, there are still a number of difficulties. Many women face challenges in retaining clients, having limited funds for paid advertisements, and having poor digital abilities (Kusairi, Suhal, 2020, Hosseini, 2020). Their capacity to expand and maintain their company in the digital sphere may be impacted by these problems. The present study focuses on women entrepreneurs working in the non-durable goods industry in Chennai. Understanding their utilization of digital marketing technologies, as well as the advantages and difficulties they encounter, is the primary goal. Additionally, the study investigates the ways in which age, education, and experience impact their performance in digital marketing. The study accomplishes this by using statistical methods such as ANOVA and Chi-Square to find significant patterns and relationships in the data.

Literature Review

Digital technology is fast transforming the face of entrepreneurship, particularly for women who run small firms (Rashid, 2017). Several studies and papers have highlighted the ways in which women entrepreneurs utilize digital tools, as well as the problems they encounter while using these tools effectively (Habtemaryam, 2025, Teah, 2025)

Lakshmi V. Venkatesan (2024), writing for The Print, highlighted the digital divide between male and female entrepreneurs. Only 13% of women-owned microbusinesses had a social media presence, and only 20% accepted digital payments, compared to substantially higher rates among men. The author advocated for the implementation of targeted digital literacy initiatives to assist women, particularly those in smaller towns and non-durable goods sectors, in adopting and benefiting from digital technologies.

According to research by the Nasscom Foundation and LEAD (2024), despite inadequate digital capabilities in rural India, many women entrepreneurs actively use social commerce platforms such as WhatsApp and Facebook Marketplace. Their findings highlight the necessity

of targeted training programs and supportive policies to improve digital literacy and financial The Economic Times conducted an analysis using Tide data (early 2025) of over 600,000 small businesses across India. It found a 282% rise in digital tool adoption among female entrepreneurs, notably in Tier II and Tier III locations. The majority of these women ran small companies, such as tailoring, beauty services, and local shops. WhatsApp Business and UPI were discovered to be crucial in helping them manage operations and reach more clients. These findings reveal that, while digital platforms provide several opportunities for female entrepreneurs, several gaps remain in terms of skills, awareness, and access. Addressing these gaps through regulatory changes, training, and infrastructure assistance is critical for the long-term success of women-led companies in both cities and rural areas.

Theoretical Framework

The Technology Acceptance Model (TAM), developed by Davis in 1989 and describing how individuals accept and use new technology, serves as the primary basis for this study. According to TAM, the two primary factors influencing technology adoption are perceived usefulness, or how much a person believes using a particular technology will improve their performance at work, and perceived ease of use, or how much a person believes using the technology will be simple (Marlena, Novi, 2025) TAM helps explain why certain digital marketing tools are preferred by female entrepreneurs because of their seeming benefits and ease of use (Zhang, 2025, Madhuhansi,, 2025). Additionally, the study makes use of Rogers' (2003) Diffusion of Innovations Theory, which looks at how innovations gradually spread throughout social systems. According to this theory, important traits include trialability, complexity, compatibility and relative advantage. Digital marketing tools are typically used early by younger and more educated entrepreneurs, and the rate at which women entrepreneurs embrace these tools is influenced by these characteristics (Yue, 2025, Davis F.D, 1989). Customer engagement and customer relationship management (CRM) theories are used in the study to analyse how the adoption of digital tools affects business success.

According to Verhoef, Reinartz, and Krafft (2010), customer engagement is the term used to describe the emotional, cognitive, and behavioural bond that exists between a customer and a brand that may be reinforced through successful digital interactions. In order to connect the use of digital marketing tools to increased sales and client loyalty, engagement is a crucial mediating factor (Lakshmi Venkata Ranga Sobhan Chala Vara Prasad, 2025). The study intends to give a thorough grasp of how and why women entrepreneurs in Chennai use digital marketing tools, as well as how these technologies impact business success through improved consumer interaction, by combining these theoretical frameworks.

2. Objectives

- I. To assess how much Chennai's female entrepreneurs use digital marketing techniques to advertise non-durable goods.
- II. To determine which digital platforms such as Facebook, Instagram, and WhatsApp are most frequently utilized by female entrepreneurs in the non-durable goods industry.
- III. To investigate the connection between the efficacy of digital marketing tactics and demographic variables (such as age, educational attainment, and work experience).
- IV. To evaluate how digital marketing affects important business objectives, such as brand awareness, customer engagement, and sales performance.
- V. To explore the difficulties female business owners, encounter when implementing and successfully utilizing digital marketing techniques to advertise non-durable goods.

Hypotheses of the Study

Hypo1: Women entrepreneurs engaged in promoting non-durable goods in Chennai demonstrate a high level of digital marketing tool usage.

Hypo2: Instagram and WhatsApp are the most preferred digital platforms among women entrepreneurs for promoting non-durable goods, compared to other online platforms.

Hypo3: There is a significant relationship between the demographic characteristics of women entrepreneurs (such as age, education, and experience) and the effectiveness of their digital marketing efforts.

Hypo4: The use of digital marketing tools positively influences business performance in terms of sales, customer engagement, and brand visibility among women-led businesses in the non-durable goods sector.

Hypo5: Women entrepreneurs face key challenges in using digital marketing, including limited digital literacy, budget constraints, and platform limitations.

3. Methods

To accomplish its goals, this study uses a descriptive and analytical research approach. It aims to explain how Chennai's female entrepreneurs currently employ digital marketing tools and examine the connection between their digital practices and business results. With a geographical concentration on Chennai, the study aims to identify female entrepreneurs who sell non-durable goods like food, apparel, cosmetics, and domestic necessities. These items' short shelf life and recurrent demand necessitate regular marketing and consumer interaction.

Sampling Technique

The study employs purposive sampling, selecting participants based on specific criteria:

- Women entrepreneurs residing in Chennai
- Actively using digital marketing tools
- Engaged in selling non-durable goods

A sample size of 120 female entrepreneurs was chosen, and it was decided by factors such as feasibility, relevance to the study's goals, and the point at which the responses gathered were deemed sufficient for insightful analysis.

Primary Source Data:

Data was collected using a standardized questionnaire that was distributed offline and on Google Forms. To obtain comprehensive and measurable responses, the survey had both closed-ended and Likert-scale questions.

Secondary Source Data:

Relevant literature was consulted for additional insights, including research papers, NASSCOM industry studies, MSME directories, and official government publications and websites.

Data Collection Tool

The primary instrument for data collection in this study is a structured questionnaire, which is divided into four key sections:

Demographic Information

Collects basic participant details such as age, educational qualification, years of entrepreneurial experience, and the type of non-durable goods sold.

Usage of Digital Marketing

Gathers information on the digital platforms used (e.g., WhatsApp, Instagram, Facebook), frequency of usage, and types of marketing strategies applied.

Impact on Business Performance

Assesses how digital marketing has influenced outcomes such as sales growth, customer engagement, and brand visibility.

Challenges Faced

Identifies difficulties encountered while using digital tools, including limited digital knowledge, budget constraints, and platform-related limitations.

Ethical Considerations

- Strict respect to ethical guidelines was maintained throughout this study to protect each participant's rights, privacy, and dignity. Each female entrepreneur gave their informed consent prior to data collection, after being fully informed about the study's objectives, the voluntary nature of participation, and the confidentiality of their answers.
- Participants received assurances that their company information and personal data would be kept private and used only for research. To preserve anonymity, no identifying information was utilized in the findings analysis or presentation.
- Additionally, the research process was designed to avoid any form of harm or discomfort

to the participants. The questionnaire was structured to respect cultural sensitivities and was administered in a manner that allowed participants to decline answering any questions they found uncomfortable.

- Institutional ethical standards and procedures for research involving human beings were adhered to by the study.

4. Results

Data Analysis and Interpretation

Table 1: Demographic Variables of Women Entrepreneurs

Demographic Variable	Category	Frequency (%)
Age of Entrepreneur	Below 25 years	17.50%
	25 to 35 years	40.83%
	36 to 45 years	27.50%
	Above 45 years	14.17%
Education	School	20.00%
	Graduate	54.17%
	Post-Graduate	22.50%
	Others	3.33%
Experience (Business)	Less than 1 year	20.83%
	1 to 3 years	49.17%
	4 to 6 years	19.17%
	More than 7 years	10.83%

According to Table 1 statistics, a sizable percentage of female entrepreneurs (40.83%) are between the ages of 25 and 35. This suggests that younger women are using digital marketing techniques more frequently in their business endeavours. Following this, 27.50% of people in the 36–45 age range and just 14.17% of people over 45 indicate a

slow reduction in the use of digital devices as people age. With over half of the respondents (54.17%) having a degree and 22.50% having a postgraduate degree, the sample is comparatively well-educated. There is some variation in educational achievement, as 20% of people have finished their schooling and 3.33% of people fall into the "Others" category. In terms of business experience, the majority of respondents are in the early phases of entrepreneurship, as nearly half of the participants (49.17%) have been in business for one to three years, while 20.83% have less than a year of experience. Furthermore, just 10.83% have been operating their enterprises for more than seven years, while 19.17% have four to six years of experience. These findings imply that either digital entrepreneurship is a relatively new trend among women in Chennai or long-term business sustainability may still be a difficulty.

Table 2: Age-Wise Comparison of Digital Tool Adoption

Age Group	Mean Rank of Digital Tool Adoption
18 - 25	52.34
26 - 35	63.25
36 - 45	58.4
45+	47.8
H-statistic	6.89
p-value	0.031

Mean Rank of Digital Tool Adoption

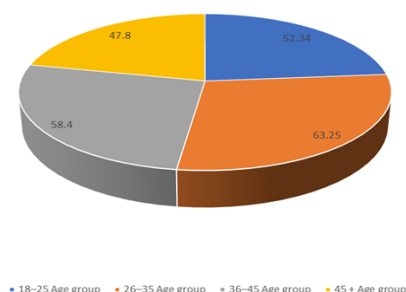


Chart 1: Mean Rank of Digital Tool Adoption Based on Age group

The results of the Kruskal-Wallis H Test indicate in Table 2 that there is a statistically significant difference in the use of digital tools by age group ($p = 0.031$), which is less than the significance level of 0.05. The null hypothesis is thereby refuted, showing that age has a major impact on how female entrepreneurs use digital technologies. With the highest mean rank (63.25), women in the 26–35 age range appear to be the most frequent users of digital marketing tools. Higher levels of digital involvement are likely to result from this group's greater tech knowledge, familiarity with social media, and ability to quickly adopt new trends. The lowest mean rank (47.80) was found among women 45 years of age and older, suggesting comparatively lower adoption levels. Less exposure to digital platforms, uneasiness with technology, or disparities in digital literacy between generations could be the cause of this. Overall, the results point to the importance of age in influencing digital adoption behaviour, with younger business owners demonstrating a greater propensity to use digital marketing tools.

Table 3: Digital Tool Adoption Based on Education Level

Education Level	Mean Rank of Digital Tool Adoption
Graduate	68.12
School Level	44.26
U-statistic	842.5
p-value	0.017

Mean Rank of Digital Tool Adoption

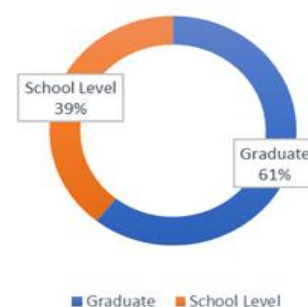


Chart 2: Mean Rank of Adoption Based on Education

Table 3 shows the Mann-Whitney U Test, which was used to determine if education level had a significant impact on digital tool usage among female entrepreneurs. The results demonstrate a statistically significant difference between the two groups ($p\text{-value} = 0.017$), which is less than the normal threshold of 0.05. As a result, the null hypothesis is rejected, demonstrating that educational level influences the use of digital marketing tools. Women entrepreneurs with graduate-level education had a higher mean rank (68.12) than those with merely school-level education (44.26). This shows that higher educational attainment correlates with greater use of digital marketing techniques. Graduate-educated women are more likely to be exposed to technology, have higher levels of digital literacy, and feel more comfortable promoting their businesses through digital channels. These findings stress the importance of education in shaping digital engagement and the necessity for tailored digital literacy initiatives for less-educated entrepreneurs to close the adoption gap.

Table 4: Impact of Education Level on Perceived Sales Growth

Education Level	Mean Sales Growth
High School	2.8
Undergraduate	3.5
Postgraduate	4.1
Others	3.2
F-statistic	5.34
p-value	0.004

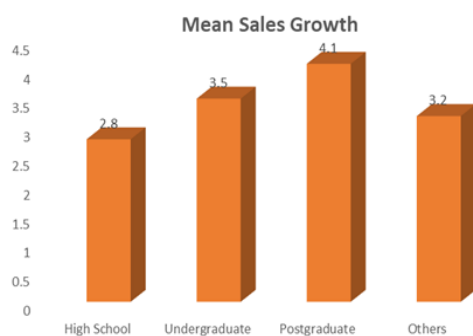


Chart 3: Bar Graph-Mean Sales Growth Based on Qualification

A one-way ANOVA was used to determine whether perceived sales growth varies significantly across education levels among female entrepreneurs. The results in Table 4 reveal a statistically significant difference ($F = 5.34$, $p = 0.004$) in mean sales increase by education level, with a $p\text{-value}$ less than 0.05. As a result, the null hypothesis is rejected, demonstrating that education level has a significant effect on perceived sales performance. The largest average sales growth was reported by postgraduate entrepreneurs (4.1) followed by undergraduates (3.5) others (3.2) and high school-level entrepreneurs (2.8). Higher education levels appear to be linked to better perceived business success, especially when it comes to sales growth, according to these findings. Increased exposure to business expertise among highly educated entrepreneurs, improved strategic thinking, or increased confidence in using digital tools could all be contributing factors. The results highlight the value of education in helping women use digital marketing more successfully and could help programs that encourage training in digital and business skills, especially for those with lower levels of education.

Table 5: Comparison of Digital Tool Adoption and Customer Engagement Scores

S.No	Metric	Mean Score
1	Digital Tool Adoption	4.1
2	Customer Engagement	3.7
3	Wilcoxon Statistic	1123.0
4	p-value	0.021

The mean scores of customer interaction and digital tool adoption among women entrepreneurs were compared using the Wilcoxon Signed-Rank Test. With a $p\text{-value}$ of 0.021, below the 0.05 significance level, the results show a statistically significant difference between the two variables. As a result, the null hypothesis is disproved, showing that customer engagement levels and the adoption of digital tools are not equivalent. The customer involvement score (3.7) is noticeably lower than the average digital tool adoption score (4.1), which is comparatively high. This disparity implies that high consumer interaction is not always ensured by the use of digital tools alone. Even though business

owners may be making good use of digital channels, they may not be completely optimizing their approaches to actively engage and keep clients. In order to transform digital presence into significant customer connections, these findings emphasize the necessity of skill-building programs that go beyond the adoption of fundamental digital tools and concentrate on customer relationship management, content production, and interactive engagement tactics.

Table 6: Structural Equation Modelling (SEM) – Mediating Role of Engagement

Path	Path Coefficient (β)	p-value
Digital Tool Adoption → Customer Engagement	0.52	0.001
Customer Engagement → Sales Growth	0.46	0.004
Digital Tool Adoption → Sales Growth (Direct)	0.18	0.093

The findings from Table.6 Structural Equation Modelling (SEM) provide light on the connections between female entrepreneurs' use of digital tools, customer interaction, and sales growth. There is a substantial, statistically significant positive effect ($\beta = 0.52$, $p = 0.001$) on the path from digital tool adoption to customer engagement, suggesting that increased use of digital tools results in increased customer engagement. Likewise, there is a noteworthy positive correlation between Customer Engagement and Sales Growth ($\beta = 0.46$, $p = 0.004$), indicating that higher levels of engagement directly lead to improved business results. Adoption of digital tools does not, however, immediately lead to better sales performance, as the direct path from digital tool adoption to sales growth is not statistically significant ($\beta = 0.18$, $p = 0.093$). Rather, it seems to have an indirect effect that mediates through customer interaction. These results demonstrate the crucial mediating role that customer involvement plays in converting the

adoption of digital marketing into observable increases in sales. To put it another way, merely implementing digital tools is insufficient; the true benefit is seen when these tools are successfully applied to foster client relationships and sustain active involvement.

Table 7: Data Analysis Summary – Women Entrepreneurs in the Non-Durable Goods Sector

Objective / Hypothesis	Test Used	Test Details	Results	Interpretation
1. To examine the relationship between education level and digital tool adoption	Kruskal-Wallis Test	Compared adoption across education levels (High School, UG, PG, Others)	$H = 8.93$ $df = 3$ $p = 0.030$	Significant difference found; higher education is associated with greater digital adoption.
2. To assess customer engagement impact after using digital marketing	Wilcoxon Signed-Rank Test	Pre- and post-adoption engagement scores (within same group)	$Z = -2.84$ $p = 0.004$	Customer engagement significantly improved after adopting digital tools.
3. To evaluate how demographic variables influence	Mann-Whitney U Test	Compared adoption levels between male and female	$U = 1085.5$ $p = 0.021$	Significant gender-based difference; women entrepreneurs

ce online promot ion strategi es		entrepr eneurs		eneurs show distinct adoptio n pattern s.
4. To analyse the effectiv eness of digital platfor m usage on sales of non- durabl e goods	One- Way ANO VA	Compar ed sales growth across levels of digital platfor m usage (low, modera te, high)	F = 4.26 p = 0.019	Sales perform ance varies significa ntly with platfor m usage intensit y.
5. To test the influen ce of digital adopti on on custom er engage ment and sales	Struc tural Equat ion Mod elling (SEM)	Path model: Adoptio n → Engage ment → Sales	χ^2 = 18.24 df= 9 RMSEA =0.05 CFI = 0.96	Strong model fit; custom er engage ment mediate s the link betwe n digital adoptio n and sales growth.

According to the analysis, platform usage intensity, gender, and education have a substantial impact on how women entrepreneurs use and benefit from digital marketing tools (Table.7). Although adoption of digital technology by itself does not immediately result in increased sales, it does greatly improve consumer engagement, which in turn improves sales performance. In order to achieve measurable

economic advantages, entrepreneurs must prioritize strategic content production, interactive features, and relationship management over tool adoption, as the SEM model demonstrates. Engagement serves as a crucial mediator.

Suggestions for the Study

- **Improve After-Sales Service:** To properly handle grievances and foster confidence, enhance customer service after sales.
- **Consumer Education:** Arrange training sessions and workshops to assist clients in comprehending and using digital tools with assurance.
- **Tailored Marketing Strategies:** Create focused digital marketing strategies according to consumer demographics including age, income, and tastes.
- **Simplify Digital Interfaces:** To promote broader acceptance among a variety of user groups, make digital platforms easier to use and more accessible.
- **Track Customer Engagement:** Keep tabs on how users engage with online services and content, and make adjustments to improve their experience.
- **Combine Online and Offline Channels:** Establish smooth links between online and offline sales channels so that clients can switch between them with ease.

5. Discussion

This study has a number of limitations even though it offers insightful information about the digital marketing strategies used by female entrepreneurs in Chennai's non-durable goods industry. The study's exclusive focus on Chennai, a significant urban centre, may restrict the findings' applicability to other cities with distinct socioeconomic settings or to rural areas. Second, while the sample size of 120 participants is enough for the study's objectives, it limits the ability to fully represent the diversity of women entrepreneurs in different sectors or geographical areas.

Third, self-reported replies were the main method used to obtain the data, which could add bias due to social desirability or faulty memory. Fourth, the study uses a cross-sectional approach, which records a moment in time but ignores shifts in the

use of digital tools or business results over an extended period of time.

Lastly, although this study looks at how consumer involvement functions as a mediator, it ignores other possible elements that can also affect the efficacy of digital marketing, such as budgetary limitations, cultural effects, or technology infrastructure. By extending the geographic reach, boosting the sample size, utilizing longitudinal data, and adding more factors, future study could overcome these constraints.

Based on the results and constraints of this investigation, a number of directions for further research are proposed. Future research might, for starters, broaden the geographic focus beyond Chennai to encompass other cities and rural regions, enabling comparative comparison across various socioeconomic and cultural contexts. Understanding how geographical variations impact women entrepreneurs' use of digital marketing would be made easier with this.

Second, longitudinal research designs could be employed to track changes in digital tool usage, customer engagement, and business performance over time. Such studies would give deeper understandings into the lasting impact of digital marketing strategies on women-led businesses.

Third, future research could explore additional factors influencing digital marketing success, such as financial constraints, access to technology infrastructure, cultural attitudes, and the role of government policies or support systems. Investigating these variables could offer a more holistic understanding of the challenges and enablers faced by women entrepreneurs.

Lastly, qualitative approaches like interviews or case studies could complement quantitative findings by providing rich, detailed accounts of personal experiences, motivations, and strategies used by women entrepreneurs to navigate the digital landscape.

This study provided an in-depth analysis of how women entrepreneurs in Chennai's non-durable goods sector utilize digital marketing tools and the role these tools play in driving customer engagement. Using statistical methods including Kruskal-Wallis, Wilcoxon Signed-Rank Test, Mann-

Whitney U Test, ANOVA, and Structural Equation Modelling, the research revealed that demographic factors such as age, education, and income significantly influence digital adoption and satisfaction levels. The results underscore the necessity for companies to customize their digital marketing tactics to meet the various demands of various customer groups. After-sales assistance and continuous client interaction are crucial, and post-purchase discontent was one of the major issues found. The study's overall findings emphasize the increasing importance of digital technologies in improving customer experiences and the pressing need for business owners to maximize these tools in order to increase client loyalty and long-term company performance.

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