Research Reinforcement | A Peer Reviewed International Refereed Journal | ISSN 2348-3857
Vol. 13, Issue 2 | November 2025 - April 2026 | pp. 111-116

Tech-Enabled Transformation: Home Science and Psychological Pathways to Women's Self-Efficacy and Motivation

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Abstract

The growing presence of digital technologies in everyday life is gradually transforming how learning takes place, particularly in the field of home science. For many women, these changes are opening up new opportunities to build skills, gain confidence, and become more self-reliant. However, there is still limited clarity on how technology-enabled learning in home science contributes to women's self-efficacy and motivation from a psychological perspective. This paper seeks to address this gap by exploring the relationship between digital engagement and women's personal and skill development. The study adopts a narrative review approach, drawing on peer-reviewed articles, theoretical perspectives, and empirical studies published between 2015 and 2025. Relevant literature was identified using key terms such as women's empowerment, digital learning, self-efficacy, and home science, and was examined to identify common themes and patterns. The review suggests that technology-supported home science learning helps women develop practical skills, improve confidence, and connect with wider communities. Tools such as online tutorials, virtual workshops, and smart devices not only support learning but also encourage independence and entrepreneurial thinking. At the same time, challenges like unequal access to technology and socio-cultural barriers continue to shape women's participation. Overall, digital home science emerges as a meaningful pathway for enhancing women's motivation and self-efficacy. The paper highlights the importance of inclusive digital access and calls for further research to better understand long-term impacts across different contexts.

Keywords: *Home Science, Women Empowerment, Digital Learning, Self-Efficacy, Motivation*

Introduction

Home science today is far more than a subject about cooking, stitching, or managing a household. It has grown into a dynamic field that connects everyday life with modern knowledge, creativity, and technology. What once involved handwritten recipes, sewing needles, and basic household planning has now expanded into a world where digital tools guide, support, and inspire women in completely new ways. From step-by-step cooking tutorials on YouTube to online courses in nutrition, from virtual textile workshops to smart kitchen appliances that simplify daily routines, technology is redefining how women learn, practise, and innovate within home science.

This digital shift is not just practical; it is deeply psychological. Technology gives women more than information, it builds confidence. When someone learns a new recipe online, masters a sewing technique through a video, or shares their handmade products on social media, they

experience a sense of achievement and independence. Flexible learning platforms, online communities, and instant feedback all contribute to stronger self-belief, higher motivation, and a greater sense of autonomy. Women feel encouraged to explore new ideas, make mistakes safely, and keep improving at their own pace. At the same time, digital spaces are opening doors to income-generating opportunities. Home-based businesses whether baking, tailoring, crafting, or offering consultancy in nutrition or childcare are now reaching wider audiences through social media marketing, e-commerce, and digital networking. What once remained within the four walls of a home can now grow into a profession supported by technology.

However, this transformation also brings challenges: limited digital access in some regions, lack of training, online safety issues, and the pressure to keep up with rapidly changing tools. Understanding these hurdles is as important as celebrating the progress. This research explores all these dimensions how technology is reshaping traditional home science, the psychological impacts of digital learning, the new opportunities emerging for women, the barriers that still exist, and the future possibilities for creating more empowered, skilled, and self-reliant women through tech-enabled home science.

Even though digital technologies are becoming a regular part of everyday learning, there is still limited understanding of how they actually influence women's personal growth in the context of home science. Most existing studies tend to focus either on access to technology or on skill development, but they often overlook how these experiences shape women's confidence, motivation, and sense of independence.

In addition, research in this area is spread across different fields like home science, psychology, and gender studies, without fully bringing these perspectives together. Because of this, we still do not have a clear picture of how technology impacts not just what women learn, but how they feel about their abilities and how motivated they are to grow.

This study, therefore, aims to bridge this gap by exploring how technology-enabled learning in home science connects with women's self-efficacy and motivation, offering a more integrated and meaningful understanding of empowerment.

Review of Literature

Research over the past decade has increasingly shown that digital technologies and ICT (information and communication technology) play a powerful role in empowering women including in domains related to home science, skill development, and entrepreneurship. For instance, many studies find that when women gain access to digital tools and platforms, their opportunities for knowledge acquisition, learning, creative application, and income-generation expand significantly (Lalrinsangi & Kharbirymbai, 2024; Dixit, 2024; Verma, Pandey & Kaur, 2024). Programs teaching digital marketing, online crafts, or digital literacy have helped rural and semi-urban women break out of traditional domestic roles and launch small enterprises, improving both their economic status and social independence (Makkar et al., 2024; Sahu, Anant & Tiwari, 2023).

Beyond economic benefits, digital learning and ICT have important psychological and social effects. A comprehensive review of global research concludes that when women engage with technology through mobile devices, online courses, and virtual communities, they often experience increased self-confidence, autonomy, and social participation (Mackey & Petrucka, 2021; Samuel, George & Samuel, 2020). Digital platforms allow step-by-step learning, modelling of successful role-models, and peer support, which collectively enhance self-efficacy, intrinsic motivation, and a sense of agency. This transformation is particularly potent when home-science skills like cooking, textiles, nutrition, or home-based enterprises are taught via digital media, allowing women to learn, experiment, and share their work beyond the confines of the home.

However, significant barriers still hinder the full potential of this digital-home-science revolution. Many studies point to a persistent "digital

divide": limited internet access, lack of affordable devices, poor infrastructure in rural and tribal areas, and challenges in digital literacy (Arya & Kumar, 2023; Dhanamalar, Preethi & Yuvashree, 2023). On top of that, socio-cultural restrictions and gendered expectations such as limited mobility, domestic responsibilities, and low support for women's independence reduce uptake even when digital tools are available (Anzak & Sultana, 2020; Panda, 2023). Researchers emphasize that while technology offers tremendous promise, realizing its empowering potential requires targeted efforts: improving infrastructure, offering training, ensuring social support, and addressing gender norms.

Research Objectives

- To examine how technology enhances home science skills among women.
- To explore psychological pathways that link digital learning to women's self-efficacy.
- To understand how technology fosters intrinsic and extrinsic motivation.
- To evaluate the impact of tech-enabled interventions on women's autonomy and decision-making.
- To identify barriers and limitations associated with technology-based empowerment.

Methodology

This study uses a narrative review approach to understand how technology is shaping women's learning and empowerment in home science. To keep the process organized and meaningful, relevant studies were identified through academic sources such as Google Scholar and other open-access platforms.

A set of keywords, including women's empowerment, digital learning, self-efficacy, home science, and technology-enabled skills, was used to guide the search. The review mainly focuses on studies published between 2015 and 2025 so that it reflects recent developments in digital learning and technology use.

To ensure relevance, only peer-reviewed articles, theoretical discussions, and empirical studies related to women's learning, motivation, and skill development were included. Studies that were not in English or did not directly relate to the topic were excluded.

The selected studies covered both rural and urban contexts, helping to capture a wider range of experiences. These studies were then carefully read and grouped into key themes such as skill development, confidence building, motivation, autonomy, and barriers to access. This thematic approach made it easier to understand patterns across different contexts.

Overall, this method allowed for a balanced and holistic understanding of how digital tools and platforms support not only learning in home science but also women's confidence, independence, and decision-making.

Tools, Practices & Interventions

This section synthesizes key tools, practices, and interventions identified across the reviewed literature.

Today, women have a remarkable variety of digital tools and technologies at their fingertips, making learning, creating, and managing both home and small businesses more accessible and enjoyable. Online platforms like YouTube tutorials, MOOCs, and apps guide women step by step in cooking, nutrition, tailoring, gardening, and crafts, while virtual workshops and webinars allow them to connect with experts and mentors from across the globe. Smart home technologies, from digital measuring tools and air fryers to sewing machines with smart interfaces, simplify everyday tasks and creative projects, letting women focus more on experimenting, learning, and innovating.

Beyond practical tools, women are also using apps and digital systems to organize and track their work and habits. Goal-setting planners, habit trackers, and financial management apps help them manage home-based enterprises efficiently, set priorities, and see tangible progress. On the psychological side, interventions such as self-monitoring techniques, structured feedback, and supportive peer groups boost confidence, offer motivation, and encourage shared learning.

By combining practical tools with these supportive practices, women are not just completing tasks, they are growing in autonomy, building competence, and developing the confidence to explore new ideas. Digital learning and smart technologies create an environment where women can continuously improve, feel empowered, and take charge of their personal, domestic, and entrepreneurial goals, making home science both a skill and a source of self-driven growth.

Case Studies and Anecdotal Illustrations

The transformative power of technology in women's lives can be seen vividly through the journeys of several inspirational figures. Nisha Madhulika, for example, began with a simple passion for cooking and initially shared her recipes through a blog. As her audience grew, she embraced YouTube, creating step-by-step cooking tutorials that eventually turned her into one of the platform's top culinary content creators. Her story highlights how digital platforms can empower women to showcase their talents, build personal brands, and achieve entrepreneurial success from home. Similarly, Sudha Murty has leveraged technology and organizational resources through the Infosys Foundation to promote social change, particularly for underprivileged women and children, by improving access to education, healthcare, and livelihood opportunities. Her initiatives demonstrate the potential of technology not just to enhance individual lives but to uplift entire communities.

Sairee Chahal's work with Sheroes, an online platform designed to support women in entrepreneurship, employment, and financial literacy, provides another compelling example. By bridging gender gaps and creating a comprehensive ecosystem for women's growth, Sheroes enables women to pursue careers, start businesses, and access resources that were previously difficult to reach. Likewise, Ruma Devi, a social activist, fashion designer, and traditional handicraft artist, has used her expertise to train over 30,000 rural women, connecting them with sustainable livelihood opportunities. Her recognition with the "Nari Shakti Puraskar" in 2018 underscores the impact of combining skill development with empowerment initiatives.

These stories, drawn from diverse backgrounds and contexts, illustrate how women across India are harnessing technology, creativity, and innovation to drive social change, build careers, and inspire others. Through blogs, social platforms, community initiatives, and digital tools, they exemplify the countless ways technology can transform aspirations into tangible achievements, offering both inspiration and practical lessons for women seeking to make their mark in the digital age.

Contribution of the Study

This study brings together ideas from home science, psychology, and gender studies to offer a more connected understanding of how technology supports women's empowerment. Instead of looking only at skills or access to technology, it focuses on how digital learning influences women's confidence, motivation, and ability to make decisions.

By combining insights from different types of studies, the study highlights how technology can support both practical learning and personal growth. It also points out the importance of making digital opportunities more accessible and inclusive, especially for women who face social or structural barriers.

The study can be useful for educators, policymakers, and practitioners who are working to promote women's empowerment through technology in meaningful and sustainable ways.

Results

The findings are based on thematic analysis of the reviewed literature. They clearly highlight the positive impact of technology on women engaging in home science. Women who actively use digital tools demonstrate notable increases in self-efficacy, showing greater confidence in their abilities to learn and perform tasks independently. They also exhibit higher motivation to acquire new skills, take initiatives, and make decisions within their households, reflecting a growing sense of autonomy and responsibility.

Technology use enhances creativity and problem-solving skills, allowing women to approach challenges more effectively, while also opening doors to part-time or home-based entrepreneurial opportunities. Qualitative insights further reveal that women experience emotional satisfaction, reduced dependency on others, and a strong sense of achievement, all of which contribute to their overall well-being and empowerment.

At the same time, the study identifies challenges that can limit the full potential of digital engagement. Limited access to devices or the internet, gaps in digital literacy, and socio-cultural restrictions continue to affect participation for some women. Yet, these barriers do not overshadow the overwhelmingly positive effects of technology. Online tutorials, virtual workshops, and smart tools not only enhance skill development but also provide platforms for peer connection, collaboration, and practical application. In essence, technology-supported home science empowers women to build competence, gain confidence, and explore entrepreneurial possibilities, fostering both personal growth and social engagement.

Criticisms and Limitations

While tech-enabled home science has brought many opportunities, it is not without its limitations. Many women still face barriers such as lack of access to reliable internet, smartphones, or proper training, which can prevent them from fully benefiting from digital tools. Gaps in digital literacy are particularly challenging for older women or those living in remote areas. Social norms and cultural expectations may also limit women's participation in online spaces. In some cases, over-reliance on technology can reduce hands-on practice or expose learners to unverified content, which may lead to misinformation or incomplete understanding.

From a research perspective, studies in this area also have their constraints. Many rely on small sample sizes, self-reported data, or context-specific findings, making it difficult to generalize results across different populations. The rapid pace of technological change further means that older studies can become outdated quickly, and interventions that worked previously may no longer be as effective. Despite these challenges, acknowledging these criticisms is important, as it helps guide more inclusive, evidence-based, and context-sensitive approaches to using technology for women's empowerment in home science.

Future Directions

Looking ahead, the future of tech-enabled home science lies in creating inclusive and culturally-sensitive programs that cater to women with diverse literacy levels and backgrounds. Efforts by governments and NGOs can play a key role by expanding digital literacy training, setting up community learning centers, and providing affordable access to smart tools and devices. Emerging technologies like AI, virtual reality, and simulation-based training could be integrated into home science curricula, offering women immersive, hands-on learning experiences that go beyond traditional methods. Longitudinal research is also needed to track the long-term effects of these interventions on women's empowerment, skills, and socio-economic participation. At the policy level, promoting women's digital inclusion should be recognized as a priority for national development, ensuring that technology becomes a sustainable pathway for education, skill-building, and holistic growth for women everywhere.

Conclusion

Technology has opened up a whole new world for women in home science, giving them the freedom to learn, experiment, and create like never before. With digital tools, smart appliances, and online communities, women are not just improving their skills, they are gaining confidence, taking initiative, and even exploring ways to earn independently from home. These experiences do more than teach practical abilities; they help women feel capable, motivated, and empowered, building a sense of autonomy and self-reliance that goes beyond everyday tasks.

At the same time, challenges such as limited access to devices, digital literacy gaps, and social or cultural restrictions can make it harder for some

women to fully benefit. Addressing these barriers through training, support networks, and inclusive policies is key to ensuring that technology can reach everyone. When these supports are in place, tech-enabled home science becomes more than just a skill-building activity, it becomes a pathway for personal growth, confidence, and long-term aspirations. While the results so far are promising, further research is needed to explore its long-term impact and the full potential for empowering women across different communities.

References

1. Anzak, S. & Sultana, A. (2020). Social and economic empowerment of women in the age of digital literacy: A case study of Pakistan, Islamabad-Rawalpindi. *Global Social Sciences Review*, 5(1), 1-12.
2. Arya, S. & Kumar, P. (2023). Digital divide and women's (dis)empowerment: A study of selected tribal communities in Wayanad District, Kerala, India. *Journal of Telecommunications and the Digital Economy*, 13(2), 25-41.
3. Dhanamalar, M., Preethi, S. & Yuvashree, S. (2023). Impact of digitization on women's empowerment: A study of rural and urban regions in India. *Journal of International Women's Studies*, 24(5), 98-115.
4. Dixit, P. (2024). The role of home science education in enhancing entrepreneurial skills among rural women. *Research Review International Journal of Multidisciplinary*, 9(11), 256-261.
5. Lalrinsangi, R. & Kharbirymbai, B. (2024). Empowering women through ICT: A study. *Indian Journal of Educational Technology*, 6(1), 273-282.
6. Mackey, A. & Petrucka, P. (2021). Technology as the key to women's empowerment: A scoping review. *BMC Women's Health*, 21, Article 78. https://doi.org/10.1186/s12905-021-01225-4
7. Makkar, D., Singh, K.J., Panesar, H., Gupta, R., Mejie, T.S. & Singh, T.P. (2024). Digital empowerment: Transforming rural women through digital marketing skills in Fatehgarh Sahib, Punjab. *International Journal of Research in Social Science and Humanities*, 5(3), 80–87. https://doi.org/10.47505/IJRSS.2024.3.8
8. Panda, J.K. (2023). Bridging the digital gender divide: Empowering women through digital literacy in India. *International Journal of Innovation in Engineering Research and Management*, 10(4), 45-60.
9. Samuel, Y., George, J. & Samuel, J. (2020). Beyond STEM: How can women engage big data, analytics, robotics and artificial intelligence? An exploratory analysis of confidence and educational factors. *arXiv*. https://arxiv.org/abs/2003.11746
10. Verma, S., Pandey, D. & Kaur, H. (2024). Role of digital entrepreneurship in social empowerment of women entrepreneurs in India: An empirical study. *Journal of Informatics Education and Research*, 4(3), 112-128.