Digital Marketing and Women Farmers' Financial Independence in Dakshinkali, Nepal: The Conditional Feasibility of Digital Inclusion

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ARTICLES

ABSTRACT

This study explores the conditional feasibility of adopting digital marketing as a strategic tool to support the financial independence of women farmers associated with the Shikharapur Community Learning Centre (SCLC) in Dakshinkali, Nepal. Although digital technologies have broadened market access within the agricultural sector, rural women farmers continue to face notable structural barriers, including limited digital literacy, restricted mobility, and unequal access to devices and reliable connectivity. Using a qualitative approach involving semi-structured interviews and participatory rural appraisal, the research explores how women farmers and local stakeholders understand the opportunities and challenges of introducing digital marketing in this community context. The findings suggest that digital marketing could help women farmers improve price awareness, reach customers more directly, reduce dependence on intermediaries, build confidence, and gain greater recognition for their agricultural work. However, the study also highlights that digital marketing is not yet feasible as a standalone strategy. Its use is constrained by small-scale and irregular production, limited exposure to digital platforms, gendered access to technology and finance, inadequate infrastructure, and the need for practical training. The study concludes that digital marketing may contribute to women farmers' financial independence if it is introduced gradually and supported by gender-sensitive training, culturally responsive implementation, institutional facilitation, and investment in digital and market infrastructure.

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INTRODUCTION AND BACKGROUND

Agriculture, an essential component of Nepal's economy, employs approximately 60% of the workforce and contributes one-fourth of the Gross Domestic Product (Chhetri & Ghimire, 2023). However, the sector faces persistent structural and emerging challenges. Traditional farming systems have been affected by globalisation, modernisation and climate change, influencing the sustainability and competitiveness of agricultural production (Bachkain & Karki, 2022; Pandey, 2023). Agricultural growth has been constrained by limited access to technology, weak policy implementation, inadequate production opportunities and reduced market access (Pandey, 2023; Bachkain & Karki, 2022). Farmers often have insufficient awareness of prices and market demand, remaining dependent on middlemen, which can contribute to low wages, financial dependency and unequal compensation for agricultural produce (Kumar & Timalsina, 2018).

A central factor in understanding these agricultural challenges is gender. Women play a substantial role in Nepal's agricultural sector, yet their access to education, management, technology, resources and market opportunities remains constrained by wider gender inequalities (Chhetri & Ghimire, 2023). Male out-migration has further contributed to the feminisation of agriculture, increasing women's responsibilities in farming while not necessarily improving their decision-making power, market participation or economic security (Leigh Anderson et al., 2021). These dynamics highlight the importance of women's empowerment within agriculture, for households and communities alike.

Women's empowerment is a multidimensional concept that includes economic, educational, political, health-related and media-related dimensions (Alves & Steiner, 2017). It can also be understood as a process through which women gain independence in decision-making and in the access and use of resources (Khursheed et al., 2021). This study focuses on the economic dimension. Female economic empowerment refers to women and girls moving from having limited power and restricted access to economic resources towards greater economic progress, agency and opportunity (Taylor & Pereznieto, 2014, as cited in Eggers del Campo & Steinert, 2022). In this article, financial independence means women's ability to access, manage and make meaningful decisions over income, resources and economic opportunities.

Digital technologies are increasingly discussed as possible tools for strengthening agricultural markets, improving information access and connecting producers with consumers. In Nepal, the rapid expansion of internet use and the growing relevance of information and communication technology (ICT) and e-commerce in agriculture suggest new possibilities for sustainable and transformative agricultural business models (Magar, 2020; Thapa, 2023). However, the practical relevance of digital tools depends heavily on local conditions. Many online stores and e-commerce initiatives have emerged without sufficient understanding of online processes, while farmers, particularly women, face knowledge gaps in cultivation practices, technological innovation and the use of digital marketing tools (Kumar & Timalsina, 2018).

For small-scale women farmers, digital marketing cannot therefore be treated as an immediate solution. Its feasibility is shaped by production capacity, digital literacy, access to smartphones and reliable internet, gendered control over technology, trust in online transactions, customer demand and institutional support availability. This is particularly important in rural contexts where women farmers may produce primarily for household consumption or local markets with limited engagement with commercial agricultural value chains.

This issue is especially relevant in Dakshinkali, Nepal, where women farmers associated with the Shikharapur Community Learning Centre (SCLC) engage in agricultural production within a context marked by opportunity and constraint. Organisations such as SCLC support women farmers by providing expertise in farming technology, farming input purchasing and management, and product marketing, thereby strengthening self-employment and income generation (Shikharapur CLC, n.d.; Chhetri & Ghimire, 2023). At the same time, women farmers face limitations related to small-scale production, dependence on local buyers and middlemen, restricted digital device access, limited exposure to online platforms and gendered expectations around mobility, income and technology use.

Although digital marketing and e-commerce in agriculture have received growing attention within research, much of the existing literature focuses on developed economies, while fewer studies examine weaker economic contexts such as Nepal (Kumar & Timalsina, 2018). This creates a need for context-specific research that examines not only whether digital marketing can support women farmers, but also under what conditions it may become realistic, useful and empowering. Thus, this article examines the conditional feasibility of digital marketing as a pathway towards financial independence for women farmers associated with SCLC in Dakshinkali, Nepal. Rather than approaching digital marketing as a "ready-made solution", the study investigates what digital marketing could realistically mean in a small-scale agricultural context and what conditions would be necessary for it to support women's economic empowerment. Through semi-structured interviews and participatory rural appraisal, the article explores how women farmers and local stakeholders perceive digital marketing opportunities, barriers and support needs.

The study contributes to existing literature in three ways. First, it provides empirical insight into women farmers' experiences and perceptions of digital marketing in a relatively underexplored Nepali context. Second, it shows that the feasibility of digital marketing in small-scale farming contexts is conditional rather than automatic, requiring attention to production readiness, digital inclusion, gender relations and institutional mediation. Third, it highlights the potential role of community-based organisations, such as SCLC, and local government actors in supporting gradual, context-sensitive digital engagement that may strengthen women farmers' market participation and financial independence.

LITERATURE REVIEW

The objective of this literature review is to illustrate the role of women in agriculture and the purpose of digital marketing as an economic strategy for women farmers, highlighting the technological and educational barriers. To meet the objective, this review is organised into three subsections which evaluate different aspects of the agricultural circumstances in Nepal and identifies the technological development and digital marketing prospects.

WOMEN IN AGRICULTURE

While agriculture is commonly seen as the primary occupation of the Nepalese population, it is women who make up the majority of the agricultural workforce, playing a pivotal role in the national economy (Chhetri & Ghimire, 2023). With many men leaving the country seeking more lucrative employment opportunities, the feminisation of agriculture has emerged as a prominent trend in Nepal. Consequently, women work six times as many hours in agriculture as men (Chhetri & Ghimire, 2023). According to Leigh Anderson et al. (2021), women are responsible for numerous tasks, including seed selection, planting, weeding, harvesting, and processing. However, their engagement in agriculture is primarily limited to production and processing, with less involvement further along the value chain or marketing procedure, where more profits are generated (Upreti et al., 2018). Despite their substantial contributions, women face several challenges, including limited access to land, water, credit, education, and technology.

TECHNOLOGY, ICT AND DIGITAL INCLUSION IN AGRICULTURE

Nepalese farming systems are often characterised by ecological, social and geographical complexity, including risk-prone and isolated conditions. In such contexts, high-input agricultural technologies may be unavailable, unaffordable or impracticable for many smallholder farmers (Shrestha, 2016). As a result, many Nepalese smallholders have not yet adopted improved technologies that could increase farm productivity and strengthen livelihood sustainability (Suvedi et al., 2017).

Digital development in Nepal remains uneven. Bachkain and Karki (2022) report that only 63% of Nepalese people have access to internet services and smartphones and women are 14% less likely than men to own mobile phones and other technological devices. These disparities, however, are not evenly distributed among women. Socioeconomic marginalisation, particularly

affecting Dalit women, can compound gendered barriers to digital access. Thapa (2023) identifies limited internet connectivity, restricted electricity access, insufficient Information Technology (IT) knowledge and a lack of specialist support as major barriers to effective agricultural extension services, particularly in rural areas. These barriers are important because digital marketing depends not only on the existence of digital platforms, but also on the ability of farmers to access, understand and use them in practice.

For this reason, it is important to distinguish between ICT, digital technology and digitalisation. In this article, ICT refers to the broader information and communication tools and systems that enable access to knowledge, communication and services, including mobile phones, internet connectivity and digital communication channels (Bachkain and Karki, 2022). Digital technology refers more specifically to the devices, applications and platforms through which people access and use digital services, such as smartphones, social media, websites, messaging applications and online payment systems. Digitalisation refers to the process through which these tools become integrated into everyday practices, institutions and economic activities (Bachkain and Karki, 2022; Kumar & Timalsina, 2018).

Digital inclusion is therefore not only a matter of physical access to technology. It also involves affordability, digital literacy, confidence, relevant content, trust and the social freedom to use digital tools. Han et al. (2022) argue that digital inclusion is essential for social stability and development, while recognising persistent inequalities in ICT access and effective use across individuals, households, businesses and regions. In Nepal, the use of mobile phones and online communication has increased in recent years, suggesting potential for agricultural information dissemination and online grocery delivery (Magar, 2020). However, these benefits are likely to remain uneven where farmers lack digital literacy, reliable infrastructure or support in using digital tools for agricultural purposes.

DIGITAL MARKETING AND E-COMMERCE IN AGRICULTURE

Digital tools are increasingly discussed as a means of improving agricultural information flows, communication between stakeholders and access to markets. Magar (2020) describes electronic technologies and internet-based services, including web portals, websites, social media, blogs, emails and smartphones, as contemporary methods of agricultural extension. Such tools may facilitate collaboration among farmers and other stakeholders and contribute to economic sustainability. The promotion of smallholder farmers and women-friendly technologies is also important for achieving economies of scale, creating employment opportunities and increasing economic competitiveness in Nepal's agricultural production and marketing systems (Suvedi et al., 2017; Pandey, 2023).

However, digital marketing and e-commerce should be understood as related but distinct concepts. Digital marketing refers to the use of digital channels to promote products, communicate with customers, share product information, build visibility and maintain buyer-seller relationships. E-commerce refers more specifically to the online buying and selling of goods or services, often involving digital ordering, payment systems, delivery arrangements or platform-based transactions (Kumar & Timalsina, 2018). E-commerce may be supported by digital marketing, but the two are not identical.

This segmentation is relevant in smallholder agriculture. For farmers with limited production volumes, digital marketing may not immediately involve full participation in e-commerce platforms. It may begin with more accessible practices, such as sharing product information through social media, communicating with customers through messaging applications, advertising seasonal produce, improving price awareness or maintaining contact with regular buyers. These lower-threshold forms of digital engagement may be more realistic than fully developed online sales systems in contexts where production, infrastructure and digital literacy remain limited.

Han et al. (2022) provide a relevant example from China, showing how social media marketing can support rural farmers in promoting products, communicating with customers and strengthening market relationships. Their study highlights the role of mobile technologies, such as WeChat, and wider policy efforts, including the "Internet plus agriculture" strategy, in expanding digital inclusion in rural areas. At the same time, they emphasise that

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adoption depends on more than access to platforms. Product suitability, digital literacy, social networks and institutional support shape whether social media marketing can be used effectively. This example suggests that digital marketing may offer opportunities for smallholder farmers, but only when the wider conditions for meaningful digital participation are in place.

In Nepal, e-commerce and social media marketing have been recognised as tools that may enhance the efficiency of product marketing and selling. The presence of more than two dozen active e-commerce sites reflects the growing relevance of digital platforms in agricultural marketing (Kumar & Timalsina, 2018). At the same time, literature identifies several barriers to agricultural e-commerce in Nepal, including the lack of suitable business models for agricultural markets, international competition, cultural barriers, infrastructural barriers, security concerns and public barriers (Kumar & Timalsina, 2018). These barriers suggest that digital marketing should not be treated as a simple technological solution, but as a process that depends on market readiness, trust, infrastructure, digital skills and institutional support.

DIGITAL TECHNOLOGY AND WOMEN FARMERS' EMPOWERMENT

The majority of women involved in the agricultural sector in South Asia are unrecognised and underpaid (Asadullah & Kambhampati, 2021). Thus, women farmers face credit and resource constraints, as well as limited access to information and extension services, making women less likely to adopt modern agricultural technologies (Asadullah & Kambhampati, 2021). Bachkain and Karki (2022) emphasised the clear gender disparity in the usage of ICT and digitalisation, derived from Nepal's male-dominated society, where men hold greater access to education, technology and decision-making.

Regardless of women's contributions to agricultural production, research confirms a gender gap in empowerment among farming households (Asadullah & Kambhampati, 2021). Academic research has developed impactful measurement tools, such as the Women's Empowerment Agriculture Index (WEAI), to assess the empowerment, agency and inclusion of women in the agricultural sector (Gupta, 2016). The WEAI monitors and evaluates women's engagement in five domains: decisions about agricultural production, access to resources, control over use of income, leadership in community and time use (Gupta, 2016; International Food Policy Research Institute, n.d.). Focusing on empowering women by increasing their access to and control over agricultural inputs leads to economic benefits, including enhanced agricultural productivity and reduced gender productivity gaps. Moreover, empowered women farmers can address and reach a wide range of challenges to achieve nutritional security and dietary diversity, as well as improve female well-being (Asadullah & Kambhampati, 2021). Further, these dimensions are relevant to this study because digital marketing may affect not only income generation, but also women's access to market information, control over sales, confidence in communication and visibility as economic actors.

Digital technologies could help overcome the constraints on female mobility and dependency by connecting women to the market and enhancing their standing within the agricultural sector (Asadullah & Kambhampati, 2021). Furthermore, encouraging disadvantaged people and social groups to adopt technologies and digital advancements displays an effective strategy to ensure digital inclusion and participation (Han et al., 2022). Social media portrays a strong potential for facilitating interactions and connections between agents, customers and farmers (Magar, 2020). Thus, digital technology could serve as an impactful tool for women's empowerment in agriculture, aiming to create greater accessibility to agricultural trade networks and social capital. However, digital technologies do not automatically produce empowerment. Their effects depend on whether women can access, use and control these technologies, and whether digital engagement translates into meaningful economic decision-making power.

In Nepal, government efforts to promote women's participation in agriculture include increasing women's involvement in cooperatives and farmers' groups and strengthening their leadership roles in agricultural policy development (Chhetri & Ghimire, 2023). These efforts suggest that women's empowerment in agriculture requires more than technical intervention alone. It also

depends on access to resources, markets, institutions and decision-making spaces. Digital marketing may contribute to this process, but only when embedded within broader support systems that address skills, infrastructure, gender norms and market access.

As the literature showed, enhancing women's expertise in technological tools and digitalisation is an important step towards more inclusive agricultural development. Thus, training programmes and capacity-building initiatives are essential for improving digital competencies among women farmers and for supporting more productive, diversified and sustainable agricultural systems (Thapa, 2023; Shrestha, 2016). However, the adoption of ICT, digital marketing and e-commerce in agriculture continues to be constrained by limited infrastructure, insufficient investment, low levels of awareness and the absence of well-defined policies and support mechanisms (Kumar & Timalsina, 2018; Thapa, 2023).

Therefore, the literature suggests that digital marketing should not be understood as a simple or standalone solution. Its potential depends on whether women farmers have access to the necessary skills, technologies, markets and institutional support. Building suitable agricultural e-commerce platforms, raising awareness among farmers and consumers, simplifying online payment processes and providing gender-sensitive training are important conditions for making digital tools more accessible and relevant (Kumar & Timalsina, 2018; Thapa, 2023). Hence, digital marketing may contribute to women farmers' financial independence, but only when embedded within broader efforts to improve digital inclusion, market access and women's control over agricultural resources.

RESEARCH METHODOLOGY

STUDY AREA

The study was conducted in Dakshinkali Municipality, Nepal, focusing on Pharping, a city at the southern edge of the Kathmandu Valley, approximately 18 km from the capital, see Figure 1 (NTB, n.d.). In 2021, Dakshinkali had a population of 26,372 with a density of 618 people per square kilometre (Edusanjal, n.d.). The area is shaped by agricultural and rural tourism activities, which represent important income sources for local residents (Kafle & KC, 2024). This context allowed the research to examine digital marketing not as an abstract technological intervention, but as a possible strategy within an agricultural setting characterised by small-scale production, local market relations and uneven access to digital infrastructure.



Figure 1 Map of Kathmandu Region.

Note. Drawn by the author, as adapted from *Dakshinkali Municipality, Nepal: Situation Analysis for Green Municipal Development* by Global Green Growth Institute (2018, page 9).

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STUDY DESIGN

The study used a descriptive qualitative research design to explore how women farmers and local stakeholders perceived the opportunities, limitations and support needs associated with digital marketing. This approach was appropriate as the study aimed to understand participants' experiences, interpretations and situated knowledge rather than measure prevalence or statistical effects of digital marketing adoption (Nowell et al., 2017). The study was also cross-sectional, with data collected at one point in time.

Two qualitative methods were used: semi-structured interviews and participatory rural appraisal (PRA). Semi-structured interviews allowed participants to describe their experiences, concerns and expectations in their own words, while enabling the researcher to explore key themes related to agricultural marketing, technology use, financial independence and gendered constraints. Interviews were conducted online or in person, depending on participants' location and availability. In total, eight in person interviews and one online interview via Microsoft Teams were conducted.

The PRA strengthened the participatory dimension of the research. PRA is a community-based and semi-structured approach enabling rural participants to share, analyse and reflect on local conditions (Amir & Khan, 2019). In this study, PRA ensured women farmers were treated as participants with situated expertise about their livelihoods, resources, constraints and opportunities, rather than mere sources of information. This was particularly important as the study examined the digital marketing's conditional feasibility in a context where many women farmers were engaged in small-scale or locally oriented agricultural production. The PRA helped identify not only whether digital marketing was perceived as useful, but also what social, infrastructural, institutional and production-related conditions needed addressing before digital marketing could become meaningful.

SAMPLING

The main study population consisted of women farmers from Dakshinkali Municipality. Eligible participants were Nepali women aged 18 years and above, engaged in agricultural activities, permanently resident in the study area and familiar with selected communities in Dakshinkali. Participants had varying levels of formal education and training experience, including training provided by the Shikharapur Community Learning Centre (SCLC).

Expert participants were included to provide contextual and professional insights. These included SCLC staff members, agricultural cooperative representatives, Dakshinkali Municipality officials with agricultural development or digital marketing experience, and an organic food store representative connected to local value chains. Their perspectives complemented the accounts of women farmers and helped situate the findings within the broader institutional and market environment.

Purposive sampling and snowball sampling, were applied to recruit participants for interviews and PRA. Purposive sampling enabled selection of participants meeting predefined inclusion criteria directly relevant to research objectives (Gill, 2020). Snowball sampling subsequently identified further participants through recommendations and existing networks. A diverse range of participants in terms of age, farming experience, digital literacy, caste affiliation, and socio-economic background was recruited to ensure varied perspectives.A certain degree of homogeneity was maintained, as all women participants shared a similar geographical and entrepreneurial context within Dakshinkali. This ensured participants´ relevance to the research focus and supported the process of reaching data saturation, while gaining richer understanding through diversity in personal characteristics such as age and professional background. Despite efforts to ensure demographic diversity, certain groups, such as women farmers from marginalised ethnic backgrounds, may be underrepresented. Snowball sampling may have limited access to less-connected individuals.

The researcher conducted nine semi-structured in-depth interviews (see Table 1), and one PRA session with 18 women farmers. Sampling size relied on the concept of "saturation," the point at which no new information or themes were observed in the data (Guest et al., 2006). Based on Guest et al. (2006), six interviews identify basic elements for meta themes, six to eight suffice for a homogeneous sample, and 12 to 20 achieve maximum variation. All participants were assigned pseudonyms to protect confidentiality and anonymity.

PARTICIPANT	AGE	GENDER	FIELD OF EMPLOYMENT	EXPERIENCE
Yasir	40-50 years	Male	Education	SCLC Manager position
Jamuna	30-40 years	Female	Agricultural Cooperative	Manager position
Nabraj	40-50 years	Male	Education	SCLC Manager position
Kamal	20-30 years	Male	Organic supermarket	Manager, Biofarming entrepreneur
Darsana	29 years	Female	Farmer	10-15 years in agriculture
Aabhya	46 years	Female	Farmer	In agriculture since childhood
Isan	20-30 years	Male	Municipality member	Works within the agricultural department ofDakshinkali Municipality
Nabita	30-40 years	Female	Education	SCLC Administration position
Chameli	40-50 years	Female	Education	SCLC Administration, with previous farming experience

Table 1 Demographics of Interview Participants.

DATA COLLECTION

Semi-structured interviews were conducted from 2–16 May 2024. The interview guide was developed based on the research objective and relevant literature. Open-ended questions explored participants' experiences of agricultural production and marketing, technology access, digital marketing perceptions, financial decision-making, training needs and gendered barriers to digital participation. Interview questions for women farmers were phrased personally to invite reflections on lived experience, while questions for expert participants elicited professional and contextual knowledge. Both interview guides addressed the same overall research objective.

The interview guide was piloted before data collection to assess question clarity, relevance and cultural appropriateness. Two pilot interviews were conducted with SCLC staff familiar with the local context. The pilot process identified possible misunderstandings and refined question wording and sequencing. Following the pilot, several questions were rephrased for clarity, and overlapping questions were combined to reduce repetition and avoid lengthy interview sessions. These adjustments ensured the final interview guide was accessible, culturally appropriate and manageable for participants.

Several interviews were conducted collaboratively by the wider research project team members. Where appropriate, Interview protocols were combined to reduce participant time burden and streamline the data collection process. Field notes were taken during or immediately after interviews. Due to the language differences between English and Nepali, the researcher was usually accompanied by a translator. While this enabled communication with participants, it may have reduced nuance in the data, particularly where meanings were translated across languages and cultural contexts.

Before each interview, participants were familiarised with the study purpose, interview procedure, estimated duration (45 min – 1 hour) and confidentiality. Participants received information about the data collection process and consented to audio and/or video recording of the conversation.

PARTICIPATORY RURAL APPRAISAL ACTIVITIES

The PRA session was organised by three researchers in close collaboration with SCLC. The session lasted approximately two hours. Activities were selected according to the research objectives,

the local context and the participatory purpose of the study. The PRA generated data through written posters, sketches, field notes, photographs and audio recordings (see Figures 2 and 3). These forms of documentation supported the observation of behaviours, interactions, patterns and relationships during the session (Sontakki et al., 2019). During the PRA session, the 18 women farmer-participants were divided into two equal groups of nine. This format facilitated smaller group discussions, encouraged participation among all members, and allowed detailed exploration of participants' experiences, resources and perceived challenges.

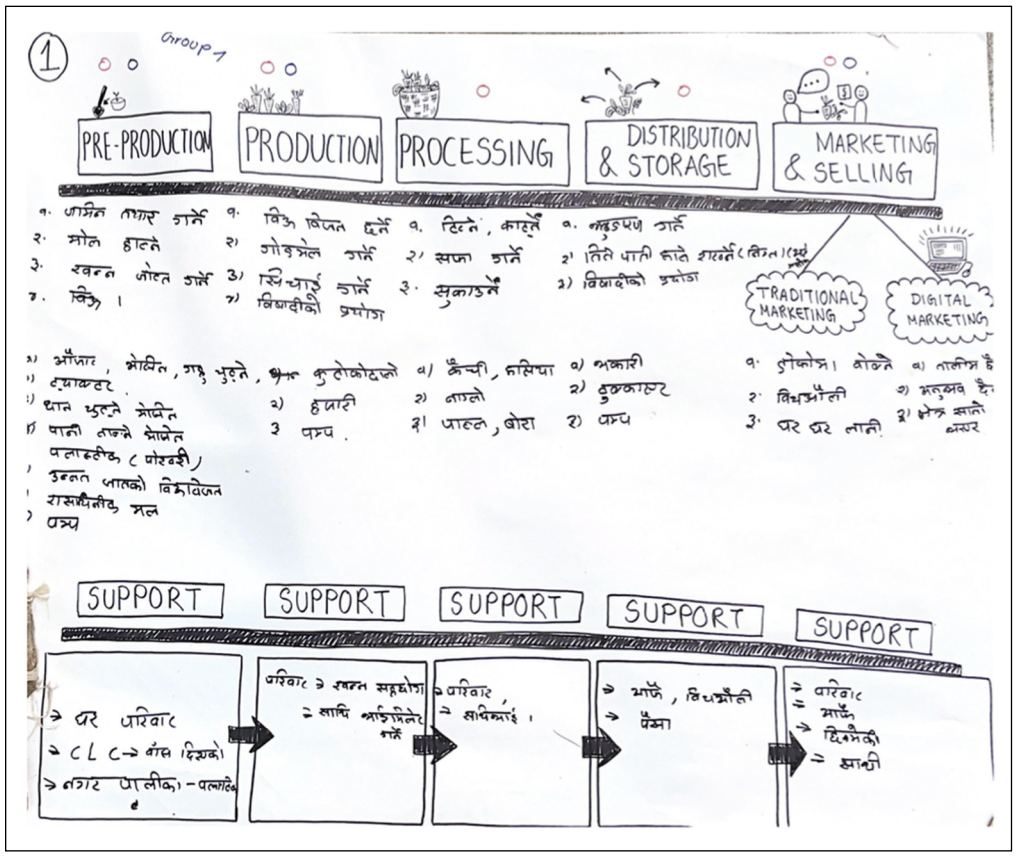


Figure 2 Examples of Data Collection from PRA Session (Resource Mapping Activity – Group 1).

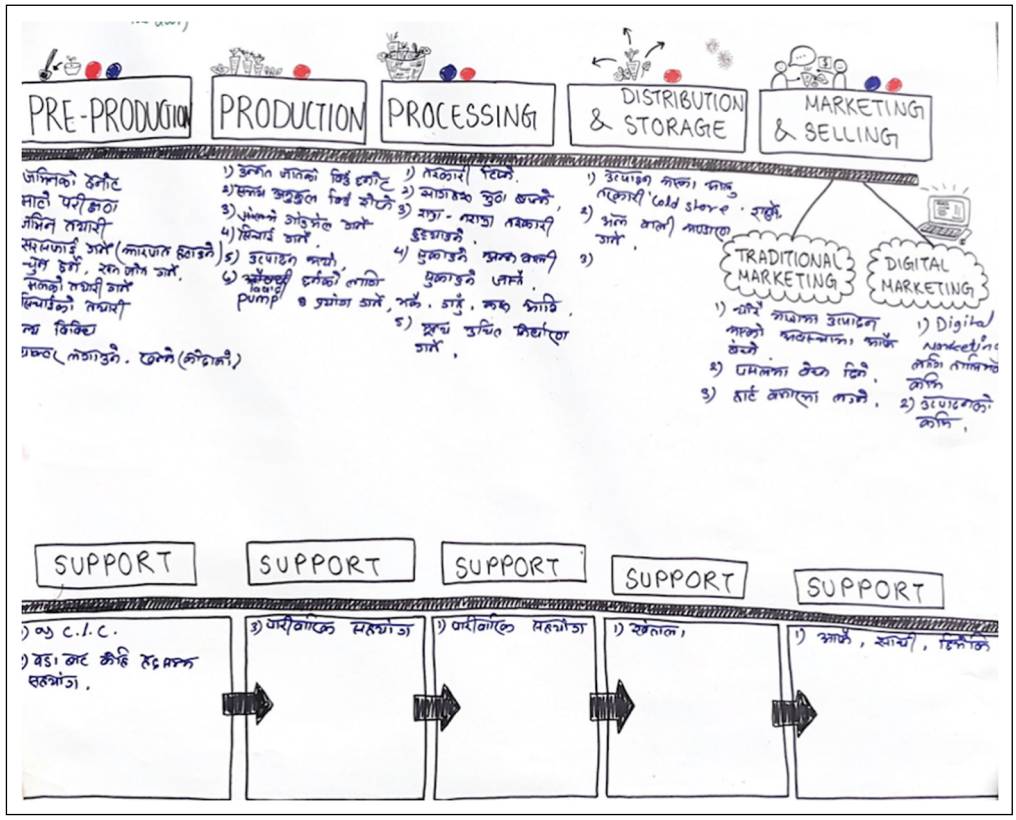


Figure 3 Data Collection from PRA Session (Resource Mapping Activity – Group 2).

The PRA was inspired by the work of Sontakki et al. (2019), and included four activities: "Resource Mapping", "Resource Availability", "Problem Identification", and "Problem-Cause-Effect-Opportunities Analysis". Each activity contributed differently to the research question. "Resource Mapping" identifies local resources, actors, institutions and market spaces shaping women farmers' agricultural activities. "Resource Availability" explored participants' access to land, technology, training, financial resources and other forms of support. "Problem Identification" allowed participants to name main barriers experienced in agricultural production, marketing, income generation and technology use. The "Problem-Cause-Effect-Opportunities Analysis" supported structured discussion of why challenges existed, how they affected women farmers, and what opportunities might exist for future digital marketing or capacity-building initiatives.

This participatory process was particularly relevant as the study did not assume digital marketing was already feasible or desirable for all women farmers. Instead, the PRA helped reveal the conditions under which digital marketing might become useful, as well as the barriers limiting its relevance in small-scale agricultural contexts. PRA outcomes were interpreted collaboratively with community members and SCLC staff to strengthen accuracy and ensure that the analysis remained grounded in local experiences.

QUALITY ASSURANCE

Trustworthiness and authenticity through various credibility, transferability, dependability, and confirmability strategies. Peer debriefing and member checks were used to increase credibility (Nowell et al., 2017). To embrace the research findings' relevance and participatory process design, the researcher presented emerging findings within SCLC and received feedback from research participants (additional member checking). Dependability and confirmability were maintained through logical, traceable, and clearly documented processes. Rich description and an audit trail, consisting of raw data such as notes, transcripts, data reconstruction, and synthesis products (codebooks) were employed.

Triangulation improved research credibility and created wider understanding of research objectives. Multiple researchers and observers participated in both data collection and analysis (Delve & Limpaecher, 2023). This approach greatly mitigated the risk of researcher or interviewer bias. Including multiple triangulation methods, perspectives and interpretations enhanced trustworthiness of findings, ensuring a more holistic understanding of the examined phenomena (Nowell et al., 2017). Confirmability was achieved by including explanations for methodological and analytical decisions, improving credibility, transferability, and dependability of research findings.

DATA ANALYSIS

Interview and PRA data were analysed using thematic analysis. After data collection, audio and video recordings were transcribed and reviewed several times. Reflective notes documented initial impressions and emerging analytical ideas. Thematic analysis was used to identify, analyse, and report patterns within the data (Nowell et al., 2017).

A hybrid coding strategy was used. Analysis began with deductive coding based on the research objective and themes identified in literature, including market access, digital literacy, financial independence, gendered technology use and institutional support. Simultaneously, the coding process remained open to inductive insights emerging from participants' accounts and PRA material. This allowed the researcher to combine conceptual guidance from literature with attention to locally specific meanings and experiences.

Important statements from interviews were highlighted using multiple colours, and main declarations summarised. Coded themes were identified, reviewed and modified throughout data processing, forming the foundation for further development and transformation of the findings. Furthermore, the generated code structure allowed comparison and initial interpretations of results, as well as an evaluation and interpretation of data.

ETHICAL CONSIDERATION

The study followed ethical principles minimising harm, protecting confidentiality and ensuring voluntary participation. Questions about personal experiences, income, household relations

and social constraints may affect participants' comfort and emotional well-being. For this reason, the study was guided by non-maleficence and beneficence principles, preventing harm and proactively identifying potential risks (Laryeafio & Ogbewe, 2023).

This study was designed and conducted in accordance with international ethical standards for qualitative research involving human participants. Given the non-clinical nature of the community-based PRA, oversight and execution were managed through SCOC collaboration. Prior to data collection, all participants were fully informed about the study purpose, voluntary involvement, right to withdraw at any time, and intended data use. Explicit informed consent was obtained from all individuals, including permission for audio and video recording where applicable. Participant confidentiality was safeguarded through pseudonyms, and all distinguishing details were removed or altered.

The research process required cultural sensitivity, particularly as the study was conducted in a South Asian context and involved linguistic and cultural differences between researcher and participants. Efforts were made to respect local knowledge systems, cultural practices and participants' own interpretations of their experiences. SCLC staff and translators facilitated communication and contextual understanding, although translation may have shaped how participants' meanings were conveyed and interpreted.

Researcher positionality was relevant. The researcher's background, language limitations and role as an external researcher may have shaped interactions with participants and the interpretation of data. Reflexive notes and discussions with local collaborators were used to reduce and reflect on biases. Findings should therefore be read as interpretations produced through situated research processes, shaped by participants' accounts, local collaboration and the researcher's analytical decisions.

RESEARCH FINDINGS

This section presents the main findings from the semi-structured interviews and the PRA. Four themes were identified as central to understanding digital marketing utility for women farmers in Dakshinkali: the scale of production and dependence on existing market actors; digital access, awareness and training needs; gendered access to technology, finance and marketing decisions; and the possible contribution of digital marketing to financial independence and social recognition. Across these themes, participants did not view digital marketing as an immediately applicable solution. Rather, they presented it as a potential opportunity depending on changes in production capacity, infrastructure, skills, household relations, customer behaviour and institutional support. Figure 4 visualises the findings.

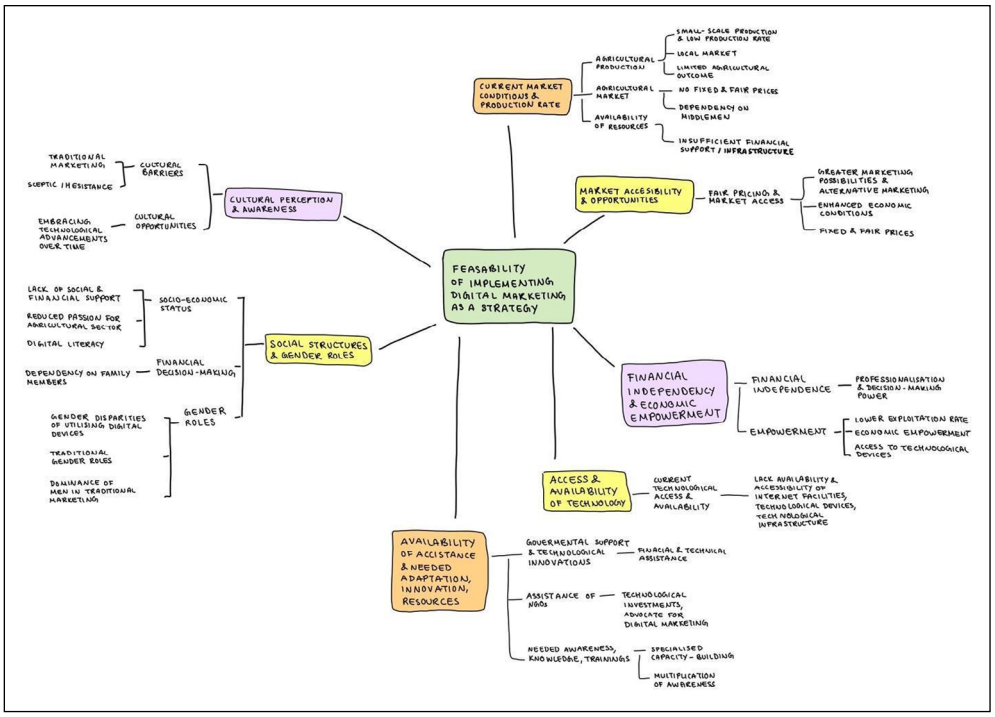


Figure 4 Visual of Findings.

PRODUCTION SCALE AND MARKET DEPENDENCE

A central finding was that the current scale and organisation of agricultural production limited immediate feasibility of digital marketing. Many women farmers in Dakshinkali were described as producing on a small scale, often for household consumption, local exchange or nearby markets such as the Haat Bazaar in Pharping. The PRA similarly indicated that many farmers worked with limited resources and facilities, restricting their overall production capacity. This raised questions among participants about the relevance of modern marketing tools where production volumes were often limited and irregular. Several interviewees suggested that digital marketing would require more stable, consistent and higher-quality production before it could be meaningfully implemented. As Nabraj explained:

> "They need to have good products, regular production, good production. We need to be professional."

He further emphasised the importance of maintaining regular contact with customers:

> "If they go on the digital marketing, at least they should have continuous production and a continuous touch with the consumers. Otherwise, if you are not producing the goods regularly, the [customer] contact will be lost."

These statements suggest that digital marketing was not understood only as a promotional tool. Participants associated it with a broader process of professionalising production, strengthening customer relationships and meeting market expectations. Limited land, insufficient investment, crop disease, product shortages and poor prices were described as barriers that reduced farmers' capacity and motivation to engage with digital markets.

Furthermore, market dependence shaped the feasibility of digital marketing. Interviewees described women farmers as highly dependent on local buyers and middlemen, who often influenced prices, payments and market access. Yasir noted that this dependence could create power imbalances, particularly when middlemen provided loans or financial support. Nabita similarly observed that delayed payments from middlemen could deepen farmers' financial dependence, making it more difficult for them to explore alternative marketing channels.

The findings show that digital marketing would have to be introduced into an already unequal market structure. While participants saw potential for digital tools to support more direct customer access, they also indicated that existing relationships with buyers, middlemen and local consumers would continue to shape whether women farmers could shift towards alternative marketing practices. Chameli also pointed to customer loyalty and familiarity with existing selling points, suggesting that consumers may prefer trusted face-to-face exchanges over unfamiliar digital channels.

Local institutional and financial support were also limited. Isan explained that the municipality had a restricted budget for loans and financial assistance for women farmers, with no existing digital marketing programmes or dedicated financial resources for such initiatives. This indicates that digital marketing would require more than individual willingness. It would also require technical support, institutional investment and a gradual strengthening of the local agricultural market environment.

DIGITAL READINESS: INFRASTRUCTURE, AWARENESS AND TRAINING NEEDS

A second theme concerned digital readiness. Participants repeatedly identified limited internet access, unreliable connectivity, insufficient access to smartphones and computers, limited technical skills and low levels of digital literacy as barriers to digital marketing. Consequently, women farmers struggled to access online markets even where interest existed.

The findings also showed that digital marketing remained unfamiliar to many participants. Several interviewees suggested that women farmers were not necessarily opposed to digital marketing, but that they had limited exposure to its practical uses and possible benefits. Nabraj captured this lack of awareness when he stated:

> "Nobody's thinking about it because nobody's using it. Nobody's thinking about it, not even me, as an educated person."

This illustrates that digital marketing had not yet become part of local agricultural practice. Participants emphasised that awareness-raising would need to come before implementation. This awareness must include both farmers and customers. As Chameli explained:

> "It's not enough for farmers to learn about this digital marketing, but the customers also need to be aware of it."

This finding is important because it shows that digital marketing depends on both supply-side and demand-side readiness. Women farmers would need knowledge and confidence to use digital platforms, while customers would also need to trust and engage with digital forms of agricultural buying and selling. Training and capacity-building were identified as essential. Participants described needing practical training in digital marketing, customer communication, product presentation, market evaluation, advertising, packaging and digital device use. The PRA indicated that digital marketing training was not currently available, though women farmers considered it important for becoming more professional and entrepreneurial in agriculture. Nabita stated:

> "Get the knowledge about all these things that really increases their knowledge, enhances their ability and even helps their empowerment. The farmers need to get the skills, they need to be skillful."

Similarly, Kamal emphasised the importance of demonstrating practical uses of digital media:

> "Change can happen by showing how to utilise digital media successfully to the farmers."

Participants also linked training to women's confidence and financial independence. Chameli explained:

> "If female farmers had more knowledge and experience about how to properly market and they could be more, they could earn more and that way they would be more financially independent."

At the same time, the findings suggest that training would need careful design. Participants noted that existing training programmes do not always reflect women farmers' everyday needs and practical constraints. For digital marketing training to be meaningful, it would need to be locally relevant, accessible and closely connected to farmers' production realities. This includes recognising time constraints, literacy levels, device access and family/community acceptance.

GENDERED ACCESS TO TECHNOLOGY, FINANCE AND MARKET DECISION-MAKING

Digital marketing feasibility was also shaped by gendered access to technology, finance and decision-making. Interviewees described how women's use of digital devices was often restricted by household responsibilities, gender norms and unequal control over technology. Men were generally perceived as having greater freedom to use mobile phones, while women's use was sometimes questioned or monitored. Aabhya explained:

> "So, the husbands are free to use the phone at any time, for hours. But if the wives use the phone, then sometimes the suspicious husband can question [their online activities], so they just want to restrict their wife from using more mobiles."

This finding shows that digital access involves more than device ownership or internet connectivity. Even where phones are available within a household, women may lack equal freedom to use them for learning, communication or marketing. Suspicion around women's online activity may become a social barrier to digital marketing.

Financial decision-making was another gendered constraint. Participants explained that decisions about money, investment and household resources often involved husbands or senior family members. As a result, women farmers may have limited control over their own income and limited ability to invest in smartphones, internet access, packaging, transport or other resources needed for digital marketing. This restricts the practical possibility of using digital marketing as an independent economic strategy.

Additionally, the findings highlighted gendered divisions within agricultural marketing. Although women were involved in selling and promoting produce in local markets, broader marketing decisions and financial transactions were often associated with men. Participants suggested that men were more likely to control activities linked to money and revenue, while women were more closely associated with practical agricultural labour. This division may reduce women's confidence and experience in formal or digital marketing spaces.

Moreover, participants suggested that digital marketing could challenge some of these dynamics if introduced in a supportive and gender-sensitive way. By enabling women to communicate with customers, access price information and present their products more visibly, digital marketing could potentially strengthen women's role in agricultural decision-making. Yet, this would depend on whether women can access and control necessary technologies, and if families and communities accept women's participation in digital spaces.

CONDITIONAL OPPORTUNITIES FOR FINANCIAL INDEPENDENCE AND SOCIAL RECOGNITION

Despite these barriers, participants identified ways digital marketing could support women farmers if the necessary conditions were met. Digital marketing was perceived as a possible way to improve price awareness, reach wider markets, reduce dependence on middlemen and create more direct relationships with customers. Darsana and Aabhya highlighted that digital marketing could support fairer and more stable pricing for agricultural products. Other participants suggested that online product presentation could strengthen quality assurance and make women farmers' work more visible.

Participants also saw digital marketing as a way to reduce the physical burden of traditional marketing. Women farmers often relied on door-to-door selling or local market visits, which could be time-consuming and physically demanding. Chameli described digital marketing as a potentially more accessible alternative:

> "It is very easy for the [women] to sell their product because if they use digital marketing, if they stay at home and customers also will come to buy her product. So that she has lots of time to work in the field and take care of her children. So digital marketing is very effective, very effective for women."

This illustrates how participants connected digital marketing not only to income, but also to time use, household responsibilities and women's everyday workload. Digital marketing was perceived as potentially useful because it could make market engagement more flexible and less physically demanding. Participants also linked digital marketing to women's social recognition. Several interviewees suggested that women's agricultural work was often undervalued because it was seen as traditional farm labour rather than as a formal occupation or business activity. Chameli explained that digital marketing could change how women farmers are perceived:

> "In Nepali context, only working on the farm and traditional farming is not considered as a proper job but they are supposed to do that. But if they have digital marketing, they could do more marketing and then be in touch with other companies as well, which would be considered as a proper job like they could be entitled as a business woman."

This finding suggests that digital marketing could contribute to women's empowerment not only through increased income, but also through recognition, confidence and a shift in social status. Participants associated digital engagement with professionalism, entrepreneurship and greater visibility within the market. The link between digital marketing and financial independence was also emphasised. Nabraj stated:

> "Digital marketing will definitely contribute to financial independence because once we are able to do the digital marketing, then the easy answer is that they can have access to the market, they can be informed about the market, we can know about the price. They can know all related information."

Similarly, Jamuna described a possible positive cycle where better market knowledge and reduced exploitation could improve production and income:

> "A lot of changes, farmers will know about the market, about the prices, less chance for them to be exploited, should not have to go door to door, this will save time, that time they can instead utilise for farming and then create more production, more benefit, more farming, earn more money, a positive cycle."

However, these opportunities remained conditional. Participants did not present digital marketing as something that could be implemented successfully without broader support. Instead, they pointed to the need for awareness-raising, training, customer readiness, reliable infrastructure, production strengthening, financial support and institutional facilitation. SCLC was repeatedly positioned as a potentially important actor in this process due to its existing relationships with women farmers and its role in training and community-based learning. Local government was also seen as important, particularly in relation to infrastructure, funding and policy support.

Overall, the findings show that digital marketing may support women farmers' financial independence only when it is connected to wider changes in the agricultural and social environment. In the Dakshinkali context, feasibility depends not solely on digital platform access, but also on production capacity, market relationships, digital literacy, gendered access to technology, household decision-making and institutional support.

DISCUSSION

This study examined the conditional feasibility of digital marketing as a pathway towards financial independence for women farmers associated with SCLC in Dakshinkali, Nepal. The findings show that digital marketing cannot be understood as an immediately applicable or standalone solution in this context. Rather, its potential depends on a set of interrelated conditions, including production capacity, market readiness, digital literacy, access to devices and connectivity, gendered control over technology, household decision-making, customer trust and institutional support.

DIGITAL MARKETING AS A CONDITIONAL RATHER THAN STANDALONE STRATEGY

The findings complicate the assumption that digital marketing can automatically improve women farmers' market access or financial independence. Many women farmers in Dakshinkali engage in small-scale production, often oriented towards household consumption, local exchange or nearby markets. This limits digital marketing's immediate applicability, as online promotion and customer engagement require a degree of product consistency, quality control and market responsiveness. Participants repeatedly emphasised that farmers would need regular production, reliable supply and stronger customer relationships before digital marketing could become viable.

This contributes to literature by showing that digital marketing in smallholder or semi-commercial farming contexts should not be treated as a simple technological intervention. More specifically, the findings show that feasibility is not determined by digital access alone, but also by farmers' ability to produce regularly, maintain product quality and respond to customer demand. In doing so, the study shifts the discussion from whether digital marketing is beneficial in principle to what conditions must be in place for it to become useful in practice. Although ICT, e-commerce and digital communication tools are increasingly recognised as potential drivers of agricultural development in Nepal, their relevance depends on whether they can be integrated into the everyday realities of farmers' production systems (Magar, 2020; Thapa, 2023). In this sense, digital marketing concerns agricultural readiness, market organisation and local demand, not only access to technology.

Furthermore, this study supports existing concerns that e-commerce in Nepal faces barriers including weak business models for agricultural markets, infrastructural constraints, cultural barriers, security concerns and public barriers (Kumar & Timalsina, 2018). In Dakshinkali, these challenges were reflected in participants' concerns about irregular production, limited financial resources, low digital familiarity and customer preference for known, face-to-face market relationships. Digital marketing may therefore become meaningful only if introduced gradually and adapted to the local agricultural context. Beyond product quality, delivery and production

continuity, platforms that farmers and customers already use in everyday life may shape which digital channels represent realistic entry points for marketing. Where social media and entertainment platforms have high engagement, they may offer more familiar starting points for digital marketing than dedicated e-commerce systems, though this study did not examine platform-specific use in detail.

MARKET ACCESS, MIDDLEMEN AND FINANCIAL INDEPENDENCE

A key finding of the study is that women farmers' financial independence is closely connected to their position within existing market structures. Participants described dependence on middlemen, limited price awareness and delayed payments as factors that reduce women farmers' economic security and restrict their ability to explore alternative market channels. This reflects broader concerns in Nepal's agricultural sector, where limited market access and intermediary dependence can contribute to low wages, unequal compensation and financial dependence (Kumar & Timalsina, 2018).

Digital marketing was perceived by participants as a possible way to improve price awareness, establish more direct customer contact and reduce middlemen dependence. This aligns with the idea that digital technologies may support agricultural trade networks by connecting farmers, customers and other market actors (Magar, 2020). However, findings suggest that digital marketing alone cannot resolve unequal market relations. Women farmers would also need support in pricing, product presentation, customer communication, quality assurance and negotiation. At the same time, digital markets may introduce new, less visible forms of dependency alongside existing ones. If women farmers remain insufficiently digitally literate while companies increasingly sell agricultural products directly through their own online portals, farmers risk being bypassed or disadvantaged within digital marketplaces in ways that echo their existing dependence on middlemen. Rather than resolving unequal market relations, digital marketing could therefore reproduce them in a new form unless farmers are supported in understanding pricing, platform terms and negotiation within digital as well as physical markets.

This advances current knowledge by linking digital marketing not only to market access, but also to women farmers' position within the existing market power relations. The findings suggest that digital marketing may support financial independence only when helping women move beyond passive dependence on intermediaries and strengthening their ability to understand prices, communicate with buyers and participate more actively in market decisions.

Thus, the relationship between digital marketing and financial independence should be understood carefully. Digital marketing may create opportunities for wider market access and more control over income-generating activities, but this is not guaranteed. Financial independence requires more than increased sales. It also involves women's ability to access, manage and decide over income and resources. This links directly to wider understandings of women's empowerment as a process involving decision-making, access to resources and ability to exercise agency (Khursheed et al., 2021; Taylor & Pereznieto, 2014, as cited in Eggers del Campo & Steinert, 2022).

DIGITAL INCLUSION AND GENDERED ACCESS TO TECHNOLOGY

Moreover, the findings explained the importance of digital inclusion. Participants identified limited internet access, unreliable connectivity, lack of smartphones and low digital literacy as barriers to digital marketing. These findings are consistent with existing literature showing Nepal's uneven digital development and rural constraints related to connectivity, electricity access, IT knowledge and limited specialist support (Bachkain & Karki, 2022; Thapa, 2023). While mobile phone and online communication use have increased in Nepal, the benefits are likely to remain unevenly distributed unless digital literacy and access barriers are addressed (Magar, 2020).

Additionally, the findings show that digital access is gendered. Women's ability to use phones and online platforms was shaped not only by device availability, but also by household expectations, caregiving responsibilities, financial dependence and suspicion around women's online activity. This supports existing research identifying gender disparities in ICT use and

digitalisation in Nepal, where men often have greater access to education, technology and decision-making (Bachkain & Karki, 2022). It also reflects wider evidence that women farmers in South Asia face constraints in accessing information, extension services, credit and agricultural technologies (Asadullah & Kambhampati, 2021).

Hence, for digital marketing to support women farmers' empowerment, women must be able not only to access digital technologies, but also to use and control them meaningfully. Digital inclusion is therefore a social and gendered process, not simply a technical one. Training programmes focusing only on platform use or online selling may be insufficient if they do not also address household-level barriers, confidence, mobility, time constraints and women's decision-making power.

TRAINING, AWARENESS AND INSTITUTIONAL SUPPORT

Training and awareness emerged as central conditions for digital marketing use. Participants emphasised the need for practical training in digital literacy, product presentation, customer communication, pricing, packaging, market evaluation and online promotion. This is consistent with existing research highlighting the importance of training programmes that improve women's access to agricultural assets and strengthen their knowledge and skills (Chhetri & Ghimire, 2023). It also reflects the need to raise awareness about the advantages and practical use of e-commerce in agricultural contexts (Kumar & Timalsina, 2018; Thapa, 2023).

However, the findings suggest that training must be locally relevant and connected to farmers' everyday realities. Some participants indicated that existing training programmes do not always reflect the practical needs of women farmers. For digital marketing training to be useful, it should be designed around farmers' current production capacities, literacy levels, device access, time constraints and existing market practices. Training should therefore not begin with advanced e-commerce models, but with accessible steps such as using mobile phones for product photos, communicating with known customers, sharing seasonal availability, understanding prices and building confidence in digital communication.

This broader understanding of digital literacy reflects lessons from Nepal's earlier nationwide literacy campaigns, which relied on coordinated participation from government bodies, NGOs, local communities and even political party cadres to reach rural populations at scale. A similar multi-actor approach may be relevant for digital literacy, particularly because the barriers women farmers in Dakshinkali face extend beyond internet access alone. Participants suggest that gaps in basic reading and numeracy skills, together with limited familiarity with online information more broadly, remain significant. Digital literacy training in this context should therefore also build awareness of misinformation and disinformation, rather than focusing narrowly on platform use or connectivity, to ensure safe and critical engagement with digital tools.

SCLC has an important potential role in this process. The organisation already supports women farmers through training, farming-related expertise, input management and marketing support (Shikharapur CLC, n.d.; Chhetri & Ghimire, 2023). Because of its existing relationship with women farmers, SCLC is well positioned to act as a trusted intermediary between farmers, customers, local government and digital market actors. Its role could include awareness-raising, basic digital literacy training, group-based marketing support, coordination with buyers and the gradual introduction of digital tools in culturally and practically appropriate ways.

Furthermore, findings revealed that local government support is also important. Participants noted that municipal budgets and financial support for women farmers were limited, with no dedicated digital marketing initiatives currently in place. Government actors could contribute by improving infrastructure, supporting device or internet access, funding training programmes, strengthening agricultural extension services and supporting cooperatives or farmer groups. Such support is particularly important because individual women farmers may not have the resources or bargaining power to adopt digital marketing independently.

IMPLICATIONS FOR WOMEN'S EMPOWERMENT

Additionally, the findings suggest that digital marketing may contribute to women farmers' empowerment, but only under specific conditions. Participants linked digital marketing to

fairer pricing, reduced dependence on middlemen, increased market knowledge, time savings, improved confidence and greater social recognition. These dimensions connect to broader understandings of empowerment, including control over income, leadership, decision-making and use of time, as reflected in the Women's Empowerment in Agriculture Index (Gupta, 2016; International Food Policy Research Institute, n.d.).

Importantly, participants did not view digital marketing only as an income-generating tool. They also associated it with recognition and identity. Some interviewees suggested that digital marketing could help women farmers be seen not merely as agricultural labourers, but as businesswomen or entrepreneurs. This matters because women's agricultural work is often undervalued, despite their substantial contribution to production and household livelihoods (Chhetri & Ghimire, 2023; Asadullah & Kambhampati, 2021). Digital marketing may therefore support empowerment not only by expanding market access, but also by making women's work more visible and socially valued.

This finding broadens the understanding of digital marketing's possible empowerment effects. It suggests that digital marketing may matter not only for income generation, but also for recognition, identity and women's perceived legitimacy as economic actors. In this way, the study connects digital marketing to social dimensions of women's empowerment that are often less visible in discussions focused mainly on market access or sales. Simultaneously, digital technologies do not automatically challenge gender inequality. If women lack control over phones, income, time or mobility, digital marketing could reproduce existing inequalities or increase women's workload without improving their decision-making power. For digital marketing to support empowerment, it must be embedded within gender-sensitive support systems that address both technical skills and social constraints.

CONCLUSION

In conclusion, this research explored the conditional feasibility of digital marketing as a pathway towards financial independence for women farmers associated with SCLC in Dakshinkali, Nepal. The findings show that digital marketing holds potential, but its relevance is shaped by the realities of small-scale production, dependence on local buyers and middlemen, limited digital literacy, unreliable infrastructure, gendered access to technology and restricted financial decision-making.

The main contribution of this study lies in showing that digital marketing for women farmers in small-scale agricultural contexts should be understood as a socially, institutionally and materially conditioned process, rather than as a direct technological pathway to financial independence. Thus, the study does not suggest that digital marketing can be introduced as a standalone solution. Instead, it argues that digital marketing may become useful for women farmers when embedded within a wider support system. Such a system would need to include practical and gender-sensitive training, improved device and connectivity access, production strengthening, customer awareness, financial support and institutional facilitation. SCLC and local government actors play an important role in this process by supporting digital literacy, coordinating market linkages, building trust and ensuring that digital initiatives respond to women farmers' actual needs and constraints.

Further, the study also shows that the potential value of digital marketing extends beyond income generation. Participants associated digital marketing with fairer pricing, improved market information, reduced middlemen dependence, greater confidence, time savings and increased social recognition. These outcomes are closely connected to women's economic empowerment, particularly where women gain greater agency, visibility and decision-making power within households, markets and communities. However, the study has limitations. It was based on a small qualitative sample in one municipality and should not be generalised to all women farmers in Nepal. Participant sampling may have limited the inclusion of less-connected women farmers, and some marginalised groups, including Dalit women, may be underrepresented, despite efforts to recruit a diverse sample. Translation between Nepali and English may also have affected the nuance of participants' responses.

The study examined perceptions and possibilities rather than the long-term outcomes of an implemented digital marketing intervention. Future research could examine digital marketing

initiatives over a longer period and compare different regions within Dakshinkali Municipality, the Kathmandu Valley or other rural areas of Nepal. Further studies could also investigate how farmer groups, cooperatives or community organisations might support collective digital marketing, especially where individual production volumes are too small for direct online selling. Such research would help clarify how digital marketing can be designed in ways that are locally appropriate, economically realistic and genuinely supportive of women farmers' empowerment.

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COMPETING INTERESTS

The author has no competing interests to declare.

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