International Conference on Sustainable Tourism and Entrepreneurship

Vol. 01 No.01 August 2026, ISSN: 3163-2912

Digital Storytelling for Women's Entrepreneurship: Communication Strategies and Intergenerational Collaboration in the Lake Toba Super Priority Destination

Henry Sianipar[1], Hadriani Uli Tiur Ida Silalahi[2],

Prasetya Yoga Santoso[1], Ridzki Rinanto Sigit[1]

[1] *Doctoral Program in Communication Science,Universitas Sahid, Indonesia*
[2] *Chair G20 Indonesian Presidency 2022; Head of the Division of Economy and Foreign Affairs at Indonesian Women's Congress (KOWANI), Jakarta, Indonesia*

**Corresponding author. Email: henry.hen@bsi.ac.id*

ABSTRACT

Digital transformation is reshaping tourism markets and redefining how micro, small, and medium enterprises (MSMEs) access customers, transactions, and visibility. For women-led MSMEs in rural tourism destinations, weak digital communication capacity has become a major constraint to business sustainability. This study examines communication barriers faced by women entrepreneurs in the Lake Toba Super Priority Destination and formulates strategic interventions based on digital storytelling and intergenerational collaboration. Using an exploratory mixed-methods design, the research combines a survey of 131 women entrepreneurs with focus group discussions and in-depth interviews involving key stakeholders in the Lake Toba tourism ecosystem. The findings show that although the average Entrepreneurial Orientation (EO) score is relatively high (3.61), a significant intergenerational digital divide persists. Generation Z records the highest EO score (3.97), while Baby Boomers score the lowest (2.78), reflecting unequal digital readiness across age groups. The study identifies three major communication barriers: the intergenerational digital communication gap, patrilineal cultural restrictions that limit women's decision-making autonomy, and institutional communication deficits that weaken women's ability to access finance and formal support. In response, the paper proposes a communication-based intervention model that integrates digital storytelling to transform local products into culturally resonant market narratives, intergenerational mentoring to bridge digital skills gaps, and a Pentahelix communication platform to coordinate cross-sector support. The study's main theoretical contribution is the Communication-Based Entrepreneurial Orientation (CBEO) framework, which reconceptualizes EO as a construct shaped not only by individual traits but also by communication practices, social relations, and cultural context.

Keywords: *digital storytelling, women entrepreneurship, Lake Toba tourism, Communication-Based Entrepreneurial Orientation (CBEO)*

1. INTRODUCTION

The tourism industry is undergoing rapid digital transformation. Today, many travellers expect seamless access to online information, digital booking systems, and cashless payment options. While many destinations have invested in digital infrastructure to meet these expectations, rural and culture-based tourism areas often struggle to keep pace. This gap places local businesses at a competitive disadvantage, particularly small enterprises that depend heavily on tourism-related demand.

This challenge is evident in the Lake Toba Super Priority Destination (SPD) in North Sumatra. The area was recently recognised as one of the 25 Best Places to Visit in Asia 2025 by Travel + Leisure Asia, highlighting its growing visibility as an international tourism destination.

However, this international recognition has not yet been matched by equal readiness among local tourism actors, especially women-led micro, small, and medium enterprises (MSMEs). Although women lead around 60% of MSMEs in the area, only 39% mostly from younger generations have sufficient digital literacy. The remaining 61%, particularly those from Generation X and the Baby Boomer generation, still rely on conventional marketing methods. This condition reflects not only limited access to technology, but also a wider communication problem that constrains women's entrepreneurial growth.



Figure 1. 25 Best Places in Asia 2025

However, this international recognition has not yet been matched by equal readiness among local tourism actors, especially women-led micro, small, and medium enterprises (MSMEs). Although women lead around 60% of MSMEs in the area, only 39% mostly from younger generations have sufficient digital literacy. The remaining 61%, particularly those from Generation X and the Baby Boomer generation, still rely on conventional marketing methods. This condition reflects not only limited access to technology, but also a wider communication problem that constrains women's entrepreneurial growth.

Preliminary findings indicate the presence of a "communication poverty trap" shaped by three interrelated dimensions. First, the transfer of digital knowledge from younger to older generations is often restricted by norms of politeness and social hierarchy within Batak culture. Second, patrilineal values continue to position women less favourably in business decision-making, limiting their communication autonomy in public and commercial settings. Third, many women face institutional communication barriers, as reflected in low marshalling self-efficacy scores (3.02/5.0), suggesting difficulty in presenting business ideas persuasively to banks, investors, and government agencies.

At the same time, Lake Toba's position as one of Indonesia's five Super Priority Destinations, alongside Borobudur, Mandalika, Labuan Bajo, and Likupang offers a strategic opportunity to address these challenges. Before the COVID-19 pandemic, around 60% of foreign visitors to North Sumatra also travelled to Lake Toba, with 20,172 international tourists and 1,094,065 domestic visitors recorded in 2019. Despite this strong potential, many women entrepreneurs still market products such as ulos woven fabrics and local culinary goods primarily through direct selling and word of mouth. As one participant in the FGD explained, "I only sell from home. I don't understand how to sell online yet."

Previous studies on women's entrepreneurship in tourism have largely focused on structural constraints such as access to capital and physical infrastructure, while paying less attention to communication competence as a critical entrepreneurial resource. Research linking digital storytelling with intergenerational learning as a context-based solution for indigenous communities also remains limited. This gap is particularly significant in Lake Toba, where cultural narratives are closely intertwined with tourism value and product identity. Therefore, this study asks: how can communication strategies based on digital storytelling and intergenerational collaboration strengthen the entrepreneurial orientation of women-led MSMEs in the Lake Toba SPD?

This study aims to: (1) analyse entrepreneurial orientation and communication barriers across generations; (2) develop digital storytelling models grounded in Batak local wisdom; and (3) design intergenerational collaboration within a Pentahelix ecosystem. Its main theoretical contribution is the Communication-Based Entrepreneurial Orientation (CBEO) framework, which conceptualises entrepreneurial orientation as socially shaped through communication practices.

2. LITERATURE REVIEW

2.1. Communication Infrastructure Theory

Communication Infrastructure Theory (CIT), developed by Ball-Rokeach, Kim, and Matei [1], provides a foundational framework for understanding how multi-layered communication networks shape civic engagement, collective identity, and coordinated action. CIT postulates that communication infrastructure such as comprising mass media, community organizations, and interpersonal storytelling networks. CIT functions as social capital enabling communities to mobilize resources and address shared challenges. In Lake Toba's Batak community context, this encompasses not only formal mass media but deeply embedded storytelling networks centred on customary institutions (adat) and churches.

Subekti, Bakti, and Koswara [2] demonstrated that strengthening internal communication capacity within established community structures significantly enhances micro-entrepreneurial resilience in Pangandaran's tourism sector. Jung and Kim [3] confirmed that access to community-based communication resources correlates directly with civic and economic engagement, supporting CIT's premise that communication infrastructure functions as social capital. This research extends CIT by positioning digital infrastructure as a new layer that must be integrated rather than traditional social networks such as the Dalihan Na Tolu kinship system and church congregations.

2.2. Entrepreneurial Orientation and Communication Dimensions

Entrepreneurial Orientation (EO) Theory, as conceptualized by Miller [4] and elaborated by Covin and Slevin [5], identifies five core behavioural dimensions: innovativeness, reactiveness, risk-taking, autonomy, and competitive aggressiveness. Traditionally treated as

organizational or personality-level attributes, this research challenges that assumption by proposing that each EO dimension carries specific communicative prerequisites. Innovativeness requires persuasive communication; reactiveness depends on information access enabled by communication infrastructure; risk-taking is mediated by access to mentors and peer support networks; autonomy must be rhetorically negotiated within patrilineal contexts; and competitive aggressiveness requires negotiation and marketing communication skills.

Kong [6] reconceptualised EO as a dynamic, socially embedded process shaped by intergenerational interaction, drawing on Constructivist Learning Theory. Liew and Loo [7] demonstrated through hierarchical regression analysis that family-level generational involvement significantly moderates the EO performance relationship in small family businesses. These perspectives form the conceptual basis for the CBEO framework developed in this study.

2.3. Theory of Planned Behavior and Communication

Ajzen's Theory of Planned Behaviour (TPB) [8] holds that behavioural intentions are jointly determined by attitudes toward the behaviour, subjective norms, and perceived behavioural control (self-efficacy). In this research, communication functions as a moderating variable across all three TPB components. Attitudes toward entrepreneurial risk-taking are shaped by narrative exposure to successful women entrepreneurs. Subjective norms within patrilineal culture can be reconstructed through strategic communication by engaging customary and religious leaders to reframe women's entrepreneurship as honourable family economic contribution. Perceived behavioural control is directly enhanced by digital communication competence [9]. FGD evidence illustrates these dynamics. One homestay owner explained: "I manage this homestay, but the land and building are registered under my husband's family name. So if I want to renovate or add facilities, I have to ask permission first." These testimonies confirm that women entrepreneurs require not only business knowledge but also rhetorical strategies to navigate culturally sanctioned frameworks. This is a challenge conventional entrepreneurship training programs rarely address.

2.4.Digital Storytelling and Tourism Marketing

Digital storytelling combining personal and cultural narratives with multimedia elements to create emotional audience connections [10] has demonstrated significant advantages over conventional advertising in tourism marketing. Tussyadiah, Park, and Fesenmaier [11] established that story-based content is more effective than standard promotional messaging in shaping destination visit decisions. For Lake Toba MSMEs, the strategic imperative is to transform physical artefact's into emotionally resonant cultural experiences. More than just cloth, Ulos is a living symbol woven with blessings, family lineage, and spiritual meaning. It has already accompanied the Batak people through every turning point of life.

Bassano et al. [12] demonstrated that effective place storytelling converts destinations from mere geographical locations into emotionally resonant experiential brands. Cahyani, Mardani, and Sukmayadi [13] showed that digital storytelling enables cultural preservation and commercial viability simultaneously in Indonesian heritage tourism. Togatorop, Saragih, and Simanjuntak [14] further demonstrated that the synergy between digital literacy and local wisdom empowers women-led MSMEs in Lake Toba to transform cultural assets into competitive advantages. The findings from this study show that the biggest hurdle isn't a lack of cultural understanding. It's the challenge of translating that knowledge effectively. Many struggle to take deep, oral traditions and reshape them into concise, engaging content that resonates in the digital space.

2.5.Intergenerational Learning and the Pentahelix Model

Intergenerational learning theory posits that meaningful knowledge exchange between generations is bidirectional [15]. In the entrepreneurship context, reverse mentoring frameworks, where younger digital natives teach technical skills to older generations while receiving business wisdom, customer relationship expertise, and social networks in return [16] It offers a culturally viable pathway that respects existing social hierarchies while facilitating necessary knowledge transfer. Qu [17] found that sustainable community-based tourism requires institutional partnerships that simultaneously honour heritage and teach contemporary entrepreneurial skills. Culler [18] demonstrated that aging processes and generational membership shape entrepreneurial goals and work orientations in systematically different ways, underscoring the need for generationally differentiated entrepreneurship support strategies.

The Pentahelix model integrating Academia, Business, and Community, Government, and Media stakeholder sectors provides an operational framework for coordinating multi-stakeholder support [19], [20]. Azwar et al. [21] confirmed that the Pentahelix model, when integrated with local wisdom empowerment, advances sustainable community-based tourism development. Pane et al. [22] identified that within Pentahelix configurations, cultural and community institutions such as women's empowerment organizations play crucial roles in facilitating entrepreneurship empowerment processes. This study highlights a key insight: cultural and religious leaders play a vital yet often overlooked role in the Pentahelix framework. Their influence can validate women's entrepreneurial efforts and help shift long-standing norms in male-dominated societies, that current Pentahelix research hasn't fully explored.

2.6. Research Gap and Theoretical Positioning

Although women's entrepreneurship in tourism has been widely studied, an important gap remains at the intersection of communication skills, intergenerational knowledge transfer, and entrepreneurial orientation in indigenous communities.

Previous research has usually examined these areas separately—focusing either on individual traits, structural barriers, communication processes, or knowledge transfer across generations. This study addresses that gap by bringing them together. It also proposes the CBEO framework, which argues that entrepreneurial orientation is not something individuals simply possess in advance, but something shaped through communication, social relationships, and the cultural context of everyday life.

3. METHOD

3.1. Research Design

This study uses an exploratory mixed-methods design based on a post-positivist approach. It combines quantitative and qualitative data to capture both general patterns and the cultural context behind them. This approach is especially suitable for Lake Toba, where Batak social structures and gender norms continue to shape how women understand and practice entrepreneurship. Fieldwork was conducted in three regencies within the Lake Toba tourism area, Samosir, North Tapanuli, and Toba, which are key centres of women-led businesses, particularly in handicrafts, culinary enterprises, and homestay services.

3.2 Quantitative Component: Survey

Survey data were collected from 131 women entrepreneurs selected via purposive random sampling. Eligibility criteria required participants to be women business owners or managers operating in tourism-related sectors (handicraft, culinary, accommodation, tourism services, or agro tourism) within the Lake Toba DSP boundaries and willing to participate voluntarily. The generational distribution of the sample was: Generation Z (born 1997–2012) 8%; Millennials (born 1981–1996) 47%; Generation X (born 1965–1980) 39%; and Baby Boomers (born 1946–1964) 5%. By business sector: handicraft/Ulos weaving (55%), culinary (16%), homestay/accommodation (13%), tourism services (14%), and agriculture (2%). millennial predominance reflects the prime entrepreneurial age range (25–40 years), while handicraft's dominance reflects the region's cultural heritage and tourism appeal.

The survey instrument adapted the Self-Test Entrepreneurial Orientation scale developed by Ladd and Lanteri [23], validated across five EO dimensions (Cronbach's $\alpha = 0.89$) and supplemented with an entrepreneurial self-efficacy scale (Cronbach's $\alpha = 0.87$). Both instruments were translated into Indonesian via forward-backward translation procedures and culturally validated through expert consultations and pilot testing with 15 women entrepreneurs not included in the final sample. Quantitative analysis was conducted using SPSS v. 26, employing descriptive statistics, independent samples t-tests, and one-way ANOVA to assess differences across generations and business types.

Table 1. Generation Distribution of sample Women Entrepreneurs DSP Danau Toba

Jenis Wirausaha	Baby Boomer	Gen X	Gen Z	Gen Y (Millennial)	Total
Usaha Rumahan		3	1	5	9
Souvenir dan Kerajinan	4	30	4	34	72
Ritel dan Perdagangan	1		3	1	5
Pertanian		2		1	3
Penginanan dan Pariwisata	2	7	1	7	17
Kuliner		7	1	13	21
Jasa Lainnya		2	1	1	4
Total	**7**	**51**	**11**	**62**	**131**

3.3. Qualitative Component: FGDs and In-Depth Interviews

To gain deeper insight, this study conducted three focus group discussions (FGDs), each involving 8–10 participants, as well as in-depth interviews with 30 stakeholders from five Pentahelix groups: women entrepreneurs, customary leaders, religious leaders, government officials, academics, and business practitioners. The FGDs explored how women entrepreneurs are viewed in Lake Toba's tourism sector, the communication barriers they face, generational differences in digital skills, the influence of cultural norms on business decisions, and possible forms of support.

The interviews, which lasted between 45 and 90 minutes, focused on participants' personal experiences, including their business journeys, communication challenges, family dynamics, use of digital marketing, and future aspirations. Qualitative data were analysed through open, axial, and selective coding following Saldaña (2015). To strengthen credibility, the findings were verified through triangulation by comparing quantitative EO scores with qualitative accounts and cross-checking responses across different participant groups.

4. FINDINGS AND DISCUSSION

4.1 Entrepreneurial Orientation Profile of Women Entrepreneurs

The survey results paint a surprisingly confident picture. Women entrepreneurs in the Lake Toba tourism area scored an overall Entrepreneurial Orientation of 3.61 out of 5.0, a figure that quietly pushes back against the assumption that rural women are economically passive or disengaged.

Looking at the individual dimensions, Innovativeness and Autonomy both came in highest at 3.84. The creativity finding makes intuitive sense, but the Autonomy score is worth pausing on. In a society shaped by patrilineal Batak tradition, where women's independence in many social domains remains

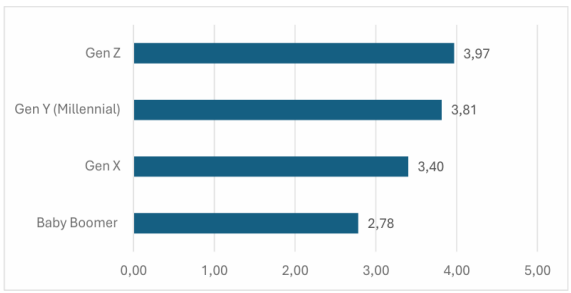
constrained, the business sphere appears a negotiated space where women can make decisions on their own terms. Reactiveness followed at 3.60, reflecting a genuine tendency to seek out opportunities rather than wait for them. Competitive Aggressiveness sat at 3.53, which is moderate rather than cutthroat, and that actually fits the way these businesses operate, embedded in community relationships that value cooperation over rivalry. Risk-taking scored lowest at 3.35, and understandably so: limited social safety nets, restricted access to formal credit, and inheritance rules that keep asset ownership largely out of women's hands all make bold financial risk a luxury many cannot afford.

What emerges from this profile is a genuine paradox. These women score high on entrepreneurial orientation, yet their businesses remain small and their market reach limited. That gap cannot be explained away by lack of motivation or capital alone. It points to something else, communication competency as the missing link between entrepreneurial mind-set and entrepreneurial action.

4.2. Generational Analysis: The Digital Divide in Entrepreneurial Orientation

Our analysis of different age groups shows clear differences in entrepreneurial mindsets, closely tied to digital skills. The younger generations show stronger entrepreneurial tendencies, with Gen Z scoring highest (3.97), followed by Millennial (3.81), Gen X (3.40), and Baby Boomers trailing at 2.78. The significant 43% gap - nearly 1.2 points on our scale, between the youngest and oldest groups proves that in today's digital tourism landscape, success in business ventures depends heavily on one's ability to navigate and use digital communication tools effectively.

Table 2. Entrepreneurial Orientation (EO) by Generations of Women Entrepreneurs DSP Danau Toba



Generation Z entrepreneurs demonstrated particularly high scores (3.97) reflecting native fluency with digital platforms, social media marketing, and technology-enabled business models. As one Gen Z Ulos entrepreneur articulated: “For me, Instagram and TikTok are natural ways to reach customers. I create content showing the weaving process, tell stories about the Ulos meanings, and customers from Jakarta and abroad find me and order. It’s normal for my generation.”

Baby Boomer entrepreneurs (EO = 2.78) scores, reflecting deep technophobia and digital market alienation. One 62-year-old Ulos weaver described her experience: “Young people now shop on their phones. I don’t understand it. When no middleman comes to buy my Ulos, they just pile up at home. I don’t know how to find customers myself anymore.”

The gap between generations is not just about digital skills. Younger women are more used to online markets, while older women still rely on direct contact and trust. Many older entrepreneurs therefore feel left behind by a market that now works in unfamiliar ways. Because of this, digital training should not focus only on technical skills, but also on helping them adjust to these wider changes.

4.3 Multidimensional Communication Barriers

4.3.1 Intergenerational Digital Communication Gap

More than six in ten senior, generation respondents rely mainly on word-of-mouth and simply waiting for customers to come to them, rather than actively reaching out through digital channels. This is not just a matter of not knowing how to use the tools, there is a deeper unease around digital markets that straightforward training sessions rarely touch.

The FGD sessions brought this to life in ways the numbers alone could not. One participant confessed, *"I once registered on Shopee but got confused uploading photos and prices"* She walked away before completing a single transaction. A homestay owner described a more immediate gap: "When guests ask if I accept QRIS, I don't have it." These are not simply technological failures. They point to something more communicative in nature. The need for patient, dignified explanation across generational lines, culturally sensitive role negotiation between those who teach and those who learn, and the kind of emotional reassurance that keeps frustration from curdling into shame.

The mentoring relationship between generations carries its own complications, shaped in no small part by Batak hierarchical norms. One mentor from Balige observed with measured candor: *"These young people learn very quickly, their ideas are good but sometimes they're not ready when business suddenly slows down or operational problems arise. Their mentality still goes up and down."*

On the other side, many senior entrepreneurs hold what might be called a sufficiency mind-set, a quiet resistance to change that is, in its own way, entirely rational. A Pangururan Ulos shop owner with more than two decades behind her said it plainly: "*This business has been running for more than 20 years. We have regular customers, the profit is sufficient. So why change it?"* When someone has never been exposed to digital markets and has no visible model of what growth might look like. The risk of innovation simply does not feel worth it, not when what they have already works.

4.3.2 Patrilineal Cultural Communication Barriers

Nearly three out of four women surveyed said they need to get the go-ahead from their husband or another male family member before making any major business decision. What makes this particularly striking is that these aren't laws written in a rulebook. They're deeply rooted social expectations that play out quietly behind closed doors, within the home. The interviews painted a vivid picture of just how real and varied these pressures are in everyday life.

One woman who weaves Ulos fabric in Samosir put it plainly, *"I don't own any land myself. Iin our tradition, land passes down to the sons. So if I want to start a business, I either have to rent somewhere or ask to use the family land, and that doesn't always go smoothly."* A woman running a homestay shared a similar story: *"I'm the one managing this place day to day, but the land and the building are in my husband's family name. That means every time I want to do renovations or add anything new, I have to ask first."*

These accounts show that the issue is more complex than simply lacking property or capital. Without assets in their own name, many women cannot meet bank requirements for collateral. At the same time, even business decisions often require them to seek approval and justify their choices in ways that men usually do not.

Beyond property rights, gender expectations at home also shape women's business opportunities. They affect how far women can expand, who they can work with, and how visible they can become. Several participants noted that business success can create tension at home, especially when it is seen as challenging the husband's role as the main provider. As a result, many women feel the need to present their businesses as supporting the family rather than competing with traditional roles.

In this context, successful entrepreneurship requires more than business skills. Women also need the ability to communicate carefully, frame their work in acceptable ways, and manage relationships in a social setting where men still hold much of the authority.

4.3.3 Institutional Communication Deficit

A third challenge lies in how women engage with banks and other formal institutions. Many struggle to clearly explain their business plans and needs in ways that are understood and accepted. Access to loans is especially difficult. Without assets in their own name, many cannot provide the collateral banks require. At the same time, some also feel uncertain about the loan process itself, including how repayments work. This often creates anxiety and makes formal institutions feel intimidating. As a result, many women avoid these spaces, which only deepens their lack of confidence and makes financial access even harder over time.

4.4. Digital Storytelling as Communication Strategy

To help women present their products more effectively, a series of small digital storytelling workshops was held with 25 women entrepreneurs. The aim was simple: instead of only posting a product and its price, they were encouraged to share the story behind it, so their promotion felt more meaningful and engaging.

The workshops focused on three connected areas. First, the participants learned basic digital skills such as taking photos, editing short videos, and using social media. Second, they practiced turning their knowledge of their craft into short stories and visuals that highlighted the cultural meaning of their products. Third, they were encouraged to see their work not only as selling goods, but also as preserving and sharing Batak heritage.

This approach was not entirely new to the community. It was already visible in accounts such as @dame_ulos, which posts short Instagram Reels linking Ulos weaving to everyday life and local events around Lake Toba. This shows that digital storytelling was already growing naturally, and the workshops helped build on something that was already taking shape.



Figure 2 Ulos on Instagram Reels https://www.instagram.com/reel/DMiOeM3zhEA/

These digital storytelling in Instagram gains align with broader national evidence: a 2025 study of 125 women-owned MSMEs in Padang City found that 95% of enterprises adopting social media as their primary marketing channel experienced sales increases of 20–30%, rising to 40% when social media was combined with e-commerce platforms [24]. The present study's 150%+ engagement increase and pricing premiums thus situate within a consistent national pattern, while suggesting that narrative-driven cultural storytelling may generate returns that exceed baseline social media adoption—the differentiating factor being the cultural depth and emotional resonance of the content rather than the platform itself

This case demonstrates digital storytelling's capacity to transform commodity products into high-value cultural experiences by articulating the philosophical and spiritual meanings that senior weavers possess through lived experience but have historically struggled to communicate to digital audiences.

This pattern is not isolated to the present study's pilot. External evidence from the same cultural-geographic region corroborates these findings: the Partonun cooperative in Silindung, North Tapanuli, documented a 45% increase in income over two years following the integration of digital marketing techniques with traditional Batak weaving motifs, while the broader transformation of Ulos from sacred object to digital

commodity yielded an average market value increase of 320% [25]. Critically, 60% of Partonun's active members are educated young women, mirroring the intergenerational dynamic central to the present study's intervention model.

A closer look at social media accounts run by Ulos producers in Samosir adds weight to the idea that this kind of business is increasingly being shaped by how people communicate online. On TikTok, @hervidasitanggang presents herself openly as a traditional gedogan weaver from Samosir. Her identity as a craftsperson is front and center, not an afterthought. Over on Instagram, accounts like @uloshutaraja_official and @sakkamadeha do something similar, showcasing hand woven Ulos from Hutaraja and Lumban Suhi-Suhi in a way that speaks to both cultural pride and the practical reality of running a business.

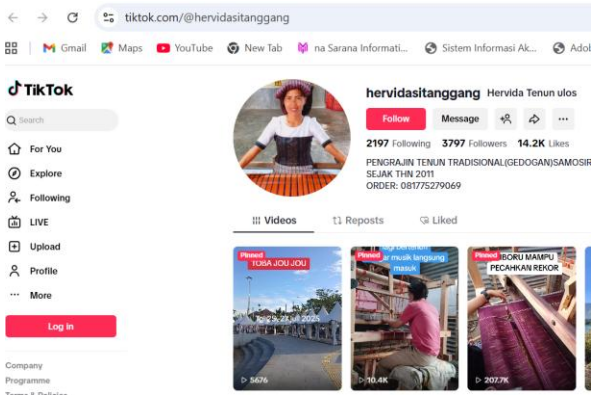


Figure3 https://www.tiktok.com/@hervidasitanggang Direct artisan accounts identifies local producers, also building digital market presence.

What these accounts share is telling. They are not just storefronts. They are also acts of preservation, quietly documenting a craft and a way of life while at the same time reaching out to potential buyers. The lines between showing, selling, and storytelling have started to blur, and local Ulos producers in Samosir seem to be finding their footing in that space quite naturally.

4.5 Intergenerational Collaboration Model

One of the real tensions this research had to work around was the gap between older and younger women when it comes to digital tools, while also being careful not to step on the cultural values that hold Batak community life together. To navigate this, the study developed and tested a three-phase model built around the idea of older and younger entrepreneurs learning from each other, rather than one group simply teaching the other.

The first phase revolves around skill exchange workshops. A framing chosen deliberately to respect Batak cultural norms, where younger people instructing their elders can feel like a breach of the respect that age commands. By structuring sessions as a genuine two-way exchange, that tension is avoided. Younger entrepreneurs contribute knowledge of social media marketing and digital payment tools, while senior women bring decades of hard-earned experience navigating slow seasons, retaining loyal customers, maintaining product quality, and preserving the cultural meaning embedded in traditional Ulos.

This mutual structure serves both sides well. It keeps senior entrepreneurs' expertise visible and respected, while also addressing something mentors had flagged about younger women. As one mentor observed: "Their mentality still goes up and down" . She suggests that digital fluency alone does not make someone business-ready. Learning alongside experienced seniors helps fill that gap.

This same pattern shows up beyond Samosir. The SCILLS digital inclusion program running across Solo, Klaten, and Indramayu in 2024 found that women from conservative households were far more willing to join training sessions when village heads showed up. Their presence alone sent a signal that participation was acceptable[26].

One participant captured what that kind of support can unlock: *"I come from a shy and conservative family, but I succeeded. I am now more confident and independent."* It is a reminder that teaching digital skills works best when it happens inside relationships people already trust.

Phase 2 moves into hands-on collaboration, pairing older and younger entrepreneurs together, whether as mother and daughter, or mentor and mentee, where each handles what they do best. Seniors oversee production and quality, while juniors take care of the digital side. One pilot paired a 58-year-old Ulos weaver with her 26-year-old niece, and within three months, online orders had grown by 280%, allowing the weaver to bring on two more craftspeople. The niece described it simply: *"Auntie has incredible skills and knows every Ulos motif meaning, but she couldn't reach customers. I just help tell her story online."* The weaver's own words reflect how much the experience shifted her thinking: *"At first I was sceptical about this internet business, but seeing orders come from Jakarta and Singapore, I realize the world has changed. I'm grateful my niece is patient teaching me, even though I'm slow."*

Phase 3 is about making sure seniors do not stay dependent on younger partners forever. Once they have built some confidence, they move into small peer groups where they keep practising together, help each other work through problems, and keep the momentum going. WhatsApp groups play a quiet but important role here. This WAG giving women a low-pressure space to ask questions, share small wins, and remind each other that struggling with technology is completely normal.

4.6 Pentahelix Communication Platform

This research proposes a "Pentahelix Communication Platform": a digital space where five sectors can work together: academia, business, community, government, and media. What makes it more than just a coordination tool is its cultural function. When respected traditional leaders called “raja adat”, publicly stated that women's businesses honour their ancestors by

keeping traditional crafts alive, resistance at the family level noticeably dropped. Some women also reported that their husbands became more supportive after church sermons touched on women's economic contributions to the family. The lesson here is straightforward: in communal societies, change moves more easily when it works through existing authority structures, not around them. Framing women's entrepreneurship as cultural preservation and community contribution carries far more weight than pushing individual empowerment as a standalone message.

A six-month pilot in Samosir Regency showed real results. Government training program participation among women entrepreneurs rose by 34%, cross-sector business partnerships grew by 28% including Ulos weavers teaming up with homestay operators for cultural tourism packages and self-reported confidence in dealing with institutions jumped by 41%. Together, these numbers suggest that a well-coordinated multi-stakeholder platform can meaningfully reduce the friction women face when navigating formal systems in culturally complex environments.

On the ground, signs of this model are already visible in the Lake Toba digital landscape. Accounts like @info_samosir and @disbudparsamosir push cultural and destination content in platform-native formats, while @otorita.danautoba provides broader governance and branding reach. At the community level, @lumbansuhitoruan roots Ulos within village identity, and local outlets like @delfmradio amplify these stories to wider audiences. Taken together, women's Ulos entrepreneurship is increasingly carried by a distributed digital ecosystem, not just individual effort.

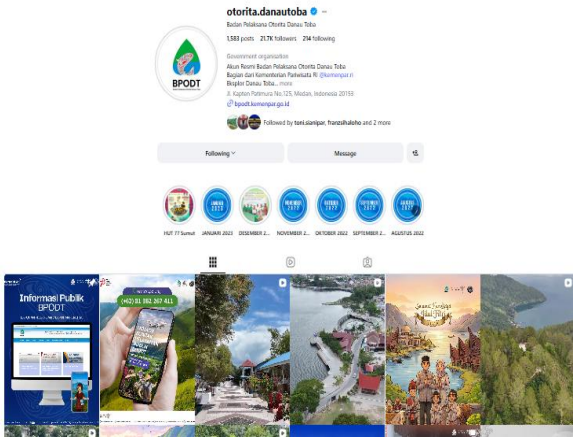


Figure 4 Destination-level institutional suggests that local storytelling around Ulos can be linked to wider place branding and tourism and governance agendas https://www.instagram.com/otorita.danautoba/

4.7 Theoretical Contribution: The CBEO Framework

The study's primary theoretical contribution is the Communication-Based Entrepreneurial Orientation (CBEO) framework, which reconceptualises EO as socially constructed through communication practices rather than as individual psychological disposition. Traditional EO frameworks [4], [5] measure EO dimensions as personality characteristics or organizational attributes that exist, at least in principle, independently of social context. The CBEO framework challenges this assumption empirically and theoretically.

Evidence from Lake Toba shows that entrepreneurial orientation depends heavily on communication. The 43% gap between younger and older groups is not about natural personality differences, but about unequal access to digital tools. In the same way, women are not held back by a lack of motivation, but by cultural expectations and limited ways to justify their role within the family. Poor communication at the institutional level also weakens risk-taking and initiative because it reduces access to funding, markets, and business networks. Theoretically, CBEO integrates three established theoretical streams into a coherent framework: Communication Infrastructure Theory [1] provides the macro-level framework for understanding how multi-layered communication networks enable or constrain entrepreneurial action; the Theory of Planned Behaviour [8] explains how communication practices reconstruct subjective norms and perceived behavioural control, shaping entrepreneurial intentions; and Entrepreneurial Orientation Theory [4], [5] provides the outcome the aspects of entrepreneurial orientation that are shaped by communication processes. This shows that communication is not just a support for entrepreneurship, but a core part of it. In community-based tourism, where businesses rely on cultural stories and digital platforms, strong communication skills are essential. They help entrepreneur's access resources, build networks, and turn local assets into economic value.

5. CONCLUSIONS

This study finds that the main challenges facing women entrepreneurs in the Lake Toba Super Priority Destination are not only limited capital or infrastructure, but also communication barriers that affect their access to these resources. Although the average Entrepreneurial Orientation score is relatively high (3.61/5.0), business growth remains limited, suggesting that the issue lies more in communication skills than in motivation.

The findings also show a clear generational gap in the digital tourism era, with Generation Z scoring 3.97 and Baby Boomers 2.78. Three related barriers were identified: first, a digital communication gap, where many older entrepreneurs still depend on passive marketing; second, cultural barriers in patrilineal family settings, which make it harder for women to defend their business roles and gain access to assets; and third, weak institutional communication, reflected in low confidence in dealing with finance, negotiation, and public communication.

The study further highlights three practical communication strategies. Digital storytelling training helps women shift from simple selling to more engaging cultural marketing, increasing audience engagement and supporting higher prices. In addition, a three-phase intergenerational collaboration model shows strong potential, as it allows knowledge sharing across age

groups while still respecting Batak cultural norms. One pilot program even recorded a 280% increase in online orders within three months.

The scalability of structured short-format training is further supported by external evidence: a one-day digital marketing intervention for 35 women entrepreneurs in Klaten produced statistically significant improvements in both digital marketing comprehension (mean score: 9.34 → 12.51) and responsible social media use (11.29 → 13.23), with reduced variance across participants indicating knowledge democratization irrespective of prior educational background ($p < 0.001$) [27].

This finding suggests that the three-phase model developed in this study could be applied more widely across the Lake Toba SPD, as it offers a structured approach to skill development with outcomes that can be clearly measured. The Pentahelix Communication Platform also showed promising results. By improving coordination among institutions and using cultural and religious leaders to strengthen legitimacy, it helped reduce institutional barriers. Pilot results showed better access to government programs, stronger business partnerships, and higher confidence in dealing with institutions.

National-level evidence corroborates these findings: 95% of women-owned MSMEs in Padang City that adopted social media as their primary marketing channel reported sales increases of 20–30%, rising to 40% when social media was combined with e-commerce platforms [28]. These findings strengthen the argument for the digital storytelling intervention proposed in this study. Narrative-based content on Instagram and TikTok not only increased audience engagement but also supported higher pricing for Ulos products. The CBEO framework also offers an important theoretical contribution by showing that communication is not merely supportive of entrepreneurship, but central to entrepreneurial capacity itself, especially in community-based tourism where cultural narratives form the main product and digital platforms provide the main access to markets.

In terms of policy, this suggests the need to invest in communication support alongside physical infrastructure. Key priorities include digital storytelling training, intergenerational mentoring, involvement of cultural and religious leaders, stronger stakeholder coordination, and financing models that consider women's limited asset ownership in patrilineal contexts. These recommendations support SDGs 5, 8, and 17. However, this study is limited to the Batak patrilineal and predominantly Christian context of Lake Toba, so its findings may not fully apply elsewhere. Since the results are also based on perceptions and short-term pilot outcomes, future research should examine longer-term impacts and test the framework in other cultural settings.

ACKNOWLEDGMENTS

The authors would like to sincerely thank all women entrepreneurs in Lake Toba for generously sharing their time, experiences, and insights throughout this study. Appreciation is also extended to the community leaders, government officials, and academic colleagues whose support during the fieldwork and valuable contextual input greatly contributed to this research.

REFERENCES

[1] S. J. Ball-Rokeach, Y.-C. Kim, and S. Matei, "Storytelling Neighborhood: Paths to Belonging in Diverse Urban Environments," Communication Research, vol. 28, no. 4, pp. 392–428, Aug. 2001.

[2] P. Subekti, I. Bakti, and A. Koswara, "Empowering Micro-Entrepreneurs through Community Communication Networks in Pangandaran's Tourism Sector," AL MA'ARIEF: Jurnal Pendidikan Sosial dan Budaya, vol. 7, no. 1, pp. 234–251, Jan. 2025.

[3] E. Jung and Y. C. Kim, "Commuting, Communication, and Community Engagement from a Communication Infrastructure Theory Perspective," Communication Research, vol. 48, no. 4, pp. 527–552, Jun. 2021.

[4] D. Miller, "The Correlates of Entrepreneurship in Three Types of Firms," Management Science, vol. 29, no. 7, pp. 770–791, Jul. 1983.

[5] J. G. Covin and D. P. Slevin, "Strategic Management of Small Firms in Hostile and Benign Environments," Strategic Management Journal, vol. 10, no. 1, pp. 75–87, Jan. 1989.

[6] W. S. Kong, "Entrepreneurial Orientation in Family Firms: The Role of Intergenerational Dynamics, Firm Size, and External Working Experience," Ph.D. dissertation, Singapore Management University, Singapore, 2025.

[7] M. X. Liew and Y. M. Loo, "The Family-Level of Generational Involvement: Impact on the Nexus between Entrepreneurial Orientation and Business Performance among Small Family Businesses," Journal of Family Business Management, vol. 14, no. 3, pp. 475–495, Aug. 2024.

[8] I. Ajzen, "The Theory of Planned Behavior," Organizational Behavior and Human Decision Processes, vol. 50, no. 2, pp. 179–211, Dec. 1991.

[9] C. Khoo, E. C. L. Yang, and R. Y. Y. Tan, "Opportunities and Challenges of Digital Competencies for Women Tourism Entrepreneurs in Latin America: A Gendered Perspective," Journal of Sustainable Tourism, vol. 32, no. 5, pp. 847–868, May 2024.

[10] J. Lambert, Digital Storytelling: Capturing Lives, Creating Community, 5th ed. New York, NY, USA: Routledge, 2018.

[11] I. P. Tussyadiah, J. R. Park, and D. R. Fesenmaier, "Assessing the Effectiveness of Consumer Narratives for Destination Marketing," Journal of Hospitality & Tourism Research, vol. 35, no. 1, pp. 64–78, Feb. 2011.

[12] C. Bassano, S. Barile, P. Piciocchi, J. C. Spohrer, and F. Iandolo, "Storytelling about Places:

Tourism Marketing in the Digital Age," Cities, vol. 87, pp. 10–20, Apr. 2019.
[13] I. P. Cahyani, P. B. Mardani, and D. Sukmayadi, "Digital Storytelling in Cultural Tourism: A Sustainable Communication Approach at the Lasem Heritage Foundation," Journal of Sustainable Tourism, Entrepreneurship and Development, vol. 2, no. 1, pp. 45–62, Mar. 2023.
[14] F. Togatorop, D. Y. Saragih, and M. Simanjuntak, "Digital Literacy and Local Wisdom for Women-Led MSMEs: Pathways to Sustainable Rural Tourism in Lake Toba," Jurnal Ekonomi dan Manajemen USI, vol. 6, no. 1, pp. 78–95, Jan. 2025.
[15] S. Newman and A. Hatton-Yeo, "Intergenerational Learning and the Contributions of Older People," Ageing Horizons, vol. 8, pp. 31–39, 2008.
[16] W. M. Murphy, "Reverse Mentoring at Work: Fostering Cross-Generational Learning and Developing Millennial Leaders," Human Resource Management, vol. 51, no. 4, pp. 549–574, Jul. 2012.
[17] M. Qu, "Intergenerational Dynamics and Sustainability in Community-Based Tourism: A Case Study of Koh Kret," SAGE Open, vol. 15, no. 1, pp. 1–16, Jan. 2025.
[18] W. Culler, "An Intergenerational Study of the Entrepreneurial Nature of Agritourism Operators," Ph.D. dissertation, Clemson University, Clemson, SC, USA, 2022.
[19] H. Etzkowitz and L. Leydesdorff, "The Dynamics of Innovation: From National Systems and 'Mode 2' to a Triple Helix of University–Industry–Government Relations," Research Policy, vol. 29, no. 2, pp. 109–123, Feb. 2000.
[20] R. Prasanna, N. Sulistyani, and A. Hapsari, "Strengthening Women's Entrepreneurship through a Pentahelix Collaboration Model in Creative Economy Development," Journal of Innovation and Entrepreneurship, vol. 11, no. 1, p. 35, 2022.
[21] H. Azwar, M. H. Hanafiah, A. Abd Ghani, and N. Sumarjan, "Community-Based Tourism (CBT) Moving Forward: Penta Helix Development Strategy through Community Local Wisdom Empowerment," Planning Malaysia Journal, vol. 21, no. 5, pp. 289–304, Oct. 2023.
[22] R. P. Pane, H. F. Nasution, and A. Susanto, "Pentahelix Model in Community Based Tourism Development: Roles, Challenges, and Synergy Enhancement," International Journal of Tourism and Leisure, vol. 3, no. 1, pp. 89–106, Jan. 2025.
[23] T. Ladd and A. Lanteri, Innovating with Impact: The Logic of Value Creation. London, UK: Economist Books, 2023.
[24] R. Anggraini and D. Puspitasari, "Digital Transformation of Women-Owned MSMEs: Social Media Adoption and Sales Performance in Padang City," Widya Cipta: Jurnal Sekretari dan Manajemen, vol. 8, no. 2, pp. 112–125, 2024. [Online]. Available: https://ejournal.bsi.ac.id/index.php/widyacipta/article/download/24504/pdf
[25] R. Simatupang and M. Situmorang, "Boru ni Raja: Agency and Social Transformation of Toba Batak Women in Inclusive Rural Development," Sodality: Jurnal Sosiologi Pedesaan, vol. 11, no. 2, pp. 1–18, 2023. [Online]. Available: https://journal.ipb.ac.id/sodality/article/download/63983/31766
[26] F. Z. Lbouhmadi, "Women Entrepreneurs Driving Change Across Indonesia," Internet Society Foundation, Washington, DC, USA, Nov. 2024. [Online]. Available: https://www.isocfoundation.org/story/women-entrepreneurs-driving-change-across-indonesia/
[27] N. Rahayu, A. Fitriani, and S. Wulandari, "Impact of Digital Marketing Training on Women-Led MSMEs in Klaten: A Pre-Post Intervention Study," Journal of Economics Research and Policy Studies, vol. 5, no. 1, pp. 45–58, 2025. [Online]. Available: https://journal.nurscienceinstitute.id/index.php/jerps/article/download/2170/79745
[28] H. U. T. I. Silalahi, "Strategi Intervensi dalam Mengakselerasi Orientasi Kewirausahaan Perempuan Berbasis Komunitas di Destinasi Pariwisata Super Prioritas Danau Toba," Ph.D. dissertation, Fakultas Ilmu Administrasi, Universitas Indonesia, Depok, Indonesia, 2025.