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Designing of Hausa Smartphone Tutor App (HASTAP) for Women's Digital Marketing and Financial Literacy

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Abstract

Women-owned micro and small enterprises constitute an important part of Nigeria's informal and emerging entrepreneurial economy. However, many women entrepreneurs continue to experience limitations in financial literacy, digital marketing capabilities, access to business information and the effective utilisation of digital financial services. These challenges are particularly important in Northern Nigeria, where language, educational background, digital access and socio-cultural conditions may influence women's participation in the digital economy. Although smartphones and social media platforms offer opportunities for business development, access to these technologies does not automatically translate into the competencies required to use them productively. This paper develops a conceptual framework for the design of the Hausa Smartphone Tutor App (HASTAP), a culturally responsive, Hausa-language mobile learning application intended to strengthen women's digital marketing and financial literacy competencies. Drawing on Human Capital Theory, Social Cognitive Theory, the Technology Acceptance Model, Diffusion of Innovation Theory and adult learning principles, the paper conceptualises HASTAP as an integrated digital learning intervention connecting accessible instruction, practical skills acquisition, financial decision-making and entrepreneurial application. The proposed application incorporates two principal learning domains: digital marketing, covering social media marketing, content creation, customer engagement, online branding and digital sales; and financial literacy, covering budgeting, bookkeeping, savings, financial planning, pricing, cash-flow management and digital financial security. The framework further identifies Hausa-language accessibility, interactive learning, offline functionality, affordability, usability, digital confidence and culturally appropriate content as important design considerations. It proposes that the application can improve women's financial and digital competencies, strengthen the adoption of digital business practices and contribute to enterprise performance and economic empowerment. The paper contributes to the literature by proposing a context-sensitive smartphone-based learning framework that integrates digital marketing and financial literacy within a single instructional platform for Hausa-speaking women entrepreneurs. It concludes with theoretical propositions and recommendations for the development, validation and empirical evaluation of HASTAP.

Keywords: *Hausa Smartphone Tutor App, HASTAP, women entrepreneurs, financial literacy, digital marketing, mobile learning, digital inclusion, Northern Nigeria.*

Introduction

The growing influence of digital technologies on contemporary business operations has changed

how entrepreneurs identify customers, promote products, receive payments, manage business transactions and compete in increasingly connected markets. Small businesses that previously depended almost exclusively on physical interactions and traditional marketing channels now have opportunities to reach wider audiences through social media, mobile applications, digital payment systems and other internet-enabled platforms. These developments have created new opportunities for women entrepreneurs, particularly those operating micro and small enterprises with limited financial and organisational resources. However, the ability to benefit from digital business opportunities depends on more than access to smartphones and internet connectivity. Entrepreneurs require relevant knowledge, practical competencies and the confidence to use digital technologies effectively. They must understand how to create attractive online content, communicate with potential customers, manage digital transactions, determine product prices, maintain financial records and distinguish legitimate financial services from fraudulent platforms. Consequently, digital marketing literacy and financial literacy have become complementary entrepreneurial capabilities.

In Nigeria, these competencies are particularly relevant to women operating businesses in informal and semi-formal economic environments. Women entrepreneurs are involved in retail trading, food processing, tailoring, fashion, agricultural produce marketing, cosmetics, household products and other commercial activities. Many operate with limited capital, relatively small customer networks and varying levels of formal business education. Their businesses may generate regular income without necessarily maintaining adequate financial records, using formal budgeting procedures or taking full advantage of available digital marketing opportunities. The importance of addressing these limitations is reflected in recent evidence on women's digital and financial inclusion. The World Bank's (2025) Nigeria Financial and Digital Inclusion report indicates that 52% of women owned an account in 2024, compared with 74% of men. The report also identifies differences in smartphone ownership and internet use, with women recording lower participation in both areas. These differences suggest that digital financial inclusion remains an important development concern. The situation is also connected to broader gender disparities in mobile technology adoption. The GSMA (2025) reports that women in Sub-Saharan Africa remain less likely than men to use mobile internet. Although access has expanded, affordability, digital skills, safety concerns and social conditions continue to influence women's ability to benefit from mobile connectivity. For Hausa-speaking women entrepreneurs, the challenge may extend beyond access and affordability to the language through which digital knowledge is communicated. Business education and digital financial instructions are frequently presented in English. While English is an important language of formal business communication in Nigeria, it may not be the most accessible instructional medium for women whose everyday business activities and learning interactions are conducted primarily in Hausa. This does not suggest that Hausa-speaking women cannot learn through English. Rather, it recognises that learning in a familiar language may reduce comprehension barriers and make unfamiliar financial and technological concepts easier to understand and apply. The African Women's Report by the United Nations Economic Commission for Africa (2022) identifies inadequate digital and financial literacy, limited connectivity and socio-cultural barriers as important constraints to women's digital financial inclusion. These challenges demonstrate the need for interventions that combine technological access with practical learning and context-sensitive support.

Existing research provides further justification for integrating financial literacy and digital marketing into women's entrepreneurship development. Tumba et al. (2022), examining female micro-entrepreneurs across six states in North-Eastern Nigeria, established the relevance of financial literacy to business performance. Similarly, Kolawole (2022) found that digital marketing adoption, particularly through social media and mobile marketing, was associated with improved performance among women-owned micro and small enterprises in Ogun State. Ojeleye and Mustapha (2024) also reported positive relationships between digital financial knowledge, financial knowledge, awareness of digital financial risks and the performance of female entrepreneurs in Kaduna State. These findings suggest that financial and digital competencies are not isolated entrepreneurial resources. They are mutually reinforcing capabilities that influence how women organise, promote and sustain their businesses. Despite the growing availability of digital learning platforms, a conceptual opportunity remains to develop a specialised smartphone-based tutor that combines financial literacy and digital marketing education in Hausa. Existing business training programmes may be delivered through physical workshops, general entrepreneurship applications or conventional educational materials. Such interventions do not necessarily provide continuous, flexible and practical learning support in a language familiar to their intended users. This paper therefore proposes the Hausa Smartphone Tutor App (HASTAP), conceived as a Hausa-language, smartphone-based instructional platform designed to improve women's financial literacy and digital marketing competencies. Unlike a conventional information application, HASTAP is conceptualised as a structured learning environment through which users acquire knowledge, practise business-related skills, receive feedback and progressively apply what they learn to their enterprises.

Conceptual Clarification

Hausa Smartphone Tutor App (HASTAP)

HASTAP refers to a proposed Hausa-language smartphone-based instructional application designed to provide women entrepreneurs with accessible, interactive and practical learning in digital marketing and financial literacy. It is conceived as a digital tutor rather than merely a repository of business information. The distinction is important. A conventional business information application may provide articles, videos or general guidance without necessarily establishing a structured learning process. A tutor application, by contrast, organises learning content into modules, presents instructional materials progressively, evaluates understanding, provides feedback and encourages practical application. HASTAP is therefore conceptualised around five interrelated characteristics: Hausa-language accessibility, structured instructional content, interactive learning, practical entrepreneurial exercises and continuous learning support. The application is intended primarily for Hausa-speaking women operating micro and small enterprises, including existing business owners and aspiring female entrepreneurs. It may accommodate different educational backgrounds and levels of digital experience through simple navigation, audio instructions, illustrated demonstrations and progressively structured lessons.

Women's Digital Marketing Competencies

Digital marketing refers to the use of digital technologies and online communication channels to

promote products and services, attract customers, build relationships and facilitate commercial transactions (Chaffey & Ellis-Chadwick, 2022). For women operating micro and small enterprises, digital marketing competencies extend beyond having social media accounts. They involve understanding how to identify target customers, prepare promotional messages, create product content, communicate with customers and convert online interactions into sales. The proposed HASTAP framework identifies six major competency areas:

- Digital business presence and online branding.
- Social media marketing and customer engagement.
- Product photography, video and content creation.
- Digital advertising and customer targeting.
- Online selling, order management and customer relationships.
- Digital marketing ethics, privacy and online safety.

WhatsApp Business, Facebook, Instagram and other relevant platforms may serve as practical learning examples. However, the application should teach transferable marketing principles rather than depend exclusively on particular commercial platforms.

Women's Financial Literacy

Financial literacy involves the knowledge, skills, attitudes and behaviours required to make informed financial decisions and manage financial resources effectively (Lusardi & Mitchell, 2014). For women entrepreneurs, financial literacy is particularly important because household and business financial activities may overlap. Such circumstances can make it difficult to determine actual business profitability, maintain adequate working capital or plan for business expansion. The HASTAP framework therefore considers financial literacy as a practical entrepreneurial capability comprising:

1. Financial planning and budgeting.
2. Bookkeeping and transaction recording.
3. Revenue, expenditure and profit determination.
4. Pricing and cost management.
5. Savings and working-capital management.
6. Credit and borrowing decisions.
7. Digital financial services and electronic payments.
8. Fraud prevention, financial privacy and cybersecurity.

The inclusion of digital financial security is particularly important. Women must not only understand how to use digital financial services but also recognise fraudulent transactions, suspicious links, identity theft and other potential risks.

Mobile Learning and Language Accessibility

Mobile learning involves the use of portable digital devices to facilitate learning across different locations and situations. It provides opportunities for flexible, self-paced and continuous learning,

particularly among adults who may have competing occupational and household responsibilities (Crompton, 2013). The proposed HASTAP framework adopts mobile learning as its delivery mechanism and Hausa as its principal instructional language. Hausa-language delivery is expected to improve accessibility and comprehension for users who are more comfortable learning in Hausa. However, the application should not be exclusively dependent on written Hausa. Audio narration, visual demonstrations, familiar business examples and practical exercises should complement textual materials. English terminology may also be introduced where necessary, particularly for commonly used financial and digital business expressions. This approach recognises that language accessibility involves more than translating English content. It requires presenting knowledge in ways that reflect the experiences, vocabulary and business environments of intended learners.

Theoretical Foundations

The proposed HASTAP framework draws on five complementary theoretical perspectives. Their integration provides a basis for explaining how a language-responsive smartphone tutor may influence learning, technology adoption and entrepreneurial outcomes.

Human Capital Theory

Human Capital Theory explains how investments in knowledge, education, skills and competencies can improve individual productivity and economic outcomes (Becker, 1964). From this perspective, financial literacy and digital marketing competencies represent productive capabilities that women entrepreneurs can develop through structured learning. An entrepreneur who understands budgeting, bookkeeping and cost management may be better positioned to control business expenditure and make informed investment decisions. Similarly, a woman who develops digital marketing competencies may identify new customers, improve product visibility and expand market access. HASTAP represents a proposed investment in entrepreneurial human capital. Its instructional content is intended to strengthen the knowledge and practical capabilities required to manage and grow small businesses. The theory also explains why the proposed intervention should be evaluated beyond application downloads and user registration. The more meaningful outcome is whether participation produces measurable improvements in knowledge, skills and business-related decision-making.

Social Cognitive Theory

Bandura's (1986) Social Cognitive Theory explains human behaviour through the interaction of personal factors, environmental influences and behaviour. A central construct is self-efficacy, referring to individuals' beliefs about their capacity to perform specific tasks successfully. This perspective is relevant because some women entrepreneurs may have access to smartphones without feeling confident about creating digital advertisements, using online payment systems or maintaining electronic business records. HASTAP can potentially strengthen self-efficacy through demonstrations, guided exercises, repeated practice, instructional feedback and progressive learning activities. For example, a woman who initially lacks confidence in creating a product advertisement may first observe an instructional demonstration, practise using a sample product and subsequently prepare promotional content for her own business. As users experience

successful task completion, their confidence in performing related digital and financial activities may improve. The theory therefore supports the inclusion of practical exercises and feedback mechanisms rather than relying exclusively on instructional videos or written explanations.

Technology Acceptance Model

The Technology Acceptance Model (TAM) explains technology adoption through perceived usefulness and perceived ease of use (Davis, 1989). Perceived usefulness concerns the extent to which an individual believes that using a particular technology will improve performance. Perceived ease of use relates to the extent to which using the technology is expected to require limited effort. These constructs are relevant to HASTAP because the intended users may have different levels of digital experience. An application with complex navigation, lengthy text and demanding internet requirements may discourage adoption even when its educational content is valuable. Consequently, HASTAP should be designed around simple navigation, clear instructions, familiar terminology, accessible learning materials and visible connections between lessons and actual business activities. The proposed relationship is that perceived usefulness and perceived ease of use will influence women's attitudes towards the application, intention to use it and sustained engagement with its learning activities.

Diffusion of Innovation Theory

Rogers' (2003) Diffusion of Innovation Theory explains how innovations spread within social systems. Five attributes are particularly relevant: relative advantage, compatibility, complexity, trialability and observability. HASTAP's relative advantage would arise from combining financial literacy and digital marketing instruction within one learning platform. Its compatibility would depend on how well the application reflects women's business activities, language preferences and learning needs. Its complexity should be reduced through simple interfaces and practical demonstrations. Trialability could be supported through free introductory modules, while observability could be strengthened by allowing users to see how acquired skills translate into improved business practices. The theory also suggests that adoption may be influenced by community networks, women's associations, cooperatives, entrepreneurship centres and peer recommendations.

Adult Learning Theory

Knowles' (1980) andragogical perspective emphasises the distinctive characteristics of adult learning. Adults are generally more receptive to learning when content is relevant to their immediate needs, builds on their experiences and provides opportunities for practical application. This perspective is especially important for HASTAP because its intended users are not necessarily conventional students. They are women who may already possess substantial entrepreneurial experience acquired through years of trading, production and customer interaction. The application should therefore avoid treating users as individuals without prior business knowledge. Instead, it should connect new concepts to familiar commercial activities. For example, budgeting lessons may use the daily purchasing and selling activities of a market trader, while digital marketing lessons may demonstrate how a tailor can advertise new clothing designs through

WhatsApp Business. Adult Learning Theory supports the proposed use of short lessons, practical demonstrations, self-paced learning and immediate application.

Table 1. Theoretical foundations of the HASTAP framework

Theory	Central construct	Application to HASTAP
Human Capital Theory	Knowledge and productive skills	Development of financial and digital marketing competencies
Social Cognitive Theory	Self-efficacy and learning through observation	Demonstrations, practice and feedback
Technology Acceptance Model	Perceived usefulness and ease of use	Simple, relevant and accessible application design
Diffusion of Innovation Theory	Compatibility and relative advantage	Hausa localisation and community-based adoption
Adult Learning Theory	Experience and practical relevance	Self-paced, problem-centred entrepreneurial learning

The integration of these perspectives provides a broader explanation of how HASTAP may influence entrepreneurial development. Human Capital Theory explains the value of acquired competencies; Social Cognitive Theory explains confidence and practical learning; TAM explains technology acceptance; Diffusion of Innovation Theory explains adoption within communities; and Adult Learning Theory guides instructional design.

Conceptual Rationale for HASTAP

The central argument of this paper is that access to digital technology does not necessarily produce entrepreneurial benefits unless users possess the competencies required to use it effectively. This distinction is important because digital inclusion is sometimes measured through device ownership, internet access or account registration. Although these indicators are relevant, they do not adequately explain whether women can use available technologies to improve business activities. A woman may own a smartphone and use WhatsApp daily without understanding how to develop a business profile, prepare promotional content, manage customer enquiries or evaluate the effectiveness of online marketing. Similarly, she may operate a digital bank account without possessing adequate knowledge of budgeting, transaction reconciliation, savings, interest charges or financial security. HASTAP addresses this conceptual gap by integrating digital marketing and financial literacy into one instructional intervention. The integration is based on three arguments. First, digital marketing creates opportunities for market access and revenue generation. However, these opportunities require financial management capabilities to translate increased sales into sustainable business outcomes. Second, financial literacy supports better management of business resources but does not automatically expand customer access. Digital marketing can complement financial competencies by improving product visibility, customer relationships and sales opportunities. Third, the effectiveness of both competencies may depend on the accessibility and relevance of the learning environment. Language-responsive mobile instruction may reduce some

barriers to participation and support practical knowledge acquisition. The application is therefore not intended to replace existing entrepreneurship development programmes, financial institutions or digital marketing platforms. Rather, it is conceived as a complementary learning intervention that strengthens women's ability to engage with these opportunities.

Proposed Architecture and Functional Components of HASTAP

The proposed HASTAP application is conceptualised as an Android-first, Hausa-language mobile learning platform. Android-first delivery is proposed because of the importance of affordability and accessibility in the intended context. Nevertheless, actual device compatibility and platform preferences should be established through preliminary user research. The application will consist of six interrelated functional components.

Hausa-Language Learning Interface

The first component concerns the application's language and instructional interface. Hausa should serve as the principal language for navigation, instructional explanations, audio narration and learning feedback. English equivalents of important financial and digital marketing concepts may be introduced to familiarise users with terminology commonly encountered in formal business environments. The interface should incorporate:

- Clear Hausa-language instructions.
- Audio narration for major learning activities.
- Illustrated examples and demonstrations.
- Simple icons and recognisable navigation features.
- Adjustable text presentation.
- Short instructional lessons.

The objective is to reduce unnecessary language and navigation difficulties without compromising the technical accuracy of the learning content.

Digital Marketing Learning Module

The digital marketing module will provide practical instruction on how women can use digital platforms to promote their businesses and improve customer engagement. Its proposed learning units include:

Online business identity and branding: Users will learn how to establish a recognisable business identity, prepare business descriptions, display products and maintain consistent branding.

Social media marketing: This unit will introduce practical approaches to using WhatsApp Business, Facebook and other relevant platforms to promote products and communicate with customers.

Digital content creation: Users will learn basic product photography, short-video production,

promotional writing and the preparation of attractive product displays.

Customer engagement: The module will address customer enquiries, responses to complaints, relationship management and customer retention.

Online selling and order management: Women will learn how to receive orders, communicate prices, organise deliveries and maintain records of digital transactions.

Digital marketing ethics and safety: Instruction will cover responsible advertising, customer privacy, misinformation, online fraud and protection of business accounts.

The emphasis should be on practical outcomes. At the end of a lesson, users should be able to complete a relevant business task rather than simply recall theoretical definitions.

Financial Literacy Learning Module

The financial literacy module will provide structured instruction on the financial activities required to manage small enterprises. The first learning unit will address budgeting and financial planning. Users will learn how to estimate business expenditure, allocate resources and prepare simple business budgets. The second will cover bookkeeping. It will demonstrate how to record sales, purchases, expenses, debts and other business transactions. The third will address pricing and profitability. Women will learn the difference between revenue, expenditure, gross profit and net profit, using examples from their own commercial activities. The fourth will focus on savings and working-capital management, including the importance of separating business and personal funds. The fifth will address credit management, borrowing decisions and financial planning for business expansion. The sixth will introduce digital financial services, electronic payments, transaction verification and financial cybersecurity. A particularly useful feature would be a simple financial practice tool through which users can enter sample business figures and receive instructional explanations of revenue, expenditure and profit calculations. The tool should initially function as an educational aid rather than a substitute for professional accounting or financial advice.

Interactive Learning and Assessment Component

The third major instructional component will involve interactive learning and assessment. Each module should contain short lessons followed by quizzes, practical exercises and feedback. The application may also include simulated business scenarios. For example, a user may be presented with a hypothetical situation in which she purchases goods for ₦50,000, incurs transportation costs of ₦5,000 and sells the goods for ₦70,000. The application can guide her through the calculation of gross business surplus before other relevant expenses. Similarly, a digital marketing exercise may ask users to prepare an advertisement for a product, select an appropriate target audience and identify the information that should appear in a promotional message. These activities will allow the application to move beyond passive information consumption towards practical competency development.

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Offline Learning and Progress Tracking

Connectivity and data affordability are important considerations in designing digital learning interventions for underserved populations. HASTAP should therefore incorporate offline functionality that allows users to download selected lessons, access previously downloaded audio and video materials, complete exercises and retain learning progress without continuous internet connectivity. Where connectivity becomes available, the application may synchronise progress and retrieve updated content. A personal learning dashboard should display completed lessons, assessment results and areas requiring further practice. This functionality may encourage continuity and provide users with visible evidence of their learning progress.

Intelligent Learning Assistance

An optional AI-supported instructional assistant may be incorporated into HASTAP at a later development stage. The assistant could respond to basic questions in Hausa, explain unfamiliar financial terms, provide guided instructions and recommend relevant learning materials based on users' progress. For instance, a woman who experiences difficulty distinguishing revenue from profit could request a Hausa-language explanation accompanied by a simple business example. However, the AI component should operate within an approved instructional knowledge base. It should not provide unverified financial advice, make lending recommendations or request sensitive banking credentials. Human oversight, content validation, privacy protection and safeguards against inaccurate responses will be essential.

Table 2. Proposed functional architecture of HASTAP

Component	Principal functions	Expected learning contribution
Hausa interface	Hausa text, audio and illustrations	Improved accessibility and comprehension
Digital marketing	Branding, social media, content and online sales	Improved digital marketing competencies
Financial literacy	Budgeting, bookkeeping, pricing and savings	Improved financial management competencies
Interactive assessment	Quizzes, simulations and feedback	Knowledge retention and practical skills
Offline learning	Downloadable lessons and progress tracking	Learning continuity and accessibility
AI learning assistant	Hausa explanations and guided assistance	Personalised learning support

Proposed Conceptual Framework

The proposed framework positions HASTAP as an enabling digital learning intervention that influences women's entrepreneurial capabilities through two principal competency pathways:

digital marketing competency and financial literacy. The first pathway concerns the development of digital marketing capabilities. Through Hausa-language instruction, demonstrations and practical exercises, women are expected to improve their ability to promote products, communicate with customers, create digital content and manage online sales activities. The second pathway concerns financial literacy. Through structured instruction and financial exercises, women are expected to improve their ability to prepare budgets, maintain business records, determine profitability, manage cash flows and use digital financial services safely. The framework further recognises digital self-efficacy as an important mechanism through which learning may translate into actual technology use. Women who develop confidence in their ability to perform digital and financial tasks may be more willing to apply acquired knowledge in their businesses. Enterprise performance represents a downstream outcome of the proposed relationships. It may be reflected in improved sales, customer reach, profitability, financial control, operational efficiency and business sustainability. However, these relationships are not expected to operate independently of contextual conditions. Smartphone ownership, internet connectivity, affordability, educational background, household responsibilities, social support and access to relevant business infrastructure may influence the extent to which women participate in HASTAP and apply their learning.

Discussion

The proposed HASTAP framework offers a different way of approaching women's entrepreneurial development. Rather than treating financial literacy and digital marketing as separate training subjects, it conceptualises them as complementary capabilities that can be developed through an integrated mobile learning environment. This distinction has important theoretical and practical implications.

Integrating Financial Literacy and Digital Marketing

A major argument of this paper is that digital marketing capabilities and financial literacy should be developed together. Digital marketing may increase customer awareness, improve product visibility and create opportunities for additional sales. However, increased sales do not necessarily translate into improved profitability when entrepreneurs lack the financial competencies required to manage expenditure, pricing, working capital and business records. Similarly, financial literacy may improve financial planning and resource management without necessarily expanding a business's customer base. The integration of both competencies is therefore important. A woman who learns how to advertise her products online should also understand how to calculate the cost of producing those products, determine appropriate selling prices, record transactions and evaluate the financial implications of promotional activities. This position is consistent with evidence from Nigerian women-owned enterprises. Kolawole (2022) identifies the contribution of digital marketing adoption to enterprise performance, while Tumba et al. (2022) establish the relevance of financial literacy among female micro-entrepreneurs in North-Eastern Nigeria. Ojeleye and Mustapha (2024) further demonstrate the relevance of digital and financial knowledge to female entrepreneurs' performance. The proposed HASTAP framework brings these complementary insights together within a single instructional architecture.

Hausa Language as an Instrument of Digital Inclusion

The second important contribution concerns language accessibility. Digital inclusion is often discussed in terms of infrastructure, device ownership and internet connectivity. However, meaningful inclusion also involves the ability to understand and use digital services. A technology may be technically accessible while remaining educationally inaccessible to individuals who struggle with its instructional language or terminology.HASTAP responds to this challenge by positioning Hausa as its principal instructional language. This is not simply a translation strategy. It represents an attempt to make entrepreneurial knowledge more accessible through familiar language, practical illustrations and contextually relevant examples. The approach is consistent with the broader argument that educational technology should address the circumstances of disadvantaged learners rather than assume that technology alone will resolve existing inequalities (UNESCO, 2023). The application should nevertheless preserve opportunities for users to become familiar with English financial and marketing terminology. Such an approach may strengthen their ability to participate in wider commercial environments without making English proficiency a prerequisite for acquiring essential business knowledge.

Mobile Learning and Women's Entrepreneurial Responsibilities

Another important consideration is the relationship between mobile learning and women's everyday responsibilities. Women operating small businesses may have to balance commercial activities with household responsibilities, childcare and other social obligations. Fixed training schedules may therefore limit participation, particularly among women who cannot easily leave their businesses for extended periods. A smartphone-based tutor offers opportunities for flexible learning. Women may access short lessons during available periods, repeat difficult topics and practise business activities at their own pace. This arrangement is consistent with adult learning principles, which emphasise flexibility, relevance and the application of knowledge to real-life situations (Knowles, 1980). However, flexibility should not be confused with assuming that every woman has unrestricted access to a smartphone. Shared devices, limited data, electricity constraints and household control over technology may affect participation. The proposed application should therefore be complemented by community-based access arrangements and appropriate support mechanisms.

Digital Self-Efficacy as a Mechanism of Entrepreneurial Development

The proposed framework also highlights digital entrepreneurial self-efficacy. Knowledge acquisition does not always result in behavioural change. An individual may understand the importance of online marketing but remain reluctant to advertise products because of limited confidence, fear of making mistakes or uncertainty about handling customer interactions. Social Cognitive Theory suggests that confidence can develop through successful experiences, observation and feedback (Bandura, 1986). HASTAP can support this process by providing practical demonstrations and opportunities for repeated exercises. As women successfully complete learning tasks, they may become more confident in performing similar activities independently. This suggests that application effectiveness should not be evaluated exclusively through knowledge tests. Measures of confidence, actual digital behaviour and the application of

financial management practices are equally important.

From Digital Learning to Enterprise Performance

The ultimate objective of HASTAP is not simply to increase women's use of smartphones. It is to strengthen their ability to manage and develop economically productive enterprises. The proposed framework assumes that improvements in financial literacy and digital marketing competencies can contribute to enterprise performance through better business practices. For example, improved bookkeeping may help an entrepreneur identify unnecessary expenditure, while improved digital marketing may increase customer enquiries. When these capabilities are combined with effective pricing and cash-flow management, the entrepreneur may be better positioned to convert commercial opportunities into sustainable business outcomes. Nevertheless, enterprise performance is also influenced by factors beyond individual competencies. Access to finance, market conditions, infrastructure, competition, business networks and institutional support may determine whether acquired knowledge produces measurable economic benefits. HASTAP should therefore be understood as a capability-development intervention, not a standalone solution to all the structural challenges confronting women entrepreneurs.

Proposed Development and Implementation Strategy

Although this paper is conceptual, the practical development of HASTAP requires a systematic process that connects instructional design with the experiences of intended users. A phased development approach is proposed.

Phase One: Needs Assessment

The initial phase should establish the actual financial literacy and digital marketing needs of Hausa-speaking women entrepreneurs. A needs assessment should involve women operating businesses in selected locations across Northern Nigeria. Participants may be drawn from market associations, women-owned microenterprises, cooperatives, entrepreneurship development centres and relevant business support organisations. Data may be collected through questionnaires, interviews and focus group discussions. Importantly, the needs assessment should determine whether women prefer audio, video, text or combinations of these formats. Application features should be informed by user evidence rather than developer assumptions.

Phase Two: Instructional Content Development

The second phase should involve developing the Hausa-language instructional content. Subject specialists in business administration, accounting, digital marketing, entrepreneurship, information technology and Hausa language should participate in content development and validation. The content should be organised into short, progressively structured learning units. Each unit should contain learning objectives, instructional explanations, practical demonstrations, exercises and assessment questions. Translation should be followed by technical and linguistic validation to ensure that financial concepts retain their intended meanings.

Phase Three: Application Design and Development

The third phase should involve the design and development of the smartphone application. The proposed development process should prioritise:

- Android compatibility and simple navigation.
- Hausa-language interface and audio support.
- Offline access to learning materials.
- Interactive assessments.
- Progress tracking.
- Basic financial learning calculators.
- Secure data storage and user privacy.
- Optional AI-assisted instructional support.

A minimum viable product should be developed before introducing advanced features. This will allow the development team to assess user experience and instructional effectiveness without committing substantial resources to features that may not be necessary.

Phase Four: Pilot Testing

The fourth phase should involve pilot testing among selected Hausa-speaking women entrepreneurs. The pilot should assess usability, content comprehension, user satisfaction, adoption intention and the practicality of the learning activities. Participants should be observed while completing selected tasks, including preparing a simple digital advertisement, recording a business transaction and calculating basic business profitability. Feedback from users should inform modifications before wider deployment.

Phase Five: Evaluation of Effectiveness

The final phase should evaluate whether HASTAP produces measurable improvements in women's competencies and business practices. A quasi-experimental or mixed-methods evaluation may be appropriate. A possible design would involve baseline and post-intervention assessments, with a comparison group where feasible. Evaluation should examine changes in financial literacy, digital marketing competency, digital self-efficacy, technology adoption and selected enterprise performance indicators. Follow-up assessment after several months would help determine whether acquired competencies are sustained and translated into actual business practices.

Implications of the Proposed Framework

Theoretical Implications

The proposed framework contributes to the literature by integrating Human Capital Theory, Social Cognitive Theory, the Technology Acceptance Model, Diffusion of Innovation Theory and Adult Learning Theory within a single mobile entrepreneurial learning framework. Its principal theoretical contribution is the conceptualisation of digital marketing and financial literacy as

complementary human capital capabilities that can be developed through a language-responsive digital learning intervention. It also introduces digital entrepreneurial self-efficacy as an important mechanism through which acquired knowledge may translate into practical business behaviour. A further contribution concerns the positioning of language accessibility as a design and adoption consideration within mobile entrepreneurial education. This broadens the discussion of technology acceptance beyond conventional considerations of usefulness and ease of use.

Practical Implications

For women entrepreneurs, HASTAP could provide continuous access to practical business learning without requiring attendance at conventional training centres. For entrepreneurship development institutions, the framework offers a potential complementary approach to existing financial literacy and business development programmes. For financial institutions, the proposed application could provide a channel for strengthening customers' understanding of digital financial services, transaction management and financial security. Any institutional partnership should, however, preserve the application's educational independence and users' privacy. For technology developers, HASTAP demonstrates the importance of designing mobile applications around the language, capabilities and practical needs of intended users.

Policy Implications

The proposed framework has implications for policies relating to women's economic empowerment, digital inclusion, financial literacy and microenterprise development. Relevant public institutions, including the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN), the Central Bank of Nigeria, state ministries responsible for women affairs and entrepreneurship, and relevant development partners, could support the development and evaluation of Hausa-language digital learning interventions. Such support may include instructional content development, digital literacy programmes, access to devices, community-based learning facilities and partnerships with women's business associations. Importantly, policy interventions should recognise that digital learning cannot independently eliminate structural barriers such as inadequate finance, weak market infrastructure and unequal access to productive resources.

Challenges and Design Considerations

Despite its potential, HASTAP may encounter several challenges that require attention during development and implementation.

Digital access and affordability: Some intended users may lack smartphones or have limited access to affordable internet services. Offline learning and community-based access arrangements may reduce these limitations.

Digital literacy differences: Women will not necessarily begin with similar levels of technological experience. The application should therefore accommodate beginners through introductory lessons and progressive learning activities.

Language and content accuracy: Financial terminology may not always have straightforward Hausa equivalents. Content should undergo linguistic and technical validation to avoid misleading translations.

Socio-cultural considerations: Household responsibilities, social expectations and control over technology may influence women's participation. Community engagement and appropriate support mechanisms may improve adoption.

Privacy and cybersecurity: The application must protect user information, avoid collecting unnecessary personal data and provide practical instruction on digital financial safety.

Sustained engagement: Users may discontinue learning when lessons are lengthy or insufficiently relevant. Short instructional sessions, practical tasks and visible progress indicators may encourage continued participation.

AI reliability: If AI-assisted features are introduced, responses must be restricted to validated instructional content where appropriate, with clear mechanisms for identifying uncertainty and referring users to qualified human support.

Business environment constraints: Increased financial and marketing knowledge cannot guarantee improved performance where entrepreneurs lack capital, reliable infrastructure or access to markets. Evaluation must therefore distinguish between learning outcomes and external business conditions.

These considerations demonstrate why HASTAP should be developed through an iterative, user-centered process rather than a purely technology-driven approach.

Limitations and Directions for Future Research

This paper is conceptual and does not present empirical evidence from an operational HASTAP application. The proposed relationships and theoretical propositions therefore require empirical testing. Future studies should examine whether Hausa-language instructional delivery produces better learning outcomes than conventional English-language instruction among comparable groups of women entrepreneurs. Such research would help establish whether language accessibility independently contributes to knowledge acquisition and technology adoption. Further research could investigate the relative contributions of financial literacy and digital marketing competencies to enterprise performance. It may also examine whether digital entrepreneurial self-efficacy mediates these relationships. Another important direction concerns the role of smartphone access, connectivity and socio-cultural conditions in determining adoption and sustained engagement. Longitudinal studies would be particularly useful in determining whether improvements in knowledge and confidence translate into sustained changes in financial management, marketing behaviour and enterprise performance. Finally, the proposed framework could be adapted for other Nigerian languages. However, such adaptation should follow separate needs assessments and linguistic validation rather than assuming that the Hausa version can be translated directly without contextual modifications.

Conclusion

This paper has developed a conceptual framework for designing the Hausa Smartphone Tutor App (HASTAP), a proposed mobile learning intervention intended to strengthen digital marketing and financial literacy competencies among Hausa-speaking women entrepreneurs. The central argument is that access to smartphones and digital platforms does not automatically produce meaningful entrepreneurial benefits. Women require practical knowledge, relevant skills and confidence to translate available technologies into productive business activities. By integrating financial literacy and digital marketing within a single Hausa-language instructional environment, HASTAP offers a potentially useful approach to addressing this capability gap. The proposed framework draws on five complementary theoretical perspectives to explain how accessible instructional content, interactive learning, practical exercises and technology acceptance may contribute to women's entrepreneurial competencies. It further identifies digital self-efficacy as an important mechanism connecting learning with the application of acquired knowledge. The paper's principal contribution is its positioning of language-responsive smartphone learning as a mechanism for developing complementary entrepreneurial capabilities rather than treating digital access as an end in itself. Ultimately, the value of HASTAP should be determined by its ability to help women understand their finances, manage business transactions, promote their products, engage customers and make better-informed entrepreneurial decisions. Its success will depend not simply on the sophistication of its technology but on how effectively it responds to the actual learning needs and business realities of its intended users.

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