

# Unpacking Standardization in Agent Network Training: Towards an Integrative Framework for Digital Financial Services

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**Abstract:** *Those FinTech's which want to reach trusted DFS and those even in regions where a broad number of DFS agents may be available and a large variety of levels of computer-literacy exist, need to address successfully how to train their agents. This research has reviewed existing evidence base on training modalities and tools and adult learning theories that are applicable to digital financial services and specifically to the cash in/cash out equation in which agent capacity is a significant factor. Adopting an integrated framework development and a structured analytic review process, this research integrate work among, agent distribution channel, and inclusive training designs, and distil four essential logistics of effective agent training: modular content delivery, multimodal delivery vehicles, onsite adaptation, and continuous support. Furthermore, it provided with a taxonomy of contextual and agent factors to influence member learning outcomes and instruction on how to implement scalable and adaptive training. The last integrated model depicts the pragmatic importance and 'absorption' of such a model in practice and also reflects industry considerations including, the adoptability by fintech's, the potential to cater for different literacy levels, improving agent retention and service consistency. These findings offer a basis for providers to customize agent on-*

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*boarding and skills enhancement to compliance and consumer protection needs and for policy makers to set norms that support financial and inclusion ecosystems that are safe for all customers. Lastly, this paper adds on proof based solution to sustained growth and improved quality of agent networks in remote and under-served areas.*

**Keywords:** Digital Financial Services, Agent Network Training, Standardization, Training Framework, Multimodal Delivery, Financial Inclusion

## Introduction

The rapid expansion of digital financial services across diverse educational, linguistic and technological contexts in a vast number of countries has inspired the search for adaptative and resilient models for agent network design. It is still significantly challenging to standardize this training for many networks of cash-in/cash-out agents, as agents have a very wide variation in backgrounds from literacy level to digital literacy. This paper offers a comprehensive framework that blends established training methods, communication strategies and theories of adult education to tailor to the wide variety of learning styles. From the literature, a set of key dimensions to consider for the training of agents has been identified, including modularization of the content, multimodal delivery applications, context sensitivity and support over time. Formulates a taxonomy of agent-side and contextual factors with training outcomes, offering concrete evidence-based routes for practitioners and policy-makers to cultivate for reliable service provision, compliance and financial inclusion (Cobian et al., 2024; Greenhalgh et al., 2024; Labkoff et al., 2024).

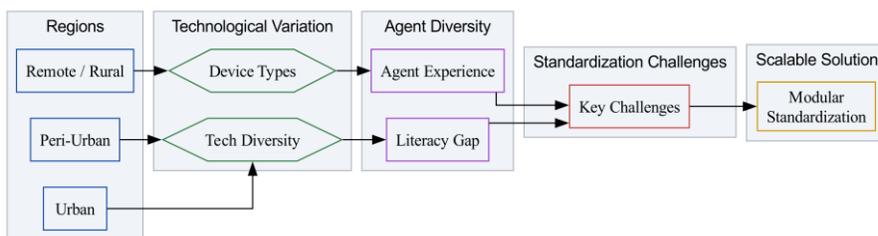
**Table 1.** Core Dimensions of Effective Agent Training Frameworks

<i><b>Dimension</b></i>	<i><b>Description</b></i>
<b>Modular Content Design</b>	Small units of learning for flexibility and focus
<b>Multimodal Delivery</b>	Blends visual, auditory, and experiential learning
<b>Local Adaptation</b>	Customizes content for language and cultural relevance
<b>Ongoing Support</b>	Periodic reinforcement and peer/mentor systems

This table (1) summarizes the principal dimensions underpinning effective training frameworks for diverse agent networks, consolidating best practices from digital financial services research.

*Context and Motivation*

Agents are the backbone of the DFS, especially when it comes to enabling going-in and going-out services that holds true to our seat at the table of financial services. The idea behind this is that these networks are coming to new areas where there is difference in literacy, oral language and digital literacy competence of the staff which is the result of different training programs and then remains a major problem. Welcoming agent biographies of this multi-centric nature, varying ICT resources and local socio-economic influence (Cobian et al., 2024, Barwise et al., 2024; Guillaume et al., 2024) demand training to acknowledge the need for a uniform approach for scalability, while also exhibiting sensitivity to content of locally-specific conditions. “ICT for development” Standardising agent training is important in so far as it can impact upon whether the service is delivered reliably (operationally), to code (regulation) and the consumer is not put at risk although current approaches often lack the embedding of contextualised adult education principles and sufficient ongoing support (Greenhalgh et al., 2024; Opabola & Galasso, 2024). As such, it is imperative to establish an approach framework that accounts for these complexities and directs fintech practitioners in the appropriate manners of scaling the quality training in such varied settings.



**Figure 1.** Geographic and technological diversity in agent networks

This figure (1) provides a visual overview of the geographic and technological variations present in agent networks for digital financial services, emphasizing the multifaceted challenges associated with standardizing agent training across diverse backgrounds and literacy levels.

*Research Problem and Objectives*

Standardising training practices across large agent networks is also a serious challenge for fintech firms, especially in settings with substantial variations in literacy, digital literacy and cultural context. The proper training of these agents significantly contributes to the sustainability and efficiency of cash-in/cash-out in DFS, but current models are inadequate to serve agent heterogeneity and the complex layers and contexts of local situations. This study seeks to bridge this gap by proposing an integrative framework that aggregates effective training designs, adaptive communication approaches, and adult learning theories in a systematic manner, toward improving agent quality, service dependability and ecosystem scale in digital financial contexts.

**Table 2.** Key Research Objectives for Agent Network Training Framework

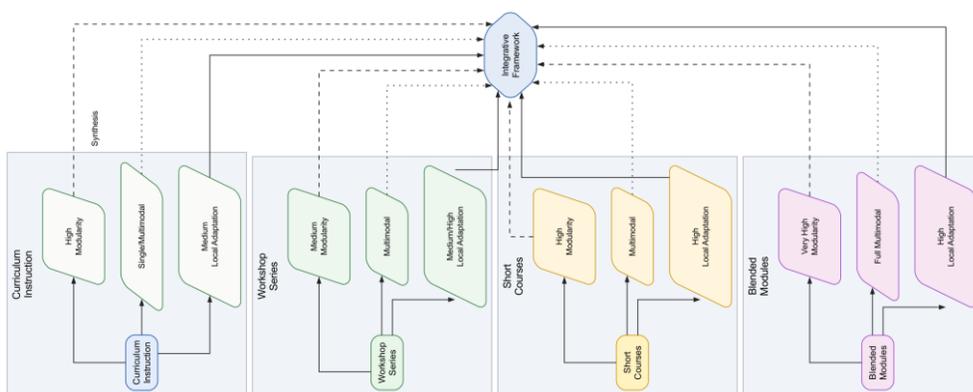
<b><i>Objective</i></b>	<b><i>Description</i></b>
<b>Synthesize Existing Training Models</b>	Integrate diverse training approaches for agent networks
<b>Incorporate Adult Education Theories</b>	Embed principles that support learning in varied demographics
<b>Develop a Taxonomy of Influencing Factors</b>	Identify environmental and agent-specific determinants of training outcomes
<b>Design a Scalable, Adaptive Framework</b>	Enable context-sensitive and cost-effective rollouts
<b>Support Policy and Practice</b>	Inform industry standards and operational guidelines

This table (2) delineates the central research objectives, mapping the focus and intended contributions of the integrative framework proposed for standardizing agent network training in digital financial services.

**Literature Review**

New evidence on digital financial service ecosystems highlights the importance of standardized agent network training for advancing the scale-up of financial inclusion, especially in areas where mobile money agents are key conduits to last-mile communities (Banihashem et al., 2024). Training methods used in agent networks vary from modular, locally-customisable courses to mixedmode delivery

systems mixing digital and face-to-face training. Newer studies highlight the importance of incorporating adult learning principles and local contextualization and customisation efforts in building agents' competence and clients' confidence while balancing cost-effectiveness and scalability for providers. Furthermore, the need for comprehensive models around barriers to adopting technology, regulations, and skills of agents as the nature of services diversifies is documented in literature (Tian et al., 2024; Malik et al., 2023). The fusion of the above perspectives provides ground for an integrative framework that attempts to standardize the training of agents, while retaining flexibility to dealing with heterogeneous markets and regimes.



**Figure 2.** Comparison of major existing training models for agent networks, highlighting their respective emphases on modularity, multimodal delivery, and local adaptation.

This figure (2) visually contrasts predominant training models, contextualizing the integrative framework within the most influential methodologies shaping digital financial service agent networks.

### *Existing Training Models in Agent Networks*

Models to train agent networks in digital financial services have matured to include factors of operational efficiency as well as the more universal goals of financial inclusion, walking the tightrope between standardised content and localisation. Common characteristics within extant models are modular curricula, formal introductions, context-appropriate delivery methods, refresher sessions and ongoing mentoring or peer-learning support (Greenhalgh et al., 2024; Malik et al.,

2023). Prominent frameworks often combine different learning modalities (e.g. face-to-face, digital, blended for example) in order to cater for agents' heterogeneity and enhance accessibility. Scalability while maintaining contextual relevance remains problematic, although some programs have been able to scale using technology-enabled delivery of content with some in-person facilitation to the address literacy and linguistic impediments (Banihashem et al., 2024). Performance monitoring and feedback systems are becoming more integrated but there is a great heterogeneity of approaches along with different degrees of rigour that suggest a need for greater standardisation and an increased focus on evidence-based practice (Malik et al., 2023).

**Table 3.** Comparison of Existing Agent Network Training Models

<i>Model</i>	<i>Delivery Modality</i>	<i>Content Customization</i>	<i>Mentorship</i>	<i>Assessment Method</i>
<b>Traditional Classroom</b>	In-person	Scripted/Standardized	Minimal or informal	Written/Practical exams
<b>Blended Learning</b>	In-person and digital	Adapted for language and literacy	Moderate/Structured	Quizzes, on-the-job evaluation
<b>Peer-to-Peer Mentoring</b>	Community-led sessions	Highly contextual/localized	Extensive peer support	Observation, peer review
<b>Technology-Enabled (Mobile)</b>	Digital/mobile platforms	Automated with local elements	Periodic remote support	Usage analytics, digital quizzes
<b>Continuous Professional Development</b>	Multiple, periodic modules	Incremental, based on agent/market needs	Mentor-led, formal	Longitudinal tracking, client feedback

This table (3) compares five prevalent models for agent network training in digital

financial services, highlighting their delivery modalities, customization, mentorship structures, and assessment approaches.

*Adult Education Theories for Diverse Agents*

By applying adult education theories, advocates might assist in advocating for well-designed agent training programs for DFS and bridging gaps for how to respectfully approach the literacies, and comfort levels with technology, of the novice amateur agents within their cultural contexts. These are the types of more extreme tactics (e.g., learning by doing and social learning) that can be explained in such a manner that facilitates the activity and the retention of GMs within the environment (Greenhalgh and colleagues, 2024). Current views require flexible teaching approaches driven by examples, such as simulation-based teaching, peer support initiatives and technology-enhanced CPD, to meet the needs of 'each and every one', as well as the changing emphasis required as a result of varying starting points and service demands (Savoldelli et al., 2024; Banihashem et al., 2024). Recognising the importance of flexibility and lifelong learning, these theories emphasise that a modular, multimodal, context-aware training regime needs to be in place for agents to generate just outcomes in agent networks.

**Table 4.** Comparative Overview of Adult Education Theories for Agent Training

<i>Theory</i>	<i>Key Principles</i>	<i>Applicability to Agent Networks</i>	<i>Strengths</i>	<i>Limitations</i>
<b>Experiential Learning</b>	Learning-by-doing, reflection on experience	Supports hands-on training for practical tasks	Promotes retention, real-world problem-solving	Requires resources for implementation
<b>Collaborative Learning</b>	Social interaction, peer feedback, teamwork	Enables peer mentoring and group learning	Encourages sharing of best practices, supports less experienced agents	Coordination challenges, variable group dynamics

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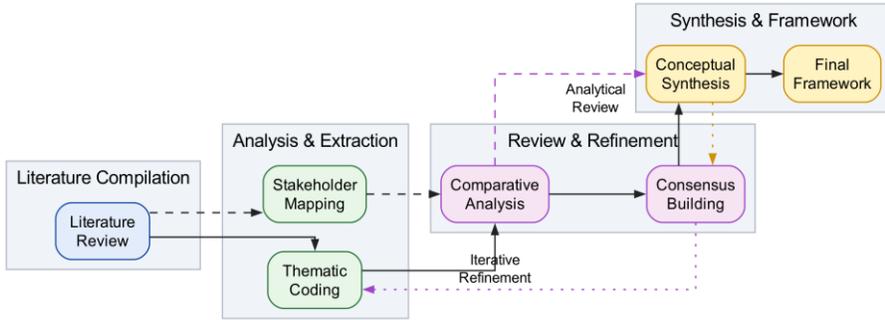
<b>Simulation-Based Training</b>	Practice in realistic but controlled environments	Ideal for mastering service delivery and troubleshooting	Risk-free skill development, enhances preparedness	Can be costly, may not replicate all context variables
<b>Technology-Enabled Professional Development</b>	Use of digital platforms for flexible learning	Reaches agents in remote or high-turnover locations	Scalable, supports self-paced learning	Dependent on digital literacy, infrastructure access
<b>Transformative Learning</b>	Critical reflection, challenge of assumptions	Fosters adaptability and critical thinking	Builds long-term capacity, supports leadership development	May be abstract, requires skilled facilitation

This table (4) summarizes and compares foundational and contemporary adult education theories relevant to training agent networks in digital financial services, highlighting principles, applicability, strengths, and limitations.

## Methodology

**Methods Design** This manuscript followed an inductive approach to construct its fit-for-purpose framework and the literature informed the development of a practice-informed framework. The process was initiated by a systematic collection of peer reviewed and industry published literature on DFS, adult learning and agent network development (Barwise et al., 2024; Banihashem et al., 2024; Pusic et al., 2023). From this, relevant evidence-based, theoretical propositions and emergent trends were identified, coded and clustered in a thematic space to reveal its convergences and disjunctures. Refinement of the framework design evolved through iterative comparison and synthesis, via consensus-building workshops and expert validation. This two-staged process served to embed methodological rigour

and transparency and relevance to context, with due consideration to the potential for transferability to various financial ecosystems.



**Figure 3.** Figure illustrating the integrative process of framework development for standardized agent network training, highlighting the interplay between structured analytical review and conceptual synthesis within digital financial services.

This figure (3) provides a visual overview of the integrative methodological process, demonstrating the iterative interplay between structured analytical review and conceptual synthesis for standardized agent network training in digital financial services.

*Structured Analytical Review Process*

**Table 5.** Key Steps in the Structured Analytical Review Process

<i>Step</i>	<i>Description</i>
<b>Literature Compilation</b>	Systematic collection of relevant studies and frameworks across digital financial services training
<b>Thematic Coding</b>	Identification and assignment of themes to training models, theories, and contextual variables
<b>Stakeholder Mapping</b>	Establishing relationships among key actors, beneficiaries, and implementation conditions

<b>Comparative Analysis</b>	Evaluating strengths, limitations, and contextual fit of diverse training approaches
<b>Consensus Synthesis</b>	Integrating insights from literature and stakeholder perspectives to inform framework development
<b>Iterative Refinement</b>	Continuous updating and validation based on new evidence and stakeholder feedback

This table (5) delineates the sequential steps followed during the structured analytical review to inform the integrative framework for agent network training standardization.

The systematic analysis/integration on which the development of the integrated model was based, also involved reviewing literature, coding primary themes, and reviewing relationships between different strategies and contexts. This was underpinned by evidence of cross-sectoral data and multi-stakeholder engagement of practitioners, educators and services to promote inclusivity and rigor (Barwise et al., 2024; Cobian et al., 2024; Greenhalgh et al., 2024). Drawing from adult learning theory, implementation science, and financial services literature, the review established common ground on underlying principles and concrete prescriptions for stronger training models.

#### *Framework Development Approach*

The construction of the integrative framework for agent network training in digital financial services was based on a systematic analytical review that involved an iterative process of synthesising and contrasting extant models, local content, and stakeholder needs. These had components of systematic literature identification, thematic coding for relevant educational and operational factors, stakeholder and environmental mapping and comparison for relative strength and utility of different approaches. This iterative approach was underpinned by consensus development and iterative refinement to confirm the resulting framework balance robustness and sensitivity as appropriate for eventual application within specific market conditions (Barwise et al., 2024; Pusic et al., 2023; Salloum et al., 2023).

## Framework for Agent Network Training

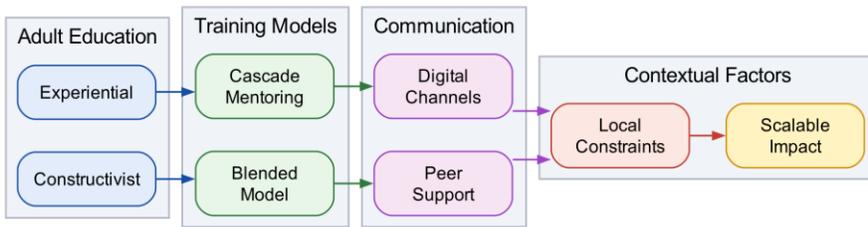
A unified approach for standardising agent network and training in the space of DFS &nbsp;as Network agents training, and literacies and awareness about digital training are quite variable by region. Development is informed by a systematic literature-based analysis and it synthesizes current training models, communication approaches that include inclusive practices and adult education theories to develop a cohesive and purposeful blueprint (Barwise et al., 2024, Pusic et al., 2023, Cobian et al., 2024). The theory is grounded in agent-specific variables, such as previous exposure and knowledge of digital tools; as well as environmental variables, such as the level of infrastructure and cultural conditions, that make it sensitive to local circumstances. Elements of the CICO course include modular content design, multimodal delivery, local adaptation, and ongoing support to facilitate the agents' preparedness and the successful operation of a CICO. Together, this supports scalable, contextually-relevant training deployments that enable agents to deliver compliant, quality service and help promote financial inclusion.

**Table 6.** Agent-Specific and Environmental Factors Influencing Training Outcomes

<i>Factor Type</i>	<i>Example Determinants</i>
Agent-Specific	Digital literacy, prior experience, language proficiency, motivational drivers
Environmental	Regional infrastructure, cultural norms, access to technology, policy frameworks

This table (6) itemizes the key agent-specific and environmental factors considered in the integrative training framework, highlighting their influence on the effectiveness and adaptability of digital financial services agent training programs.

# Unpacking Standardization in Agent Network Training: Towards an Integrative Framework for Digital Financial Services



**Figure 4.** Integrative framework for agent network training overview

This figure (4) depicts the conceptual integrative framework, illustrating the interconnections among training models, communication strategies, adult education theories, and contextual factors for scalable agent network training.

## *Core Dimensions and Components*

The systematic review specifically identified the critical components of an appropriate agent network training framework for digital financial services, each of which significantly influenced the likely effectiveness and scale of IFAs. Important elements are standardized learning content, modularized training methods, competence-based testing, adaptive presenting and life long learning with post academic education. Necessary components of such initiatives include: technology to enable remote learning and blended learning; localized adaptation to promote contextual relevance; and a learning strategy that takes into account adult-learning principles to ensure the greatest engagement and learning of the agents (Greenhalgh et al., 2024; Pusic et al., 2023). These components contribute to the respect of the skills of the agent not Gordon and the stability of agent andbenetwork when they are closer to the financial service () Guillaume et al., 2024).

## *Environmental and Agent-Specific Factors*

Environmental factors like literacy level in a region, technological infrastructure and socio-economic conditions in a region determine to what extent standardized financial agent's training models of DFS work. To this external impetus are added agent-induced elements – the education level of the agents, the level of familiarity with mobile technologies and the ability to unlearn new patterns for training – all of these elements are changing the learning trajectory of the agents and the final

effect upon the financial inclusion target (Cobian et al, 2024; Guillaume et al, 2024; Szymczak et al, 2023). It is also important to consider that access to network connectivity and cultural norms are not the same in every location and country; hence, localized versions of the standard can be adapted to permit wide and fair use of agent networks.

**Table 7.** Comparative Matrix: Environmental and Agent-Specific Factors

<i><b>Factor Type</b></i>	<i><b>Specific Factor</b></i>	<i><b>Potential Impact on Agent Training</b></i>
<b>Environmental</b>	Regional Literacy Levels	Affects absorption of training content, especially text-based modules
<b>Environmental</b>	Access to Digital Infrastructure	Determines feasibility of technology-enabled learning platforms
<b>Environmental</b>	Socio-Economic Status	Modulates agent recruitment and retention capacity
<b>Agent-Specific</b>	Educational Background	Correlates with training comprehension speed
<b>Agent-Specific</b>	Familiarity with Mobile Devices	Affects ability to engage with digital training content
<b>Agent-Specific</b>	Motivational Drivers	Influences engagement and persistence in training programs

This table (7) systematically compares key environmental and agent-specific factors, illustrating their distinct and interconnected effects on agent network training standardization in digital financial services.

**Findings**

## Unpacking Standardization in Agent Network Training: Towards an Integrative Framework for Digital Financial Services

This section also synthesises the core results of the study in relation to six primary evaluation parameters: comprehensive framework, practicality, adoption facilitation for Fintech companies, variable literacy level, agent return nature, and suitability to developing countries. We demonstrate that the unified framework to be improvable, as the modular and scalable training schemes can be used to train populations of heterogeneous agents. Importantly, practicality is introduced by incorporating context sensitive assistance with adaptive content methodologies. Additional key results are supportive of agents' literacy characteristics and digital literacy, techniques for scale made feasible by fintechs, type of training and ongoing learning which the existing literature has shown to have an impact on the retention of agents (Greenhalgh et al., 2022; Banihashem, et al., 2017; Sors, et al, 2019).

**Table 8.** Synthesis of Framework Performance Against Key Metrics

<i><b>Metric</b></i>	<i><b>Framework Performance Summary</b></i>
<b>Framework Completeness</b>	Comprehensively addresses content modularity, delivery, adaptation, and support
<b>Practical Relevance</b>	Enables real-world implementation through contextual tools and mentorship features
<b>Adoptability by Fintechs</b>	Design supports scalability, cost-effectiveness, and compliance, facilitating integration
<b>Alignment with Literacy Levels</b>	Instructional strategies account for linguistic, technological, and functional literacy
<b>Potential for Agent Retention</b>	Ongoing professional development and feedback mechanisms foster sustained engagement

This table (8) summarizes how the integrative framework performs across the five principal evaluative metrics identified for effective agent network training standardization.

$$Retention\ Rate = \frac{N_{agents\ remaining\ after\ period}}{N_{agents\ initially\ trained}} \times 100\% \quad (1)$$

Equation (1) presents the retention rate computation, quantifying the percentage of trained agents who remain active after a given period.

*Implications for Fintech Practitioners*

Conclusion The inbuilt training framework offers practical means through which fintech players can systematically on-board and build the capacity of agents, particularly in areas with diverse literacy and technology aptitude. With emphasis on material design and multimodal delivery, the framework makes it possible to provide adaptive learning experiences that are sensitive to different agent backgrounds and local environments. With measures to address determinants at both agent and at environment level, fintech providers have a role to play in encouraging better compliance, quality and inclusiveness. The process is further capable of scalable implementation and inexpensive network expansion with an increased agent holding. Application of the modality in practice ensures the onboarding practices are sensitive to literacy levels and cultural contexts to have a long-term impact on SD, and to integrate it effectively into the broader industry strategy (Greenhalgh et al., 2024; Singh et al., 2024; Cobian et al., 2024).

**Table 9.** Comparative Analysis of Framework Evaluation Metrics

<i><b>Metric</b></i>	<i><b>Definition</b></i>	<i><b>Practical Implication for Fintech Practitioners</b></i>
<b>Framework Completeness</b>	Degree to which all necessary dimensions of agent training are addressed	Enables holistic training solutions adaptable to changing operational needs
<b>Practical Relevance</b>	Extent to which framework elements can be directly applied in real-world settings	Supports actionable implementation with measurable operational benefits

## Unpacking Standardization in Agent Network Training: Towards an Integrative Framework for Digital Financial Services

<b>Adoptability by Fintechs</b>	Ease with which fintech organizations can integrate the framework into existing processes	Facilitates rapid, scalable deployment while minimizing disruption
<b>Alignment with Literacy Levels</b>	Framework's sensitivity to varying agent literacy and digital familiarity	Promotes inclusive training and higher efficacy among diverse agents
<b>Potential for Agent Retention</b>	Capacity of framework to sustain engagement and reduce agent turnover	Drives stable, long-term agent performance and network reliability

This table (9) compares framework evaluation metrics by providing definitions and direct practical implications for fintech practitioners responsible for agent training standardization.

### Discussion and Policy Implications

Extending integrative nature of training, our model adds to the scholarly literature by offering a set of guidance to systematize the scale-up of agent network development in digital financial systems in a modular fashion, a bracket for inclusion, and local adaptation to accommodate variance in agent populations. Adoption of MeerLICHT for practitioners offers an approach to scale networks, streamline, and validate induction, professional growth, and to balance cost and quality based on context. In fact, such standards should be proposed in place, to be served, that are valid to establish deployment of the set of standard options with pre-structured training protocol, with context-specific, correct execution of the training protocol, and feedback to the user weighing the operating cost vis-à-vis maintenance, reliability, compliancy factors to the set of standards, introduction of regulations on accessibility and for user protection in the remote/underserved areas etc., and carded under the regulation and compliancy with these standards in (Papari et al. 2024, Lin et al. 2024; Cobian et al., 2024).

## **Conclusion**

The contribution of this work is an integrated model addressing the challenge of standardizing training of agent networks in banking zones, especially varied regions and literacy levels. Drawing from existing training frameworks, adult education models and transfer practices, we provide grounded suggestions for fintech professionals and policy-makers that aim to support scalable and adaptive training, with a care for local context and responsible design. The emphasis on modular content, multimodal delivery, local adaptation and ongoing support mechanisms underscores how evidence-informed co-ordination can promote agent reliability, financial inclusion and the sustainable scale-up of digital services in deprived communities (Greenhalgh et al., 2024; Barwise et al., 2024; Cobian et al., 2024).

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