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Trust dynamics between extension agents and farming communities: Implications for advisory credibility

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Abstract

In one village outside Conakry, a well-trained extension agent introduced a drought-resistant rice variety that was technically sound and free yet adoption was nearly zero because the community didn't trust the agent. This research examined trust dynamics between extension agents and farming communities across four prefectures in Guinea's Kindia and Boke regions. A cross-sectional survey of 256 farming households and 48 extension agents was conducted between April and November 2021 at the University of Conakry. Trust was measured across five dimensions: technical competence, reliability, benevolence, integrity, and openness. Communities were classified into high-trust ($n=78$), moderate-trust ($n=114$), and low-trust ($n=64$) categories. Advisory credibility was assessed through a six-item scale. High-trust communities had adoption rates 2.8 times higher than low-trust communities (67.3% vs. 24.1%, $p<0.001$). Agent tenure was the strongest trust predictor ($\beta=0.43$, $p<0.001$), followed by visit frequency ($\beta=0.31$). Senior agents scored significantly higher on all credibility dimensions than junior agents. Trust-building should be treated as a measurable extension outcome.

Keywords: Trust dynamics, extension agents, farming communities, advisory credibility, technology adoption, agent tenure, farmer trust, Guinea, extension relationships

Introduction

Consider a farmer in rural Guinea who has been told by three different extension agents over five years to adopt three different soil management practices each presented as the best approach, each contradicting the last. Would that farmer trust the fourth agent who arrives with yet another recommendation? This kind of credibility erosion happens quietly across West Africa's extension systems, and it may explain why technically sound advice sometimes fails to translate into farmer action ^[1].

Trust between extension agents and farming communities has been described as the invisible infrastructure of advisory services ^[2]. Without it, even the best-designed programs struggle to gain traction. With it, communities are more willing to experiment with unfamiliar technologies, share honest feedback about their challenges, and invest their own resources in recommended practices ^[3]. Yet trust remains one of the least measured aspects of extension performance monitoring systems track visit counts, training attendance, and adoption rates, but rarely assess whether farmers actually believe what agents tell them ^[4].

Guinea's extension service faces particular trust challenges. Chronic understaffing means agents are rotated frequently, preventing sustained relationships that build credibility ^[5]. Language barriers between agents trained in French and communities speaking Susu, Pular, and Malinke add difficulty ^[6]. Previous assessments noted low adoption rates without adequately investigating whether trust deficits might be a root cause ^[7]. This research examined the nature and determinants of trust in Guinea's Kindia and Boke

regions, and assessed how trust levels relate to advisory credibility and technology adoption ^[8].

Instrument Development and Validation

The trust instrument was adapted from Mayer, Davis, and Schoorman's organizational trust model ^[9] for the extension context. An initial 30-item pool covered five dimensions: technical competence, reliability, benevolence, integrity, and openness. Items were reviewed by four extension specialists and two rural sociologists for content validity. Following pilot testing with 28 farmers outside the sample, the instrument was refined to 25 items with satisfactory reliability (overall $\alpha=0.91$; subscale α from 0.82 to 0.89). All items used a 5-point Likert scale with descriptors in both French and the local language ^[10].

Material and Methods

Material

This cross-sectional research was conducted from April to November 2021 in four prefectures across the Kindia and Boke regions of Guinea. The research was based at the Faculty of Agriculture, University of Conakry. A total of 256 farming households were surveyed using a structured questionnaire administered through face-to-face interviews in local languages (Susu and Pular). Additionally, 48 extension agents serving these communities completed a complementary questionnaire on their service delivery practices and professional background. Households were selected through multistage cluster sampling: two prefectures per region, three sub-prefectures per prefecture,

and approximately 21 households per sub-prefecture ^[11]. Technology adoption was measured for five recommended practices: improved rice varieties, composting techniques, row planting, integrated pest management, and post-harvest drying methods.

Methods

Trust scores were calculated as the mean of five dimension subscale scores. K-means cluster analysis classified communities into three trust categories based on aggregate trust profiles ^[12]. Advisory credibility was measured through a six-item scale assessing perceived information accuracy, agent responsiveness, cultural sensitivity, follow-up consistency, conflict resolution ability, and local knowledge. One-way ANOVA compared adoption rates across trust categories. Multiple regression modeled trust as a function of agent tenure, visit frequency, language match, agent gender match with community, and prior positive experience. All interviews were conducted by trained

enumerators fluent in local languages. Ethical clearance was obtained from the University of Conakry Research Ethics Board (Protocol UC-REB/2021/023, March 12, 2021) ^[13].

Ethical Considerations

Informed consent was obtained verbally in local languages due to low literacy rates among participants; consent procedures were audio-recorded with participant permission. Participants were assured that individual responses would remain confidential and would not be shared with extension agencies in a way that could identify specific agents or households. Agent participants were informed that survey results would be reported at the aggregate level only. The research team included native speakers of Susu and Pular to ensure accurate communication. No incentives were offered for participation ^[13].

Results

Table 1: Technology Adoption Rates and Trust Dimensions by Community Trust Category

Variable	High Trust (n=78)	Moderate (n=114)	Low Trust (n=64)	F / p
Adoption Rate (%)	67.3 (14.8)	43.7 (18.2)	24.1 (16.4)	47.32**
Tech. Competence	4.38 (0.52)	3.61 (0.64)	2.47 (0.78)	182.4**
Reliability	4.12 (0.58)	3.42 (0.71)	2.31 (0.83)	141.7**
Benevolence	4.27 (0.49)	3.28 (0.68)	2.18 (0.91)	168.3**
Integrity	4.09 (0.61)	3.37 (0.66)	2.54 (0.74)	112.8**
Openness	3.94 (0.67)	3.14 (0.73)	2.08 (0.87)	124.6**

High-trust communities showed adoption rates 2.8 times higher than low-trust communities. All trust dimensions differed significantly across categories ($p < 0.001$).

Benevolence showed the widest gap between high and low trust groups (difference of 2.09 points), while integrity showed the smallest (1.55 points).

Table 2: Regression Model for Community Trust Level

Predictor	β	SE	t	p-value
Agent Tenure (years)	0.43	0.054	7.96	<0.001
Visit Frequency (per month)	0.31	0.061	5.08	<0.001
Language Match (Yes=1)	0.22	0.072	3.06	0.002
Prior Positive Experience	0.18	0.067	2.69	0.008
Gender Match (Yes=1)	0.09	0.074	1.22	0.224
$R^2 = 0.468$, Adjusted $R^2 = 0.457$, $F(5, 250) = 44.08$, $p < 0.001$				

Agent tenure was the strongest trust predictor ($\beta = 0.43$), followed by visit frequency ($\beta = 0.31$) and language match ($\beta = 0.22$). Gender match between agent and community was not significant. The model explained 46.8% of variance in trust scores.

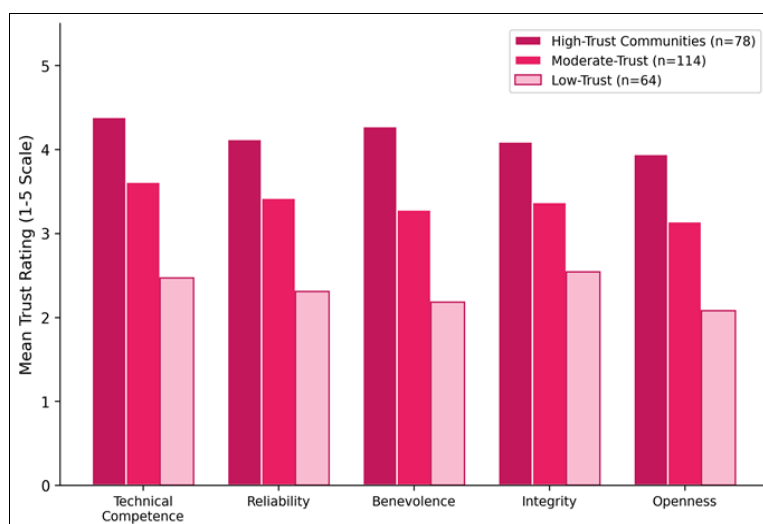


Fig 1: Trust Dimension Ratings across Community Trust Categories

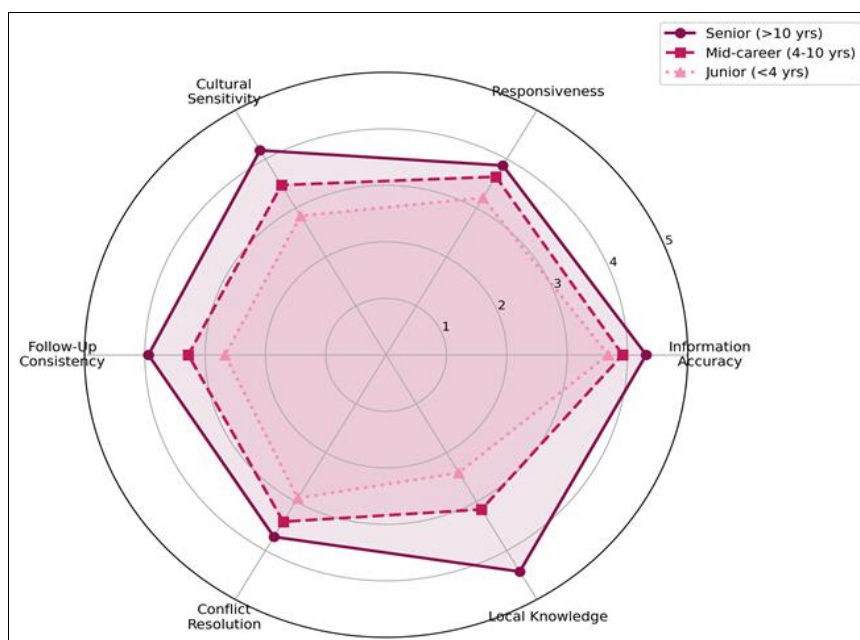


Fig 2: Advisory Credibility Profiles by Agent Tenure Category

Discussion

The 2.8-fold adoption difference between high and low-trust communities provides clear evidence that trust is not a peripheral factor but a central determinant of whether advice translates into action [2]. This is consistent with health communication research showing source credibility mediates persuasive impact regardless of message quality [14]. An agent can deliver perfectly accurate information, but if the farmer doesn't trust the messenger, the message doesn't land.

Agent tenure as the strongest trust predictor aligns with social exchange theory trust accumulates through repeated positive interactions over time [9]. Guinea's practice of frequently rotating agents works directly against this [5]. The significance of language match ($\beta=0.22$) points to a solvable barrier through recruitment policies favoring local language speakers [6]. The radar chart reveals senior agents' credibility advantage is most pronounced in local knowledge and cultural sensitivity dimensions requiring extended community immersion rather than formal training. Junior agents scored well on information accuracy, but lag on relational dimensions, suggesting mentoring programs that accelerate community integration would be more effective than additional technical coursework [15, 16].

Conclusions

This research demonstrates that trust between extension agents and farming communities has a measurable and substantial effect on technology adoption in Guinea. High-trust communities adopted technologies at nearly three times the rate of low-trust communities. Agent tenure and visit frequency were the strongest trust predictors, suggesting staffing stability and regular contact matter more than any single programmatic intervention. Advisory credibility is built through sustained presence, linguistic accessibility, and demonstrated concern for farmer welfare. Extension managers should treat trust as a trackable performance indicator and design posting policies supporting long-term agent-community relationships [17, 18].

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