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Male extension agent-female farmer interaction barriers and their effect on advisory service utilization

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Abstract

Consider a woman farmer in rural Malawi who needs pest management advice but hesitates to approach her male extension agent because cultural norms discourage private consultation between unrelated men and women. This scenario plays out across thousands of farming communities where the gender mismatch between predominantly male extension staff and female farming clients creates invisible barriers to advisory service use. This research examined the nature and intensity of male agent-female farmer interaction barriers and their effect on advisory service utilization in Lilongwe and Dedza districts of central Malawi. Structured interviews were conducted with 218 women farmers and 46 male extension agents between March 2022 and July 2023. Women rated cultural norms (mean 4.3/5) and privacy concerns (4.1/5) as the strongest interaction barriers. Male agents systematically underestimated barrier intensity across all categories. Women reporting high interaction barriers had 61.4% lower advisory contact frequency than those reporting low barriers ($P < 0.001$). The findings point to a need for gender-sensitive staffing policies and alternative delivery models that reduce face-to-face interaction requirements.

Keywords: Extension agents, gender barriers, interaction barriers, women farmers, advisory services, service utilization, cultural norms, Malawi, agricultural extension, gender mismatch

Introduction

A woman farmer in Lilongwe district recently explained that she waited three planting seasons before asking her extension agent about improved maize varieties not because she lacked interest, but because approaching a male stranger for one-on-one advice felt socially risky in her community ^[1]. Her experience is not unusual. Across sub-Saharan Africa, over 85% of field-level extension agents are male, while women make up more than half the agricultural labor force ^[2, 3]. This gender mismatch creates interaction dynamics that can limit women's access to advisory services even when those services are physically available ^[4].

In Malawi, the Department of Agricultural Extension Services employs roughly 3,100 field agents, of whom fewer than 400 are women ^[5]. Cultural norms in many rural communities restrict the circumstances under which unrelated men and women can interact privately, creating discomfort that discourages women from seeking individualized advice ^[6]. Previous research has documented gender gaps in extension contact frequency, but most investigations have treated this gap as a product of supply-side constraints (fewer agents reaching women) rather than examining the demand-side interaction barriers that suppress women's willingness to engage ^[7, 8].

This research measured the specific interaction barriers that women farmers experience when engaging with male extension agents, compared women's reported barrier intensity with agents' perceptions of those same barriers, and modeled the relationship between barrier intensity and advisory service utilization ^[9].

Instrument development and validation

Two parallel questionnaires were developed: one for women farmers (42 items) and one for male extension agents (36 items). The women's instrument measured seven interaction barrier dimensions on a 5-point Likert scale: cultural norms, communication discomfort, scheduling conflicts, privacy concerns, language/literacy barriers, trust deficit, and physical accessibility. The agent instrument measured their perceptions of the same barrier dimensions from the service provider's perspective. Both instruments were reviewed by a panel of four experts (two gender researchers, one extension manager, and one community development specialist) and achieved a Content Validity Index of 0.84. Pilot testing with 24 women farmers and 8 agents in Ntcheu district yielded Cronbach's alpha values of 0.86 (women's barrier scale) and 0.82 (agent perception scale) ^[10].

Materials and Methods

Materials

This research was conducted through Bunda College, University of Malawi, in Lilongwe, between March 2022 and July 2023. Ethical clearance was granted by the University of Malawi Research Ethics Committee (Protocol UNIMAREC-2022-014, approved February 22, 2022). The target population included women farmers registered with extension planning areas (EPAs) in Lilongwe and Dedza districts. A multi-stage sampling procedure selected 8 EPAs (4 per district), followed by random selection of 218 women farmers from village registers. All 46 male extension agents serving the selected EPAs were included as a census

sample. Data were collected through face-to-face interviews, with women's interviews conducted by trained female enumerators to minimize respondent discomfort ^[11].

Methods

Advisory service utilization was measured as the number of voluntary contacts with the extension agent in the preceding 12 months (excluding mandatory group meetings). Women were classified into high-barrier (composite score above median) and low-barrier groups for comparison. The perception gap between women's barrier scores and agents' estimates was calculated for each dimension. Negative binomial regression was used to model the association between barrier intensity and contact frequency, controlling

for distance to agent, education level, farm size, and household headship status. All analyses used Stata version 17 ^[12].

Ethical considerations

All participants gave written informed consent. Given the sensitive nature of questions about gender dynamics, women were assured that their individual responses would not be shared with extension agents or community leaders. Interviews were conducted in Chichewa at locations chosen by the respondent. Participants could skip any question and withdraw at any point without consequence. Agent interviews were conducted separately from farmer interviews to prevent response contamination.

Results

Table 1: Interaction barrier scores as reported by women farmers versus male agents' perceptions

Barrier dimension	Women (mean)	Agents (mean)	Gap	p-value
Cultural norms	4.3	2.7	1.6	<0.001
Communication discomfort	3.8	2.1	1.7	<0.001
Scheduling conflicts	3.1	2.8	0.3	0.186
Privacy concerns	4.1	2.4	1.7	<0.001
Language/literacy	2.6	2.2	0.4	0.114
Trust deficit	3.5	1.9	1.6	<0.001
Physical accessibility	2.9	2.5	0.4	0.097

Male agents significantly underestimated the intensity of cultural norms, communication discomfort, privacy concerns, and trust deficit barriers. The perception gap was

largest for communication discomfort and privacy concerns (both 1.7 points). Scheduling and accessibility barriers showed no significant perception gap ^[13, 14].

Table 2: Advisory service utilization by barrier intensity group (n = 218)

Utilization indicator	Low-barrier (n=104)	High-barrier (n=114)
Mean annual contacts (voluntary)	5.7 ± 2.4	2.2 ± 1.8
Ever sought individual advice (%)	72.1	31.6
Satisfied with advisory quality (%)	68.3	34.2
Adopted recommended practice (%)	61.5	28.9

Women in the high-barrier group made 61.4% fewer voluntary contacts with extension agents than those in the low-barrier group. They were also less than half as likely to

have ever sought individual advice and showed substantially lower satisfaction and adoption rates ^[15].

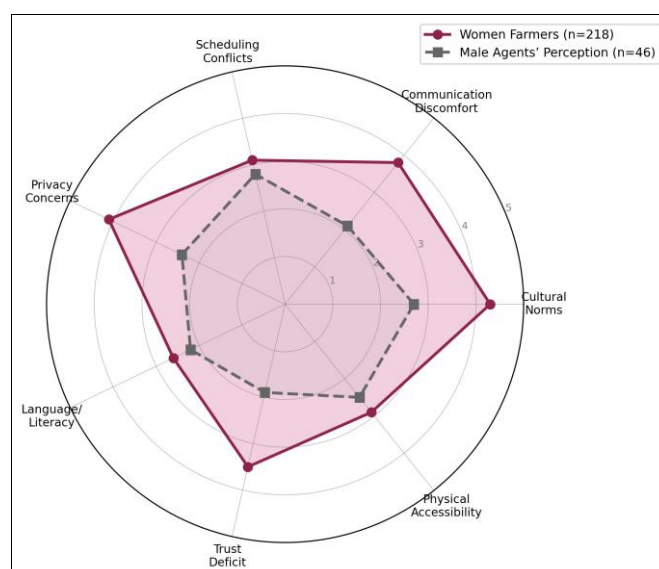


Fig 1: Comparison of interaction barrier intensity as reported by women farmers and perceived by male extension agents

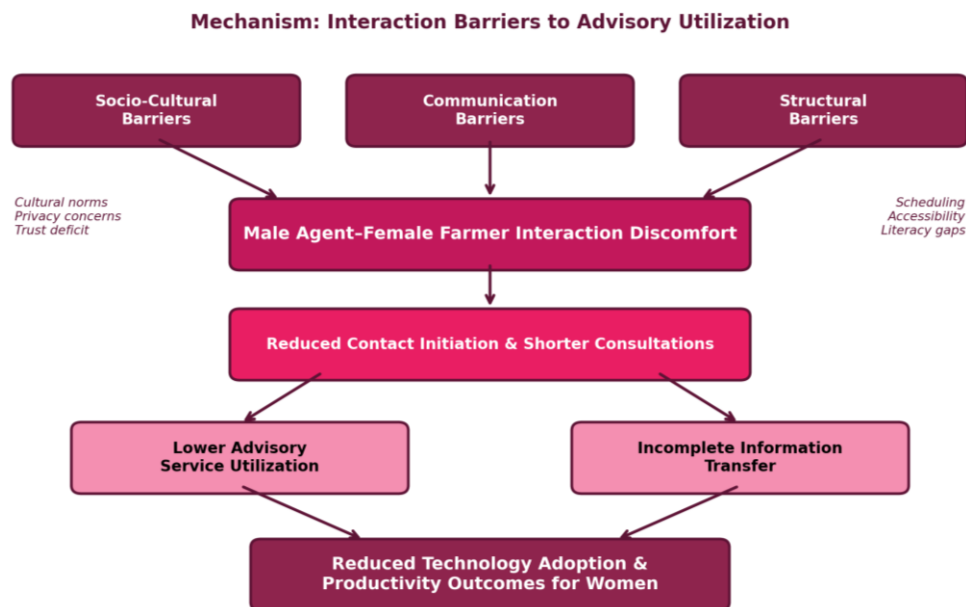


Fig 2: Mechanism through which male agent-female farmer interaction barriers reduce advisory service utilization and technology adoption

Comprehensive interpretation

The data reveal two linked problems: interaction barriers are real and intense for many women farmers, and the agents serving them are largely unaware of how severe those barriers are. This perception gap means that without deliberate measurement and feedback, agents have little incentive or basis to adjust their service delivery approach. The mechanism diagram traces how these barriers translate into reduced contact, incomplete information transfer, and ultimately lower adoption outcomes for women.

Discussion

The finding that cultural norms and privacy concerns ranked highest among women's barriers aligns with qualitative evidence from rural Mozambique and Tanzania, where cross-gender advisory encounters were similarly constrained by social expectations about male-female interaction [6, 16]. The large perception gap between women and agents is itself a significant finding. Agents may interpret women's low contact as disinterest or satisfaction with existing knowledge, when it actually reflects avoidance driven by social discomfort. Training agents to recognize and address these dynamics through group-based delivery, female intermediary models, or scheduled women-only advisory sessions could help close the utilization gap [17].

The 61.4% reduction in contact frequency among high-barrier women represents a substantial service gap with real productivity consequences. Women who didn't seek advisory support were also half as likely to adopt recommended practices. This creates a cycle where the farmers most in need of support are least likely to receive it not because they're unreachable, but because the delivery model doesn't account for the social context of cross-gender professional interaction [18].

Limitations

Self-reported contact frequency is subject to recall bias, potentially affecting the magnitude of utilization differences. Social desirability bias may have influenced both women's barrier reports (possibly underreported to

avoid seeming uncooperative) and agents' perceptions (possibly underreported to avoid appearing insensitive). The research covered two districts in central Malawi and may not reflect conditions in the country's northern or southern regions where cultural norms differ. The cross-sectional design cannot establish causal direction between barriers and utilization.

Conclusion

Male agent-female farmer interaction barriers significantly suppress advisory service utilization among women in central Malawi. Cultural norms and privacy concerns are the most intense barriers, and male agents substantially underestimate their severity. Women facing high interaction barriers make 61% fewer voluntary contacts and are half as likely to adopt recommended practices. Addressing these barriers requires a combination of approaches: recruiting and deploying more female extension staff, training male agents in gender-sensitive communication, offering group-based and women-only advisory sessions, and developing technology-mediated advisory channels that reduce the need for private face-to-face interaction. Extension systems that ignore interaction barriers will continue to underserve women farmers regardless of how many agents they deploy.

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