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Exposure visit methodologies for facilitating cross-regional farmer-to-farmer knowledge exchange

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Abstract

When farmers from one region visit successful operations in another, something happens that no manual can replicate—they see that a different approach works. This research evaluated exposure visit methodologies for cross-regional knowledge exchange across four Polish voivodeships. A total of 196 farmers participating in structured visits between January and October 2023 were surveyed before and after, with six-month follow-up. Post-visit knowledge increased by 27.4 points ($p < 0.001$). Farmers in visits with interactive components showed 41.3% higher practice adoption than observation-only visits. Six methodological elements distinguish effective visits from agricultural tourism.

Keywords: Exposure visits, farmer-to-farmer exchange, knowledge transfer, cross-regional learning, agricultural extension, practice adoption, interactive methodology, Poland, technology transfer, experiential learning

Introduction

There is a difference between being told conservation tillage works and watching a farmer in the next province pull a healthy crop from untilled soil ^[1]. Across the EU, advisory services organize thousands of farm visits annually, yet methodologies vary wildly from structured learning events to agricultural tourism ^[2].

In Poland, the Agricultural Advisory Centre coordinates inter-regional visits connecting less productive regions with successful operations ^[3]. But effectiveness depends on design. Dewey's experiential learning framework ^[4] predicts active participation produces deeper learning than passive observation yet many visits remain guided tours with minimal interaction.

This research evaluated which methodological features distinguish effective visits from ineffective ones across four voivodeships during 2023.

Field Experimental Design

Visits were categorized: observation-only (guided tours, $n=63$), semi-interactive (tours with Q&A, $n=68$), and fully interactive (tours with hands-on demonstrations, $n=65$). Pre-

visit, post-visit, and six-month assessments used parallel knowledge tests and practice adoption checklists.

Material and Methods

Material

The research was conducted through the Faculty of Agriculture, Warsaw University of Life Sciences, Poland, between January and December 2023. Farmers from Lublin, Podkarpackie, Swietokrzyskie, and Warmian-Masurian voivodeships participated ($n=196$). Farm sizes ranged from 5-85 hectares. A 42-item knowledge assessment and 18-item adoption checklist were pilot-tested and revised.

Methods

Pre-post quasi-experimental design with six-month follow-up. Paired t-tests, ANOVA, chi-square, and Cohen's d were applied in R v.4.3. Qualitative data from 24 debriefing sessions were analyzed thematically. Ethics approval: Warsaw University of Life Sciences (Protocol SGGW-RE-2023-012, December 19, 2022).

Results

Table 1. Knowledge gains by visit methodology type ($n=196$)

Visit Type	n	Pre (%)	Post (%)	6-Mo (%)	d
Observation-only	63	38.7	57.2	48.6	0.89
Semi-interactive	68	37.4	64.8	57.3	1.21
Fully interactive	65	39.1	72.6	66.1	1.54

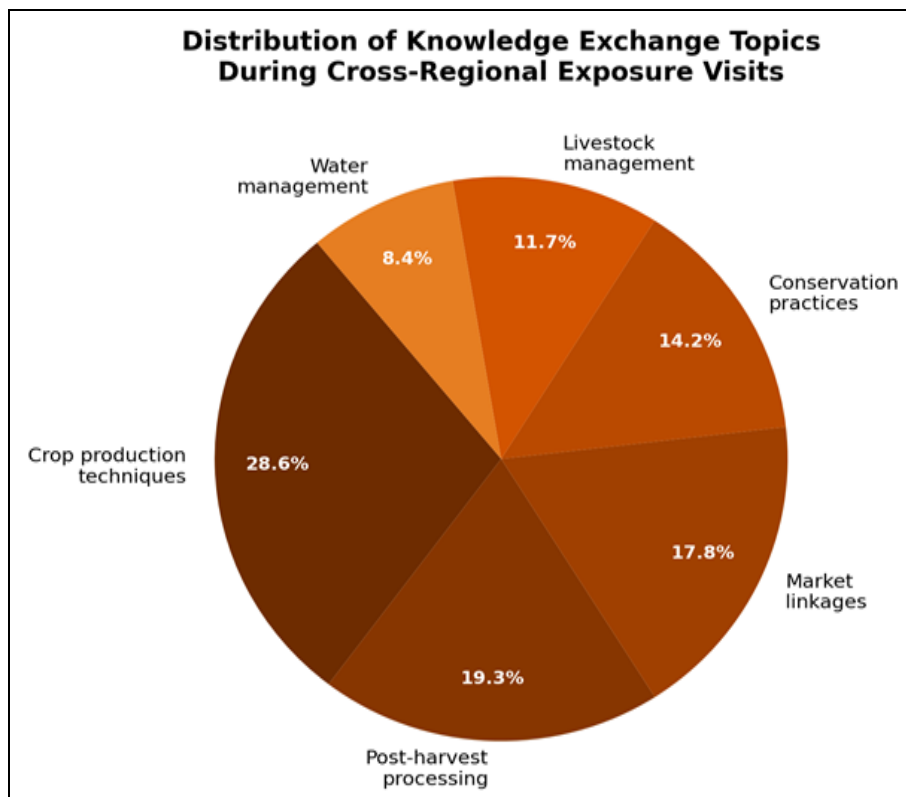
Fully interactive visits achieved the largest gains (33.5 points) with smallest decay (6.5 points) at six months.

Knowledge retention at six months was 66.1% for interactive vs 48.6% for observation-only.

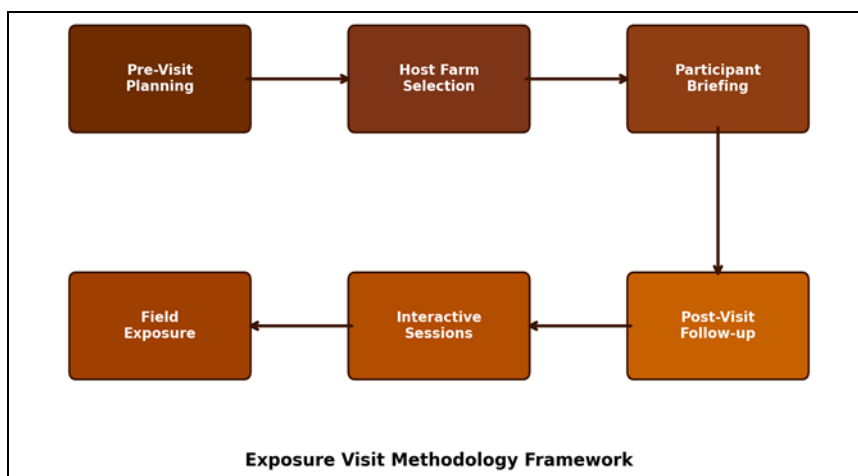
Table 2: Practice adoption at six months by methodology

Practice	Observation (%)	Semi (%)	Interactive (%)
Crop production	22.2	38.2	52.3
Post-harvest	14.3	27.9	41.5
Market linkage	11.1	22.1	33.8
Conservation	17.5	30.9	44.6
Overall	16.3	29.8	43.1

Interactive visits produced 43.1% overall adoption 2.6 times higher than observation-only (16.3%).

**Fig 1:** Knowledge exchange topic distribution during exposure visits

Crop production dominated (28.6%), followed by post-harvest processing (19.3%).

**Fig 2:** Six-stage exposure visit methodology framework

Discussion

The 2.6-fold adoption advantage confirms experiential learning predictions ^[4]: active engagement during exposure dramatically increases later adoption. Smaller knowledge

decay for interactive visits (6.5 vs 8.6 points) suggests hands-on experience creates more durable memory ^[5]. Semi-interactive visits captured roughly half the interactive advantage with minimal additional resources—a practical

option for advisory centers currently running observation-only programs. For fully interactive models, host farmer willingness was the main constraint identified in debriefings [6].

Practical Applications

Polish advisory centers should restructure visits to include mandatory interactive components: demonstrations, small-group exercises, and structured farmer discussion. Post-visit follow-up at one and three months would sustain gains and support adoption.

Conclusion

Exposure visit methodology matters more than the visit itself. Interactive visits produced knowledge and adoption rates roughly 2.5 times higher than observation-only formats. The six elements identified—structured briefing, host matching, interactive demonstration, group discussion, action planning, and follow-up—distinguish effective exchange from tourism. Investing in methodology design yields substantially better returns.

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