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Capacity building interventions for strengthening farmer producer organizations through extension linkages

Charlotte Marie Dupont

Department of Agricultural Extension, Departement des Sciences Agronomiques, AgroParisTech, Paris, France

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Corresponding Author: Charlotte Marie Dupont

Abstract

Can farmer producer organizations become self-sustaining without structured extension support? This research assessed how capacity building interventions delivered through extension linkages influenced the organizational performance of farmer producer organizations (FPOs) in selected regions of France. A cross-sectional survey covered 156 FPOs across Occitanie and Nouvelle-Aquitaine regions between April 2022 and September 2023. An FPO Performance Index and a Capacity Building Effectiveness Scale measured outcomes. FPOs with embedded extension advisors scored 78.4 on governance quality versus 54.3 for those without formal linkages. Capacity building hours correlated positively with performance ($r=0.74$, $p<0.001$). Joint planning arrangements between FPOs and extension agencies produced the strongest outcomes across financial management, market access, and collective bargaining dimensions. These results suggest that extension services should move beyond occasional training toward sustained, embedded advisory relationships with producer organizations.

Keywords: Farmer producer organizations, capacity building, extension linkages, organizational performance, governance, collective action, agricultural advisory, embedded advisors, France

Introduction

Farmer producer organizations sit at a difficult crossroads in European agriculture. They're expected to help smallholders compete in consolidated markets, negotiate better input prices, and meet increasingly complex regulatory requirements yet many lack the internal capacity to perform these functions effectively ^[1]. Across the European Union, roughly 40% of registered FPOs remain dormant or minimally active within five years of formation ^[2]. Extension services have traditionally focused on individual farmers rather than organizations. But a growing body of evidence suggests that advisory support directed at collective farmer institutions can generate broader impact per unit of investment ^[3]. The French agricultural chamber system (Chambres d'agriculture) provides a useful testing ground because it maintains both individual advisory services and group-oriented programs ^[4]. Despite this infrastructure, systematic evidence on which types of extension-FPO linkages produce the strongest organizational outcomes has been limited ^[5]. This research examined how different capacity building interventions delivered through extension linkages affected FPO performance in France, comparing five linkage types ranging from no formal connection to fully embedded advisory arrangements.

Research Area Description

Data were collected from FPOs operating in the Occitanie and Nouvelle-Aquitaine regions of southern France. Occitanie spans Mediterranean and Atlantic climate zones, supporting wine, cereal, fruit, and livestock production across 3.4 million hectares of agricultural land. Nouvelle-Aquitaine, France's largest region by area, features diverse

farming systems from Cognac vineyards to Limousin cattle ranching. Both regions have active Chambres d'agriculture networks and a history of cooperative agricultural traditions.

Materials and Methods

Materials

A cross-sectional descriptive design was used. From 412 registered FPOs in both regions, 156 were selected through proportionate stratified sampling based on commodity type and organizational age. Data collection occurred between April 2022 and September 2023 at AgroParisTech, Paris. The FPO Performance Index (FPI), adapted from Trebbin's organizational viability framework ^[6], measured governance, financial management, market access, and collective bargaining across 28 items. The Capacity Building Effectiveness Scale (CBES) assessed training quality, relevance, and application through 18 items. Both instruments used five-point Likert scales.

Methods

FPO leaders and board members ($n=312$, two per organization) completed structured questionnaires administered in French during scheduled board meetings. FPOs were categorized into five extension linkage types: no formal linkage, information sharing only, joint planning, embedded advisor, and periodic consultation. One-way ANOVA with Tukey's post-hoc tests compared performance across linkage types. Pearson correlations and multiple regression assessed relationships between capacity building variables and FPO performance. Analysis used R version 4.2. Ethics approval was granted by AgroParisTech's Research Ethics Committee (Protocol APT-REC-2022-014, March 2022).

Instrument Development and Validation

Both instruments were translated from English to French following standard back-translation procedures. A panel of six agricultural cooperative specialists assessed content validity, retaining items above 0.80 CVI threshold. Pilot

testing with 22 FPOs in Bretagne (excluded from main sample) yielded Cronbach's alpha of 0.88 for FPI and 0.84 for CBES. Confirmatory factor analysis confirmed the four-factor structure of the FPI ($\chi^2/df=1.87$, CFI=0.94, RMSEA=0.047).

Results

Table 1: FPO performance scores by extension linkage type (n=156)

Linkage Type	Governance	Financial Mgmt	Market Access	Collective Bargaining	Overall FPI
No formal linkage	54.3	48.7	42.1	39.8	46.2
Information sharing	63.8	57.2	51.6	48.3	55.2
Periodic consultation	68.1	62.4	58.9	55.7	61.3
Joint planning	74.6	71.3	68.4	65.2	69.9
Embedded advisor	78.4	73.8	71.2	68.9	73.1

Note: ANOVA $F(4, 151) = 12.74$, $p < 0.001$. Tukey's post-hoc: embedded advisor and joint planning significantly different from no linkage and information sharing ($p < 0.05$).

FPO performance increased progressively with the intensity of extension linkage. Embedded advisor arrangements produced the highest scores across all four dimensions,

while FPOs without formal linkages consistently scored lowest. The gap was widest for collective bargaining (29.1 points between extremes).

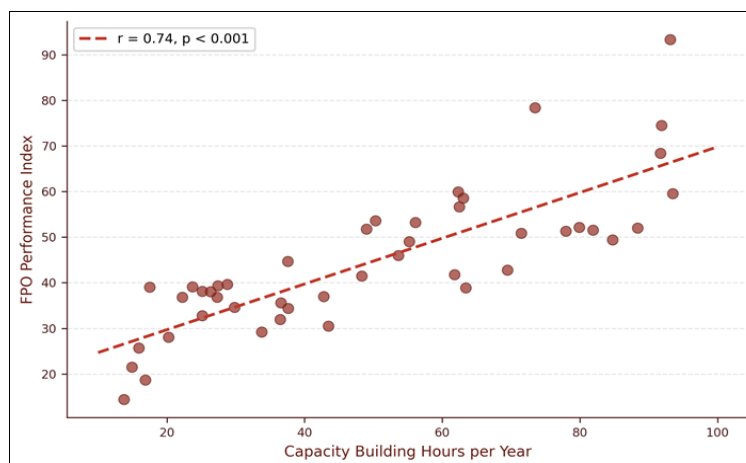


Fig 1: Relationship between annual capacity building hours and FPO performance index

A strong positive correlation ($r=0.74$, $p < 0.001$) was observed between capacity building hours and FPO performance. FPOs receiving over 60 hours annually

clustered above the 65-point performance threshold, while those below 30 hours rarely exceeded 55 points.

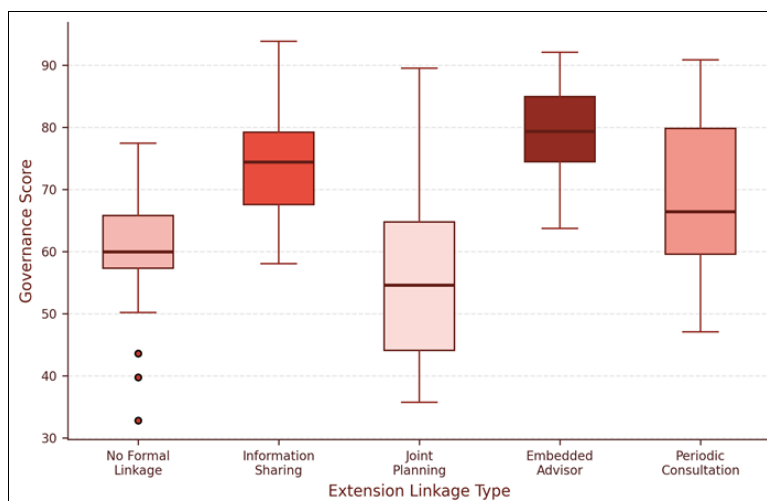


Fig 2: Distribution of governance scores by extension linkage type

Embedded advisor arrangements showed the highest median governance scores with the tightest interquartile range, suggesting both better and more consistent outcomes. Joint planning also performed well. FPOs with no formal linkage displayed the widest score dispersion, indicating highly variable governance quality.

Discussion

The clear dose-response pattern stronger extension linkages producing better FPO outcomes aligns with Berdegue's findings from Latin American producer organizations, where sustained advisory relationships outperformed short-term training interventions ^[7]. The embedded advisor model outperformed all others, likely because continuous on-site support allows real-time problem solving rather than waiting for scheduled consultations.

That collective bargaining showed the widest gap between linkage extremes is telling. Negotiating with input suppliers and output buyers requires both technical knowledge and strategic confidence that only develops through sustained coaching ^[8]. The strong correlation between capacity building hours and performance further supports the argument that organizational strengthening isn't a one-off event but an ongoing process requiring persistent investment.

Limitations

The cross-sectional design cannot establish causation better-performing FPOs may attract stronger extension linkages rather than vice versa. The research focused on two regions of southern France, and cooperative traditions in northern regions may produce different patterns. Self-reported performance measures could introduce social desirability bias. Longitudinal tracking would better capture how linkage effects evolve over time.

Conclusion

This research demonstrated that the type and intensity of extension linkage significantly influences farmer producer organization performance. Embedded advisory arrangements and joint planning models produced the strongest outcomes across governance, financial management, market access, and collective bargaining. Extension services should transition from episodic training toward sustained embedded partnerships with FPOs, particularly for building collective bargaining capacity where the performance gap was widest.

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