

International Journal of Agriculture Extension and Social Development

Volume 7; Issue 5; May 2024; Page No.66-69

Received: 06-03-2024
Accepted: 09-04-2024

Indexed Journal
Peer Reviewed Journal

Supervision and mentoring practices for newly recruited agricultural extension professionals

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DOI: <https://doi.org/10.33545/26180723.2024.v7.i5a.3219>

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Abstract

The first two years in any professional role shape long-term career trajectories, and agricultural extension is no exception. This research examined supervision and mentoring practices directed at newly recruited extension professionals across three Australian states. A cross-sectional survey of 186 extension officers with fewer than five years of service was conducted between August 2021 and March 2022, supplemented by 28 semi-structured interviews with supervisors and mentors. Results showed that 61.3% of new recruits received structured supervision, but only 34.4% had access to formal mentoring programs. Supervision frequency was positively correlated with job satisfaction ($r = 0.64$, $p < 0.001$) and self-reported competence ($r = 0.51$, $p < 0.001$). Officers with both supervision and mentoring reported 2.1 times higher retention intentions than those with neither. The interaction between supervision and mentoring was synergistic, producing outcomes greater than either intervention alone. These findings indicate that extension agencies should pair structured supervision with dedicated mentoring arrangements for early-career staff.

Keywords: Supervision, mentoring, extension professionals, early career, job satisfaction, staff retention, professional development, agricultural extension, workforce development, Australia

Introduction

Extension agencies across the developed world are losing newly recruited staff at alarming rates. In Australia, turnover among extension professionals with fewer than three years of experience exceeded 38% between 2018 and 2021, representing a substantial loss of recruitment investment and institutional knowledge ^[1]. This attrition pattern is not unique to Australia; similar trends have been documented in the United States, Canada, and parts of Western Europe ^[2]. The common thread connecting these diverse settings is a gap between what early-career extension professionals need from their organizations and what they actually receive during the critical induction period.

Supervision and mentoring represent two distinct but complementary support mechanisms. Supervision involves formal oversight by a designated line manager, focused on task performance, workload management, and organizational accountability ^[3]. Mentoring, by contrast, involves a more experienced colleague providing guidance on professional growth, career navigation, and psychosocial support without a direct reporting relationship ^[4]. Research from nursing, social work, and teaching has repeatedly shown that combining both mechanisms produces better retention and competence outcomes than either alone ^[5]. Yet the extension literature has given surprisingly little attention to how these two support structures operate together for new recruits. This research investigated the supervision and mentoring practices experienced by newly recruited agricultural extension professionals in Australia. It assessed

the prevalence, frequency, and quality of both mechanisms, tested their independent and combined effects on job satisfaction, competence, and retention intentions, and developed an integrated support model for early-career extension staff.

Materials and Methods

Materials

The research was conducted across three Australian states: Victoria, New South Wales, and Queensland, between August 2021 and March 2022. The primary institutional base was the Faculty of Agriculture, University of Melbourne, Melbourne. The target population comprised extension officers with fewer than five years of service employed by state government departments of agriculture and regional development agencies. A structured questionnaire with 44 items measured supervision characteristics (frequency, duration, content focus), mentoring characteristics (formality, mentor selection, meeting frequency), job satisfaction (7-point Likert scale), self-reported competence (6 domains), and retention intentions. Pilot testing with 22 officers in the Goulburn Valley region of Victoria produced acceptable reliability (Cronbach alpha ranging from 0.79 to 0.91). Ethical approval was granted by the University of Melbourne Human Research Ethics Committee (Protocol HREC/2021-14782, approved July 2021).

Methods

A cross-sectional survey design was employed. The

questionnaire was administered online to 312 eligible extension officers identified through departmental human resource records, yielding 186 usable responses (59.6% response rate). Quantitative analysis included Pearson correlations between supervision and mentoring variables and outcome measures, independent samples t-tests comparing officers with and without mentoring access, and

hierarchical multiple regression examining the independent and interaction effects of supervision and mentoring on outcomes. Semi-structured interviews with 28 supervisors and mentors explored the qualitative dimensions of support provision, challenges faced, and perceived gaps in current practice. Interview data were analyzed using thematic analysis [6].

Results

Table 1: Supervision and mentoring characteristics of early-career extension officers (n = 186)

Characteristic	Category	n	% / Mean
Structured supervision received	Yes	114	61.3
	No	72	38.7
Supervision contacts per quarter	Mean (SD)	-	5.7 (3.2)
Formal mentoring program access	Yes	64	34.4
	No	122	65.6
Mentor meeting frequency	Monthly+	41	64.1
	Quarterly	23	35.9
Job satisfaction (1-7 scale)	Mean (SD)	-	4.83 (1.14)
Retention intention (1-5 scale)	Mean (SD)	-	3.47 (1.08)

While most respondents (61.3%) received structured supervision, only about one-third (34.4%) had access to formal mentoring. Average supervision contact occurred 5.7

times per quarter. Job satisfaction was moderately high ($M = 4.83$ on a 7-point scale) and retention intention was moderate ($M = 3.47$ on a 5-point scale).

Table 2: Hierarchical regression predicting job satisfaction from supervision and mentoring (n = 186)

Predictor	Beta	SE	t	p-value
Step 1: Years of experience	0.14	0.07	1.92	0.057
Step 2: Supervision frequency	0.39	0.07	5.43	<0.001
Step 2: Mentoring access (binary)	0.27	0.08	3.41	0.001
Step 3: Supervision x Mentoring	0.18	0.06	2.87	0.005

The final model explained 47.6% of variance in job satisfaction (adjusted R-squared = 0.476). Supervision frequency was the strongest individual predictor ($\beta = 0.39$), followed by mentoring access ($\beta = 0.27$). The

interaction term was significant ($\beta = 0.18$, $p = 0.005$), confirming that the combined effect of supervision and mentoring exceeded the sum of their individual effects.

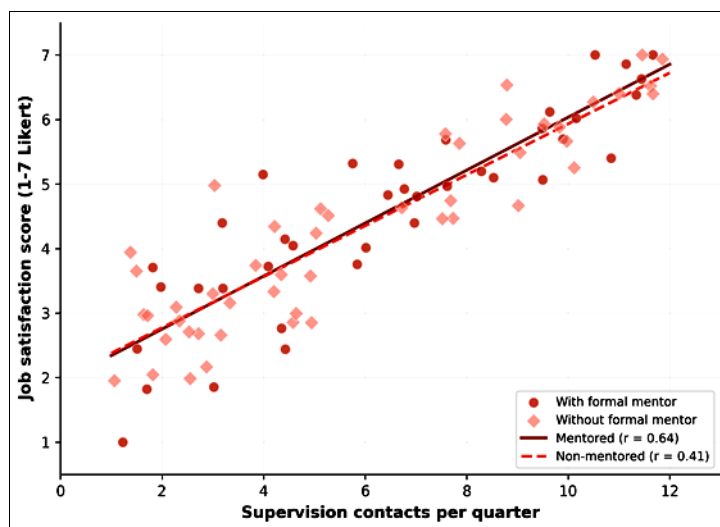


Fig 1: Relationship between supervision frequency and job satisfaction by mentoring status (n = 186)

Officers with formal mentors showed a stronger positive relationship between supervision frequency and job satisfaction ($r = 0.64$) compared to those without mentors ($r = 0.41$). The scatter plot visually confirms the synergistic

interaction: at higher supervision levels, the gap in satisfaction between mentored and non-mentored officers widened.

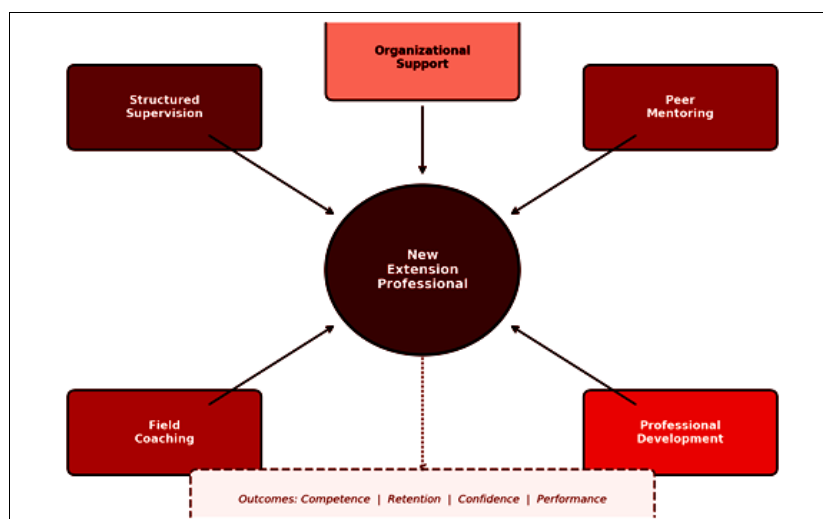


Fig 2: Integrated supervision-mentoring support model for early-career extension professionals

The model positions the new extension professional at the center of five support streams: structured supervision, peer mentoring, field coaching, professional development, and organizational support. The convergence of these streams toward the individual reflects the finding that no single mechanism was sufficient; rather, combinations produced the strongest outcomes in competence, retention, confidence, and field performance.

Comprehensive Interpretation

The combined evidence from quantitative and qualitative data indicates that supervision and mentoring operate through different but complementary pathways. Supervision addresses task-oriented needs including workload management, technical guidance, and accountability. Mentoring addresses career-oriented and psychosocial needs including professional identity development, networking, and emotional support. When both pathways are active, early-career officers develop more rounded professional capability and stronger organizational attachment.

Discussion

The synergistic interaction between supervision and mentoring aligns with findings from allied professions. Hawkins and Shohet ^[7] argued that effective professional development requires both managerial supervision for accountability and developmental support for growth. The extension context adds geographic isolation as a complicating factor: many new recruits are posted to regional and remote offices where face-to-face supervision is infrequent, making mentoring through phone or video contact an important supplement ^[8]. The low prevalence of formal mentoring (34.4%) despite its demonstrated benefits suggests an implementation gap. Interview data revealed that agencies recognized mentoring value in principle but struggled with practical arrangements: identifying willing and skilled mentors, providing release time, and defining mentoring boundaries distinct from supervision ^[9]. Several supervisors expressed concern about role confusion when expected to perform both supervisory and mentoring functions for the same individual.

Limitations

The cross-sectional design prevents causal inferences about

supervision and mentoring effects. Self-reported measures may not fully capture actual supervision quality. The 59.6% response rate, while acceptable, raises the possibility of non-response bias. Findings from the Australian context may not directly apply to developing country extension systems with different organizational structures and resource levels.

Practical Implications

Extension agencies should establish formal mentoring programs alongside existing supervision structures rather than treating them as alternatives. Mentor selection should prioritize interpersonal skills and willingness over seniority alone. Agencies should clearly differentiate supervisor and mentor roles to prevent confusion and ensure both accountability and developmental support are present.

Conclusion

This research examined supervision and mentoring practices for newly recruited extension professionals across three Australian states. While structured supervision was reasonably common, formal mentoring remained available to only one-third of early-career officers. The combination of supervision and mentoring produced synergistic effects on job satisfaction and retention intentions, exceeding either mechanism alone. Extension agencies face a clear opportunity: investing in integrated supervision-mentoring programs for new recruits can substantially reduce early-career attrition and build a more competent, committed extension workforce. The integrated model presented here provides a practical framework for designing such programs.

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