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Strategic planning approaches for modernizing legacy agricultural extension institutions

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Abstract

When Britain established its first formal agricultural advisory service in 1946, the assumption was that a single government agency could serve every farmer in the country through a standardized delivery model. Nearly eight decades later, many extension institutions built on that same template are struggling to remain relevant in a world of precision agriculture and digital information flows. This research assessed strategic planning approaches used by 25 legacy extension institutions across England, Wales, and Scotland, examining which planning elements were most strongly associated with measurable modernization progress. Data were collected between May 2023 and February 2024 through institutional document review and semi-structured interviews with 47 senior extension managers. A modernization index covering four components, namely digital infrastructure, staff capacity building, governance reform, and stakeholder engagement, was applied to each institution. Results showed that institutions with a formal strategic plan scored, on average, 28.1 index points higher than those without one by 2023. Digital infrastructure was the fastest-growing component, rising from 8.1% to 29.3% over the six-year observation window. Institutions that combined top-down strategic direction with bottom-up staff consultation produced the most balanced modernization profiles. These findings suggest that strategic planning is not merely a bureaucratic exercise but a practical driver of institutional change in extension systems that need to adapt or risk irrelevance.

Keywords: Strategic planning, institutional modernization, agricultural extension, legacy institutions, organizational change, digital infrastructure, extension reform, governance, capacity building, United Kingdom

Introduction

Britain's National Agricultural Advisory Service, launched in 1946 under the Agriculture Act, was one of the earliest unified public extension systems ^[1]. For decades it delivered soil testing, crop rotation advice, and livestock guidance through county offices. But by the 1990s, privatization and budget pressures had fragmented the system into a patchwork of public, private, and voluntary providers ^[2]. Many surviving institutions retained structures designed for an era of paper records and face-to-face farm visits. The mismatch between legacy structures and current demands is not unique to Britain. Extension agencies worldwide face pressure to incorporate digital tools, respond to climate variability, and engage diverse farming populations ^[3]. Strategic planning has been proposed as one steering mechanism, yet evidence linking formal planning to actual institutional modernization remains patchy ^[4]. This research examined 25 extension institutions across England, Wales, and Scotland to assess which planning elements were most closely linked to modernization progress over a six-year window (2018-2023).

Theoretical Background

The research drew on two bodies of theory. The first was organizational change management, specifically Kotter's eight-step model, which treats strategic vision, coalition building, and short-term wins as preconditions for sustained

transformation ^[5]. The second was the institutional isomorphism framework from DiMaggio and Powell, which predicts that organizations in the same field tend to converge toward similar structures over time through coercive, mimetic, and normative pressures ^[6]. Together, these lenses suggested that strategic planning would accelerate modernization both by creating internal direction and by aligning institutions with external expectations from funders and peer organizations.

Material and Methods

Material

This research was conducted through the School of Agriculture at the University of Reading, United Kingdom, between May 2023 and February 2024. The University of Reading Ethics Committee granted approval on 22 April 2023 (reference UREC-2023-089). Twenty-five extension institutions were selected through purposive sampling: 16 in England, 5 in Wales, and 4 in Scotland. Institutions were eligible if they had been operating continuously since at least 2017 and maintained publicly accessible annual reports. Of the 25, 14 had adopted a formal strategic plan during the observation period and 11 had not. Semi-structured interviews were conducted with 47 senior managers (1-3 per institution). All participants gave written informed consent.

Instrument Development

The modernization index was developed through a three-stage process. First, a literature scan identified 28 candidate indicators of institutional modernization in extension contexts [3]. Second, an expert panel of nine extension specialists rated each indicator for relevance and measurability, retaining 16 items grouped into four components: digital infrastructure (5 items), staff capacity building (4 items), governance reform (4 items), and stakeholder engagement (3 items). Third, a pilot application to five institutions outside the sample produced a Cronbach's alpha of 0.83 for the overall index. Each item was scored on a five-point scale and converted to a percentage.

Methods

Institutional documents including strategic plans, annual reports, budget statements, and training logs from 2018 to 2023 were coded against the modernization index. Interview transcripts were coded thematically to capture planning processes and perceived barriers [7]. Modernization trajectories were compared between the two groups (with plan vs. without plan) using repeated-measures analysis and effect sizes. Component-level trends were visualized through stacked area charts. A content analysis of the 14 strategic plans identified the most commonly included planning elements and their association with index gains.

Results

Table 1 shows the mean modernization index scores for institutions with and without strategic plans at the start and end of the observation period.

Table 1: Mean modernization index scores by strategic plan status, 2018 and 2023

Group	2018 Score (%)	2023 Score (%)	Gain (pp)	Annual Rate (pp)	Effect Size (d)
With strategic plan (n = 14)	34.2	71.4	+37.2	+6.2	1.43
Without strategic plan (n = 11)	33.8	43.3	+9.5	+1.6	0.38
Difference	0.4	28.1	+27.7	+4.6	-

pp = percentage points; d = Cohen's d effect size

Both groups started at nearly identical baselines in 2018. By 2023, the planned group had gained 37.2 percentage points

compared with just 9.5 for the unplanned group, a gap of 28.1 points with a large effect size (d = 1.43).

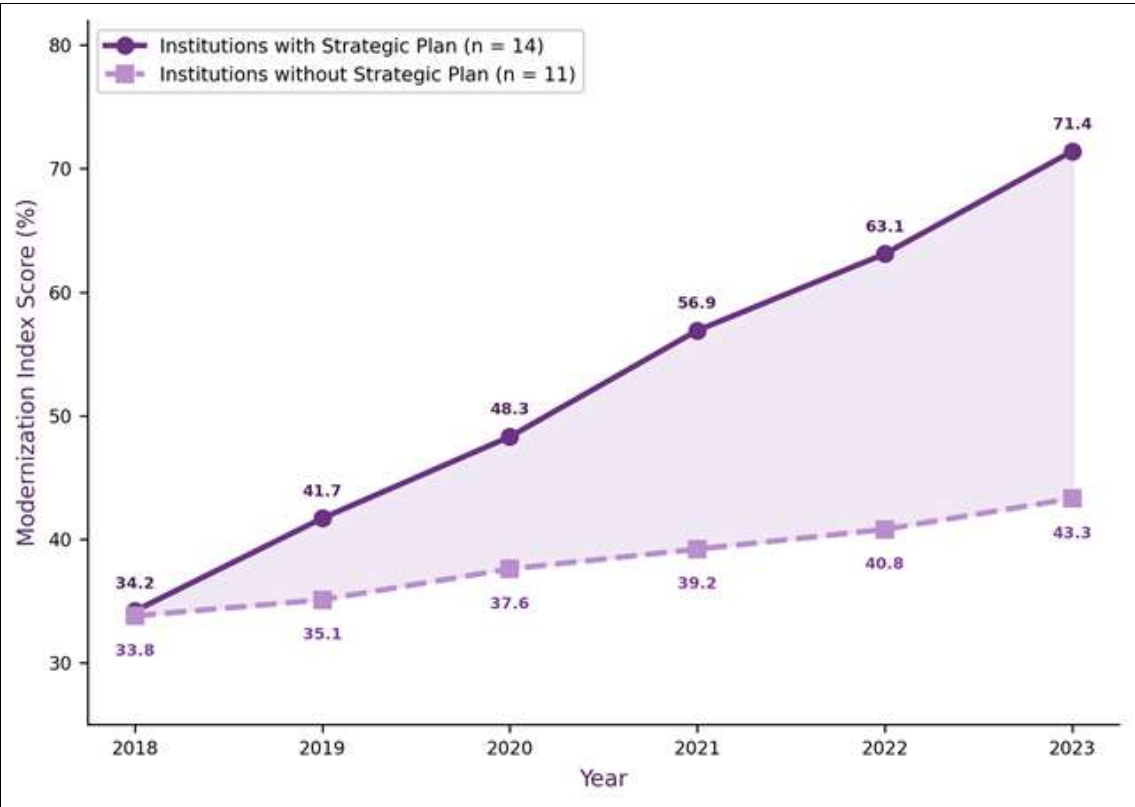


Fig 1: Modernization index trajectories for extension institutions with and without formal strategic plans (2018-2023)

The shaded area between the two lines represents the widening gap over time. The planned group began accelerating noticeably after 2020, which coincided with the period when most institutions completed their first plan cycle and entered implementation. Digital infrastructure was the fastest-growing component,

nearly quadrupling from 8.1% to 29.3%. Staff capacity building showed steady but slower growth. Governance reform and stakeholder engagement contributed less to total gains, suggesting these areas may need more deliberate planning attention.

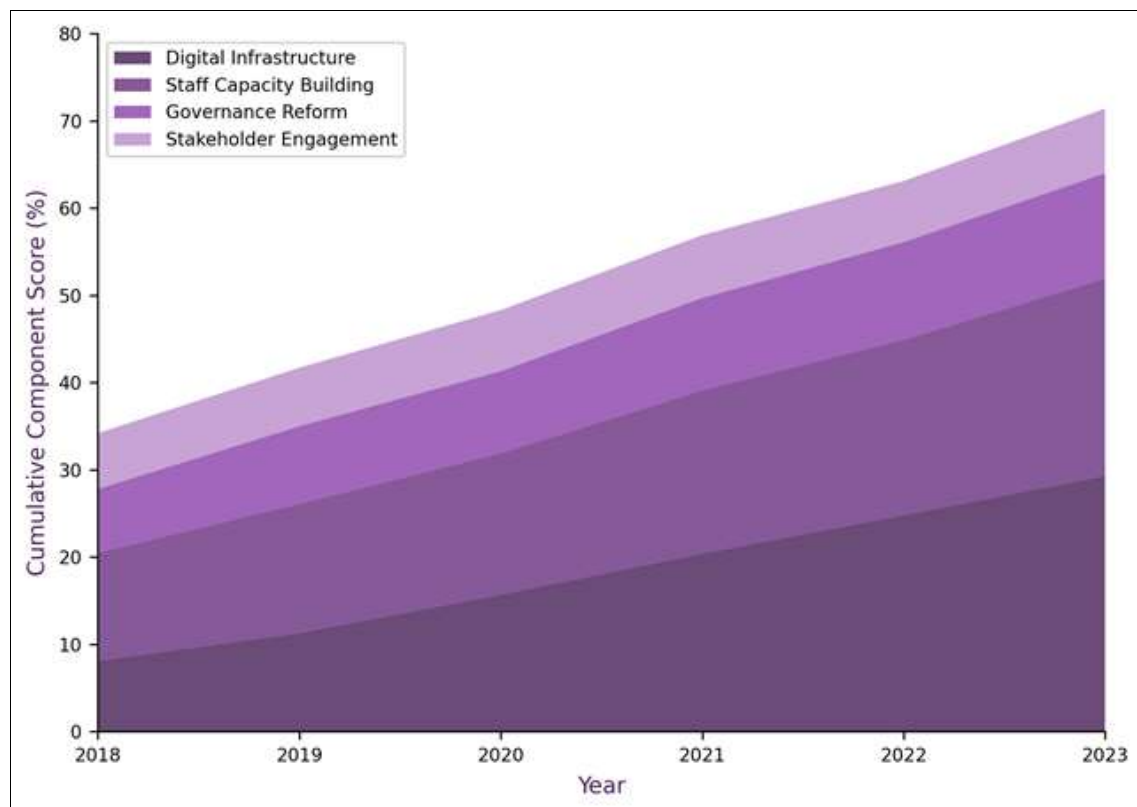


Fig 2: Component-level contribution to total modernization score for institutions with strategic plans (2018-2023)

Discussion

The 28.1-point gap between planned and unplanned institutions by 2023 is striking given the near-identical starting points. This aligns with Kotter's argument that strategic vision provides directional clarity needed to sustain change ^[5]. The acceleration after 2020 may reflect a common lag: plans take one to two years to become budgeted activities. The dominance of digital infrastructure in the component breakdown suggests technology adoption is the easiest lever to pull, while slower growth in governance and stakeholder engagement confirms that soft institutional changes are harder to plan for ^[8]. Extension managers should resist equating digitization with modernization and give equal planning weight to all four components.

Practical Applications

Three actionable recommendations emerge. First, institutions without a formal strategic plan should treat adoption as an immediate priority given the large performance gap. Second, plans should include explicit targets for governance reform and stakeholder engagement, not just digital infrastructure. Third, combining top-down strategic direction with bottom-up staff consultation during drafting appears to produce the most balanced modernization profiles.

Conclusion

Legacy extension institutions with formal strategic plans modernized at roughly four times the rate of those without over a six-year period. Digital infrastructure drove the largest gains, but governance and stakeholder engagement lagged. Strategic planning appears to be a practical driver of

institutional renewal rather than a bureaucratic formality. Future research should track whether these gains translate into measurable improvements in farmer outcomes and whether similar patterns hold outside the British Isles.

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