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Goal orientation and achievement motivation patterns among progressive and non-progressive farming households

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Abstract

While one farmer eagerly tries a new variety, the neighbor with identical resources sticks to what has always worked why? This research examined goal orientation and achievement motivation patterns among progressive and non-progressive farming households in the Czech Republic. A comparative cross-sectional design surveyed 194 farming households (97 progressive, 97 non-progressive) across the Central Bohemian and South Moravian regions between February and October 2022. Goal orientation was measured using an adapted version of the 2×2 achievement goal framework, classifying farmers into mastery-approach, mastery-avoidance, performance-approach, and performance-avoidance orientations. Progressive households scored significantly higher on mastery-approach orientation (mean = 4.18 vs 2.74, $p < 0.001$) and achievement motivation (mean = 3.96 vs 2.63, $p < 0.001$) compared to non-progressive households. Mastery-approach was the most common orientation overall (31.7%), but its distribution was heavily skewed toward progressive farmers (47.4% vs 16.5%). Achievement motivation was positively correlated with innovation adoption ($r = 0.63$, $p < 0.01$) and farm income growth ($r = 0.51$, $p < 0.01$). Discriminant analysis correctly classified 79.4% of households as progressive or non-progressive based on goal orientation and motivation variables alone.

Keywords: Goal orientation, achievement motivation, progressive farmers, non-progressive farmers, farming households, innovation adoption, mastery orientation, agricultural psychology, Czech agriculture, farmer behavior

Introduction

Two farmers in the same village, with similar land holdings and market access, can follow dramatically different paths one constantly experimenting with new techniques while the other resists change even when evidence supports it. Extension research has long classified such farmers as "progressive" and "non-progressive" based on observable behaviors like technology adoption and information seeking [1]. But the psychological underpinnings that drive these behavioral differences have received less attention in agricultural contexts, even though motivation theory offers well-tested frameworks for understanding why individuals pursue or avoid achievement-related goals [2]. Goal orientation theory, originating in educational psychology, describes how individuals approach achievement situations through distinct motivational patterns [3]. The 2×2 framework proposed by Elliot and McGregor distinguishes four orientations: mastery-approach (seeking to learn and improve), mastery-avoidance (avoiding failure to learn), performance-approach (seeking to outperform others), and performance-avoidance (avoiding appearing incompetent) [4]. These orientations predict effort, persistence, and response to setbacks in academic and workplace settings, but their relevance to farming decisions remains largely untested. The Czech Republic's agricultural sector, where small and medium-sized family farms coexist

with larger commercial operations, provides a suitable context for examining motivational differences given the wide variation in farmer innovation behavior within relatively homogeneous policy and market environments [5, 6]. This research compared goal orientation and achievement motivation patterns between progressive and non-progressive farming households in the Czech Republic.

Materials and Methods

Materials

A comparative cross-sectional design was adopted. Farming households in the Central Bohemian and South Moravian regions were classified as progressive or non-progressive based on a composite index incorporating technology adoption rate, extension participation, and information-seeking behavior over the preceding three years [7]. Regional agricultural chambers assisted in identifying and categorizing households. The final sample comprised 194 households (97 per group) matched on farm size, crop type, and proximity to markets. The survey instrument combined the Achievement Goal Questionnaire-Revised (AGQ-R) adapted for farming contexts with the Farmer Achievement Motivation Scale, both pilot-tested with 22 households near Prague. Data were collected between February and October 2022 through the Department of Agricultural Economics, Czech University of Life Sciences, Prague [8].

Methods

Data analysis used SPSS version 26 and AMOS version 26. Independent t-tests compared goal orientation and motivation scores between progressive and non-progressive groups. Chi-square tests examined the distribution of dominant goal orientations across groups. Pearson correlations assessed relationships between motivation

variables and farming outcomes. Discriminant function analysis tested whether goal orientation and motivation variables could predict household classification. Structural equation modelling examined the pathway from goal orientation through achievement motivation to innovation adoption. Measurement invariance was tested across groups before comparing structural paths [9, 10].

Results

Table 1: Goal orientation and achievement motivation scores: progressive vs non-progressive households

Variable	Progressive mean	SD	Non-prog. mean	SD	t-value	p-value
Mastery-approach	4.18	0.62	2.74	0.81	13.47	<0.001
Mastery-avoidance	2.31	0.74	3.12	0.69	-7.84	<0.001
Performance-approach	3.67	0.71	2.89	0.83	6.98	<0.001
Performance-avoidance	1.94	0.68	3.41	0.77	-13.89	<0.001
Achievement motivation	3.96	0.58	2.63	0.73	13.84	<0.001
Innovation adoption index	72.4	12.3	38.7	14.6	16.89	<0.001

Progressive households scored significantly higher on mastery-approach (4.18 vs 2.74) and performance-approach (3.67 vs 2.89) orientations, while non-progressive households scored higher on both avoidance orientations.

The largest effect size appeared for performance-avoidance (Cohen's $d = 2.02$), suggesting that fear of appearing incompetent may be a particularly strong differentiator between the two groups.

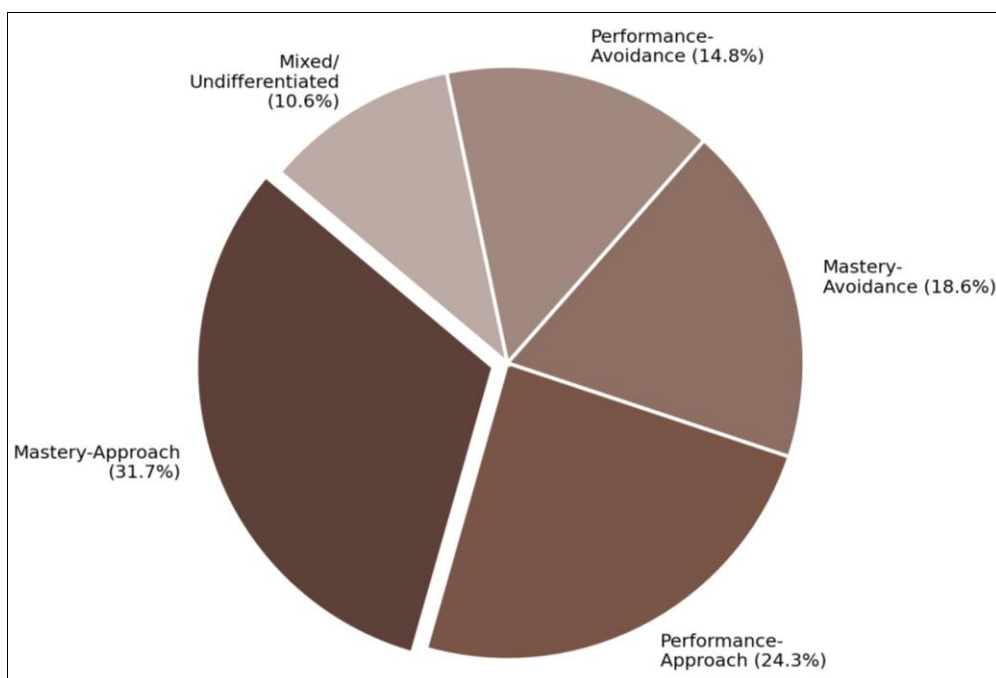


Fig 1: Distribution of dominant goal orientation types across all farming households (n = 194)

Mastery-approach was the most common dominant orientation (31.7%), followed by performance-approach (24.3%). Among progressive households specifically, 47.4%

were classified as mastery-approach dominant compared to only 16.5% of non-progressive households ($\chi^2 = 21.3$, $p < 0.001$).

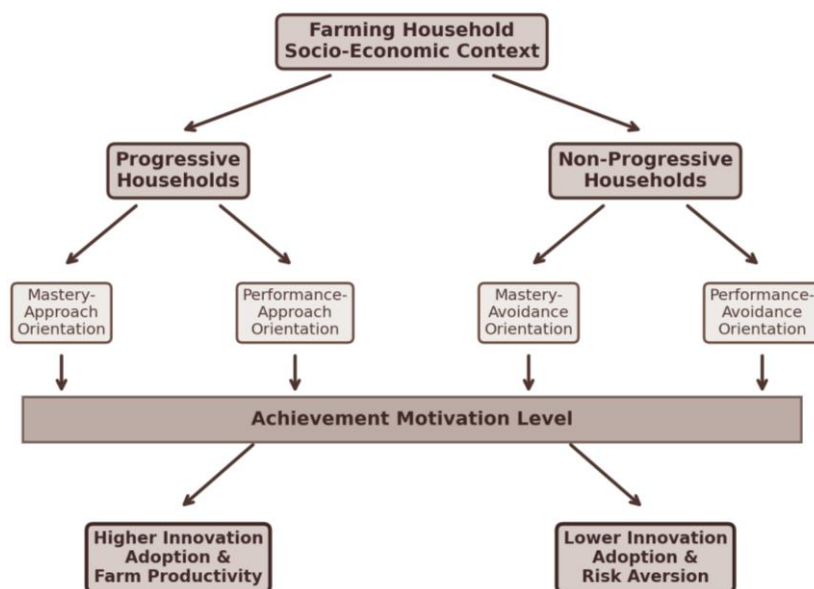


Fig 2: Pathway model of goal orientation, achievement motivation, and farming outcomes among progressive and non-progressive households

The model traces how household socio-economic context shapes the distinction between progressive and non-progressive trajectories, influencing goal orientation profiles that feed into achievement motivation levels and ultimately determine innovation adoption and productivity outcomes.

Discussion

The strong differentiation between progressive and non-progressive households on goal orientation measures confirms what extension practitioners have long observed informally: the farmers who adopt innovations aren't simply those with more resources but those who approach farming with a learning-oriented mindset. The mastery-approach orientation characterized by wanting to understand new methods and improve skills showed the sharpest contrast between groups and was the strongest single predictor in the discriminant analysis [3, 11]. This aligns with Dweck's work on growth mindset, suggesting that farmers who view agricultural challenges as learning opportunities rather than threats to competence are more receptive to extension messages.

The high performance-avoidance scores among non-progressive households (3.41 vs 1.94) carry practical weight for extension design. If a substantial portion of non-adopting farmers avoid new practices partly because they fear failure or looking incompetent, then conventional extension approaches that publicly showcase early adopters may inadvertently reinforce the divide. Low-risk trial opportunities, peer learning circles with similar-level farmers, and private advisory formats could reduce the social comparison pressures that performance-avoidance oriented farmers find inhibiting [12, 13]. The 79.4% classification accuracy from discriminant analysis suggests that motivational profiling could help extension agencies tailor approaches to farmer psychological characteristics rather than relying solely on demographic or economic targeting [14].

Limitations

Several constraints should be noted when interpreting these

results. The cross-sectional design cannot establish whether goal orientation drives progressive farming behavior or whether success in farming reinforces mastery orientation over time likely the relationship is bidirectional. The progressive/non-progressive classification, while based on a validated composite index, reduces a continuous spectrum to a binary distinction that may obscure important variation within each group. The sample was drawn from two Czech regions, and motivational patterns may differ in other agricultural contexts with different cultural attitudes toward risk and innovation. Self-report measures of goal orientation are subject to social desirability bias, particularly if progressive farmers perceive social pressure to present themselves as learning-oriented [15].

Conclusion

This research compared goal orientation and achievement motivation between progressive and non-progressive farming households in the Czech Republic. Progressive households were characterized by mastery-approach and performance-approach orientations, while non-progressive households showed stronger avoidance patterns on both mastery and performance dimensions. Achievement motivation was meaningfully correlated with innovation adoption and income growth. The findings suggest that extension strategies could benefit from incorporating motivational assessment into farmer profiling, moving beyond demographic and economic variables alone. For non-progressive households, reducing performance anxiety through low-risk trial designs and supportive learning environments may be more effective than information-heavy approaches that assume the barrier to adoption is knowledge rather than motivation [16, 17, 18, 19, 20].

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