

Farmers' Motivation for Learning and Developing New Skills

S. Windon¹, C. Henzi², C. Schmidt³

Abstract

This study utilized an online survey to examine the relationships between farmers' self-leadership skills, job motivation, and motivation for learning and developing new skills. A self-selected, chain-referral sampling strategy, a convenience sampling, was employed, resulting in 59 responses. The results show statistically significant positive associations among the variables. Farmers' motivation for learning and development was moderately associated with job motivation ($r = .34, p \leq .05$) and self-leadership ($r = .40, p \leq .05$). A stronger association was found between job motivation and self-leadership ($r = .59, p \leq .05$). These findings suggest that higher motivation is linked to stronger self-leadership competencies among farmers. Chi-square analysis indicated a significant association between motivation for learning and gender ($\chi^2 = 67.31, p \leq .05$), with no significant associations found for age, educational level, employment status, tenure in farming, farm size, land ownership, or number of agricultural commodities produced. The findings suggest that extension services should enhance farmers' motivation for continuous learning and skill development through targeted educational interventions. These insights should guide future research and practical initiatives, ensuring farmers have the necessary skills and support to succeed in an ever-changing agricultural environment.

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Introduction and Problem Statement

This paper contributes to the advancement of agricultural development by providing new insights into the factors influencing farmers' job motivation, self-leadership competencies, and motivation for learning and developing new skills, offering practical implications for improving agricultural practices and supporting sustainable development. Farmers' motivation and willingness to learn and develop new skills are crucial to adapting to global challenges that agriculture faces due to the COVID-19 pandemic, climate change, and a growing population (United Nations, n.d.). Implementing improved practices, technologies, and business management strategies enables farmers to increase their production yield and sustain economically viable agriculture (National Institute of Food and Agriculture, n.d.). Agricultural producers desire to be successful, increase their profit, remain competitive, and improve their quality of life (Bhatta et al., 2019; Franz et al., 2009). This desire leads farmers to participate in educational programming that spans diverse topics across different formats and lengths (Franz et al., 2010), mainly when these programs are need-focused (Westbrook et al., 2009). Silvert et al. (2022) wrote that agricultural extension enhances the livelihoods of rural individuals and communities by building capacity and connecting them to information, technologies, and marketing opportunities. Previous literature suggested that extension professionals and outreach educators increase farmers' participation and engagement in extension programs that help them learn and develop new skills and foster job motivation (Mills et al., 2018). Limited studies examined the relationship between farmers' self-leadership skills, job motivation, and motivation for learning and development. The present study hypothesized that an individual's self-leadership skills, job motivation, and motivation for learning and developing new skills are positively correlated.

Theoretical and Conceptual Framework

We propose an integrative framework combining leading theories to explore the relationships among self-leadership, job motivation, motivation for learning and development, and demographic variables. This approach views learning outcomes as indicators of goal-directed behavior. Motivation allows individuals to initiate actions (Hiriyappa, 2008 p. 1) or sustain behaviors in particular situations. Research indicates that farmers are highly motivated to learn and integrate new skills into their work (Bhatta et al., 2019; Franz et al., 2009).

Self-Leadership

Self-leadership involves influencing oneself to foster the self-motivation and self-direction required for effectiveness (Manz, 1986; Manz & Sims, 1991). It is a continuous process of self-discovery and behavioral regulation, utilizing strategies to boost self-efficacy, manage actions, and pursue meaningful goals (Manz & Neck, 2006). Bandura's (1991) self-regulation theory emphasizes self-observation, judgment, and reaction, aiding individuals in setting realistic goals and reinforcing positive behaviors. Self-determination theory (SDT) links motivation to personal growth and self-regulation (Deci & Ryan, 2012). Bryant and Kazan (2012) identify four pillars of

self-leadership: defining values, reflecting on motivation, planning, and building productive habits, which promote purposeful, goal-oriented behavior.

Job Motivation

Job motivation encompasses forces that drive work-related behavior, both intrinsic and extrinsic (Pinder, 2008). Herzberg's two-factor theory (Herzberg et al., 1959) distinguishes between factors causing satisfaction (e.g., achievement) and dissatisfaction (e.g., salary). According to Robinson et al. (2003), the most substantial sources of farmers' satisfaction are pride of ownership, making a satisfactory income, self-respect by doing a worthwhile job, meeting a challenge, enjoyment of work tasks, and ensuring a future income. Vroom's expectancy theory (1964) links motivation to the belief that effort leads to meaningful rewards. Alderfer's ERG theory (1969) categorizes needs into existence, relatedness, and growth, forming a continuum influencing satisfaction. These frameworks highlight how self-leadership competencies enhance intrinsic motivation, reduce reliance on external direction, and improve work performance (Manz, 2015; Stewart et al., 2019). McCombs (1991) mentions the relationship between the willingness to learn and motivation itself, stating that a motivated person is a lifelong learner, and a lifelong learner is a motivated person. Hence, farmers' motivation to learn is essential to acquiring new skills, enabling them to be competitive. Manz (1986) highlights that self-leadership involves managing tasks with low intrinsic motivation through self-imposed strategies and leveraging the inherent motivational value of tasks, suggesting a strong relationship between self-leadership and intrinsic motivation in fostering more engaged and effective behaviors in organizations.

Motivation for Learning and Development

Farmers' motivation to learn stems from intrinsic and extrinsic factors and values. Intrinsic motivators include personal satisfaction, curiosity, and self-fulfillment (Deci & Ryan, 1985). These factors and values are reflected in Bergevoet et al. (2004), where Dutch dairy farmers ranked higher in enjoying farm work, working with animals, and producing a good and safe product, rather than the goal of achieving maximum income. For farmers, intrinsic motivators and values might involve improving production outcomes or engaging with innovative practices (Mills et al., 2018). Lunneryd and Öholmér (2009) and Willock et al. (1999) sustain that Farmers' values affect their decision-making, shaping how farmers process and pay attention to information and forecast consequences, which all precede and successively direct their choices. Muri et al. (2020) and Hansen and Greve (2014) highlight that farmers are primarily intrinsically oriented and motivated; they emphasize the importance of individual characteristics and non-monetary benefits in improving farmers' wellbeing, valuing the nature of work, independence, and performance. Franz et al. (2009) reported that farmers from the United States Southeast region prefer the following learning formats: hands-on activities (99%), demonstrations (96%), and farm visits (94%), followed by field days, discussions, and one-on-one sessions. Farmers indicated that they do not prefer game-related activities, comics, role-playing, or radio. However, this perception might have changed given recent advances in game-based learning (Klit et al., 2018). Extrinsic motivators, such as financial rewards or job security, drive decisions to participate in learning programs with clear, practical benefits like profitability or efficiency gains (Franz et al., 2009; Ryan & Deci, 2020). Lunneryd and Öholmér (2009) state that values

related to high profitability positively affect how farmers collect and process information in their decision-making to engage in learning and innovation. Öhlmér (1998) found that the nature of farmers' values affects their problem detection and searching for options. The research underscores the importance of tailoring educational programs to address intrinsic and extrinsic motivations to meet farmers' immediate needs and long-term growth.

Adult Learning Theory

Andragogy, the study of adult learning, posits that adults learn best when the material is relevant, practical, and aligned with their motivations (Knowles, 1980; Knowles et al., 1998). Adults are self-directed learners who use personal experiences as resources and focus on problem-solving. In agricultural education, effective programs resonate with farmers' practical needs (Franz et al., 2010). High self-leadership skills further reduce the need for external motivation, emphasizing intrinsic rewards and self-management (Lovelace et al., 2007; Neck & Houghton, 2006).

Relationship Between Motivation and Demographics

Demographics significantly influence farmers' motivation to learn and adopt new skills. Knowledge and skills are critical for integrating new agricultural practices (Kanyi et al., 2017). Gender, age, education, and farm size shape motivation and participation in educational programs. For instance, Narine et al. (2019) found that age and technology literacy impact farmers' use of modern tools. Sarie et al. (2023) demonstrated a positive association between demographics and the adoption of innovative practices. Meece et al. (2009) indicated that gender influences motivation for professional development, with males generally more motivated in competitive settings, while females show stronger intrinsic motivation in collaborative environments. Recognizing these differences can improve the design and effectiveness of professional development opportunities in education. Understanding these factors is essential for designing effective outreach programs and fostering sustainable agricultural development.

Purpose

This descriptive-associational study assessed Pennsylvania farmers' self-leadership, job motivation, and motivation for learning and developing new skills. Moreover, this study determined the relationship between farmers' motivation for learning and developing new skills and farmers' demographics. The following three research objectives guided this study: (a) Describe farmers' self-leadership competencies, job motivation, and motivation for learning and developing new skills; (b) Describe the relationship between farmers' self-leadership competencies, job motivation, and motivation for learning and developing new skills, and (c) Describe the relationship between farmers' motivation for learning and development and selected demographic variables.

Methods

This study is an offshoot of a more comprehensive study (Winton & Robotham, 2021) approved by the Institutional Review Board. The study targeted self-identified Pennsylvania farmers, with a sample ($n = 59$) selected using a self-selected and chain-referral convenience sampling approach (Fricker, 2008). Data was collected via an open web page survey, with recruitment supported by agriculture-related organizations in Pennsylvania in 2020. Recruitment utilized the Penn State Extension website, an online magazine press release, a newspaper, Farm Bureau County websites, and the Penn State Extension Facebook page. After excluding incomplete responses, the final dataset included 59 out of 91 surveys. A panel of seven experts (including educators, administrators, academic faculty, and a graduate student) assessed the survey instrument for face and content validity. A pilot study conducted during a three-day agriculture-related event verified the scale's reliability. Nonresponse bias was evaluated by comparing early (first 25) and late (last 25) respondents based on submission time. A t-test showed no significant nonresponse bias (Lindner et al., 2001; Miller & Smith, 1983), confirming that the sample represents the study population (see Table 1). However, caution is advised as the sample was not randomly selected, limiting generalizability to all Pennsylvania farmers.

Instrumentation

The research instrument comprised three scales to measure self-leadership competencies, motivation for learning and developing new skills, and job motivation. The Self-Leadership Competencies Scale included 11 items measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with a Cronbach's alpha of .74. Example items were: "I easily prioritize tasks during my busy season on the farm." These scale items were adapted from Benge et al. (2011), Bruce and Anderson (2012), Conklin et al. (2002), and others. The Motivation for Learning and Developing New Skills Scale was adapted from Llinares-Insa et al. (2018). The scale consists of two items using a five-point Likert scale with a Cronbach's alpha of .70. Sample items included: "I like to learn new things about my work, even if it is about small details." Lastly, the Job Motivation Scale contained three items, measured on a five-point Likert scale, achieving a Cronbach's alpha of .82. Example items were: "I take pride in doing my job as well as I can." The scale is derived from Vithessonthi and Schwaninger (2008).

A five-point Likert-type scale was used to collect data for this study, following the guidelines outlined by Lindner and Lindner (2024). The true limits of the response categories were defined as follows: Strongly Agree = 5.00–4.51, Agree = 4.50–3.51, Neither Agree nor Disagree = 3.50–2.51, Disagree = 2.50–1.51, and Strongly Disagree = 1.50–1.00. The alpha level for statistical significance was set a priori at .05 (Lindner & Lindner, 2024).

We treated independent and dependent variables as interval data. Spearman association analysis examined relationships between variables, while chi-squared analysis explored the link between farmers' motivation for learning and their demographics. The questionnaire included eight demographic variables represented in Table 1.

Table 1
Descriptive Statistics of Farmers' Demographics

Items	<i>n</i>	Frequency	Percent
Gender	54		100.0
Male		38	70.4
Female		14	25.9
I prefer not to say		2	3.7
Age	55		100.0
Under 25		6	10.9
25-34		13	23.6
35-44		7	12.7
45-54		8	14.5
55-59		4	7.3
60+		17	30.9
Education level	53		100.0
High school		13	24.5
Associate's or Technical Certificate		13	24.5
Bachelor's		21	39.6
Graduate degree		6	11.3
Tenure in farming	55	100	100.0
<5 years		12	21.8
5-9 Years		10	18.2
10-14 Years		8	14.5
15-19 Years		3	5.5
20-24 Years		4	7.3
25+		18	32.7
Employment status	52		100.0
Full-time farm		20	38.5
Part-time farm/Seasonal work		9	17.3
Work off farm full-time.		16	30.8
Work off-farm part-time		6	11.5
Work off-farm seasonal		1	1.9
Farm size	53		100.0
Under 5 Acres		3	5.7
6-10 Acres		6	11.3
11-40 Acres		8	15.1
41-60 Acres		3	5.7
61-80 Acres		3	5.7
81-150 Acres		7	13.2
151-250 Acres		8	15.1
251-400 Acres		5	9.4
Over 400 Acres		10	18.9
Number of Ag commodities	52		100.0
One		9	17.3
Two		14	26.9
Three		7	13.5
Four or more		22	42.3
Ownership of land	53		100.0
Owned land		44	83.0
Rented land		9	17.0

Findings

The first objective of this study was to assess farmers' self-leadership competencies, job motivation, and motivation to learn and develop new skills. The overall mean score for self-leadership competencies was 3.93 ($SD = .49$, $n = 61$), as shown in Table 2. This score falls within the *Agree* range, indicating that farmers moderately agreed on the importance of self-leadership skills and demonstrated a reasonable level of proficiency. The relatively low standard deviation suggests moderate consistency in responses, meaning that most participants shared similar perceptions of their self-leadership abilities. Specifically, participants indicated greater needs in areas such as balancing work and personal life during peak farming seasons, managing stress, making timely decisions, and prioritizing tasks effectively. On the other hand, farmers reported higher proficiency in applying their personal values at work, working independently, maintaining self-confidence, and achieving business goals.

Table 2
Farmers' Self-Leadership Competencies

Items	Strongly disagree, (%)	Disagree, (%)	Neither agreed or disagree, (%)	Agree, (%)	Strongly agree, (%)	<i>M</i>	<i>SD</i>
I can balance my professional and personal life.	3(5.0)	14(23.3)	15(25.0)	25(41.7)	3(5.0)	3.18	1.02
I can manage my stress effectively.	1(1.7)	10(16.9)	17(28.8)	28(47.5)	3(5.0)	3.39	.89
I can make decisions quickly.	0(0)	8(13.6)	14(23.7)	24(40.7)	13(22.0)	3.71	.98
I can prioritize tasks.	1(1.7)	2(3.4)	14(23.7)	32(54.2)	10(16.9)	3.82	.82
I can achieve my work-related goals.	0(0)	0(0)	12(20.3)	35(59.3)	12(20.4)	4.02	.64
I feel self-confident.	1(1.7)	3(5.0)	3(5.0)	30(50.0)	23(38.3)	4.17	.87
I do my work independently.	0(0)	1(1.7)	1(1.7)	19(32.2)	38(64.4)	4.59	.62
I apply a set of values in the workplace.	0(0)	0(0)	3(5.0)	18(30.0)	39(65.0)	4.60	.589

Note. The farmers' self-leadership scale was measured using a 5-point Likert scale: Strongly Agree = 5-4.51, Agree = 4.5 -3.51, Neither Agree nor Disagree = 3.5-2.51, Disagree = 2.5-1.51, Strongly Disagree = 1.5-1.

The overall mean score for farmers' job motivation was 4.72 ($SD = .42$, $n = 59$), as presented in Table 3. This score falls within the *Strongly Agree* range, indicating that farmers expressed high job motivation. The higher score suggests that, on average, farmers felt highly motivated in

their work, with many reporting a sense of personal satisfaction, pride in their roles, and a proactive approach to improving their job performance. The relatively low standard deviation of .42 further reinforces this interpretation, as it indicates that the responses were closely clustered around the mean, reflecting a strong consensus and consistency in job motivation among the participants. Overall, these findings suggest that job motivation is uniformly high across the group of surveyed farmers.

Table 3
Farmers' Job Motivation

Items	Strongly disagree (%)	Disagree (%)	Neither agreed or disagree (%)	Agree (%)	Strongly agree (%)	<i>M</i>	<i>SD</i>
I think of ways of doing my job effectively.	0(0)	0(0)	2(3.4)	20(33.9)	37(62.7)	4.59	.56
I take pride in doing my job as well as I can.	0(0)	0(0)	1(1.7)	11(18.6)	47(79.7)	4.78	.46
I feel a sense of personal satisfaction when I do my job well.	0(0)	0(0)	1(1.7)	11(18.6)	47(79.7)	4.78	.46

Note. The farmers' job motivation scale was measured using a 5-point Likert scale: Strongly Agree = 5-4.51, Agree = 4.5 -3.51, Neither Agree nor Disagree = 3.5-2.51, Disagree = 2.5-1.51, Strongly Disagree = 1.5-1.

The overall mean score was 4.33 ($SD = 0.54$, $n = 59$), as shown in Table 4. This score falls within the *Agree* range, indicating that farmers expressed a high level of motivation to learn and develop new skills. The standard deviation suggests a moderate level of variability in responses, implying that while most participants were motivated, some variation in perceived motivation levels existed within the group.

Table 4
Farmers' Motivation for Learning and Developing New Skills

Items	Strongly disagree (%)	Disagree (%)	Neither agreed or disagree (%)	Agree (%)	Strongly agree (%)	<i>M</i>	<i>SD</i>
I view changes as an opportunity to learn and not as a difficulty.	0(0)	1(1.7)	10(16.9)	30(50.8)	18(30.5)	4.19	.54
I like to learn new things about my work, even if it is about minor details.	0(0)	0(0)	1(1.7)	24(40.7)	34(57.6)	4.56	.53

Note. The farmers' motivation for learning and development scale was measured using a 5-point Likert scale: Strongly Agree = 5-4.51, Agree = 4.5 -3.51, Neither Agree nor Disagree = 3.5-2.51, Disagree = 2.5-1.51, Strongly Disagree = 1.5-1.

The second research objective was to describe the relationship between farmers' self-leadership, job motivation, and motivation for learning and developing new skills. Table 5 presents Spearman's correlation among farmers' motivation for learning and development, job motivation, and self-leadership. The results indicate a statistically significant positive association between the variables. Specifically, there is a moderate positive association between farmers' motivation for learning and development and job motivation ($r = .34, p \leq .05$), suggesting that farmers motivated to develop new skills are also more likely to exhibit high job motivation. Additionally, a moderate to strong positive association was found between farmers' motivation for learning and development and self-leadership ($r = .40, p \leq .05$), as well as between farmers' job motivation and self-leadership ($r = .59, p \leq .05$). These findings suggest that farmers with higher motivation for learning and development and those with higher job motivation tend also to exhibit stronger self-leadership competencies.

Table 5
Spearman's Intercorrelation among Farmers' Motivation for Learning and Development, Job Motivation, and Self-leadership.

Items	Farmers' motivation for learning and development	Farmers' job motivation	Farmers self-leadership
Farmers' motivation for learning and development.	1		
Farmers' job motivation.	.339*	1	
Farmers' self-leadership.	.403*	.592*	1

Note. *Statistical significance was determined using an alpha level of .05

The third research objective aimed to assess the association between farmers' motivation for learning and development and various demographic variables. A chi-square analysis was conducted to examine these associations, with statistical significance set at $p \leq .05$. The study revealed that gender was the only demographic variable significantly associated with farmers' motivation for learning and development ($\chi^2 = 67.311$, $df = 42$, $p = .0108$). In contrast, no significant associations were found between farmers' motivation for learning and development and other demographic factors such as age, educational level, employment status, tenure in farming, farm size, land ownership, and the number of agricultural commodities produced. For these variables, p-values were greater than .05, indicating no significant relationships with motivation for learning and development.

Table 6

Chi-square Analysis on Association between Overall Farmers' Motivation for Learning and Development and Selected Demographic Variables.

Demographic factors	Valid cases	χ^2	df	p
Gender	54	67.31	42	.01
Age	55	101.29	105	.58
Educational level	53	65.24	60	.30
Employment status	52	81.67	80	.43
Tenure in farming	55	123.99	105	.10
Farm size	53	153.23	160	.64
Land ownership	53	15.13	20	.78
Number of agricultural commodities farmers produce	53	61.07	60	.44

Conclusions, Discussion, and Recommendations

This study explores the relationship between farmers' motivation for learning and developing new skills, self-leadership competencies, and job motivation within Pennsylvania. This study's findings align with existing literature, showing that autonomy and intrinsic motivation are deeply interconnected, supporting the self-determination theory (Deci & Ryan, 2012) and the theoretical alignment with adult learning theory (Knowles et al., 1998), where purposeful, self-directed individuals are most likely to sustain lifelong learning behaviors.

In this study, farmers demonstrate strong self-leadership skills such as goal setting, self-confidence, adherence to values, and independent work, supported by the literature (Bryant & Kazan, 2012; Hansen & Greve, 2014; Muri et al., 2020; Neck & Manz, 2012). However, challenges persist in balancing personal and professional life during peak seasons, particularly in stress management, decision-making, and task prioritization; this points to potential risks of burnout and other mental health issues during peak farming seasons. Leadership educators and human resources practitioners should incorporate modular training based on stress management, work-life balance, decision-making, and prioritization strategies (e.g., mindfulness-based farming practices, digital time management tools) into Extension programs

curricula to address these needs. As Bryant and Kazan (2012) suggest in their four pillars of the self-leadership model, incorporating values, reflection, planning, and habits promotes purposeful, goal-oriented behavior. Practitioners should incorporate peer-led reflection tools in programming that might promote farmers' goal setting and alignment with core values, as well as peer mentoring strategies where seasoned farmers reflect on real-life prioritization and decision-making approaches to model adaptive leadership for less experienced peers. By enhancing self-leadership skills, farmers can improve personal and professional outcomes through greater self-efficacy (Neck & Manz, 2012). The study confirms high job motivation among farmers, who take pride in their work and seek effectiveness in their roles. High job motivation suggests identity-based occupational commitment, where farmers derive intrinsic satisfaction beyond financial gain (Bergevoet et al., 2004; Hansen & Greve, 2014; Muri et al., 2020).

These findings support Muri et al.'s (2020) study, which identified a positive association between farmers' job satisfaction and motivation. Farmers in Pennsylvania are also strongly motivated to learn and develop new skills, perceiving change as an opportunity for growth. Strong motivation to learn reflects active engagement in professional development, aligning with adult learning theories that emphasize self-direction and intrinsic interest (Knowles, 1980; Knowles et al., 1998). These findings align with McCombs' (1991) assertion that motivated individuals are lifelong learners. Furthermore, the study found a positive relationship between farmers' motivation to develop new skills and self-leadership competencies, supporting Bryant and Kazan's (2012) four-pillars self-leadership model. According to Manz (1986), effective self-leadership enables individuals to manage both inherently motivating and less appealing tasks, fostering overall productivity.

In this study, gender was the only demographic variable significantly associated with motivation for learning and development. The positive association between farmers' motivation for learning and development, job motivation, and self-leadership further suggests that these aspects of motivation are interconnected. These findings highlight the importance of gender in shaping farmers' motivations for skill development while underscoring the broader role that motivation and self-leadership play in driving farmer success. Furthermore, the lack of associations with demographics, except gender, might suggest that motivation is shaped more by psychosocial roles and responsibilities than by structural or economic factors, supporting the findings of Meece et al. (2009). Thus, incorporating qualitative follow-up studies would help to understand the nature of gender differences in motivation for learning and development.

This study is subject to certain limitations. An open survey link utilizing an anonymous response format restricts the ability of researchers to track participants and engage in a more detailed discussion of the included variables. Moreover, it is challenging to confirm that all respondents were exclusively farmers. Another limitation is that the results cannot be generalized to the entire population of farmers in Pennsylvania or beyond; they merely represent the participants in this study. Additionally, this study found a disproportionate gender distribution of farmers, which may impact the study outcomes and interpretation. Gender was the only significant association between farmers' motivation for learning and development and demographics. This

finding must be interpreted cautiously, but it opens the possibility of reflecting on cultural roles, access issues, or time availability. Despite these limitations, this research underscores the significant association among farmers' self-leadership, job motivation, and motivation for learning and developing new skills.

Future studies should explore how demand-driven innovation adoption in agriculture impacts farmers' motivation and learning behaviors. Extension educators should incorporate motivational analysis as a common practice in design extension programming. Need-based, learner-centered approaches guided by Knowles' (1980) adult learning theory can be reinforced by pre-program diagnostic tools to understand farmers' dominant motivational drivers, whether intrinsic (e.g., innovation) or extrinsic (e.g., profitability).

Silvert et al. (2022) highlighted the importance of addressing gender norms to expand women's access to social capital and learning opportunities. Given the strong gender link, future research should prioritize participatory and intersectional studies to design responsive strategies for different farmer subgroups. Data-driven decisions can improve gender equity and increase program uptake.

Extension programs should strengthen curricula by incorporating self-leadership concepts and theories into leadership development training to fill a theoretical and practical gap. Incorporating behavioral self-regulation models, such as Bandura's self-regulation (1991) and Bryant and Kazan's four-pillar model (2012), into extension programming would boost farmers' motivation and skill acquisition but also empower farmers to pursue change proactively. Franz et al. (2009) emphasize that farmers prefer hands-on activities, demonstrations, farm visits, field days, and discussions. Although game-based learning was historically underutilized, recent advancements (Klit et al., 2018) suggest potential for broader acceptance. Gender also influences motivation for learning and developing new skills. Meece et al. (2009) note that historically, gender norms restricted women's educational and professional opportunities, though significant progress has been made in recent decades. Extension programs should continue offering targeted support to foster farmers' learning and professional growth, ensuring their resilience and success in an evolving agricultural landscape.

Summarizing, enhancing agricultural practices, and boosting motivation among farmers requires a comprehensive approach that considers both personal and professional aspects of farming. The findings from this study suggest that strategies should prioritize comprehensive skill development programs aimed at improving job satisfaction, fostering self-leadership, and addressing the specific challenges farmers face, particularly around work-life balance and stress management. Incorporating gender-sensitive strategies and encouraging a culture of proactive learning can help farmers improve their motivation and productivity and ultimately contribute to more sustainable farming practices. These insights should guide future research and practical initiatives, ensuring farmers have the necessary skills and support to succeed in an ever-changing agricultural environment.

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