

HUMAN RESOURCE DYNAMICS IN AGRICULTURAL EXTENSION: THE ROLE OF LEARNING MOTIVATION, ROLE CONFLICT, AND TIME MANAGEMENT IN ENHANCING PERFORMANCE

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Abstract

This study investigates the influence of learning motivation and role conflict on the job performance of agricultural extension workers, with time management examined both as an independent predictor and as a moderating variable. The research was conducted in Cirebon Regency, West Java, a region with a significant number of active extension personnel. Using a quantitative approach, data were collected from 144 respondents through a structured questionnaire. Respondents were identified using a snowball sampling technique to access individuals within a decentralized extension system where no comprehensive list exists. The analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings reveal that learning motivation and time management each have a positive and significant effect on job performance, while role conflict has a negative and significant effect. However, the moderating effects of time management on both the relationship between role conflict and job performance, and between learning motivation and job performance were not statistically significant. These results underscore the importance of psychological and behavioral factors in shaping public sector performance, particularly in complex and multi-role work environments. The study contributes to human resource development literature in agricultural services and offers practical recommendations for improving performance through motivation-building strategies, time management training, and organizational role clarification.

Keywords: Learning Motivation; Role Conflict; Time Management; Agricultural Extension Workers; Performance

INTRODUCTION

Agricultural extension plays a pivotal role in promoting sustainable rural development, enhancing food security, and improving the welfare of farming communities. As the primary conduit between agricultural research and field implementation, extension workers serve as agents of change by facilitating knowledge transfer, disseminating innovation, and guiding the adoption of relevant technologies (Ahmed et al., 2023). The effectiveness of extension services is largely determined by the individual performance of these personnel, which is influenced not only by institutional structures but also by internal psychological and behavioral dynamics (Cerasoli et al., 2014; Kundu et al., 2020).

In increasingly complex and dynamic agricultural systems, learning motivation has emerged as a critical determinant of extension worker performance. Learning motivation refers to the intrinsic or extrinsic drive that encourages individuals to acquire, apply, and update their knowledge and skills. In knowledge-intensive and service-oriented professions, particularly in the public sector, high levels of learning motivation are essential for ensuring professional relevance and adaptability amidst rapidly evolving technological, climatic, and policy challenges (Di Domenico et al., 2017). Within the context of agricultural extension, this motivational factor supports lifelong learning, field-level innovation, and responsiveness to farmer needs (Cerasoli et al., 2014; Y. Zhang et al., 2024).

However, structural and organizational pressures often give rise to role conflict, which can significantly hinder job performance. Role conflict occurs when individuals are subjected to incompatible expectations from multiple stakeholders or tasks that exceed the limits of time and capacity, leading to cognitive dissonance, job stress, and ultimately, reduced work quality (Wang et al., 2024). In Indonesia's decentralized extension system, extension workers are required to assume multiple responsibilities simultaneously as technical facilitators, educators, administrators, and policy implementers often without sufficient support. This multitasking burden creates fertile ground for role ambiguity and conflicting demands (Bachtiar et al., 2024).

Although both learning motivation and role conflict have been extensively studied as antecedents of job performance, few studies have integrated these two psychological constructs within a unified analytical framework, particularly in the context of public agricultural services. Furthermore, the moderating effect of time management a behavioral competency has been largely overlooked in existing empirical research. Time management enables individuals to plan effectively, set priorities, and allocate their time resources efficiently. Prior studies have shown that effective time management can enhance productivity, reduce stress, and support a better work-life balance (Claessens et al., 2007). However, the potential of time management to either buffer or amplify the effects of learning motivation and role conflict on the performance of extension workers remains underexplored, particularly in field-based public service environments where workload intensity and unpredictability are common.

The central problem, therefore, lies in the absence of comprehensive empirical understanding regarding how internal psychological factors such as learning motivation and role conflict interact with behavioral strategies like time management to influence extension worker performance. This literature gap can be identified in three specific areas: the lack of integrated models that address motivation and role stressors in public agricultural services; limited application of behavioral moderation frameworks in agricultural human resource management; and underrepresentation of empirical evidence from rural Southeast Asian contexts, especially Indonesia.

In response to these gaps, this study aims to examine the influence of learning motivation and role conflict on the performance of agricultural extension workers, with a particular focus on the moderating role of time management. Drawing from theories of work motivation (Di Domenico et al., 2017), role stress (Levinson et al., 1965), and behavioral management (Claessens et al., 2007), this research proposes a holistic framework to understand the determinants of performance in public agricultural extension services. The findings of this study are expected to contribute to the academic discourse on human resource development in the agricultural public sector while offering practical recommendations for policymakers and practitioners to design more adaptive and responsive extension systems.

LITERATURE REVIEW AND HYPOTHESIS FORMULATION

1. Agricultural Extension and Human Resource Performance

Agricultural extension plays a vital role in disseminating innovations, enhancing farmers' knowledge, and supporting rural development. The effectiveness of extension programs largely hinges on the performance of agricultural extension officers (AEOs), who function as change agents between scientific research and farming communities. In recent years, human resource dynamics in this sector have gained increased scholarly attention, particularly in relation to the changing demands of rural populations, digital transformation, and sustainability challenges (Y. A. Dewi et al., 2024). The performance of extension workers is not only determined by technical skills but also by internal psychological factors, organizational dynamics, and time-related pressures.

2. Learning Motivation and Performance

Learning motivation refers to the internal drive that compels individuals to acquire and apply new knowledge and skills. In the context of agricultural extension, learning motivation is crucial due

to the continuous emergence of new agricultural technologies, climate-smart farming practices, and government regulations. Motivated extension workers are more likely to seek knowledge, engage in professional development, and apply learned competencies in field activities (Sugino et al., 2023).

Self-Determination Theory (SDT) postulates that individuals who are intrinsically motivated are more likely to experience competence, autonomy, and relatedness, leading to enhanced performance (Di Domenico et al., 2017). Extension workers with high learning motivation exhibit proactive behavior in updating their knowledge base, improving communication with farmers, and designing context-specific interventions.

Empirical studies affirm the positive relationship between learning motivation and employee performance across public sector settings (X. Zhang & Fan, 2024). Specifically, in the agricultural domain, motivated extension agents are more responsive to innovation and better equipped to solve field-level problems.

H1: Learning motivation has a positive and significant effect on the performance of agricultural extension workers.

3. Role Conflict and Performance

Role conflict occurs when individuals face incompatible expectations related to their job functions. In the case of agricultural extension workers, role conflict may stem from dual roles (technical support vs. administrative duties), stakeholder pressure (government vs. farmer needs), or organizational ambiguity (unclear KPIs or reporting lines). According to Role Theory (Levinson et al., 1965), such conflict generates stress, reduces job satisfaction, and hinders performance.

Recent studies confirm that role conflict negatively affects individual effectiveness in knowledge-intensive occupations, especially in the public sector where bureaucratic rigidity and overlapping tasks are common (Fathulla Ahmad, 2022; Wu et al., 2019). Agricultural extension workers who experience high role conflict may become demotivated, misallocate effort, or disengage from community-based initiatives.

Furthermore, Role Stress Theory suggests that role conflict diminishes cognitive and emotional resources needed for task completion, thereby lowering overall performance (Coetzer et al., 2009). In decentralized rural systems where expectations are multidimensional and sometimes contradictory, managing role clarity becomes essential.

H2: Role conflict has a negative and significant effect on the performance of agricultural extension workers.

4. Time Management and Performance

Time management is defined as the ability to plan, prioritize, and allocate time effectively for goal achievement. Agricultural extension is a time-sensitive profession, involving farm visits, workshops, data collection, and administrative reporting. Effective time management helps extension officers optimize their schedules, reduce job strain, and enhance service delivery to farmers (Arslan Haider & Xavier Rita, 2021).

Time Management Theory (Aeon et al., 2021) underscores that perceived control over time enhances job satisfaction, reduces stress, and improves performance. In field-based work, where unpredictability is common, the ability to allocate time judiciously becomes a competitive advantage. Recent empirical studies show that time management is positively associated with work efficiency, especially among knowledge workers and field-based personnel (D. O. Dewi & Ariani, 2023).

Moreover, time management contributes to self-regulation, goal clarity, and prioritization—factors critical for the multifaceted role of extension agents. Those who manage their time well are better positioned to balance farmer consultations, administrative work, and continuous learning.

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H4: Time management negatively and significantly moderates the relationship between role conflict and the performance of agricultural extension workers.

H5: Time management positively and significantly moderates the relationship between learning motivation and the performance of agricultural extension workers.

5. Integrated Model and Theoretical Contributions

This study integrates multiple theoretical frameworks to examine the interplay between individual factors—namely learning motivation and time management and contextual factors such as role conflict in predicting the performance of agricultural extension workers. Drawing on Self-Determination Theory, Role Theory, and Time Management Theory, this research positions job performance as a multidimensional outcome influenced by both psychological resources and occupational stressors. These theoretical lenses provide a comprehensive basis for understanding how internal motivation, time regulation, and conflicting expectations affect employees in complex service delivery systems such as agricultural extension.

In doing so, the study addresses several research gaps. While many existing studies have explored the effectiveness of agricultural extension services from institutional or technical perspectives, limited research has emphasized the psychological and behavioral dimensions of extension workers, particularly in developing country contexts. Furthermore, most prior research has tended to analyze motivational, conflict-based, and time-related variables in isolation. This study, however, brings together these elements into a unified conceptual framework, allowing for a more integrated analysis of human resource dynamics in the public agricultural sector.

A key contribution of this study lies in its investigation of time management not only as an independent variable that directly affects performance, but also as a moderating variable. Specifically, the model tests whether time management moderates the negative effect of role conflict on performance, as well as whether it enhances the positive effect of learning motivation on performance. By doing so, the research offers a nuanced understanding of how time-related competencies can amplify or mitigate the impact of psychological and contextual factors. The conceptual framework of this study highlighting the influence of learning motivation and role conflict on the performance of agricultural extension workers, with time management functioning both independently and as a moderating variable is illustrated in Figure 1.

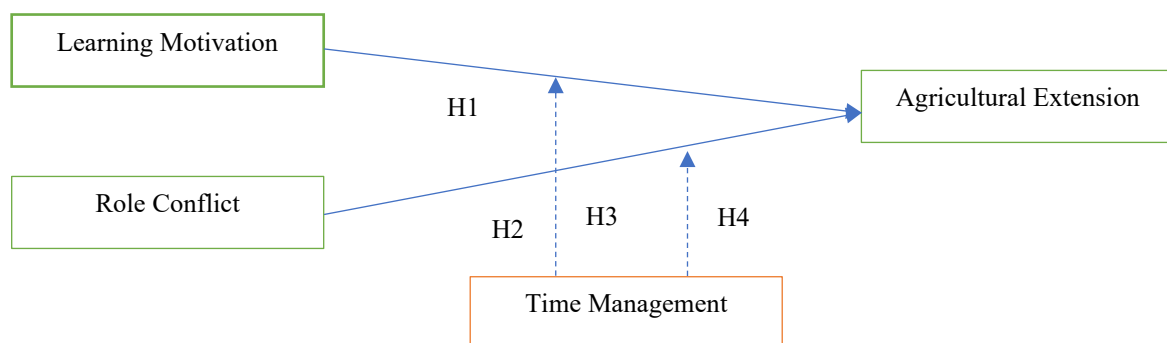


Figure 1. Conceptual framework

RESEARCH METHODS

This study employs a quantitative method to examine the influence of learning motivation and role conflict on the performance of agricultural extension workers, with time management as a moderating variable. The research was conducted in West Java, specifically in the administrative area of the Department of Agriculture of Cirebon Regency. This location was selected due to its significant agricultural base, large number of active extension workers, and the diverse challenges they face in balancing technical and administrative responsibilities.

Population and Sample

The population of this study consists of 228 active agricultural extension workers employed by the Department of Agriculture in Cirebon Regency, West Java Province. This population includes Civil Servants (PNS), Government Employees with Work Agreements (P3K), and Freelance Daily Workers (THL). Referring to the sample size table by (Krejcie & Morgan, 1970), a population of 228 would require a minimum sample of 144 respondents to statistically represent the population at a 95% confidence level with a 5% margin of error.

Although this figure was used as a reference for representativeness, the sampling technique applied in this study was snowball sampling or chain-referral sampling. This technique was selected due to limited access to a complete administrative list of active extension workers and the decentralized, field-based nature of their work. The sampling began with a number of known active respondents who were then asked to refer their colleagues who were also eligible to participate. The referral process continued iteratively until the required sample size was achieved.

Snowball sampling is considered effective for reaching hidden or hard-to-access populations, such as field officers in decentralized systems (Biernacki & Waldorf, 1981; Noy, 2008). Therefore, this approach enabled the researcher to collect data from a more diverse and operationally relevant group, including those who may not be formally recorded in institutional databases.

Data Collection Procedures

Data were collected using a structured questionnaire distributed directly to the selected respondents through field visits and coordination with local agricultural offices. The questionnaire was administered over a two-week period in March 2025. Prior to the main data collection, a pilot test involving 30 respondents was conducted to ensure the validity and reliability of the instrument. Participation was voluntary, and confidentiality was assured.

Measurement of Variables

All variables in this study were measured using validated instruments from previous research, with responses recorded on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Learning motivation was measured using 25 items adapted from the Motivated Strategies for Learning Questionnaire (MSLQ) developed by (Duncan & McKeachie, 2005), covering aspects such as intrinsic and extrinsic goal orientation, task value, control of learning beliefs, and self-efficacy. Role conflict was assessed through eight items adapted from (House & Rizzo, 1972), which evaluate conflict arising from incompatible expectations, unclear directives, or overload in job responsibilities.

Job performance was measured with four items adapted from the performance indicators for agricultural extension workers as outlined in Permentan No. 91/2013 and operationalized by (Maksum & Suriaatmaja, 2020). These include planning of extension programs, dissemination of agricultural innovations, group facilitation, and evaluation-reporting tasks. Meanwhile, time management was measured using 19 items adapted from (Alay & Koçak, 2002), encompassing time planning, time attitudes, and counterproductive time behaviors (some items were reverse-coded). Each scale used in this study had been previously validated and demonstrated good internal consistency in similar research contexts.

Data Analysis Technique

Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) through SmartPLS version 4.0. This technique was chosen for its ability to handle complex models and measure latent constructs with smaller sample sizes. The analysis process involved evaluating both

the measurement model (indicator validity, composite reliability, and AVE) and the structural model (path coefficients, R-squared, and effect sizes). Moderating effects were examined through interaction terms, and significance was tested using bootstrapping with 5,000 subsamples.

This methodological framework ensures that the findings offer robust and generalizable insights into the psychological and behavioral factors that influence the performance of agricultural extension workers in West Java, with practical implications for strengthening human resources in public agricultural institutions.

RESULTS AND DISCUSSION

Results

Respondent Demographic Profile

This study involved agricultural extension workers under the authority of the Department of Agriculture in Cirebon Regency, West Java. The operational areas represent key agricultural zones in the eastern part of the province. A total of 144 respondents were selected proportionally from the official list of active field extension personnel, ensuring fair representation across employment types. The demographic characteristics of respondents were analyzed based on four variables: gender, age group, educational background, and length of service.

The results indicate that a significant proportion of the respondents were male (75%), confirming the male-dominated profile of agricultural extension workers in rural West Java. This trend may be attributed to institutional recruitment patterns, the physical nature of fieldwork, and traditional gender roles within the agricultural sector. Nevertheless, the 25% female representation suggests an ongoing diversification in agricultural public service roles, indicating greater inclusion of women in professional extension activities.

Table 1. Gender, Age, Length of Service, and Educational Background of Respondents

Variable	Category	Frequency	Percentage
Gender	Male	108	75.0%
	Female	36	25.0%
Age	26–35 years	8	5.6%
	36–45 years	82	56.9%
	>45 years	54	37.5%
Length of Service	0–5 years	5	3.5%
	6–10 years	23	16.0%
	11–15 years	69	47.9%
	>15 years	47	32.6%
Education	SMA/SLTA	57	39.6%
	Diploma III	17	11.8%
	S1 (Bachelor)	66	45.8%
	S2 (Master)	4	2.8%

The age distribution shows that the majority of respondents (56.9%) were in the 36–45 year age group, with 37.5% aged over 45 years, indicating that most extension workers are in their mid-to-late career stages. This reflects a mature and experienced workforce, potentially with deep familiarity with local agricultural challenges.

Data Analysis

This study employed Partial Least Squares Structural Equation Modeling (PLS-SEM) using SmartPLS version 4.0. PLS-SEM is considered a suitable technique for studies with a predictive objective, relatively small sample sizes, formative constructs, and data that may not follow a normal distribution (Hair et al., 2022).

1. Validity Test

The validity test aims to determine how accurately the research instrument measures the intended constructs (Hair et al., 2022). In SmartPLS, construct validity is assessed using two approaches: convergent validity and discriminant validity.

a. Convergent Validity

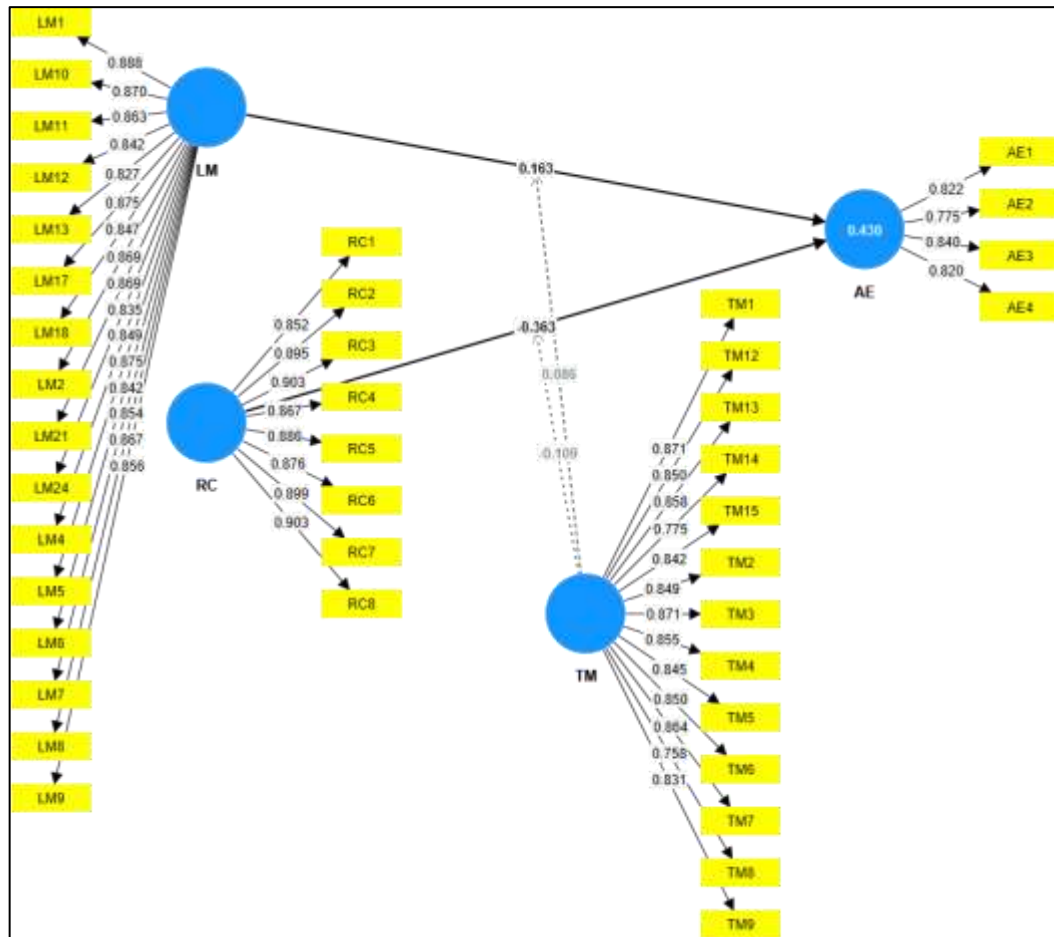


Figure 2. Convergent Validity

Validitas konvergen dievaluasi dengan meninjau nilai *outer loading* dari setiap indikator terhadap konstruk laten yang diukurnya. Mengacu pada kriteria dari (Latan et al., 2023), an indicator is considered to have acceptable convergent validity if its outer loading is ≥ 0.70 .

Table 2. Outer Loadings

Variable	Indicator	Loading Factor	Conclusion
Agricultural Extension	AE1	0.822	Valid
	AE2	0.775	Valid
	AE3	0.840	Valid
	AE4	0.820	Valid
Learning Motivation	LM1	0.888	Valid
	LM10	0.870	Valid
	LM11	0.863	Valid
	LM12	0.842	Valid
	LM13	0.827	Valid
	LM17	0.875	Valid
	LM18	0.847	Valid
	LM2	0.869	Valid
	LM21	0.857	Valid
	LM24	0.856	Valid

	LM21	0.869	Valid
	LM24	0.835	Valid
	LM4	0.849	Valid
	LM5	0.875	Valid
	LM6	0.842	Valid
	LM7	0.854	Valid
	LM8	0.867	Valid
	LM9	0.856	Valid
Role Conflict	RC1	0.852	Valid
	RC2	0.895	Valid
	RC3	0.903	Valid
	RC4	0.867	Valid
	RC5	0.886	Valid
	RC6	0.876	Valid
	RC7	0.899	Valid
	RC8	0.903	Valid
Time Management	TM1	0.871	Valid
	TM12	0.850	Valid
	TM13	0.858	Valid
	TM14	0.775	Valid
	TM15	0.842	Valid
	TM2	0.849	Valid
	TM3	0.871	Valid
	TM4	0.855	Valid
	TM5	0.845	Valid
	TM6	0.850	Valid
	TM7	0.864	Valid
	TM8	0.758	Valid
	TM9	0.831	Valid
	TM x LM	1.000	Valid
	TM x RC	1.000	Valid

This validation process ensured that only the most reliable indicators were retained in the final measurement model. The robust loadings support the internal consistency of the constructs and affirm that each indicator contributes meaningfully to its respective latent variable. This step is crucial in building a valid and reliable measurement model before proceeding to the structural model analysis and hypothesis testing.

Based on the final testing results, all retained indicators under the constructs Learning Motivation (LM), Role Conflict (RC), and Time Management (TM) demonstrated loading values exceeding the minimum threshold of 0.70. This confirms that each indicator adequately contributes to measuring its intended construct.

Specifically, the Learning Motivation construct comprised 16 indicators with loading values ranging from 0.827 to 0.888. The Role Conflict construct included 8 indicators, with loadings ranging from 0.852 to 0.903. The Time Management construct was represented by 13 indicators, with loading values between 0.758 and 0.871.

Additionally, the two interaction terms, TM × LM and TM × RC, each recorded a loading value of 1.000, indicating that the moderation variables were properly specified and modeled within the structural framework.

These results confirm that the measurement model demonstrates strong convergent validity, as all indicators are significantly related to their respective latent variables. This step is essential to

ensure the reliability and internal consistency of the constructs before proceeding to structural model analysis and hypothesis testing.

b. Average Variance Extracted (AVE)

The Average Variance Extracted (AVE) values for each construct were calculated to assess the proportion of variance that a latent variable captures from its indicators relative to the amount due to measurement error. According to (Fornell et al., 1981), an AVE value greater than 0.50 indicates adequate convergent validity, signifying that more than half of the variance in the indicators is explained by the construct. This benchmark is also supported by (Jr. et al., 2017), who argue that AVE is a robust criterion for confirming convergent validity in reflective measurement models.

As presented in Table 4, all constructs in this study show AVE values above the threshold of 0.50. This confirms that each construct sufficiently explains the variance of its observed variables and that the model meets the convergent validity criteria.

Table 3. Average Variance Extracted (AVE)

Construct	AVE	Conclusion
Agricultural Extension (AE)	0.663	Valid
Learning Motivation (LM)	0.737	Valid
Role Conflict (RC)	0.784	Valid
Time Management (TM)	0.707	Valid

These results strengthen the evidence that the retained measurement items effectively represent their respective latent constructs, providing a solid foundation for further structural model evaluation.

2. Discriminant Validity

a. Fornell-Larcker Criterion

Discriminant validity assesses the extent to which a construct is truly distinct from other constructs by comparing the square root of its Average Variance Extracted (AVE) with the correlations it has with other latent variables. According to (Fornell et al., 1981), discriminant validity is established when a construct's square root of AVE (shown on the diagonal) is greater than the correlations (off-diagonal values) with any other construct.

Table 4. Fornell-Larcker Criterion

Construct	AE	LM	RC	TM
AE	0.814			
LM	0.352	0.858		
RC	0.51	0.33	0.885	
TM	0.506	0.218	0.341	0.841

As shown in the table, the square root of AVE for each construct (highlighted on the diagonal) is greater than the highest correlation it shares with any other construct in the model. For instance, the value for AE is 0.814, which exceeds its correlations with LM (0.352), RC (0.510), and TM (0.506). Similarly, all other constructs show the same pattern. Thus, based on the Fornell-Larcker criterion, all constructs in the model exhibit adequate discriminant validity, indicating that each construct is empirically unique and measures a conceptually distinct phenomenon.

b. Cross Loadings

Discriminant validity was further assessed through cross-loading analysis, where each indicator should exhibit the highest loading on its associated construct compared to other constructs. The table below presents selected results from the cross-loading analysis:

Table 5. Cross Loadings (Selected Indicators)

Indicator	AE	LM	RC	TM	TM x RC	TM X LM
AE1	0.822	0.285	-0.430	0.385	-0.093	0.030
AE2	0.775	0.336	-0.392	0.364	-0.209	0.058
AE3	0.840	0.247	-0.426	0.465	-0.027	0.135
AE4	0.820	0.286	-0.412	0.428	0.020	0.116
LM1	0.307	0.888	-0.241	0.196	0.064	0.086
LM10	0.313	0.870	-0.265	0.178	0.038	0.076
LM11	0.375	0.863	-0.330	0.248	-0.008	0.016
LM12	0.346	0.842	-0.331	0.163	0.032	0.003
LM13	0.306	0.827	-0.300	0.164	0.087	0.084
LM17	0.214	0.875	-0.278	0.130	0.060	0.054
LM18	0.369	0.847	-0.333	0.274	0.061	0.002
LM2	0.257	0.869	-0.242	0.147	0.052	-0.003
LM21	0.323	0.869	-0.340	0.227	0.101	0.028
LM24	0.303	0.835	-0.241	0.120	0.087	0.088
LM4	0.263	0.849	-0.294	0.144	0.173	0.031
LM5	0.253	0.875	-0.236	0.102	0.093	0.044
LM6	0.234	0.842	-0.208	0.130	0.072	0.065
LM7	0.305	0.854	-0.242	0.231	0.068	0.086
LM8	0.297	0.867	-0.275	0.240	0.080	0.022
LM9	0.263	0.856	-0.317	0.212	0.042	0.007
RC1	-0.392	-0.243	0.852	-0.276	-0.082	0.028
RC2	-0.402	-0.278	0.895	-0.254	-0.138	0.088
RC3	-0.523	-0.349	0.903	-0.345	-0.101	0.033
RC4	-0.497	-0.301	0.867	-0.230	-0.145	0.041
RC5	-0.430	-0.277	0.886	-0.313	-0.124	0.036
RC6	-0.397	-0.241	0.876	-0.372	-0.156	0.085
RC7	-0.476	-0.316	0.899	-0.271	-0.132	0.095
RC8	-0.458	-0.311	0.903	-0.353	-0.214	0.096
TM1	0.442	0.145	-0.262	0.871	-0.097	-0.002
TM12	0.415	0.177	-0.223	0.850	-0.082	-0.014
TM13	0.448	0.204	-0.338	0.858	-0.157	-0.004
TM14	0.334	0.090	-0.203	0.775	-0.085	0.021
TM15	0.508	0.204	-0.358	0.842	-0.126	0.076
TM2	0.379	0.173	-0.302	0.849	-0.092	0.010
TM3	0.452	0.275	-0.303	0.871	-0.069	0.024
TM4	0.475	0.224	-0.330	0.855	-0.060	-0.018
TM5	0.517	0.177	-0.322	0.845	-0.058	0.052
TM6	0.406	0.183	-0.238	0.850	-0.078	0.036
TM7	0.377	0.155	-0.248	0.864	-0.083	0.004
TM8	0.347	0.182	-0.295	0.758	-0.047	-0.034
TM9	0.321	0.155	-0.248	0.831	-0.075	0.014
TM x LM	0.106	0.049	0.070	0.017	-0.313	1.000
TM x RC	-0.092	0.078	-0.154	-0.102	1.000	-0.313

As illustrated above, each indicator demonstrates its highest loading on the latent construct it is intended to measure. For instance, AE1 loads highest on Agricultural Extension (0.822), LM1 loads highest on Learning Motivation (0.888), and RC3 loads highest on Role Conflict (0.903). Similarly, TM1, TM5, and TM9 show their strongest associations with the Time Management (TM) construct.

In addition, the interaction terms $TM \times LM$ and $TM \times RC$ also exhibit appropriate loading behavior, with both constructs showing perfect loading values (1.000) on their respective indicators. These results further confirm that the indicators used to represent the moderating effects were correctly modeled and do not significantly cross-load with other constructs.

Overall, the results validate that each indicator loads most strongly on its corresponding construct, including the interaction terms. This satisfies the criteria for discriminant validity based on the cross-loading analysis, supporting the empirical distinctiveness of each latent variable in the measurement model.

3. Reliability Test

Reliability testing was conducted to assess the internal consistency of the measurement model. Two main indicators were used: Cronbach's Alpha and Composite Reliability (CR). Cronbach's Alpha is a traditional measure of internal consistency, while Composite Reliability (ρ_c) is considered a more accurate estimate of construct reliability, particularly in PLS-SEM models (Hair et al., 2022; Latan et al., 2023). A CR value above 0.70 is generally considered acceptable, and values above 0.80 are deemed good to very good.

Table 6. Composite Reliability and Cronbach's Alpha

Variable	Cronbach's Alpha	ρ_A	Composite Reliability	Conclusion
Agricultural Extension (AE)	0.831	0.832	0.887	Good
Learning Motivation (LM)	0.976	0.980	0.978	Very Good
Role Conflict (RC)	0.961	0.965	0.967	Very Good
Time Management (TM)	0.965	0.970	0.969	Very Good

The results show that all constructs exceed the minimum reliability threshold. Learning Motivation (LM), Role Conflict (RC), and Time Management (TM) exhibit very high internal consistency, with Composite Reliability values well above 0.90, indicating that the indicators are highly reliable in representing their respective constructs. Meanwhile, Job Performance (AE) also demonstrates good reliability, with a CR value of 0.887 and Cronbach's Alpha of 0.831. These findings confirm that all constructs meet the reliability criteria, supporting the robustness of the measurement model for further structural analysis.

4. Structural Model Evaluation (Inner Model)

a. Coefficient of Determination (R^2)

The coefficient of determination (R^2) reflects the proportion of variance in the endogenous construct explained by its exogenous variables. In this study, Job Performance (AE) was the endogenous variable influenced by Learning Motivation, Role Conflict, and Time Management.

Table 7. R Square and R Square Adjusted

Construct	R Square	R Square Adjusted
Agricultural Extension (AE)	0.423	0.407

According to (Hair et al., 2022), an R^2 value of 0.25 is considered weak, 0.50 moderate, and 0.75 substantial in behavioral sciences. With an R^2 of 0.423, the model demonstrates a moderate level of explanatory power, meaning that approximately 42.3% of the variance in Job Performance can be explained by the combined effects of Learning Motivation, Role Conflict, and Time Management. The adjusted R^2 value of 0.407 indicates that the model remains stable after adjusting for the number of predictors. These values support the adequacy of the model in explaining the outcome variable while leaving room for future research to explore additional influencing factors.

b. Predictive Relevance (Q^2)

The Q^2 value assesses the predictive relevance of the model using the blindfolding procedure. A Q^2 value greater than 0 indicates that the model has predictive relevance for a given endogenous construct (Hair et al., 2022).

Table 8. Q^2 – Predictive Relevance

Construct	SSO	SSE	$Q^2 (=1 - SSE/SSO)$
Agricultural Extension (AE)	576.000	420.366	0.270
Learning Motivation (LM)	2304.000	2304.000	0.000
Role Conflict (RC)	1152.000	1152.000	0.000
Time Management (TM)	1872.000	1872.000	0.000

From the table above, Agricultural Extension (AE) has a Q^2 value of 0.270, which indicates acceptable predictive relevance. However, the constructs Learning Motivation (LM), Role Conflict (RC), and Time Management (TM) show Q^2 values of 0.000, suggesting that while these constructs act as predictors, the model does not attempt to predict them hence their Q^2 is not relevant or expected to be greater than zero. This result confirms that the model is predictive only for the endogenous variable, which in this case is Job Performance.

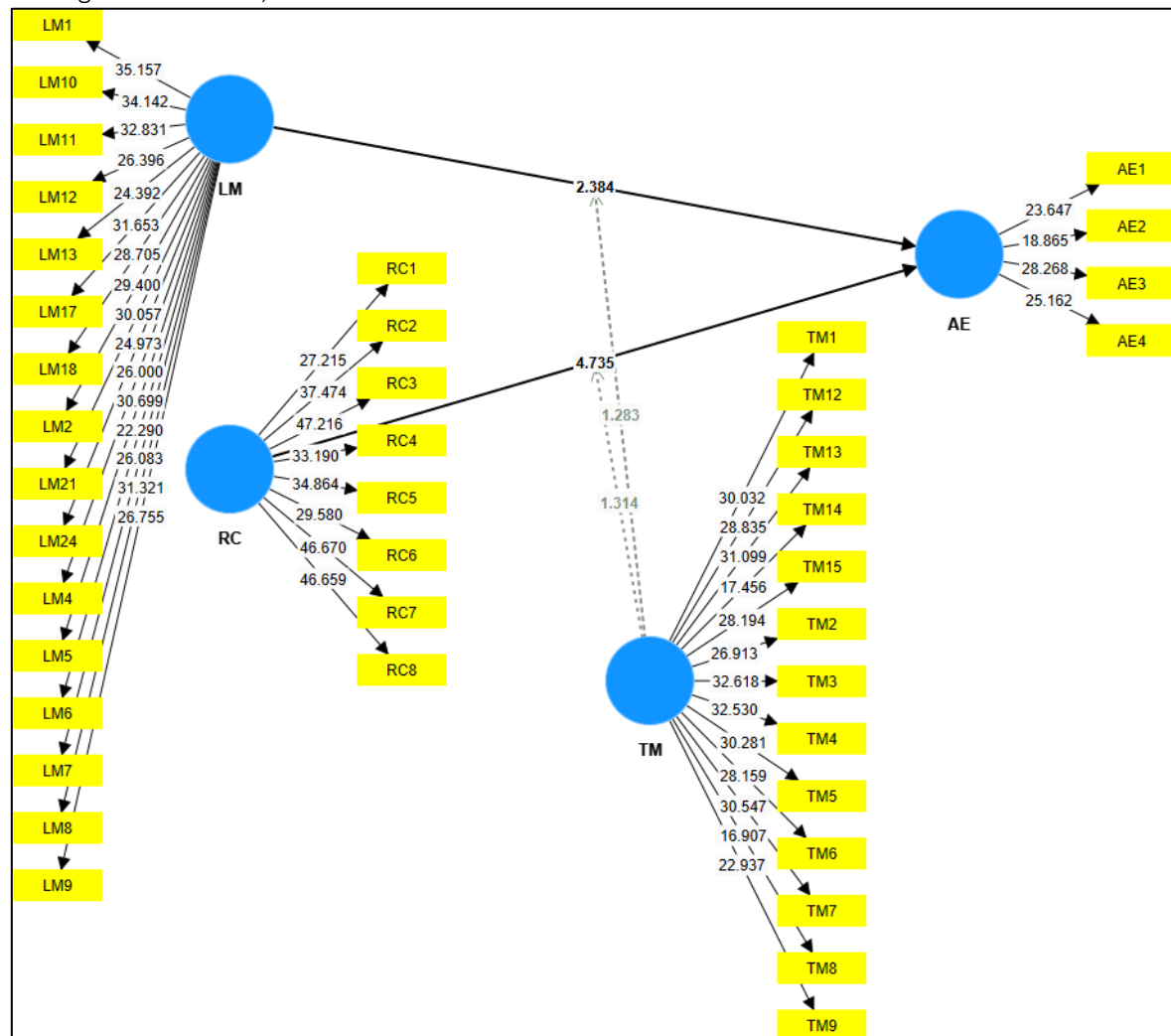


Figure 3. Conceptual Model

Hypothesis Testing

The following table summarizes the results of hypothesis testing based on path coefficients (beta), t-statistics, and p-values generated through bootstrapping with 5,000 subsamples in SmartPLS. A hypothesis is considered statistically supported (accepted) when $p < 0.05$ and the t-value > 1.96 (Hair et al., 2022).

Table 9. Hypothesis Testing Results

No	Hypothesis	Beta	t-Value	p-Value	Decision
H1	LM → AE (Learning Motivation → Agricultural Extension)	0.163	2.384	0.017	Accepted
H2	RC → AE (Role Conflict → Agricultural Extension)	-0.363	4.735	0.000	Accepted
H3	TM → AE (Time Management → Agricultural Extension)	0.335	4.246	0.000	Accepted
H4	TM × RC → AE (Moderating effect of TM on RC → AE)	-0.109	1.314	0.189	Rejected
H5	TM × LM → AE (Moderating effect of TM on LM → AE)	0.086	1.283	0.199	Rejected

Note: Decision is based on t-value > 1.96 and p-value < 0.05 (significant at the 95% confidence level).

Interpretation:

- H1, H2, and H3 are accepted, indicating that learning motivation, role conflict, and time management each have a statistically significant influence on agricultural extension performance.
- H4 and H5 are rejected, suggesting that the moderating effects of time management on the relationships between role conflict and agricultural extension (H4), as well as between learning motivation and agricultural extension (H5), are not statistically significant at the 5% level ($p > 0.05$).

This implies that while the individual constructs significantly influence agricultural extension performance, the interaction terms (moderation effects) do not play a strong or significant role in this model. These findings suggest the need for further investigation into potential moderators or contextual factors that may strengthen or weaken these relationships.

Finding and Discussion

The statistical analysis demonstrates that Learning Motivation (LM), Role Conflict (RC), and Time Management (TM) have significant direct effects on Agricultural Extension (AE) among agricultural extension officers in Cirebon Regency. However, the moderating effects of Time Management on both Learning Motivation → AE and Role Conflict → AE are not statistically significant. Below is a detailed discussion of each hypothesis in light of previous literature and contextual realities.

Learning Motivation and Job Performance

The path coefficient for Learning Motivation to Job Performance is $\beta = 0.163$ ($t = 2.384$, $p = 0.017$), indicating a positive and statistically significant relationship. This confirms Hypothesis 1 (H1), aligning with prior research which highlights motivation—both intrinsic and extrinsic—as a key driver of job performance (Cerasoli et al., 2014; Di Domenico et al., 2017).

Extension officers with high learning motivation are more likely to actively seek knowledge, stay engaged in professional development, and adapt their skills to dynamic field conditions. These behaviors are especially crucial in agricultural extension, where officers must continually learn to deliver technical guidance to farmers. The results support the motivational framework proposed by Duncan & McKeachie (2005), which links learning motivation with cognitive engagement and persistence. These outcomes translate into better program planning, stronger communication with

farming communities, and more consistent task execution. Consistent with Susanti et al. (2023), learning motivation enhances accountability and performance in public service roles. Institutions may therefore consider policies that foster motivation, such as performance recognition, learning incentives, and goal-aligned feedback systems.

Role Conflict and Job Performance

The analysis finds a negative and significant effect of Role Conflict on Job Performance, with a path coefficient of $\beta = -0.363$ ($t = 4.735$, $p = 0.000$). This result confirms Hypothesis 2 (H2) and aligns with traditional role stress theory (House & Rizzo, 1972; Levinson et al., 1965), which states that conflicting expectations impair job clarity, focus, and satisfaction, ultimately reducing performance.

In Cirebon Regency's decentralized agricultural extension system, officers are tasked with multiple roles including educator, facilitator, and administrator. When expectations from different stakeholders are unclear or conflicting—such as pressure from both local governments and farmer groups—this can create stress, confusion, and emotional fatigue. These outcomes reduce an officer's ability to carry out responsibilities effectively. The finding supports earlier studies (Bowling et al., 2017; Fathulla Ahmad, 2022), which show that role conflict in public sector jobs decreases productivity and increases turnover intention.

Therefore, managing role clarity and improving task coordination become essential. Without such structural support, even experienced extension officers may experience burnout, misaligned priorities, and reduced performance outcomes.

Time Management and Job Performance

The path coefficient from Time Management to Job Performance is $\beta = 0.335$ ($t = 4.246$, $p = 0.000$), indicating a positive and significant relationship, confirming Hypothesis 3 (H3). This aligns with findings that effective time management enhances task prioritization, efficiency, and job satisfaction (Aeon et al., 2021; Alay & Koçak, 2002).

In rural agricultural services, where officers must meet administrative demands, conduct field visits, and respond to community needs, time management becomes an essential skill. Officers with stronger time management capabilities tend to handle workloads more efficiently, meet deadlines, and deliver consistent extension services. Moreover, studies by Alay & Koçak (2002) emphasize the link between time control and self-efficacy, which likely strengthens an officer's confidence and productivity. Accordingly, time management training should be prioritized as a core component of professional development in public agricultural institutions.

Moderating Role of Time Management on Learning Motivation

The interaction term (TM $\times$ LM) yielded a path coefficient of $\beta = 0.086$ ($t = 1.283$, $p = 0.199$), which is not statistically significant. Therefore, Hypothesis 5 (H5) is rejected.

This result suggests that Time Management does not significantly enhance the positive effect of Learning Motivation on job performance. Although both constructs individually improve performance, their interaction does not yield a synergistic effect within this context.

This may reflect the nature of agricultural extension work, where institutional constraints, rather than individual time-use behaviors, play a stronger role in shaping performance outcomes. It also points to the idea that learning motivation may already be maximized in motivated individuals, regardless of time constraints. As Claessens et al. (2007) suggest, the effectiveness of personal strategies like time management may be contingent upon broader organizational supports.

Moderating Role of Time Management on Role Conflict

The second interaction term (TM $\times$ RC) has a path coefficient of $\beta = -0.109$ ($t = 1.314$, $p = 0.189$), indicating a negative but not statistically significant moderating effect. Thus, Hypothesis 4 (H4) is also rejected.

This suggests that while time management independently contributes to better performance, it does not significantly buffer the negative impact of role conflict. In other words, even officers with good time management are still vulnerable to the detrimental effects of unclear or conflicting responsibilities.

Although previous studies (e.g., Rao et al., n.d.) suggested that time management can help manage stress related to workload and ambiguity, the current findings align more closely with Claessens et al. (2007), who argued that personal time management is ineffective when faced with structural or systemic issues. In Cirebon's context, overlapping mandates and inconsistent supervision may limit the individual's ability to manage conflict through time management alone.

Conclusion from Moderation Analysis

Although Learning Motivation, Role Conflict, and Time Management significantly influence job performance, the moderating role of Time Management on both Learning Motivation → AE and Role Conflict → AE was found to be not significant. These findings highlight the importance of institutional and organizational-level interventions, such as structural clarity, improved coordination, and more defined roles, rather than relying solely on individual competencies like time management.

Future research should explore additional moderators such as job autonomy, supervisor support, or organizational justice to further understand how extension officers can maintain performance under stress and role ambiguity.

CONCLUSION

This study examined the influence of learning motivation, role conflict, and time management on the performance of agricultural extension workers in Cirebon Regency, West Java, with time management also tested as a moderating variable between both learning motivation → performance and role conflict → performance.

The findings confirmed that learning motivation and time management each have a statistically significant positive effect on job performance, while role conflict has a significant negative effect. However, the moderating effects of time management on both relationships $TM \times LM$ and $TM \times RC$ were not statistically significant. This indicates that time management does not strengthen the positive influence of learning motivation nor buffer the negative impact of role conflict in this specific context.

From a theoretical standpoint, these findings contribute to the broader literature on public sector human resource development by reaffirming the importance of internal psychological and behavioral factors particularly motivation and time self-regulation as key drivers of job performance. The study also strengthens the empirical foundation of role stress theory, confirming that unmanaged conflicting expectations reduce job effectiveness in complex service environments such as agricultural extension.

Importantly, the non-significant moderating effects challenge common assumptions that individual competencies such as time management are sufficient to overcome organizational deficiencies. This underscores the limits of behavioral strategies when structural and systemic issues, like role ambiguity or poor inter-agency coordination, remain unresolved.

Practically, these findings highlight several priorities for policymakers and public sector managers. First, they should invest in motivation-enhancing programs, including performance-based incentives, recognition schemes, and opportunities for continuous learning. Second, time management training should be integrated into professional development, not just to increase efficiency but to support broader personal and task regulation. Third, and most critically, reforms must go beyond individual interventions: task rationalization, clearer role definitions, and improved supervision structures are essential to reduce role conflict and support sustainable performance.

Ultimately, optimizing the performance of agricultural extension workers requires a dual approach: strengthening individual capacity while simultaneously addressing the organizational-level barriers through comprehensive, systemic reform. Only by integrating both personal and institutional strategies can performance be meaningfully improved in complex public service systems.

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