

The Influence of Motivation, Entrepreneurship, and Utilization of Information Technology of Management on the Performance of KPRI Cooperatives in Bangkalan Regency

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ABSTRACT

Purpose – This study examines whether work motivation, entrepreneurial orientation, and information technology (IT) utilization are associated with the performance of Republic of Indonesia Employee Cooperatives (Koperasi Pegawai Republik Indonesia, KPRI) in Bangkalan Regency.

Design/methodology/approach – A quantitative, cross-sectional explanatory survey was conducted in May 2025. Questionnaire responses were obtained from 106 KPRI administrators representing 36 cooperatives and analyzed using descriptive statistics, item-total correlations, Cronbach's alpha, diagnostic tests, and multiple linear regression.

Finding/Results – The regression model was statistically significant, $F(3, 102) = 18.551$, $p < .001$, and explained 35.3% of the variance in cooperative performance (adjusted $R^2 = .334$). Work motivation had a positive unique association with performance ($B = .341$, $\beta = .286$, $p = .009$). Entrepreneurial orientation ($B = .151$, $\beta = .218$, $p = .055$) and IT utilization ($B = .151$, $\beta = .187$, $p = .072$) were positive but did not reach the conventional .05 threshold after adjustment for the other predictors.

Originality/Value – By testing motivational, entrepreneurial, and digital factors in a single model within Indonesian employee cooperatives, the study shows that collectively relevant capabilities do not necessarily make equally strong unique statistical contributions. The findings refine performance priorities for locally embedded cooperatives and caution against interpreting digital adoption or entrepreneurial orientation as automatic performance gains.

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1. Introduction

Cooperatives combine economic activity with member ownership, democratic control, and a service-oriented purpose. Their performance therefore cannot be reduced to profitability alone; it also concerns continuity of member services, participation, accountability, operational efficiency, and the capacity to adapt to changing market and technological conditions. Contemporary reviews identify governance quality, strategic capability, member involvement, and professional management as recurring foundations of cooperative performance (Jamaluddin et al., 2023; Kusmiati et al., 2023). These requirements have become more demanding as cooperatives operate in increasingly digital and competitive environments, where reliable information systems and responsive service processes shape both organizational legitimacy and economic sustainability (Wahyuningtyas et al., 2023).

In Indonesia, Republic of Indonesia Employee Cooperatives (KPRI) occupy a distinctive institutional position. They typically serve civil servants through savings and loans, retail activities, rentals, and other member-oriented services. The Bangkalan KPRI included in this study reported memberships ranging from approximately 75 to 500 and annual remaining operating results (*sis hasil usaha*, SHU) ranging from IDR 13 million to IDR 900 million. Such heterogeneity implies that administrators manage organizations with different resource bases, member demands, and operating complexity. It also means that apparently similar cooperatives can exhibit markedly different performance even under the same regional policy environment.

Prior studies commonly examine motivation, entrepreneurial orientation, or digitalization in separate organizational contexts. This fragmentation makes it difficult to determine whether each factor retains a distinctive association with cooperative performance when the others are controlled. The problem is analytically meaningful: predictors may be individually relevant but share explanatory variance, and a factor may appear important at the bivariate level without making a statistically distinguishable unique contribution in a multivariable model. A combined test can therefore clarify performance priorities while avoiding the assumption that every desirable managerial attribute has an independent effect.

The present study addresses this issue by evaluating work motivation, entrepreneurial orientation, and IT utilization simultaneously among KPRI administrators in Bangkalan Regency. The study contributes context-specific evidence from employee cooperatives outside Indonesia's major metropolitan centers, where digital infrastructure, managerial professionalization, and organizational scale may differ from those of commercial firms. It also interprets non-significant coefficients as evidence of limited unique association under the specified model, rather than as proof that a capability is irrelevant. Consistent with the cross-sectional design, the analysis is framed in terms of associations rather than causal influence (Spector, 2019).

2. Literature Review & Hypothesis Development

One mechanism through which performance differences may emerge is work motivation. Motivation determines the direction, intensity, and persistence of effort, but modern organizational research distinguishes autonomous reasons for working from controlled pressure and amotivation rather than treating motivation as a single undifferentiated force (Deci et al., 2017; Gagné et al., 2015; Lee & Raschke, 2016). Meta-analytic evidence indicates that intrinsic motivation is consistently related to performance quality, while incentives can complement or undermine effort depending on task characteristics and implementation (Cerasoli et al., 2014). More recent longitudinal synthesis also supports a reciprocal

relationship: motivation can precede higher performance, and successful performance can in turn reinforce motivation (Wang et al., 2024). For cooperative administrators, these processes may be expressed through commitment to member service, willingness to attend meetings and training, persistence in administrative work, and initiative in resolving operational problems.

The relevance of motivation is especially pronounced in cooperatives because administrators must reconcile economic goals with collective obligations. Formal authority alone may not produce active service, innovation, or accountability when managerial tasks are added to other occupational responsibilities. Self-determination theory suggests that competence, autonomy, and relatedness foster higher-quality motivation and sustained engagement (Deci et al., 2017; Van den Broeck et al., 2021). In a KPRI setting, administrators who perceive their roles as meaningful and feel capable of influencing cooperative outcomes may be more likely to maintain records, respond to members, and follow through on development initiatives. This reasoning supports an expected positive association between work motivation and cooperative performance.

H1: Work motivation is positively associated with KPRI cooperative performance.

A second mechanism is entrepreneurial orientation, commonly conceptualized through innovativeness, proactiveness, and risk-taking. Entrepreneurial orientation concerns how organizations search for, evaluate, and act on opportunities; it is not synonymous with informal enthusiasm or the mere existence of new ideas (Lumpkin & Dess, 1996; Wales et al., 2023). Research has generally found a positive relationship between entrepreneurial orientation and organizational performance, but the strength of that relationship varies with environmental conditions, resources, measurement choices, and organizational configurations (Rauch et al., 2009; Suder et al., 2025). This contingency is important for cooperatives, whose collective decision processes and member-service mandates may slow risk-taking yet also provide a stable base for experimentation.

Entrepreneurial behavior can help a KPRI diversify services, respond to member needs, create new revenue sources, and recognize local market opportunities. Evidence from online SMEs likewise indicates that entrepreneurial-orientation dimensions can have uneven performance effects across specific market settings (Li et al., 2022). However, entrepreneurial orientation is multidimensional, and its dimensions do not always operate uniformly or combine additively (Anderson et al., 2015). Strategic entrepreneurial behavior must be translated into coordinated routines, resource commitments, and value-creation mechanisms before it affects outcomes (Anderson et al., 2019; Wiklund & Shepherd, 2005). Cross-sectional entrepreneurial-orientation research also requires cautious causal interpretation because performance can shape strategic posture as well as result from it (Anderson et al., 2022). Thus, a positive association is theoretically plausible, but its unique statistical contribution may depend on whether the cooperative possesses sufficient governance and implementation capacity.

H2: Entrepreneurial orientation is positively associated with KPRI cooperative performance.

The third mechanism is the utilization of information technology. Digital tools can support transaction recording, financial reporting, member databases, digital payments, communication, transparency, marketing, and service delivery. Technology-acceptance theory emphasizes performance expectancy, ease of use, social influence, and facilitating conditions as determinants of use (Venkatesh et al., 2003), whereas diffusion-of-innovations theory highlights relative advantage, compatibility, complexity, trialability, and observability (Rogers, 2003). Both perspectives imply that acquiring a system is not equivalent to productive utilization. Administrators need infrastructure, training, organizational

support, and compatible work processes before technology becomes embedded in routine cooperative operations.

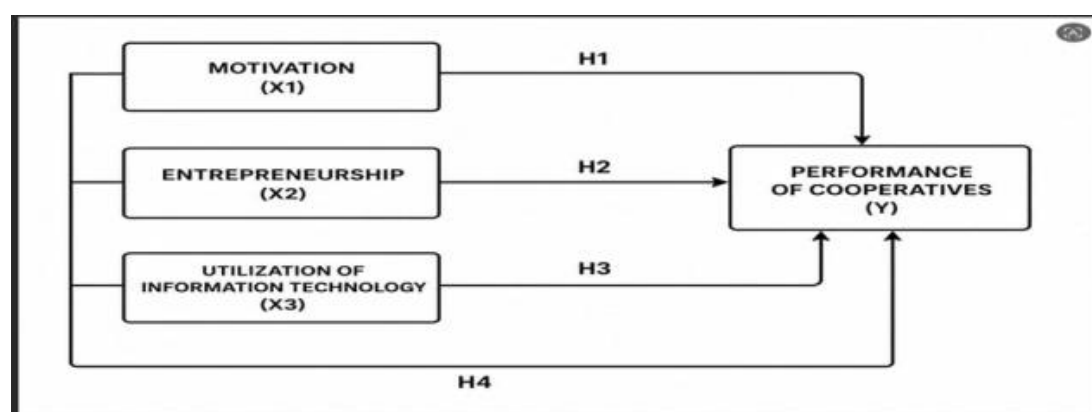
This distinction between access and capability is central to digital-transformation research. Digital transformation involves organizational change and value creation, not simply the deployment of isolated applications (Gong & Ribiere, 2021; Nambisan et al., 2017; Vial, 2019). Its performance implications are often mediated by innovation, business-model renewal, managerial capabilities, and the redesign of processes (Kraus et al., 2022; Verhoef et al., 2021). Evidence from small and medium-sized enterprises similarly indicates that digital diffusion supports innovation when firms can absorb and exploit the technology (Hassan et al., 2024). Within cooperatives, digital systems may improve information access and technology adoption, but the benefits depend on member engagement and institutional capacity (Wu et al., 2023).

H3: IT utilization is positively associated with KPRI cooperative performance.

Because work motivation, entrepreneurial orientation, and IT utilization each provide a theoretically distinct route to cooperative performance, their combined explanatory power is also of interest. A joint hypothesis therefore complements the three unique-association hypotheses above.

H4: Work motivation, entrepreneurial orientation, and IT utilization jointly explain a statistically significant proportion of the variance in KPRI cooperative performance.

Figure 1 presents the original conceptual framework retained from the source manuscript. The framework specifies three direct paths to cooperative performance and a joint hypothesis concerning the predictors as a set. The model is parsimonious and appropriate for multiple regression, but its arrows are interpreted as hypothesized associations in this revision. A cross-sectional questionnaire cannot establish temporal precedence, rule out reciprocal relationships, or isolate all competing explanations.



Source: Adapted from the source manuscript.

Figure 1. Original conceptual framework linking motivation, entrepreneurship, and information technology utilization to cooperative performance.

3. Methodology

3.1 Research Design

The study used a quantitative, cross-sectional explanatory survey design. Numerical questionnaire scores were analyzed with descriptive statistics and multiple linear regression to estimate the unique and joint associations of work motivation, entrepreneurial orientation, and IT utilization with

cooperative performance. The unit of observation was the individual KPRI administrator. Because all variables were measured during one data-collection period, the design supports associational inference but not causal or temporal claims (Spector, 2019).

3.2 Setting, Population, and Participants

Data were collected during May 2025 in Bangkalan Regency, Madura, East Java. The source manuscript identifies 36 KPRI under the regional Civil Servant Cooperative Center (PKPRI). Questionnaires were obtained from 106 administrators who were active in PKPRI activities and accessible during the data-collection period. The reported recruitment procedure was therefore organizationally facilitated rather than a probability sample drawn from a complete regional roster. Results should be interpreted as evidence about the participating administrators and cooperatives, not as a statistically representative estimate for all Indonesian KPRI.

The sample size permits estimation of a three-predictor regression model with 102 residual degrees of freedom. Rather than retroactively claiming an unreported a priori power analysis, this revision evaluates the achieved model through its reported F statistic, explained variance, coefficient estimates, and uncertainty intervals. The sample is adequate for the fitted model but does not remove concerns about sampling bias, common-method variance, or the precision of coefficients near the .05 threshold.

3.3 Measures

The questionnaire operationalized four constructs: work motivation (X1; 10 items), entrepreneurial orientation (X2; 15 items), IT utilization (X3; 15 items), and cooperative performance (Y; 14 items). These item counts are based on the item-level validity table in the source document. They correct a transposition in the original reliability summary, which listed 14 items for X3 and 15 for Y even though the enumerated items ran from X3.1 to X3.15 and Y1.1 to Y1.14. The available record identifies a Likert-type response format but does not specify the number or wording of response anchors; consequently, no unverified anchor labels are introduced here.

Work motivation represented administrators' participation, satisfaction, development, and persistence in cooperative duties. Entrepreneurial orientation represented innovativeness, proactiveness, opportunity response, and willingness to take calculated risks. IT utilization covered the use of digital transactions, member-information systems, administrative applications, and technology-related training. Cooperative performance encompassed the service, operational, and organizational outcomes assessed by the study questionnaire. The instrument was preliminarily discussed with administrators to check shared understanding of the items. The archived study record does not report a formal expert content-validity index or a confirmatory factor analysis; therefore, the present evidence concerns item discrimination and internal consistency rather than full construct validation.

3.4 Data Collection and Ethical Considerations

Questionnaire distribution was coordinated by the research team with assistance from students and PKPRI personnel. Responses were collected over one month and analyzed in aggregate. The study involved adults responding in their organizational roles and did not include an experimental intervention. The source manuscript does not provide an institutional ethics approval number, a written consent script, or a data-availability statement. These records should be verified by the authors against the requirements of the target journal; this revision does not create an approval identifier or consent procedure that was not documented.

3.5 Data Analysis

Analysis was conducted in SPSS using five stages. First, respondent characteristics were summarized by frequencies and percentages. Second, corrected item-total or product-moment correlations were compared with the reported critical value of .1606, and Cronbach's alpha was used to assess internal consistency. Third, the assumptions reported in the source manuscript were reviewed: residual normality, multicollinearity through variance inflation factors (VIF) and tolerance values, and heteroscedasticity through predictor-specific significance tests. Fourth, multiple linear regression was estimated as:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + e \quad (1)$$

Fifth, partial t tests, the omnibus F test, and R^2 were used to evaluate the hypotheses. These procedures follow established multivariate-analysis guidance for regression estimation and diagnostic assessment (Hair et al., 2019).

Statistical significance was evaluated at $\alpha = .05$, but interpretation also considers coefficient magnitude, direction, and uncertainty. Approximate 95% confidence intervals for the unstandardized coefficients were calculated from the reported coefficients and standard errors as $B \pm 1.96(SE)$. This calculation does not alter the original data; it makes the precision of the reported estimates more visible. The reported correlation and regression estimates are interpreted as measures of association rather than evidence of causal influence (Schober et al., 2018; Spector, 2019). Consistent with contemporary statistical guidance, a p value slightly above .05 is not treated as evidence of a zero relationship, and a p value below .05 is not treated as proof of practical importance (Wasserstein et al., 2019).

4. Result and Discussion

4.1 Respondent Profile

Table 1 consolidates the demographic information reported separately in the source manuscript. It describes gender and educational attainment, age, and length of service for all 106 respondents. Consolidation avoids repetitive presentation while preserving every reported frequency.

Table 1. Demographic profile of participating KPRI administrators (N = 106)

Domain	Category	n	%
Gender and education	Male – bachelor's degree	53	50.0
	Male – master's degree	15	14.2
	Male – doctoral degree	2	1.9
	Female – bachelor's degree	30	28.3
	Female – master's degree	6	5.7
Age	20–30 years	9	8.5
	31–40 years	15	14.2
	41–50 years	37	34.9
	Over 50 years	45	42.5

Domain	Category	n	%
Length of service	1–10 years	22	20.8
	11–20 years	27	25.5
	21–30 years	23	21.7
	31–40 years	34	32.1

Source: Primary questionnaire data, processed by the author(s), 2025.

The participating group was predominantly male (66.0%) and educated at the bachelor's level (78.3%). Most respondents were experienced administrators: 77.4% were older than 40 years, and 53.8% reported more than 20 years of service. The profile provides substantial institutional experience, but it may also limit the extent to which the findings represent younger administrators or newly established KPRI.

The age distribution is visualized in Figure 2 to show the concentration of respondents in the two oldest categories.

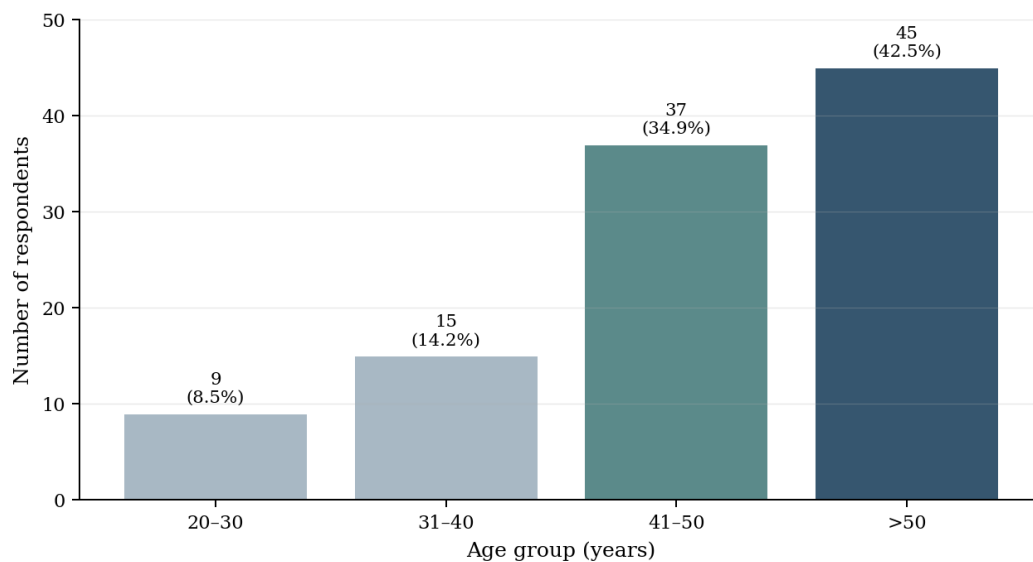


Figure 2. Age distribution of participating KPRI administrators.

Source: Primary questionnaire data, processed by the author(s), 2025.

The modal category was over 50 years ($n = 45$), followed by 41–50 years ($n = 37$). Only 24 respondents were aged 40 or younger, indicating that managerial experience was concentrated in an older cohort. Figure 3 complements the age profile by displaying the distribution of organizational tenure.

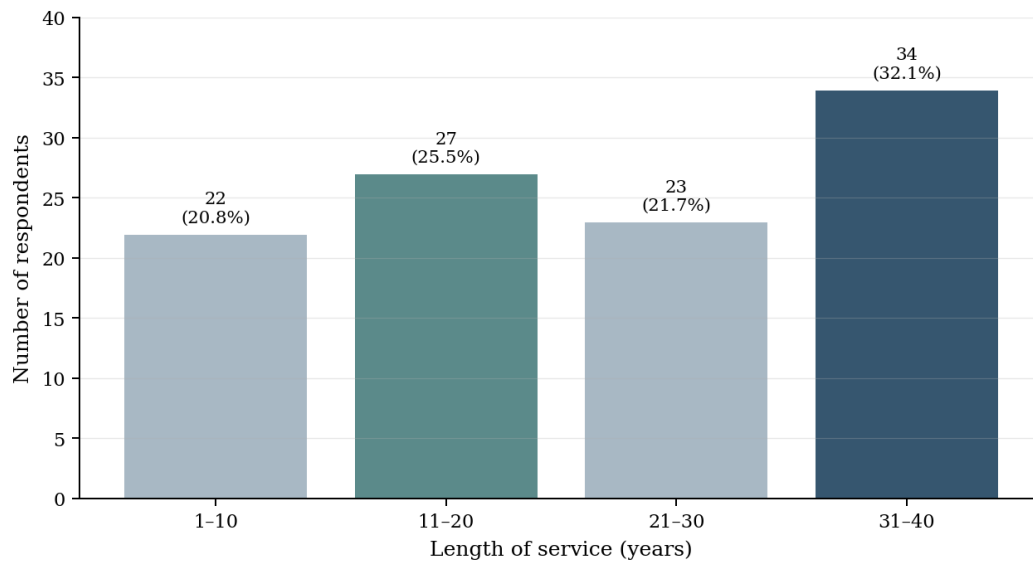


Figure 3. Length-of-service distribution of participating KPRI administrators.

Source: Primary questionnaire data, processed by the author(s), 2025.

The largest tenure group was 31–40 years ($n = 34$). The distribution was nevertheless spread across all four reported categories, with no category below 20% of the sample.

4.2 Measurement Quality

Table 2 summarizes the item-level correlation ranges and internal consistency coefficients. Every reported item correlation exceeded the stated critical value of .1606 and was significant at $p < .001$.

Table 2. Item discrimination and internal consistency of the study measures

Construct	Items	Item-total r range	Cronbach's alpha	Interpretation
Work motivation (X1)	10	.513–.779	.858	Good
Entrepreneurial orientation (X2)	15	.548–.867	.953	Excellent
IT utilization (X3)	15	.522–.827	.916	Excellent
Cooperative performance (Y)	14	.566–.794	.910	Excellent

Source: Primary questionnaire data, processed by the author(s), 2025.

The alpha coefficients ranged from .858 to .953, indicating strong score consistency within each construct. The very high alpha for entrepreneurial orientation may reflect a highly homogeneous scale, although alpha alone cannot establish dimensionality or validity. The broad correlation ranges show that all items contributed positively to their respective total scores.

4.3 Regression Diagnostics

The diagnostic results reported in the source manuscript are presented in Table 3. The tolerance results are correctly interpreted as multicollinearity diagnostics, not heteroscedasticity diagnostics.

Table 3. Reported diagnostic tests for the multiple regression model

Assumption	Statistic	Value	Interpretation
Residual normality	Kolmogorov-Smirnov p	.141	No significant departure reported
Multicollinearity	Motivation: VIF / tolerance	1.832 / .546	Acceptable
Multicollinearity	Entrepreneurship: VIF / tolerance	1.994 / .502	Acceptable
Multicollinearity	IT utilization: VIF / tolerance	1.682 / .594	Acceptable
Heteroscedasticity	Motivation test p	.665	No evidence reported
Heteroscedasticity	Entrepreneurship test p	.586	No evidence reported
Heteroscedasticity	IT utilization test p	.473	No evidence reported

Source: Primary questionnaire data, processed by the author(s), 2025.

All VIF values were below 2.0 and all tolerance values exceeded .50, indicating that the predictors were related but not so strongly as to undermine coefficient estimation. The reported normality and heteroscedasticity tests did not indicate violations at $\alpha = .05$. Because residual plots and influence diagnostics were not included in the source record, these results should be understood as the available rather than exhaustive diagnostic evidence.

4.4 Multiple Regression and Hypothesis Tests

Table 4 reports the coefficient estimates, standardized coefficients, test statistics, p values, and approximate 95% confidence intervals. The intercept is retained for model completeness but is not substantively interpreted because a score of zero may lie outside the meaningful range of the summed Likert-type measures.

Table 4. Multiple regression coefficients predicting cooperative performance

Predictor	B	SE	beta	t	p	Approx. 95% CI for B
Intercept	27.965	4.431	–	6.311	< .001	19.280, 36.650
Work motivation (X1)	.341	.128	.286	2.655	.009	.090, .592
Entrepreneurial orientation (X2)	.151	.078	.218	1.942	.055	-.002, .304
IT utilization (X3)	.151	.083	.187	1.815	.072	-.012, .314

Source: Primary questionnaire data, processed by the author(s), 2025.

Work motivation was the only predictor with a coefficient statistically distinguishable from zero at $\alpha = .05$. Holding entrepreneurial orientation and IT utilization constant, a one-unit increase in motivation was associated with a .341-unit increase in cooperative performance. Entrepreneurial orientation and IT utilization had positive coefficients, but their confidence intervals narrowly included zero. These findings support H1 but do not provide sufficient evidence to support H2 or H3 as unique partial associations at the conventional threshold.

Figure 4 visualizes the three predictor coefficients and their uncertainty. The plot is based entirely on the B and standard-error values reported in Table 4.

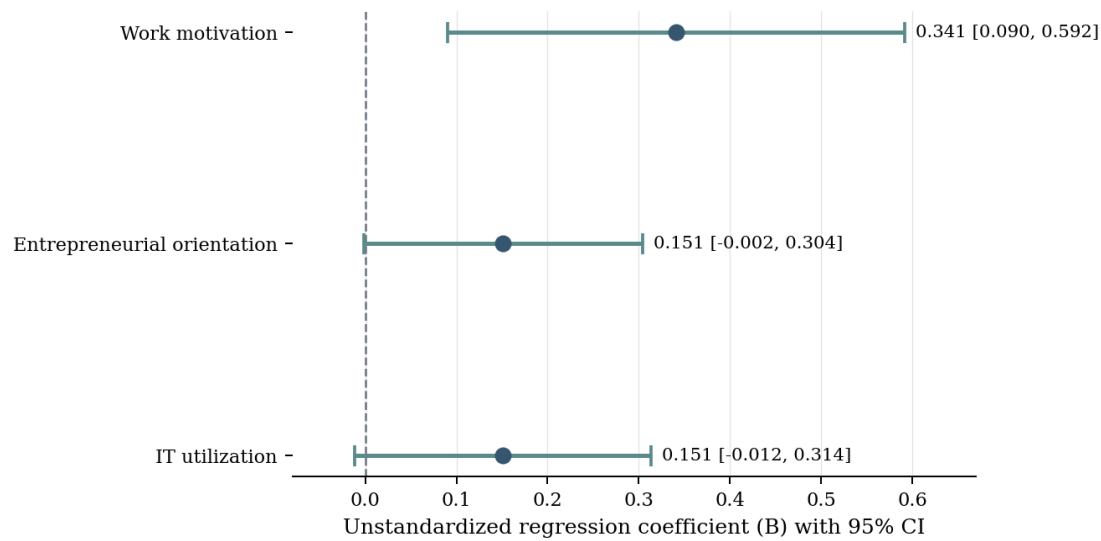


Figure 4. Unstandardized regression coefficients and approximate 95% confidence intervals.

Source: Primary questionnaire data, processed by the author(s), 2025.

The coefficient plot shows that the motivation interval remains above zero, whereas the intervals for entrepreneurial orientation and IT utilization cross zero by small margins. The pattern is more informative than a binary significant/non-significant classification because the latter two estimates remain positive and imprecise rather than demonstrating a negative or null effect.

The overall model results and hypothesis decisions are summarized in Table 5. The three predictors jointly accounted for more than one-third of the observed variance in cooperative performance.

Table 5. Model fit and hypothesis outcomes

Indicator or hypothesis	Result	Interpretation
R	.594	Overall multiple correlation
R ²	.353	35.3% of performance variance explained
Adjusted R ²	.334	Corrected for three predictors and sample size
Standard error of estimate	4.201	Average residual scale in outcome-score units
Omnibus model test	F(3, 102) = 18.551, p < .001	Joint model statistically significant
H1: Motivation → performance	Supported	B = .341, p = .009
H2: Entrepreneurship → performance	Not supported	B = .151, p = .055
H3: IT utilization → performance	Not supported	B = .151, p = .072
H4: Predictors jointly → performance	Supported	Omnibus F test, p < .001

Source: Primary questionnaire data, processed by the author(s), 2025.

The omnibus result, $F(3, 102) = 18.551, p < .001$, supports H4. The model explained 35.3% of the variance, with an adjusted value of 33.4%. The remaining 64.7% should not be interpreted as unexplained error

alone; it includes unmeasured organizational, governance, financial, market, leadership, and member-participation factors as well as measurement error.

4.5 Discussion

The central finding is that work motivation, entrepreneurial orientation, and IT utilization were jointly associated with KPRI performance, but only motivation made a statistically significant unique contribution after the three predictors were considered together. This distinction between joint and partial results is important. The model indicates that the managerial capability set is relevant as a whole, yet the available data identify motivation as the clearest independent correlate. A cooperative can possess entrepreneurial aspirations or digital tools without converting them into performance when administrators lack sustained effort, role commitment, or the willingness to implement organizational changes.

The motivation result is consistent with theories that connect autonomous and competence-supportive motivation to persistent, higher-quality work behavior (Deci et al., 2017; Van den Broeck et al., 2021). KPRI administration often involves recurring service tasks, record maintenance, meeting preparation, member communication, and follow-up that may not yield immediate rewards. Motivation can influence whether these duties are completed consistently and whether administrators move beyond minimum compliance. The positive coefficient also aligns with meta-analytic evidence that motivation is related to performance, although the relationship may be reciprocal and context-dependent (Cerasoli et al., 2014; Wang et al., 2024).

The entrepreneurial-orientation coefficient was positive and close to the conventional threshold ($p = .055$), but the evidence was insufficient to support a unique association at $\alpha = .05$. This result should not be translated into the claim that entrepreneurship has no relevance. Entrepreneurial orientation is a strategic posture whose payoff depends on implementation, organizational resources, and environmental fit (Rauch et al., 2009; Suder et al., 2025). In a member-owned cooperative, proposals for new services or calculated risks may require collective approval, financial capacity, and governance legitimacy. These intervening requirements can weaken the direct statistical relationship between an administrator's entrepreneurial orientation and contemporaneous organizational performance.

The near-threshold entrepreneurship estimate may also reflect construct complexity. Innovativeness, proactiveness, and risk-taking can combine differently, and a single total score may conceal configurations that matter for specific outcomes (Anderson et al., 2015; Puumalainen et al., 2023). For example, proactiveness without resource commitment may generate plans but not operational change, whereas risk-taking without governance controls may undermine member confidence. Entrepreneurial orientation is more likely to create value when it is connected to dynamic capabilities, knowledge acquisition, and coordinated strategic behavior (Hernández-Linares et al., 2024; Wales et al., 2023). Future cooperative research should therefore examine dimensions and mediating processes rather than assuming a uniform direct effect.

IT utilization was also positive but not statistically significant as a unique predictor ($p = .072$). The result is compatible with the distinction between technology use and digital transformation. Digital tools create performance gains when they are integrated with work processes, user capabilities, governance, and value-creation models (Gong & Ribiere, 2021; Vial, 2019). A cooperative may use messaging applications, spreadsheets, or isolated transaction systems without achieving interoperability, real-time

member services, reliable analytics, or transparent reporting. Under those conditions, utilization scores can rise before measurable organizational performance improves.

Technology-acceptance and diffusion theories further explain why infrastructure alone is insufficient. Performance expectancy, effort expectancy, facilitating conditions, compatibility, and visible benefits shape whether systems are adopted consistently and productively (Rogers, 2003; Venkatesh et al., 2003). The older age profile of the sample may make training and usability particularly salient, although the present data do not test age as a moderator. Evidence from digital-transformation research suggests that innovation capacity and organizational adaptation mediate the technology-performance relationship (Kraus et al., 2022; Peng & Tao, 2022). Thus, KPRI should evaluate workflow integration and service outcomes rather than treating the presence of software as an endpoint.

The significant omnibus model alongside two non-significant partial coefficients may also reflect shared variance. Motivated administrators may be more likely to pursue opportunities and learn digital tools, while entrepreneurial administrators may advocate technology adoption. When correlated predictors enter one regression equation, each coefficient represents only the variance uniquely associated with that predictor. The acceptable VIF values show that multicollinearity was not severe, but they do not imply independence. The model therefore suggests complementarity: motivation may be the activating condition through which entrepreneurial and technological capacities are translated into everyday performance.

The explained variance of 35.3% is meaningful for an organizational survey but leaves substantial room for other determinants. Cooperative-governance scholarship emphasizes board oversight, member participation, accountability, professional competence, and decision quality (Jamaluddin et al., 2023). Indonesian evidence also points to management, member commitment, and institutional capability as performance determinants (Kusmiati et al., 2023). Financial capital, cooperative size, leadership, market access, service diversification, member trust, and external government support may account for additional variance. Incorporating such factors would produce a more complete model and help determine whether motivation operates directly or through governance and service quality.

The findings have practical implications for KPRI administrators and the Bangkalan Cooperatives and MSMEs Service. First, motivation development should go beyond ceremonial encouragement. Role clarity, recognition, meaningful participation, manageable workloads, competence-building, and feedback can support more durable forms of motivation. Second, entrepreneurship programs should require participants to convert opportunity ideas into tested service proposals, resource plans, risk controls, and member-value indicators. Third, digital training should be tied to concrete workflows such as transaction accuracy, report timeliness, member-response time, and transparency rather than general computer literacy.

The results also have a governance implication. Because entrepreneurial and digital initiatives often require collective decisions and resource commitments, administrators need authorization structures that permit experimentation while protecting members. Pilot projects, staged investment, clear accountability, and post-implementation evaluation can reduce the tension between cooperative prudence and innovation. Such arrangements are consistent with dynamic-capability reasoning, which treats sensing, seizing, and reconfiguring as organizational processes rather than individual traits (Teece, 2018). They may also help digital initiatives move from isolated tools to integrated service systems (Verhoef et al., 2021).

Finally, the study demonstrates why statistical interpretation should not hinge exclusively on whether p is slightly above or below .05. The entrepreneurship and IT coefficients were positive and their confidence intervals only narrowly included zero. Declaring them irrelevant would overstate the evidence, just as declaring a causal effect for motivation would exceed the design. A more defensible conclusion is that motivation showed the most precise unique association in this sample, whereas the independent contributions of entrepreneurship and IT utilization remain uncertain and warrant better-powered, longitudinal, or multilevel investigation (Wasserstein et al., 2019).

5. Conclusion and Suggestion

This study examined three managerial factors within a single performance model for KPRI cooperatives in Bangkalan Regency. The predictors jointly explained 35.3% of performance variance, indicating that motivational, entrepreneurial, and technological conditions are collectively relevant. Work motivation emerged as the only statistically significant unique predictor, while entrepreneurial orientation and IT utilization produced positive but inconclusive partial estimates. The contribution of the study is therefore not a claim that entrepreneurship or technology is unimportant; rather, it shows that their performance value is unlikely to be automatic or independent of motivational, organizational, and governance conditions.

For practice, KPRI development should begin with the conditions that sustain administrator engagement and then connect entrepreneurship and digitalization to measurable service processes, resources, and accountability. For theory, the findings support a complementary-capabilities perspective in which individual drive activates strategic and technological resources. For future research, longitudinal, multilevel, and mediation models are needed to establish temporal order and identify the organizational mechanisms through which these capabilities become cooperative performance.

6. Limitations and Future Research

This study should be interpreted in light of several limitations. Its cross-sectional design does not establish temporal ordering or causality and cannot determine whether motivation precedes performance, whether performance reinforces motivation, or whether both are shaped by unmeasured organizational conditions (Spector, 2019). Participants were administrators accessible through PKPRI activities rather than members of a documented probability sample, so selection and nonresponse bias cannot be quantified. All constructs were measured through self-report questionnaires completed by the same respondents, which may introduce common-method and social-desirability bias (Podsakoff et al., 2003). Measurement evidence is also incomplete because the archived study record does not report the exact Likert anchors, full item wording, formal content-validity coefficients, factor structure, or test-retest reliability; accordingly, the reported item-total correlations and Cronbach's alpha coefficients support item discrimination and internal consistency but not comprehensive construct validity. In addition, the analysis treats administrator responses as independent even though the 106 respondents were nested within 36 cooperatives, and the absence of cooperative identifiers and cluster sizes prevented assessment of multilevel dependence. The model also included only three predictors, leaving governance, leadership, member participation, cooperative size, financial resources, market conditions, and service quality as plausible omitted determinants. Finally, the source record does not provide an

ethics approval identifier, consent documentation, response rate, or raw dataset, and these records should be verified before journal submission or data sharing.

Future research should address these constraints through longitudinal or time-lagged designs that establish temporal ordering, probability or stratified sampling across cooperative size and service type, and multilevel models that separate administrator-level from cooperative-level effects. Studies should employ validated multidimensional scales, report complete content and construct validity evidence, and reduce common-method bias by combining administrator surveys with member assessments, financial records, and digital trace data. Objective performance indicators—such as SHU growth, transaction accuracy, member retention, service turnaround time, complaint resolution, and digital-system usage logs—would provide a stronger basis for triangulation. Larger samples could also test mediation and moderation mechanisms, including whether governance quality, dynamic capabilities, training, age, or organizational resources explain when entrepreneurial orientation and IT utilization translate into performance. These extensions would improve causal credibility, external validity, and the practical specificity of recommendations for KPRI development.

Author Contributions

The source manuscript identifies Manah Tarman and Ika Lis Mariatun as authors but does not specify their individual CRediT roles. Both authors should verify and approve the precise contribution statement required by the target journal before submission.

Conflict of Interest Statement

The source manuscript does not contain a competing-interests declaration. The authors should provide and confirm the journal-required disclosure at the point of submission.

Data Availability Statement

No public data repository or access condition was reported in the source manuscript. Any data-availability statement should be aligned with participant confidentiality, institutional policy, and the authors' documented data-management arrangements.

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References

- Anderson, B. S., Eshima, Y., & Hornsby, J. S. (2019). Strategic entrepreneurial behaviors: Construct and scale development. *Strategic Entrepreneurship Journal*, 13 (2), 199-220. <https://doi.org/10.1002/sej.1306>
- Anderson, B. S., Kreiser, P. M., Kuratko, D. F., Hornsby, J. S., & Eshima, Y. (2015). Reconceptualizing entrepreneurial orientation. *Strategic Management Journal*, 36 (10), 1579-1596. <https://doi.org/10.1002/smj.2298>
- Anderson, B. S., Schueler, J., Baum, M., Wales, W. J., & Gupta, V. K. (2022). The chicken or the egg? Causal inference in entrepreneurial orientation-performance research. *Entrepreneurship Theory and Practice*, 46 (6), 1569-1596. <https://doi.org/10.1177/1042258720976368>
- Cerasoli, C. P., Nicklin, J. M., & Ford, M. T. (2014). Intrinsic motivation and extrinsic incentives jointly predict performance: A 40-year meta-analysis. *Psychological Bulletin*, 140 (4), 980-1008. <https://doi.org/10.1037/a0035661>
- Deci, E. L., Olafsen, A. H., & Ryan, R. M. (2017). Self-determination theory in work organizations: The state of a science. *Annual Review of Organizational Psychology and Organizational Behavior*, 4 , 19-43. <https://doi.org/10.1146/annurev-orgpsych-032516-113108>
- Gagné, M., Forest, J., Vansteenkiste, M., Crevier-Braud, L., Van den Broeck, A., Aspel, A. K., Bellerose, J., Benabou, C., Chemolli, E., Güntert, S. T., Halvari, H., Indiyastuti, D. L., Johnson, P. A., Molstad, M. H., Naudin, M., Ndao, A., Olafsen, A. H., Roussel, P., Wang, Z., & Westbye, C. (2015). The Multidimensional Work Motivation Scale: Validation evidence in seven languages and nine countries. *European Journal of Work and Organizational Psychology*, 24 (2), 178-196. <https://doi.org/10.1080/1359432X.2013.877892>
- Gong, C., & Ribiere, V. (2021). Developing a unified definition of digital transformation. *Technovation*, 102 , 102217. <https://doi.org/10.1016/j.technovation.2020.102217>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage. <https://www.cengage.uk/c/multivariate-data-analysis-8e-hair-babin-anderson-black/9781473756540/>
- Hassan, S. S., Meisner, K., Krause, K., Bzhalava, L., & Moog, P. (2024). Is digitalization a source of innovation? Exploring the role of digital diffusion in SME innovation performance. *Small Business Economics*, 62 , 1469-1491. <https://doi.org/10.1007/s11187-023-00826-7>
- Hernández-Linares, R., López-Fernández, M. C., García-Piqueres, G., Pina e Cunha, M., & Rego, A. (2024). How knowledge-based dynamic capabilities relate to firm performance: The mediating role of entrepreneurial orientation. *Review of Managerial Science*, 18 (10), 2781-2813. <https://doi.org/10.1007/s11846-023-00691-4>
- Jamaluddin, F., Mohd Saleh, N., Abdullah, A., Hassan, M. S., Hamzah, N., Jaffar, R., Aziz, S. A. A. G., & Embong, Z. (2023). Cooperative governance and cooperative performance: A systematic literature review. *SAGE Open*, 13 (3), 1-18. <https://doi.org/10.1177/21582440231192944>
- Kraus, S., Durst, S., Ferreira, J. J., Veiga, P., Kailer, N., & Weinmann, A. (2022). Digital transformation in business and management research: An overview of the current status quo. *International Journal of Information Management*, 63 , 102466. <https://doi.org/10.1016/j.ijinfomgt.2021.102466>
- Kusmiati, E., Masyita, D., Febrian, E., & Cahyandito, M. F. (2023). A study on the determinants of successful performance of Indonesian cooperatives. *International Journal of Social Economics*, 50 (9), 1285-1301. <https://doi.org/10.1108/IJSE-02-2022-0078>

- Lee, M. T., & Raschke, R. L. (2016). Understanding employee motivation and organizational performance: Arguments for a set-theoretic approach. *Journal of Innovation & Knowledge*, 1 (3), 162-169. <https://doi.org/10.1016/j.jik.2016.01.004>
- Li, K., Wang, X., & Duc, T. C. (2022). Entrepreneurial orientation, online credibility, and online performance: Evidence from SMEs in a B2B electronic market in China. *Journal of Small Business Management*, 60 (1), 93-118. <https://doi.org/10.1080/00472778.2019.1695495>
- Lumpkin, G. T., & Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review*, 21 (1), 135-172. <https://doi.org/10.5465/amr.1996.9602161568>
- Nambisan, S., Lyytinen, K., Majchrzak, A., & Song, M. (2017). Digital innovation management: Reinventing innovation management research in a digital world. *MIS Quarterly*, 41 (1), 223-238. <https://doi.org/10.25300/MISQ/2017/41:1.03>
- Peng, Y., & Tao, C. (2022). Can digital transformation promote enterprise performance? From the perspective of public policy and innovation. *Journal of Innovation & Knowledge*, 7 (3), 100198. <https://doi.org/10.1016/j.jik.2022.100198>
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88 (5), 879-903. <https://doi.org/10.1037/0021-9010.88.5.879>
- Puumalainen, K., Sjögrén, H., Soininen, J., Syrjä, P., & Kraus, S. (2023). Crisis response strategies and entrepreneurial orientation of SMEs: A configurational analysis on performance impacts. *International Entrepreneurship and Management Journal*, 19 , 1527-1559. <https://doi.org/10.1007/s11365-023-00847-4>
- Rauch, A., Wiklund, J., Lumpkin, G. T., & Frese, M. (2009). Entrepreneurial orientation and business performance: An assessment of past research and suggestions for the future. *Entrepreneurship Theory and Practice*, 33 (3), 761-787. <https://doi.org/10.1111/j.1540-6520.2009.00308.x>
- Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). Free Press. <https://books.google.com/books?id=4wW5AAAAIAAJ>
- Schober, P., Boer, C., & Schwarte, L. A. (2018). Correlation coefficients: Appropriate use and interpretation. *Anesthesia & Analgesia*, 126 (5), 1763-1768. <https://doi.org/10.1213/ANE.0000000000002864>
- Spector, P. E. (2019). Do not cross me: Optimizing the use of cross-sectional designs. *Journal of Business and Psychology*, 34 , 125-137. <https://doi.org/10.1007/s10869-018-09613-8>
- Suder, M., Kusa, R., Duda, J., & Karpacz, J. (2025). Exploring impact of entrepreneurial orientation on firm performance-moderators' variability under changing market conditions. *Review of Managerial Science*, 19 , 797-842. <https://doi.org/10.1007/s11846-024-00775-9>
- Teece, D. J. (2018). Business models and dynamic capabilities. *Long Range Planning*, 51 (1), 40-49. <https://doi.org/10.1016/j.lrp.2017.06.007>
- Van den Broeck, A., Howard, J. L., Van Vaerenbergh, Y., Leroy, H., & Gagné, M. (2021). Beyond intrinsic and extrinsic motivation: A meta-analysis on self-determination theory's multidimensional conceptualization of work motivation. *Organizational Psychology Review*, 11 (3), 240-273. <https://doi.org/10.1177/20413866211006173>

- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27 (3), 425-478. <https://doi.org/10.2307/30036540>
- Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. *Journal of Business Research*, 122 , 889-901. <https://doi.org/10.1016/j.jbusres.2019.09.022>
- Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *Journal of Strategic Information Systems*, 28 (2), 118-144. <https://doi.org/10.1016/j.jsis.2019.01.003>
- Wahyuningtyas, R., Disastra, G., & Rismayani, R. (2023). Toward cooperative competitiveness for community development in Economic Society 5.0. *Journal of Enterprising Communities: People and Places in the Global Economy*, 17 (3), 594-620. <https://doi.org/10.1108/JEC-10-2021-0149>
- Wales, W. J., Covin, J. G., Schüller, J., & Baum, M. (2023). Entrepreneurial orientation as a theory of new value creation. *The Journal of Technology Transfer*, 48 , 1752-1772. <https://doi.org/10.1007/s10961-023-10021-1>
- Wang, N., Luan, Y., & Ma, R. (2024). Detecting causal relationships between work motivation and job performance: A meta-analytic review of cross-lagged studies. *Humanities and Social Sciences Communications*, 11 , 595. <https://doi.org/10.1057/s41599-024-03038-w>
- Wasserstein, R. L., Schirm, A. L., & Lazar, N. A. (2019). Moving to a world beyond $p < .05$. *The American Statistician*, 73 (sup1), 1-19. <https://doi.org/10.1080/00031305.2019.1583913>
- Wiklund, J., & Shepherd, D. (2005). Entrepreneurial orientation and small business performance: A configurational approach. *Journal of Business Venturing*, 20 (1), 71-91. <https://doi.org/10.1016/j.jbusvent.2004.01.001>
- Wu, F., Guo, X., & Guo, X. (2023). Cooperative membership and new technology adoption of family farms: Evidence from China. *Annals of Public and Cooperative Economics*, 94 (3), 719-739. <https://doi.org/10.1111/apce.12433>