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Enhancing SME Performance through Entrepreneurial Orientation: The Roles of Empowerment, Entrepreneurial Competence, and Technology Support

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ABSTRACT: This study examines how SME empowerment, entrepreneurial competence, and technology support shape SME performance through entrepreneurial orientation in Baubau City, Indonesia. A quantitative explanatory, cross-sectional design was employed. Data were collected from 100 SME owners using a five-point Likert questionnaire with proportional representation of business categories and districts, subject to eligibility criteria, and analyzed using partial least squares structural equation modeling (PLS-SEM) in SmartPLS 4. The measurement model demonstrated satisfactory convergent validity and reliability. The structural model explained 44.5% of the variance in entrepreneurial orientation and 51.7% of the variance in SME performance. Empowerment had a strong positive effect on entrepreneurial orientation ($\beta=0.535$, $p<0.001$), while entrepreneurial competence also had a positive effect ($\beta=0.199$, $p=0.028$). Technology support did not significantly predict entrepreneurial orientation ($\beta=0.055$, $p=0.570$). SME performance was positively associated with empowerment ($\beta=0.283$, $p=0.001$), entrepreneurial competence ($\beta=0.202$, $p=0.006$), technology support ($\beta=0.163$, $p=0.031$), and entrepreneurial orientation ($\beta=0.294$, $p<0.001$). Entrepreneurial orientation mediated the empowerment–performance relationship ($\beta=0.158$, $p=0.002$), but did not mediate the competence–performance or technology–performance relationships. The findings indicate that entrepreneurial orientation is a selective strategic conversion mechanism: empowerment improves performance partly by strengthening proactive, innovative, and risk-oriented behavior, whereas competence and technology primarily contribute through direct pathways. The study advances an integrative strategic performance perspective for SMEs in an emerging, island-based regional economy.

1. INTRODUCTION

Small and medium-sized enterprises (SMEs) are central to employment creation, income generation, local value creation, and economic resilience, particularly in emerging economies. In Indonesia, the SME sector accounts for the overwhelming majority of business units and remains a core instrument of inclusive regional development [1, 2]. Yet growth in the number of firms does not automatically translate into stronger productivity, profitability, market expansion, or business continuity. This distinction is important because business performance is multidimensional and should be assessed through both financial and operational outcomes [3, 4].

Baubau City provides a particularly relevant setting for examining this problem. Local administrative data reported in the dissertation show that the number of registered SMEs increased sharply to 24,514 units in 2025, partly reflecting re-registration, digital data collection, and formalization. At the same time, only about 35% of SMEs were reported to have

survived beyond five years, digital technology utilization was about 28%, participation in training about 40%, and business legality about 32%. These patterns suggest a gap between numerical expansion and qualitative performance, making it necessary to identify the capabilities and strategic behaviors that convert external support into business outcomes.

The resource-based view (RBV) argues that superior performance depends on the effective deployment of valuable resources and capabilities rather than resource possession alone [5, 6]. Dynamic capabilities theory extends this reasoning by emphasizing the ability to sense opportunities, seize them, and reconfigure resources under changing conditions [7, 8]. For SMEs, empowerment programs, entrepreneurial competence, and technology support can therefore be understood as distinct resource domains. Their value, however, depends on whether owners translate them into entrepreneurial action.

Empowerment provides access to capital, training, mentoring, markets, and regulatory facilitation. Empowerment theory views such interventions as mechanisms that increase actors' capacity to access resources, make decisions, and exercise control over outcomes [9, 10]. Prior evidence suggests that business assistance and institutional support can improve survival and competitiveness, although the effect is not necessarily automatic because entrepreneurs differ in their ability to exploit the resources made available to them [11, 12]. This creates a need to examine the behavioral mechanism through which empowerment is transformed into performance.

Entrepreneurial competence represents the knowledge, skills, opportunity recognition, relationship-building, conceptual, organizing, strategic, and commitment capabilities needed to manage a venture [13]. Human-capital research generally links knowledge and skill investments to entrepreneurial success [14, 15]. Nevertheless, competence is a potential capability; it may improve performance directly or require a strategic posture that converts knowledge into opportunity-seeking behavior. Entrepreneurial orientation is therefore a plausible mechanism linking competence to outcomes.

Technology support has become equally important as SMEs adopt digital marketing, electronic transactions, information systems, and online customer interfaces. Technology acceptance research highlights perceived usefulness and ease of use as important foundations of technology utilization [16, 17], while digital entrepreneurship research emphasizes how digital technologies reshape opportunity creation and business models [18]. Prior studies show that information systems and e-business can improve efficiency, market reach, and decision quality [19, 20]. However, access to technology may enhance operations without necessarily changing an owner's strategic entrepreneurial posture.

Entrepreneurial orientation captures a firm's strategic tendency toward innovativeness, proactiveness, risk taking, competitive aggressiveness, and autonomy [21–24]. A substantial literature associates entrepreneurial orientation with stronger SME performance, but the magnitude and mechanisms vary by context [25–28]. Rather than treating entrepreneurial orientation only as an independent predictor, this study positions it as a conversion mechanism through which selected resources and capabilities may become performance outcomes.

The study contributes by integrating empowerment, entrepreneurial competence, and technology support within a single model and testing entrepreneurial orientation as a mediator for each pathway. This configuration allows the analysis to distinguish resources that operate through strategic entrepreneurial behavior from resources that primarily affect performance directly. The empirical setting further extends evidence beyond major metropolitan markets to Baubau, an island-based commercial hub in Eastern Indonesia. Accordingly, this study asks whether empowerment, entrepreneurial competence, and technology support improve SME performance directly and whether entrepreneurial orientation transmits these effects.

1.1 Theoretical framework and hypotheses

Empowerment can increase access to information, finance, mentoring, networks, and market opportunities, thereby widening the entrepreneur's perceived action set. When these resources strengthen confidence and decision capacity, entrepreneurs are more likely to act proactively, experiment with new offerings, and accept calculated risk [9–12]. Thus, empowerment should strengthen entrepreneurial orientation and performance, while entrepreneurial orientation may carry part of empowerment's effect to performance.

Entrepreneurial competence equips owners to recognize opportunities, organize resources, formulate strategy, build relationships, and sustain commitment [13–15]. These competencies can directly improve business execution and can also support innovative and proactive strategic behavior. Accordingly, competence is expected to predict both entrepreneurial orientation and SME performance, with a possible indirect pathway through entrepreneurial orientation.

Technology support provides infrastructure, technical assistance, digital marketing tools, and transaction or record-keeping systems. Such resources can lower transaction costs, expand market access, and improve operational efficiency [16–20]. They may also facilitate experimentation and opportunity discovery, suggesting a potential effect on entrepreneurial orientation. Whether this strategic conversion occurs in resource-constrained SMEs, however, remains an empirical question.

Entrepreneurial orientation is expected to improve performance because innovation, proactive opportunity pursuit, calculated risk taking, competitive aggressiveness, and autonomy help firms adapt to changing markets and mobilize resources toward growth [21–28]. Based on these arguments, ten hypotheses were tested: H1 empowerment → entrepreneurial orientation; H2 entrepreneurial competence → entrepreneurial orientation; H3 technology support → entrepreneurial orientation; H4 empowerment → SME performance; H5 entrepreneurial competence → SME performance; H6 technology support → SME performance; H7 entrepreneurial orientation → SME performance; H8 entrepreneurial orientation mediates empowerment → performance; H9 entrepreneurial orientation mediates competence → performance; and H10 entrepreneurial orientation mediates technology support → performance.

2. MATERIALS AND METHODS

2.1 Research design and participants

The study used a quantitative explanatory and cross-sectional design. The empirical setting was Baubau City, Southeast Sulawesi, Indonesia. The final dataset comprised 100 SME owners. The sampling plan in the dissertation specified stratified random sampling to represent micro, small, and medium enterprises across eight districts, with proportional allocation across strata. Eligibility criteria included an operating history of at least two years, business legality or a Business Identification Number, and prior exposure to an empowerment or development program. Data were collected using self-administered questionnaires distributed directly and online. The questionnaire used a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

The respondent profile was consistent with the local SME structure. Fifty-eight percent were men and 42% women; the largest age group was 31–40 years (34%), followed by 41–50 years (29%). Most respondents had completed senior high school/vocational education (47%), while 30% held an undergraduate degree. Thirty-nine percent had operated their businesses for 6–10 years. Trading (31%) and culinary businesses (28%) were the largest sectors, 51% employed one to three workers, and the most common monthly turnover category was IDR 10–25 million (35%).

2.2 Measures

SME empowerment was operationalized through access to finance, business training, mentoring/consultation, market access, and regulatory support, reflecting the capacity-building logic of empowerment theory [2, 10]. Entrepreneurial competence covered opportunity, relationship, conceptual/analytical, organizing, strategic, and commitment competencies based on the entrepreneurial competency framework [13]. Technology support captured infrastructure availability, technical support and training, digital marketing use, digital transactions and record keeping, and technology reliability/ease of use, informed by technology acceptance and SME information-systems research [16, 17, 19]. Entrepreneurial orientation was measured through innovativeness, proactiveness, risk taking, competitive aggressiveness, and autonomy [21–24]. SME performance reflected sales growth, profit growth, customer growth, market expansion, productivity, and business continuity, consistent with multidimensional performance research [3, 4].

2.3 Data analysis

PLS-SEM was performed with SmartPLS 4. The analysis followed two stages: assessment of the measurement model and assessment of the structural model [29, 30]. Convergent validity was examined using outer loadings and average variance extracted (AVE), while internal consistency was assessed using Cronbach's alpha, rho_A, and composite reliability. Discriminant validity was evaluated using established variance-based SEM criteria [31]. Structural assessment considered collinearity, coefficients of determination (R^2), effect sizes (f^2), path coefficients, and bootstrapped significance. At the 5% two-tailed level, paths were considered statistically significant when $t > 1.96$ and $p < 0.05$. Mediation was evaluated from specific indirect effects rather than from the significance of component paths alone [29, 30].

3. RESULTS AND DISCUSSION

3.1 Measurement model

The measurement model showed satisfactory convergent validity. Outer loadings ranged from 0.701–0.810 for empowerment, 0.772–0.867 for entrepreneurial competence, 0.835–0.885 for technology support, 0.805–0.907 for entrepreneurial orientation, and 0.680–0.814 for SME performance. Of 27 indicators, 26 exceeded 0.70. The customer-growth performance indicator loaded at 0.680 but was retained because of its substantive relevance and because the performance construct maintained acceptable AVE and reliability. AVE values were 0.592 for empowerment, 0.677 for competence, 0.723 for technology support, 0.744 for entrepreneurial orientation, and 0.538 for SME performance, all above the 0.50 threshold [29, 31].

Table 1. Measurement Model Assessment

Construct	Outer-loading range	AVE	Assessment
SME empowerment	0.701–0.810	0.592	Acceptable
Entrepreneurial competence	0.772–0.867	0.677	Acceptable
Technology support	0.835–0.885	0.723	Acceptable
Entrepreneurial orientation	0.805–0.907	0.744	Acceptable
SME performance	0.680–0.814	0.538	Acceptable

3.2 Structural model and direct effects

The structural model explained 44.5% of the variance in entrepreneurial orientation ($R^2=0.445$) and 51.7% of the variance in SME performance ($R^2=0.517$), indicating that the integrated resource–orientation model possessed meaningful explanatory power. Empowerment was the strongest predictor of entrepreneurial orientation ($\beta=0.535$, $t=6.262$, $p<0.001$; $f^2=0.387$). Entrepreneurial competence also positively predicted entrepreneurial orientation ($\beta=0.199$, $t=2.193$, $p=0.028$; $f^2=0.058$). In contrast, technology support did not significantly predict entrepreneurial orientation ($\beta=0.055$, $t=0.569$, $p=0.570$; $f^2=0.005$).

All four direct predictors of SME performance were statistically significant. Entrepreneurial orientation had the largest direct coefficient ($\beta=0.294$, $t=3.538$, $p<0.001$; $f^2=0.100$), followed by empowerment ($\beta=0.283$, $t=3.214$, $p=0.001$; $f^2=0.090$), entrepreneurial competence ($\beta=0.202$, $t=2.763$, $p=0.006$; $f^2=0.065$), and technology support ($\beta=0.163$, $t=2.162$, $p=0.031$; $f^2=0.047$). Thus, six of the seven direct-effect hypotheses were supported, with only the technology support → entrepreneurial orientation pathway unsupported.

Table 2. Structural Model and Direct Hypothesis Testing Results

Hypothesis / Path	β	t	p	f^2	Decision
H1 Empowerment → EO	0.535	6.262	<0.001	0.387	Supported
H2 Competence → EO	0.199	2.193	0.028	0.058	Supported
H3 Technology → EO	0.055	0.569	0.570	0.005	Not supported
H4 Empowerment → Performance	0.283	3.214	0.001	0.090	Supported
H5 Competence → Performance	0.202	2.763	0.006	0.065	Supported
H6 Technology → Performance	0.163	2.162	0.031	0.047	Supported
H7 EO → Performance	0.294	3.538	<0.001	0.100	Supported

3.3 Mediation analysis

The mediation results reveal a selective role for entrepreneurial orientation. The indirect effect of empowerment on performance through entrepreneurial orientation was positive and significant ($\beta=0.158$, $t=3.127$, $p=0.002$). Because the direct

empowerment → performance path was also positive and significant, the pattern is consistent with complementary mediation: empowerment contributes to performance both directly and through a strengthened entrepreneurial orientation.

The indirect effect of entrepreneurial competence through entrepreneurial orientation was not significant ($\beta=0.059$, $t=1.835$, $p=0.066$), even though competence predicted entrepreneurial orientation and entrepreneurial orientation predicted performance. The indirect effect of technology support was likewise not significant ($\beta=0.016$, $t=0.557$, $p=0.577$), consistent with the nonsignificant technology support → entrepreneurial orientation path. These findings show why mediation must be evaluated from the indirect effect itself rather than inferred from separate direct paths [29, 30].

Table 3. Indirect Effects and Mediation Hypothesis Testing Results

Hypothesis / Indirect path	β	t	p	Mediation decision
H8 Empowerment → EO → Performance	0.158	3.127	0.002	Supported; complementary mediation
H9 Competence → EO → Performance	0.059	1.835	0.066	Not supported
H10 Technology → EO → Performance	0.016	0.557	0.577	Not supported

3.4 Empowerment as a strategic antecedent

The strongest relationship in the model is the effect of empowerment on entrepreneurial orientation. This result suggests that access to finance, training, mentoring, markets, and regulatory facilitation does more than supply resources: it can change how SME owners approach opportunities. Empowerment may increase perceived control and action capacity, consistent with empowerment theory [2, 10]. It also aligns with evidence that external business assistance and institutional support can strengthen survival, growth, and competitive capability [11, 12].

The mediation result deepens this interpretation. Empowerment improves performance directly, but part of its contribution operates through entrepreneurial orientation. In practical terms, an empowerment program is more likely to generate sustained business outcomes when beneficiaries use the acquired resources to innovate, anticipate market shifts, take calculated risks, compete actively, and exercise strategic autonomy. This finding integrates resource access with strategic behavior: resources matter, but their conversion into entrepreneurial action matters as well.

3.5 Entrepreneurial competence and performance

Entrepreneurial competence positively influenced both entrepreneurial orientation and performance. This is consistent with the competency perspective, which treats opportunity recognition, relationship management, conceptual thinking, organization, strategy, and commitment as central to SME competitiveness [13]. It is also consistent with meta-analytic evidence linking human capital to entrepreneurial success [14] and with studies emphasizing the performance relevance of entrepreneurial competencies [15, 32].

However, entrepreneurial orientation did not significantly mediate the competence–performance relationship at the 5% level. The direct competence effect remained significant, suggesting that competence may be translated into performance through operational and managerial routes that do not require a broad change in strategic orientation. Analytical ability, organizing skill, and strategic competence can improve decisions, resource allocation, customer management, and execution directly. The result therefore cautions against assuming that every capability must operate through entrepreneurial orientation.

3.6 Technology support: operational value without strategic conversion

Technology support significantly improved SME performance but did not significantly shape entrepreneurial orientation. This asymmetry is one of the most informative findings. Technology may help firms process transactions, maintain records, reach customers, reduce communication costs, and improve service efficiency without automatically making owners more innovative, proactive, or risk-taking. This interpretation is consistent with technology acceptance research, where usefulness and ease of use facilitate utilization [16, 17], and with evidence that information systems and e-business adoption improve operational outcomes [19, 20].

The local context helps explain the pattern. The dissertation reports limited digital utilization among Baubau SMEs, and the descriptive results indicate that digital transactions and record keeping remain areas requiring improvement. At this stage of

digitalization, technology may function primarily as an operational enabler rather than a strategic entrepreneurship platform. The nonsignificant mediation result reinforces this conclusion: the performance benefit of technology is predominantly direct in the present model. This distinction is important for policy because distributing digital tools alone may not cultivate entrepreneurial orientation; technology programs may need to be combined with opportunity discovery, innovation, experimentation, and digital business-model training [18, 33].

3.7 Entrepreneurial orientation and SME performance

Entrepreneurial orientation had the largest direct coefficient among the predictors of SME performance. This supports the foundational argument that entrepreneurial firms create value by innovating, acting proactively, accepting calculated risk, competing assertively, and allowing autonomy in opportunity pursuit [21–24]. It is also consistent with prior empirical and meta-analytic work connecting entrepreneurial orientation with business performance [25–28,34].

The result is especially meaningful in a market dominated by micro and small businesses. When financial, human, and technological resources are constrained, strategic posture can determine how effectively limited resources are deployed. Entrepreneurial orientation can therefore be understood as a dynamic behavioral capability that helps firms sense and seize opportunities and reconfigure existing resources [7, 8]. Yet the mediation findings demonstrate that its role is not universal: it is a strong direct performance driver and a meaningful bridge for empowerment, but it does not automatically transmit every capability to performance.

3.8 Theoretical and practical implications

Theoretically, the findings support an integrative strategic performance perspective combining RBV, dynamic capabilities, empowerment, human capital, technology acceptance, and entrepreneurial orientation. The contribution lies not in asserting that all resources work through one mechanism, but in identifying differentiated pathways. Empowerment exhibits both direct and orientation-mediated effects; entrepreneurial competence contributes mainly through a direct performance route despite predicting orientation; and technology support produces a direct performance benefit without changing entrepreneurial orientation. This pathway specificity refines a simple resource → orientation → performance assumption.

For policymakers and SME-development agencies, the findings imply that empowerment should move beyond one-off assistance. Programs should combine finance, training, mentoring, market access, and regulatory facilitation with activities that explicitly build proactive opportunity seeking, innovation, and calculated risk management. Competence programs should emphasize analytical problem solving and opportunity recognition, while technology initiatives should prioritize reliable, easy-to-use systems, digital transactions, bookkeeping, and marketing, then connect these tools to business-model experimentation. For SME owners, the evidence suggests that technology and competence can improve execution directly, but empowerment yields broader benefits when translated into an entrepreneurial strategic posture.

3.9 Limitations and future research

Several limitations should guide interpretation. First, the cross-sectional design supports association and theory-consistent directional modeling but does not establish temporal causality. Second, the sample comprises 100 SME owners in one city, so generalization to other regions, industries, and firm-size distributions should be cautious. Third, the model relies on perceptual survey measures. Future studies could use longitudinal designs, objective sales or profit indicators, larger multi-region samples, and multi-group analysis by sector or firm size. Further research should also examine digital capability, innovation capability, absorptive capacity, market orientation, and environmental dynamism as alternative mediators or boundary conditions, particularly for the technology–performance pathway.

4. CONCLUSION

This study demonstrates that SME performance in Baubau City is shaped by a combination of external support, owner capabilities, technology, and entrepreneurial strategic behavior. Empowerment, entrepreneurial competence, technology support, and entrepreneurial orientation each show positive direct relationships with performance. Entrepreneurial orientation is additionally strengthened by empowerment and competence, but not by technology support. Most importantly, entrepreneurial orientation mediates only the empowerment–performance relationship. The evidence therefore portrays entrepreneurial orientation as a selective conversion mechanism rather than a universal mediator. Empowerment becomes more productive when it stimulates entrepreneurial action, whereas competence and technology primarily contribute to

performance through direct pathways in the present context. These findings support SME policies that integrate resource provision with entrepreneurial behavior development and distinguish operational digitalization from strategic entrepreneurial transformation.

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AUTHOR CONTRIBUTIONS

Suardin: Conceptualization, investigation, data curation, formal analysis, writing—original draft. Rosnawintang: Supervision, conceptualization, writing—review and editing. Yusuf: Methodology, supervision, writing—review and editing. Nursaban Rommy Suleman: Supervision, validation, writing—review and editing.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

ETHICS STATEMENT

Participation was voluntary and respondents were informed about the academic purpose of the study. No clinical intervention was involved.

DATA AVAILABILITY STATEMENT

The data supporting the findings of this study are available from the corresponding author upon reasonable request, subject to applicable research and confidentiality requirements.

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