

Youth Entrepreneurship and Rural Development in Enugu State, Nigeria

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ABSTRACT

Rural communities in Enugu State continue to experience constrained livelihood options, weak nonfarm employment absorption, and uneven access to productive assets among young people. This study examined the effect of youth entrepreneurship on rural development outcomes in Enugu State, Nigeria. Anchored on Schumpeterian innovation theory, human capital theory, and the sustainable livelihoods framework, the study specified three hypotheses linking youth entrepreneurship intensity, access to finance, and entrepreneurial skills to a composite rural development outcome index. A cross-sectional survey design was employed. The sampling frame comprised 8,640 rural youth entrepreneurs identified from cooperative registers, local government youth desks, and agribusiness clusters across six predominantly rural local government areas spanning the three senatorial districts. Yamane's formula at a 5% margin of error produced a minimum sample of 382; 430 questionnaires were distributed and 384 usable responses were retained (89.3% usable rate). Constructs were measured with multi-item Likert scales. Cronbach's alpha coefficients were .87 for youth entrepreneurship intensity, .81 for access to finance, .84 for entrepreneurial skills, and .89 for rural development outcomes. Multiple regression showed that the three predictors jointly explained 48.2% of the variance in rural development outcomes, $F(3, 380) = 117.84$, $p < .001$, $R^2 = .482$, adjusted $R^2 = .478$. Youth entrepreneurship intensity ($\beta = .381$, $p < .001$, $f^2 = .176$), entrepreneurial skills ($\beta = .294$, $p < .001$, $f^2 = .119$), and access to finance ($\beta = .237$, $p < .001$, $f^2 = .082$) each exerted a positive unique effect. The findings indicate that rural development gains associated with youth enterprise are strongest where entrepreneurial activity is intensive, skills are accumulated, and credit and other financial services are reasonably accessible. Policy implications include sequenced rural finance, practice-based skills programs, and infrastructure that reduces transaction costs for rural youth firms.

Keywords: youth entrepreneurship; rural development; Enugu State; access to finance; entrepreneurial skills; quantitative survey

1. Introduction

Nigeria's development debate has increasingly turned to the rural economy because a large share of the country's young population still lives outside major metropolitan labor markets. Enugu State, located in the South-East geopolitical zone, illustrates this tension. The state has 17 local government areas, a projected population of about 4.69 million, and a mixed economy in which agriculture, trading, artisan services, and small manufacturing remain important outside Enugu metropolis (National Population Commission & National Bureau of Statistics projections compiled by City Population, 2022). Rural local government areas such as Uzo-Uwani, Aninri, Nkanu East, Isi-Uzo, Igbo-Eze North, and Ezeagu combine farming households with growing clusters of youth-owned microenterprises in agroprocessing, trading, transport, fashion, digital services, and construction-related trades.

Youth unemployment and underemployment have been measured with changing official definitions, yet the structural problem is persistent: formal wage jobs are scarce, and a high proportion of young Nigerians work in self-employment or informal enterprise (National Bureau of Statistics [NBS], 2023, 2024). Entrepreneurship is therefore not merely an ideological preference; it is the dominant labor-market adjustment mechanism available to many rural young people. State-level initiatives, including the Enugu MSME and Startup Agency programs, digital-skills schemes, and nanoenterprise grant mapping across local government areas, have attempted to convert that necessity into more productive enterprise (Enugu SME Center, 2024, 2025). Whether those enterprises translate into broader rural development—employment beyond the founder, local income circulation, modest infrastructure contributions, and improved household provisioning—remains an empirical question.

Rural development is treated in this article as a multidimensional outcome rather than a synonym for agricultural output. Following common practice in Nigerian rural studies, the construct includes employment generation, household income improvement, contribution to local physical and market infrastructure, and contribution to food-system functioning (Obananya, 2022; Daudu & Kareem, 2022). Youth entrepreneurship is treated as a behavioral and resource-using process: opportunity recognition, innovativeness, risk-taking, and resource mobilization, conditioned by finance and skills. The study therefore estimates the unique and joint effects of entrepreneurship intensity, access to finance, and entrepreneurial skills on rural development outcomes among rural youth entrepreneurs in Enugu State.

The contribution is fourfold. First, the study assembles a rural-only sample across six local government areas rather than mixing urban campus and market respondents, which has been common in Enugu entrepreneurship surveys. Second, it reports construct reliability, effect sizes, and internally consistent inferential statistics rather than significance tests alone. Third, it situates Enugu evidence against a wider Nigerian empirical literature on agripreneurship, cooperatives, digital enterprise, and youth employment programs. Fourth, it translates coefficients into policy sequence: skills and finance do not substitute for entrepreneurial activity; they amplify it.

1.1 Research questions

The study was guided by three research questions: (a) What is the effect of youth entrepreneurship intensity on rural development outcomes in Enugu State? (b) What is the effect of access to finance on rural development outcomes among rural youth entrepreneurs in Enugu State? (c) What is the effect of entrepreneurial skills on rural development outcomes among rural youth entrepreneurs in Enugu State?

1.2 Research hypotheses

H1: Youth entrepreneurship intensity has a statistically significant positive effect on rural development outcomes in Enugu State.

H2: Access to finance has a statistically significant positive effect on rural development outcomes among rural youth entrepreneurs in Enugu State.

H3: Entrepreneurial skills have a statistically significant positive effect on rural development outcomes among rural youth entrepreneurs in Enugu State.

2. Literature Review

2.1 Youth entrepreneurship as a development mechanism

Entrepreneurship among young people is frequently proposed as a response to Africa's youth bulge and the limited absorptive capacity of public-sector and large-firm employment (Adeyanju et al., 2023; Babu & Zhou, 2020). In Nigeria, self-employment accounts for a very large share of youth work. NBS labor-force releases after the methodological revision still show that most young people are self-employed rather than wage-employed (NBS, 2023, 2024). That fact does not automatically imply high-productivity entrepreneurship. Many youth enterprises remain subsistence activities with thin margins, seasonal cash flow, and weak linkages to markets outside the immediate community (Nagler & Naudé, 2014).

Babu and Zhou (2020), in a Nigeria country report on youth entrepreneurship in agribusiness, argued that success depends on an ecosystem of policy, institutions, technology, and individual capabilities. Case studies in that report showed that rural and peri-urban agripreneurs face land access constraints, expensive working capital, weak extension, and market intermediation problems. The implication for Enugu is that measuring "being in business" is insufficient. Intensity of entrepreneurial behavior—how actively a young person searches for opportunities, modifies products or processes, takes calculated risk, and mobilizes resources—is a more informative predictor of development outcomes.

2.2 Empirical studies in Enugu State

Several Enugu-based studies provide local anchors. Apeh et al. (2023) examined digital entrepreneurship and youth empowerment with a multistage sample of 900 respondents drawn from markets and tertiary institutions. Digital platforms were ubiquitous; content creation, web services, digital marketing, crypto trading, and app development appeared as income channels. Mean scores indicated that digital activity supported self-employment and market access, while capital, interest, information, and electricity constrained engagement. Although the sample mixed urban institutional and market respondents, the constraint profile is highly relevant to rural Enugu, where electricity reliability and working capital are recurrent bottlenecks.

Anikeze et al. studied digitalized entrepreneurship schemes and youth empowerment in four local government areas of Enugu metropolis using Yamane sampling from a large resident population and a realized sample of 400. Chi-square tests supported positive associations between online training platforms, blogging-based mentorship, digital credit schemes, and youth entrepreneurship outcomes. The design was urban-metropolitan, but the policy instruments—online training and digital credit—are now being extended statewide through talent and MSME programs.

A descriptive survey of cooperatives and youth empowerment in Enugu State sampled 302 members of 16 registered multipurpose cooperatives (International Journal of Sub-Saharan African Research, 2025). Simple linear regression was used to test effects on poverty reduction and job creation. The authors concluded that cooperatives significantly improved both outcomes and recommended mentorship and financial-management workshops. The result is consistent with a long Nigerian tradition of treating cooperatives as rural financial and marketing infrastructure, though the published coefficients should be read cautiously because some reported t and n values in secondary summaries are internally inconsistent.

Okonkwo et al. (2019) studied uneducated youths and small and medium enterprises in Ezeagu Local Government Area. From a population of 1,308 they drew 306 respondents using Yamane's formula and tested hypotheses with chi-square. They reported that SMEs promoted entrepreneurship, employment, savings mobilization, and more equitable regional growth, while capital formation, infrastructure, and management problems constrained impact. Ezeagu is one of the rural local government areas retained in the present study, which allows a direct geographic continuity.

Dialoke et al. (2017) examined entrepreneurship and poverty reduction in the Industrial Layout of Coal Camp, Enugu, with 248 respondents. Pearson correlations between skill acquisition, entrepreneurship training, and creativity on the one hand and youth empowerment, job creation, and wealth creation on the other ranged from $r = .388$ to $r = .480$. Those moderate positive associations informed the expectation in the present study that skills and entrepreneurial behavior would show medium rather than very large unique effects once other predictors are controlled.

A capacity-building study covering 519 rural entrepreneurs across Enugu's three senatorial zones, with 413 valid questionnaires, used chi-square analysis and concluded that handing out equipment without entrepreneurial knowledge is an inadequate model of youth capacity building (Youth Capacity Building in Enugu State, 2018). That argument motivates the separate measurement of entrepreneurial skills in the present model. A related vocational and technical education study of students at the University of Nigeria, Nsukka, and Enugu State University of Science and Technology found high self-reported skill acquisition and application, but also equipment and attitudinal constraints.

Mbam and Nwibo (2013) studied entrepreneurship development as a poverty-alleviation strategy among farming households in Igbo-Eze North. With 120 respondents they found that entrepreneurial activity had not yet produced a statistically convincing poverty reduction effect at the 5% level, citing credit, markets, information, power, taxation, and policy as constraints. Igbo-Eze North remains in the present sampling frame; the earlier null-leaning result is a reminder that enterprise existence is not equivalent to development impact.

2.3 Empirical studies elsewhere in Nigeria

Adeyanju et al. (2023) compared National Directorate of Employment beneficiaries and non-entrepreneurs in Kano State ($n = 266$). After addressing selection, entrepreneurs displayed better livelihood outcomes on income and self-assessed living conditions. The study is important because it treats entrepreneurship as a treatment rather than a self-description and still finds livelihood gains. Adeyanju and colleagues' broader youth-in-agribusiness evaluation used endogenous switching probit methods and a sample of 668 youths in Ondo and Ogun States to estimate effects of youth-in-agribusiness programs on poverty and vulnerability (Adeyanju et al., 2022). Participation reduced poverty and vulnerability after accounting for selection, supporting the claim that structured agripreneurship programs can move outcomes, not only attitudes.

Daudu and Kareem (2022) surveyed 480 rural youth entrepreneurs in North-Central Nigeria and used factor analysis and diversification indexes. Nearly half of respondents combined on-farm, off-farm, and nonfarm enterprises; 44.5% exhibited high entrepreneurial behavior. Diversification is therefore both a risk-management strategy and a rural development channel. A Southwest Nigeria agripreneurship and food-security study sampled 432 rural youth agripreneurs and retained 427 valid cases, finding high diversification and a male advantage on a food-security index (0.6513 versus 0.4993). Gendered outcome gaps caution against treating "youth" as a homogeneous category in Enugu as well. In Jigawa State, a multidimensional study of youth agripreneurs used multistage sampling and Cochran's formula, arriving at a realized analytic sample near 286. Drivers of empowerment and performance included resources, institutions, and individual capabilities, echoing Babu and Zhou's ecosystem framing.

Nagler and Naudé (2014), using Living Standards Measurement Study–Integrated Surveys on Agriculture data for several African countries including Nigeria, found that young adults were less likely to operate nonfarm enterprises and, when they did, recorded lower labor productivity than older adults. The result is a useful counterweight to optimistic youth-entrepreneurship rhetoric: age and experience still structure productivity. Obananya (2022) examined entrepreneurship orientation, innovation, and employment creation as predictors of rural development in Anambra State with 250 registered entrepreneurs. The study, anchored on refugee and Schumpeter effects, found significant influences of orientation, innovation, and employment creation. Geographic and cultural proximity to Enugu increases the relevance of that specification. Isah et al. reported a field survey of youth entrepreneurship challenges and opportunities in rural Kebbi State. Of 200 questionnaires, 120 were analyzable; most respondents were aged 21–25. Descriptive evidence again highlighted finance, infrastructure, and market access.

Additional Nigerian program evidence sharpens the interpretation of finance. Evaluations summarized in reviews of youth employment programs note that competitive business-plan finance was associated with substantial job creation among winners relative to non-winners, while youth entrepreneurship support windows combined training with capped loans. Those national instruments rarely reach the most remote communities of Uzo-Uwani or Aninri in their original design. The present rural sample therefore captures enterprises that are more likely to rely on cooperatives, daily contribution collectors, family transfers, and occasional state nano grants than on national contests. If access to finance still predicts outcomes under those thinner conditions, the coefficient is a conservative signal.

Institutional texture also matters. Enugu State has, since 2023, expanded enterprise mapping, nano grants, digital-marketing training, and tech-talent pipelines through the MSME and Startup Agency and related hubs. Training volumes reported by the agency change the opportunity set facing rural young people even when the young person does not migrate to Enugu urban. A rural fashion producer in Ezeagu can now sell through the same digital channels that Apeh et al. (2023) documented among market and campus youths. Statewide digital public goods may raise the baseline of entrepreneurship intensity, which would, if true, bias a single-state cross-section toward higher intensity means than would have been observed a decade earlier. That historical shift does not invalidate the within-sample regression; it contextualizes the mean of 3.62 on the intensity scale.

Measurement choices in prior Enugu work also motivate the present specification. Many local studies tested hypotheses with chi-square on categorized Likert items. Chi-square can detect association but discards ordinal information and does not yield standardized unique effects. Dialoke et al. (2017) improved on that tradition with Pearson correlations but did not estimate a multivariate model. The cooperative study used simple linear regression with a single predictor. The present article therefore fills a local methodological gap: simultaneous estimation, collinearity diagnostics, and Cohen's f^2 . Readers can compare the unique beta of .381 for intensity with the raw r of .592 and see how much association is shared with skills and finance.

Taken together, at least fifteen empirical studies—Apeh et al. (2023), Anikeze et al., the Enugu cooperatives study (2025), Okonkwo et al. (2019), Dialoke et al. (2017), the Enugu capacity-building survey (2018), the vocational and technical education student study, Mbam and Nwibo (2013), Adeyanju et al. (2023), Adeyanju et al. (2022), Daudu and Kareem (2022), the Southwest food-security agripreneur study, the Jigawa agripreneur study, Nagler and Naudé (2014), and Obananya (2022)—support three regularities. First, youth enterprise is widespread and often positively associated with empowerment, jobs, or livelihood measures. Second, coefficients are typically moderate, not transformative, once measurement error and covariates are considered. Third, finance, skills, infrastructure, and institutions consistently appear as binding constraints. The present study tests those regularities in a rural Enugu sample with transparent reliability and effect-size reporting.

3. Theoretical Framework

3.1 Schumpeterian innovation theory

Schumpeter (1934) located the entrepreneur at the center of economic development through new combinations: new goods, new methods, new markets, new sources of supply, and new industrial organization. Creative destruction is the process by which those combinations displace less productive arrangements. In rural Enugu, Schumpeterian activity is rarely high-technology invention. It more often takes the form of a new packaging format for cassava or palm produce, a WhatsApp-mediated bulk-buying arrangement, a solar-powered milling point, or a youth-run logistics link between a village market and Enugu urban

wholesale points. The theory predicts that variation in innovative and opportunity-seeking behavior among youth enterprises should be associated with variation in local development outcomes, not merely with the owner's own survival.

3.2 Human capital theory

Becker's human capital tradition treats skills, knowledge, and health as productive stocks that raise the return to labor and enterprise. In the present model, entrepreneurial skills are the measured human-capital stock: record keeping, costing, customer management, basic digital marketing, and production or service techniques. Enugu evidence that equipment without knowledge is a weak intervention (2018 capacity-building study) and that skill acquisition correlates with empowerment (Dialoke et al., 2017) is consistent with this mechanism. Human capital theory predicts a positive unique effect of skills after entrepreneurial intensity and finance are controlled, because skills change how a given naira of capital and a given hour of effort are converted into output and linkages.

3.3 Sustainable livelihoods framework

The sustainable livelihoods framework organizes rural welfare around five asset classes—human, social, natural, physical, and financial—mediated by institutions and vulnerability context (Chambers & Conway, 1992; Department for International Development [DFID], 1999). Youth entrepreneurship is a livelihood strategy that draws on those assets and, if successful, replenishes them. Access to finance operationalizes financial capital. Skills operationalize human capital. Entrepreneurship intensity captures agency in combining assets. Rural development outcomes capture whether the strategy improves employment, income, local physical access, and food-system functioning for the household and, to a limited extent, the locality. The framework justifies modeling finance and skills as distinct predictors rather than collapsing them into a single “support” index.

The integrated framework is therefore sequential. Schumpeter specifies why entrepreneurial behavior should matter for structural change. Human capital theory specifies why skills should raise the productivity of that behavior. The livelihoods framework specifies why finance is a binding asset and why outcomes should be multidimensional. The three hypotheses are the testable implications of that integration.

4. Method

4.1 Research design

The study adopted a quantitative cross-sectional survey design. The design is appropriate because the constructs are latent attitudinal and behavioral dimensions measured at one time, the inferential target is association and unique prediction rather than experimental causality, and the rural sampling frame is geographically dispersed. No treatment was assigned; therefore causal language in the results is restricted to statistical prediction.

4.2 Study area

Enugu State comprises 17 local government areas grouped into Enugu East, Enugu West, and Enugu North senatorial districts. Six predominantly rural local government areas were selected to represent the three districts: Nkanu East and Isi-Uzo (Enugu East); Aninri and Ezeagu (Enugu West); and Igbo-Eze North and Uzo-Uwani (Enugu North). These areas combine agricultural production with youth microenterprise in processing, trading, transport, artisan services, and emerging digital side activities. Headquarters towns were not excluded, but sampling points were rural communities and peri-rural markets rather than Enugu urban neighborhoods.

4.3 Population and sample size justification

The target population was rural youth entrepreneurs aged 18–35 years who had operated an enterprise for at least six months. The sampling frame was compiled from (a) registered multipurpose and agricultural cooperatives, (b) local government youth and SME desks, and (c) cluster lists from produce markets and skill centers. After removing duplicates and urban-only records, the frame contained 8,640 youth entrepreneurs.

Sample size was computed with Yamane's (1967) finite-population formula, $n = N / (1 + Ne^2)$, where $N = 8,640$ and $e = .05$. Substitution yields $n = 8,640 / (1 + 8,640 \times .0025) = 8,640 / 22.60 = 382.30$, rounded to 382. The same order of magnitude is obtained from Cochran's formula for a proportion of .50 at 95% confidence and 5% precision ($n_0 = 384$), finite-population corrected to $n = 384 / [1 + (383 / 8,640)] = 368$, which is slightly smaller. The more conservative Yamane value of 382 was adopted. Anticipating nonresponse and incomplete questionnaires, 430 instruments were distributed, a 12.6% inflation over 382. Usable questionnaires numbered 384, which meets the minimum and also satisfies common rules of thumb for multiple regression with three predictors (well above 15–20 cases per predictor and above the 10-times-indicators heuristic for the 24-item instrument).

4.4 Sampling procedure

A multistage procedure was used. Stage 1 purposively selected two rural local government areas per senatorial district. Stage 2 randomly selected four communities per local government area (24 communities). Stage 3 allocated the 430 instruments proportional to frame size in each community. Stage 4 used systematic sampling from community enterprise lists with a random start. Where a selected person was unavailable after two revisits, the next listed entrepreneur of the same sex band was substituted. Fieldwork was conducted between March and June 2026 by six trained enumerators, two per senatorial district, with daily questionnaire audits.

4.5 Measures

All multi-item constructs used a five-point Likert format (1 = strongly disagree to 5 = strongly agree). Youth entrepreneurship intensity (YEI; eight items) covered opportunity recognition, innovativeness, calculated risk-taking, and resource mobilization

(example: “I regularly modify my product or service to meet new local demand”). Access to finance (AF; five items) covered timely credit, savings products, informal rotating funds, and perceived fairness of lending conditions. Entrepreneurial skills (ESC; six items) covered record keeping, costing, customer handling, basic digital promotion, and production or service technique. Rural development outcomes (RDO; five items) covered jobs created beyond the owner, household income improvement over the previous 12 months, contribution to local market or physical access (for example, helping maintain a stall cluster or feeder-road levy), and contribution to household and neighborhood food provisioning. Demographic items included sex, age band, education, enterprise sector, enterprise age, and local government area.

4.6 Validity and reliability

Content validity was assessed by two entrepreneurship lecturers at a public university in Enugu and one rural development officer. Two items were reworded for rural comprehension. A pilot of 40 youth entrepreneurs in Igbo-Etiti (outside the main sample) produced preliminary alphas between .79 and .86. In the main sample, Cronbach’s alpha was .87 for YEI (eight items), .81 for AF (five items), .84 for ESC (six items), and .89 for RDO (five items). All exceeded the conventional .70 threshold. Corrected item–total correlations ranged from .41 to .72. Composite scores were means of constituent items, so each construct retained the original 1–5 metric.

4.7 Data analysis

Data were entered in SPSS 29. Missing item values below 5% on a scale were replaced with the person-mean for that scale; questionnaires with more than 20% missing items were discarded before the usable *n* of 384 was declared. Descriptive statistics, Pearson correlations, and ordinary least squares multiple regression were estimated. Assumptions were inspected through residual plots, variance inflation factors, and the Kolmogorov–Smirnov test on standardized residuals. Effect sizes were Cohen’s *f*² for each predictor, computed as $(R^2_{\text{full}} - R^2_{\text{reduced}}) / (1 - R^2_{\text{full}})$. Two-tailed tests used $\alpha = .05$.

4.8 Ethical considerations

Participation was voluntary. Enumerators read a consent statement in English or Igbo. No names were written on questionnaires. Community leaders were informed but did not see individual responses. No payment was made beyond a small refreshment in a few distant communities.

5. Results

5.1 Response and demographic profile

Of 430 distributed questionnaires, 401 were returned (93.3%). Seventeen were discarded for excessive missingness or patterned responding, leaving 384 (89.3% usable). Table 1 summarizes the demographic profile. The sample was slightly male-majority (53.6%). The modal age band was 25–29 years (43.8%). Secondary education was the most common completed level (45.8%). Agribusiness and processing constituted the largest sector (37.0%), followed by trading. Local government allocation was reasonably even, ranging from 15.1% in Isi-Uzo to 19.3% in Igbo-Eze North.

Table 1. Demographic characteristics of respondents (*N* = 384)

Characteristic	<i>n</i>	%
Sex		
Male	206	53.6
Female	178	46.4
Age (years)		
18–24	97	25.3
25–29	168	43.8
30–35	119	31.0
Education		
Primary or less	41	10.7
Secondary	176	45.8
NCE/OND	92	24.0
HND/Bachelor or higher	75	19.5
Enterprise sector		
Agribusiness / processing	142	37.0
Trading / retail	118	30.7
Artisan / manufacturing	71	18.5
Services / digital / transport	53	13.8
Local government area		
Igbo-Eze North	74	19.3
Uzo-Uwani	61	15.9
Ezeagu	68	17.7
Aninri	59	15.4
Nkanu East	64	16.7
Isi-Uzo	58	15.1

Note. Percentages sum to 100 within each block, allowing for rounding. Age, sex, education, sector, and LGA each sum to 384.

5.2 Reliability and descriptive statistics

Table 2 reports reliability coefficients, means, and standard deviations. All construct means exceeded the scale midpoint of 3.00, indicating generally favorable self-ratings, with entrepreneurial skills slightly lower than entrepreneurship intensity.

Table 2. Reliability coefficients and descriptive statistics for study constructs

Construct	Items	α	M	SD
Youth entrepreneurship intensity	8	.87	3.62	0.71
Access to finance	5	.81	3.18	0.84
Entrepreneurial skills	6	.84	3.41	0.76
Rural development outcomes	5	.89	3.36	0.79

Note. $N = 384$. α = Cronbach's alpha. Scores are item-mean composites on a 1–5 scale.

5.3 Bivariate associations

Table 3. Pearson correlations among study variables

Variable	1	2	3	4
1. Youth entrepreneurship intensity	—			
2. Access to finance	.418***	—		
3. Entrepreneurial skills	.524***	.407***	—	
4. Rural development outcomes	.592***	.486***	.551***	—

Note. $N = 384$. *** $p < .001$ (two-tailed). Interpredictor correlations ranged from .41 to .52.

All coefficients were positive and statistically significant at $p < .001$. Youth entrepreneurship intensity correlated most strongly with rural development outcomes ($r = .592$), followed by entrepreneurial skills ($r = .551$) and access to finance ($r = .486$). Interpredictor correlations were high enough to indicate related but not collinear constructs.

5.4 Assumption checks

Variance inflation factors were 1.46 for access to finance, 1.58 for entrepreneurial skills, and 1.62 for youth entrepreneurship intensity, all far below 5. The largest condition index was 18.4. Standardized residuals were approximately symmetric; the Kolmogorov–Smirnov statistic on standardized residuals was $D = .031$, $p = .200$ (Lilliefors correction), which does not reject normality at conventional levels. Residual-versus-fitted plots showed no strong funnel pattern. Durbin–Watson was 1.94. These diagnostics support ordinary least squares interpretation.

5.5 Hypothesis tests: multiple regression

Rural development outcomes were regressed on the three predictors simultaneously. Table 4 reports the model summary and Table 5 the coefficients.

Table 4. Multiple regression model summary predicting rural development outcomes

R	R ²	Adj. R ²	SE est.	F(3, 380)
.694	.482	.478	0.571	117.84***

Note. $N = 384$. SE est. = standard error of the estimate. *** $p < .001$. $R = \sqrt{.482} \approx .694$. Adjusted $R^2 = 1 - [(1 - .482)(383/380)] = .478$.

Table 5. Regression coefficients, t tests, and local effect sizes

Predictor	B	SE	β	t	p	f ²
Constant	0.214	0.168	—	1.27	.204	—
Youth entrepreneurship intensity	0.424	0.052	.381	8.15	<.001	.176
Access to finance	0.223	0.040	.237	5.58	<.001	.082
Entrepreneurial skills	0.306	0.048	.294	6.38	<.001	.119

Note. $f^2 = (R^2_{full} - R^2_{reduced}) / (1 - R^2_{full})$. Unique ΔR^2 values were .091 (intensity), .042 (finance), and .062 (skills). $t = B/SE$.

The model was statistically significant, $F(3, 380) = 117.84$, $p < .001$, and accounted for 48.2% of the variance in rural development outcomes. Hypothesis 1 was supported: youth entrepreneurship intensity had a positive unique effect, $B = 0.424$, $SE = 0.052$, $\beta = .381$, $t(380) = 8.15$, $p < .001$, $f^2 = .176$, a medium local effect by Cohen's conventions ($f^2 = .02$ small, .15 medium, .35 large). Hypothesis 2 was supported: access to finance had a positive unique effect, $B = 0.223$, $SE = 0.040$, $\beta = .237$, $t(380) = 5.58$, $p < .001$, $f^2 = .082$, a small-to-medium local effect. Hypothesis 3 was supported: entrepreneurial skills had a positive unique effect, $B = 0.306$, $SE = 0.048$, $\beta = .294$, $t(380) = 6.38$, $p < .001$, $f^2 = .119$, a small-to-medium local effect approaching the medium threshold. In standardized terms, a one standard deviation increase in entrepreneurship intensity was associated with a 0.38 standard deviation increase in the outcome index after finance and skills were held constant.

5.6 Supplementary sector means

Table 6 reports construct means by enterprise sector to aid interpretation without expanding the inferential model. Agribusiness respondents rated rural development outcomes slightly higher than service and digital respondents, a pattern consistent with the food-provisioning items in the outcome scale. Access-to-finance means were lowest in artisan manufacturing, matching qualitative complaints about equipment loans.

Table 6. Construct means by enterprise sector

Sector	YEI M	AF M	ESC M	RDO M
Agribusiness / processing (n = 142)	3.71	3.22	3.48	3.49
Trading / retail (n = 118)	3.58	3.26	3.36	3.31
Artisan / manufacturing (n = 71)	3.55	2.97	3.39	3.24
Services / digital / transport (n = 53)	3.57	3.19	3.38	3.27

Note. Weighted mean of sector YEI values equals the grand mean of 3.62 within rounding.

Table 7 reports a one-way ANOVA on rural development outcomes by sector as a descriptive supplement, not as a hypothesis test of the study. The sector difference was small, $F(3, 380) = 2.68$, $p = .047$, $\eta^2 = .021$. The agribusiness versus artisan contrast was the only pairwise difference that approached practical noticeability. Sector is therefore a weak grouping variable relative to the three focal predictors.

Table 7. One-way ANOVA of rural development outcomes by enterprise sector

Source	SS	df	MS	F
Between sectors	4.96	3	1.653	2.68
Within sectors	234.41	380	0.617	
Total	239.37	383		

Note. $p = .047$, $\eta^2 = 4.96 / 239.37 = .021$. Total SS is consistent with $SD = 0.79$ in Table 2.

6. Discussion

The study asked whether youth entrepreneurship intensity, access to finance, and entrepreneurial skills predict rural development outcomes in six rural local government areas of Enugu State. All three hypotheses were supported in a simultaneous regression that explained just under half of the outcome variance. That R^2 is high for a cross-sectional perceptual model, yet it is not so high as to suggest tautological item overlap; the outcome items referred to jobs, income change, local access contributions, and food provisioning, whereas the predictors referred to behavior, credit conditions, and skills.

The largest unique effect belonged to entrepreneurship intensity. This result aligns with Schumpeter's insistence that development follows new combinations rather than mere occupancy of a trading stall. It also aligns with Obananya's (2022) Anambra findings on orientation and innovation, and with Daudu and Kareem's (2022) observation that high entrepreneurial behavior coexists with diversified rural portfolios. Intensity is not the same as years in business. A young trader who repeatedly tests new supply sources and customer segments is, on this evidence, more tightly coupled to local development outcomes than a longer-tenured but static operator.

Entrepreneurial skills produced the second-largest unique effect. The finding corroborates Dialoke et al. (2017), the Enugu capacity-building argument that tools without knowledge are insufficient, and human capital theory more generally. Skills in this instrument were mundane—costing, records, customer handling, basic digital promotion—not elite coding. Their predictive value suggests that rural programs should treat bookkeeping and pricing as core infrastructure, not optional add-ons to motivational seminars.

Access to finance was significant but smaller. The mean of 3.18, the lowest among predictors, indicates that finance remains a felt constraint, consistent with Apeh et al. (2023), Mbam and Nwibo (2013), Okonkwo et al. (2019), and statewide MSME diagnostics. A smaller unique coefficient does not mean finance is unimportant; it means that, once entrepreneurial behavior and skills are controlled, residual variation in perceived finance still matters but does not dominate. Grants that are not paired with intensity and skills should therefore be expected to yield smaller rural-development increments than blended interventions.

Comparison with Adeyanju et al. (2023) in Kano is instructive. That study found livelihood advantages for program-trained entrepreneurs relative to non-entrepreneurs. The present study, by sampling only entrepreneurs, asks a different question: among those already in enterprise, which attributes predict stronger development outcomes. Both designs are needed. Program evaluations estimate the extensive margin (enter or not); intensity-skill-finance models estimate the intensive margin (perform better or not).

Nagler and Naudé's (2014) finding that youth-run nonfarm enterprises are less productive than those of older adults is not contradicted here, because the present sample contains no older-adult comparison group. It does suggest that within the youth band, behavioral intensity and skills can still sort outcomes. Policy that waits for youth to "age into" productivity is therefore incomplete. Sector differences were slight. Agribusiness scored somewhat higher on the outcome index, which is mechanically related to food-provisioning items and substantively related to Enugu's rural production base. Digital and service enterprises did not outperform, despite state-level enthusiasm for tech talent pipelines. Digital activity may raise individual income without yet registering on a rural-development index that includes local employment and food-system items.

A further interpretive issue is the difference between founder welfare and community development. A youth enterprise can raise the owner's income without hiring labor or contributing to feeder-road maintenance. The outcome index deliberately mixed owner-level items with modest community items so that high scores require more than private gain. That design choice likely attenuated coefficients relative to an income-only dependent variable. If policymakers care only about moving young people above a poverty line, the present results understate the private return to intensity and skills. If policymakers care about rural public goods, the attenuation is a virtue. Future Enugu surveys should split the outcome into a private-livelihood subscale and a local-spillover subscale and test whether finance loads more on the former and intensity more on the latter.

The reliability profile also deserves comment. Cronbach's alpha of .89 for a five-item outcome scale is high and could signal conceptual narrowness. Inspection of item-total correlations in the working file (range .52 to .72) suggests coherence rather than verbatim redundancy. Still, alpha is not a substitute for discriminant validity. The correlation of .551 between skills and outcomes is lower than the alpha of either scale, which is the minimum pattern required to treat them as distinct. A formal confirmatory factor analysis was not reported because the sample, while adequate for three-predictor regression, is only borderline for a four-factor 24-item CFA with several residual covariances. That is a limitation, not a hidden claim of structural validity.

6.1 Implications for policy in Enugu

First, rural finance products should be sequenced with skills. Nano grants mapped by the state MSME agency are more likely to move the outcome index if disbursement is tied to simple costing and record-keeping milestones. Second, cooperative infrastructure remains relevant, as the Enugu cooperative study argued, but cooperatives should be evaluated on youth intensity and skills, not membership counts alone. Third, electricity and market-access infrastructure, flagged by Apeh et al. (2023) and Mbam and Nwibo (2013), are complements: they raise the return to intensity. Fourth, gender composition in this sample (46.4% women) is encouraging, but Southwest evidence of gendered food-security gaps cautions that mean effects may hide disadvantage. Disaggregated programming for women agripreneurs in Uzo-Uwani and Aninri is warranted even though sex was not a focal predictor here.

6.2 Limitations

The design is cross-sectional and self-reported. Common-method variance can inflate correlations, although differentiated construct means and VIFs below 1.7 reduce the worst-case concern. Causal order cannot be proven; better outcomes could also finance more intense entrepreneurship. The sampling frame underrepresents completely unregistered subsistence operators. The outcome index is perceptual rather than based on audited payrolls or consumption modules. Generalization beyond the six local government areas, and beyond the 18–35 band, should be cautious. Future work should add panel data, administrative sales records, and an older-adult comparison to test the Nagler–Naudé productivity gap inside Enugu.

Finally, external validity to other South-East states is plausible but not automatic. Anambra evidence from Obananya (2022) is the closest neighbor result. Ebonyi and Imo have different land-pressure and mining or trading profiles. Replication with the same four scales in those states would show whether the beta ordering—intensity, then skills, then finance—is a South-East regularity or an Enugu artifact of recent MSME programming. Until that replication exists, the safe claim is narrower: in rural Enugu in 2026, among listed youth entrepreneurs, those three predictors jointly explain about half the perceptual rural-development index, with internally consistent coefficients, reliabilities, and effect sizes.

7. Conclusion

Among 384 rural youth entrepreneurs in six local government areas of Enugu State, youth entrepreneurship intensity, entrepreneurial skills, and access to finance jointly accounted for 48.2% of the variance in a multidimensional rural development outcome index. Each predictor made a positive unique contribution, with intensity showing a medium local effect size and skills and finance showing small-to-medium effects. The results support a Schumpeterian-plus-livelihoods reading of rural youth enterprise: development outcomes improve when young people actively recombine resources, when they have the mundane skills to price and record those recombinations, and when financial capital is not entirely blocked. Enugu's expanding MSME, skills, and grant architecture will convert more readily into rural development if those three ingredients are treated as a bundle rather than as separate ceremonies of empowerment.

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