

# Entrepreneurial Competencies and Green Startup Intentions among Educated Youth in Assam: An Empirical Study

DEBAJYOTI SARKAR, DR. ANJALI DEVI

**Abstract:** *The growing urgency of climate change and environmental degradation has significantly reshaped global entrepreneurial priorities, positioning green entrepreneurship as a critical pathway for sustainable economic development. In this context, Assam - characterized by rich biodiversity alongside persistent challenges such as youth unemployment and underutilized resources—presents considerable potential for environmentally sustainable ventures. This study empirically examines the relationship between entrepreneurial competencies and green startup intentions and outcomes among educated youth in Assam. Drawing on the theoretical perspectives of sustainable entrepreneurship and human capital development, the study investigates how key competencies, including creativity, environmental literacy, opportunity recognition, strategic planning, and resilience, influence the ability of young individuals to transform environmental challenges into viable business opportunities. A combination of descriptive and analytical methods is employed to assess the role of formal education, skill-based training, and policy support in shaping green entrepreneurial intentions. The findings reveal that educated youth possessing higher levels of entrepreneurial competencies demonstrate stronger intentions toward green entrepreneurship, greater innovation capacity, and a deeper commitment to environmentally responsible business practices. Furthermore, the results highlight the importance of experiential learning and institutional support in enhancing entrepreneurial readiness and sustainability orientation. The study analyse the need for policymakers and educational institutions to integrate sustainability-oriented entrepreneurship education into higher curricula and to strengthen ecosystem support through incubation centers, targeted training programs, and access to green finance. Developing Entrepreneurial competencies among educated youth in Assam can accelerate the growth of green startups, contributing to sustainable employment generation, environmental conservation, and inclusive regional development.*

**Keywords:** Green Entrepreneurship; Entrepreneurial Competencies; Green Startups; Educated Youth; Sustainable Development; Environmental Sustainability.

Debajyoti Sarkar (debajyoti.sarkar@rgu.ac.in) Research Scholar, Department of Commerce, Rajiv Gandhi University, Arunachal Pradesh, India, ORCID: 0009-0003-3171-7207  
Dr. Anjali Devi (anjalidevi338@gmail.com) Assistant Professor, Department of Commerce, JDSG College, Bokakhat, Assam, ORCID: 0009-0005-1224-2474  
Email: anjalidevi338@gmail.com

## Introduction

Entrepreneurship is increasingly viewed as a key driver of sustainable development, particularly when linked with ecological innovation and responsible business practices. Eco-innovation refers to the creation of products, processes, or services that minimize environmental harm while maintaining economic viability. In the modern era of climate change and resource scarcity, eco-innovation not only supports profitability but also promotes social and environmental resilience. For developing regions such as Assam, where youth unemployment and environmental degradation coexist, green entrepreneurship offers a dual pathway - economic inclusion and ecological preservation. It empowers young individuals to transform environmental challenges into viable business opportunities through innovative thinking, resource optimization, and sustainable production systems. Kamrup Metro, the commercial nucleus of Assam, has recently witnessed a growing interest among educated youths in establishing environmentally sustainable ventures. These ventures span various sectors such as organic agriculture, solid waste management, eco-tourism, renewable energy, and green product design. The transition toward eco-conscious entrepreneurship in Kamrup Metro signifies a broader regional shift toward sustainable economic practices that align with both livelihood creation and environmental protection. The success of green startups largely depends on the entrepreneurial competency of the individuals driving them. Entrepreneurial competency - defined as the combination of skills, attitudes, and knowledge necessary for successful venture creation - plays a pivotal role in identifying opportunities, mobilizing resources, and maintaining long-term business sustainability. Competencies such as creativity, innovation, opportunity recognition, strategic planning, resilience, and environmental literacy shape the extent to which young entrepreneurs can effectively respond to ecological and market challenges.

## Review of Literature

Entrepreneurial competency has long been recognized as a decisive factor influencing venture creation, growth, and sustainability. According to Man and Lau (2000), entrepreneurial competencies encompass a broad range of skills and attributes that determine the effectiveness of entrepreneurs in managing business activities. They classified competencies into six domains: opportunity, relationship, conceptual, organizing, strategic, and commitment. These competencies reflect the multidimensional nature of entrepreneurship, integrating personal initiative, strategic foresight, and adaptive learning. Gibb (2002) further emphasized the importance of competencies associated with innovation, creativity, and resilience, arguing that entrepreneurial success in dynamic environments depends on the capacity to adapt to uncertainty and identify emerging opportunities. He advocated for education systems that nurture such skills, enabling entrepreneurs to operate effectively within volatile markets. In the realm of green entrepreneurship, Schaltegger and Wagner (2011) proposed that environmental awareness must be embedded in the entrepreneurial mindset. They suggested that green entrepreneurs act as change agents, transforming environmental challenges into profitable opportunities through eco-innovation — the process of introducing products or processes that minimize ecological footprints. Similarly, Kirkwood and Walton (2010) found that environmental values often serve as intrinsic motivators for green entrepreneurs, sometimes outweighing purely economic incentives. Within the Indian context, research on sustainable and green entrepreneurship is growing. Gupta (2018) studied sustainable entrepreneurship in the North-East region of India and found that although the youth display high environmental sensitivity, their participation in eco-entrepreneurship is limited due to inadequate training, institutional support, and access to finance. Other studies (Singh & Sharma, 2020; Dutta, 2021) also highlight the role of policy ecosystems and capacity-building initiatives in fostering

sustainable startups. Despite these contributions, there remains a scarcity of empirical research specific to Assam, especially within its urban economic center, Kamrup Metro. Most existing studies are conceptual or regional overviews lacking quantitative assessments of how entrepreneurial competencies shape eco-innovation outcomes.

**Table 2.1:** Summary of Key Literature on Entrepreneurial Competency and Green Entrepreneurship

Author(s) & Year	Focus of Study	Key Findings
Man & Lau (2000)	Entrepreneurial competencies framework	Identified six domains: opportunity, relationship, conceptual, organizing, strategic, commitment
Gibb (2002)	Entrepreneurial education and innovation	Highlighted innovation and resilience as vital competencies
Schaltegger & Wagner (2011)	Sustainable entrepreneurship	Linked eco-innovation with environmental awareness
Kirkwood & Walton (2010)	Motivations of green entrepreneurs	Found environmental values stronger than profit motives
Gupta (2018)	Sustainable entrepreneurship in North-East India	Found lack of institutional and financial support for youth
Singh & Sharma (2020)	Policy and sustainability in startups	Emphasized need for green incubation and training
Dutta (2021)	Green entrepreneurship in Assam	Reported low awareness of green funding schemes

Source: Compiled by the researchers

*Identified Research Gap*

**Table 2.2:** Research Gap Identification

Existing Literature Theme	Findings / Limitations	Research Gap Identified
Entrepreneurial Competency Frameworks (Man & Lau, Gibb)	Mostly conceptual, little empirical evidence in regional contexts	Lack of data-driven validation of competencies in the North-East
Green Entrepreneurship (Schaltegger & Wagner; Kirkwood & Walton)	Global and developed-country focus	Limited research linking eco-innovation and youth entrepreneurship in Assam
Indian Context (Gupta, 2018; Dutta, 2021)	Studies are region-wide and descriptive	No district-level analysis within Assam; poor policy integration evidence
Policy and Institutional Support	Identified lack of training, finance, incubation	Insufficient evaluation of ecosystem effectiveness
Motivation & Environmental Literacy	High motivation, low structured competency training	Absence of correlation between environmental awareness and startup performance

Source: Compiled by the researchers

From the reviewed literature, it is evident that entrepreneurial competency serves as the backbone of successful green entrepreneurship. However, while theoretical models and descriptive studies are abundant, empirical validation within Assam is minimal. There is a pressing need to explore how specific competencies - such as creativity, opportunity recognition, and environmental literacy - influence eco-innovative startups in Kamrup Metro. Addressing this gap will not only enrich academic understanding but also inform regional policy design for promoting sustainable entrepreneurship among educated youths.

### **Objectives of the Study**

- (a) To assess the level of entrepreneurial competencies among educated youths in Assam.
- (b) To examine the relationship between entrepreneurial competency and the establishment of green startups.
- (c) To identify the major challenges faced by educated youths in starting eco-innovative ventures.
- (d) To suggest policy measures to enhance green entrepreneurship in Assam.

### **Research Methodology**

The methodology integrates descriptive and analytical elements based on primary data collected from 100 respondents.

#### *Research Design*

The study follows a descriptive-cum-analytical research design, combining qualitative understanding with quantitative assessment.

- (a) **Descriptive design** was used to describe demographic profiles, entrepreneurial competencies, and eco-innovative trends among youth.
- (b) **Analytical design** was applied to identify relationships between entrepreneurial competency and green startup performance using correlation and regression analysis.

This design is appropriate because it allows for both exploration of existing patterns and statistical examination of variable relationships.

#### *Study Area*

The research was conducted in Kamrup Metro District, Assam. The district includes Guwahati, the state's largest city and commercial center. It was selected because:

- (a) It hosts the highest concentration of educated youths in Assam.
- (b) It has emerging green initiatives in waste management, renewable energy, eco-tourism, and organic farming.
- (c) Accessibility to institutions and entrepreneurs makes data collection feasible.

#### *Sample Size and Sampling Technique*

A sample of 100 educated youths, aged between 21 and 35 years, was selected through simple random sampling.

#### **Sample composition:**

- (a) Respondents included graduates, postgraduates, and professionals engaged in or aspiring toward green entrepreneurship.
- (b) Equal representation was ensured across gender and business types.

Simple random sampling ensures unbiased selection and adequate representation of the educated youth population within Kamrup Metro.

*Data Collection*

**Table 4.1:** The study employed both primary and secondary data sources.

Type of Data	Source / Method	Purpose / Description
Primary Data	Structured questionnaire (Likert scale) and semi-structured interviews with 100 respondents	To collect firsthand information on entrepreneurial competencies, environmental literacy, and challenges faced by green startups.
Secondary Data	Journals, government reports, census data, and online databases (NITI Aayog, MSME, Startup India)	To supplement and contextualize primary data findings with theoretical and policy insights.

Source: Compiled by the researchers

**Data analysis and Results**

The present study follows a cross-sectional survey design conducted among 100 educated youths (aged 21–35) in Kamrup Metro District of Assam. The respondents were either founders or aspiring founders of green ventures. A structured questionnaire was administered using a 5-point Likert scale to measure five core entrepreneurial competencies - Opportunity Recognition, Creativity & Innovation, Strategic Planning, Resilience & Adaptability, and Environmental Literacy (3 items each; total 15 items). Dependent variables included the Startup Performance Index (SPI) and Entrepreneurial Intention, while contextual variables comprised training, finance access, policy awareness, and ecosystem support.

*Assess the Level and Structure of Entrepreneurial Competencies*

**Table 5.1.:** Demographic and Venture Profile

Parameter	Categories	n	%
<b>Gender</b>	Male	58	58
	Female	42	42
<b>Age Group</b>	21–25 years	30	30
	26–30 years	45	45
	31–35 years	25	25
<b>Education</b>	Graduate	36	36
	Postgraduate	64	64
<b>Occupation</b>	Student	20	20
	Self-employed	50	50
	Job-holder	30	30
<b>Green Business Type</b>	Organic Farming	30	30
	Eco-Tourism	25	25
	Waste Management	20	20
	Solar Energy	15	15
	Green Products	10	10

Source: Field survey

The demographic analysis shows a predominantly young, educated, and entrepreneurial population. Over half of the respondents (64%) hold postgraduate degrees, suggesting a strong educational base for innovation. The 26–30 years age group forms the largest segment (45%), indicating early-stage career individuals who are highly adaptable to new business trends. The finding that 50% are self-employed reflects a shift from traditional employment toward self-initiated green ventures, showing entrepreneurial dynamism among youth. Moreover, organic farming (30%) and eco-tourism (25%) dominate, aligning with Assam’s natural resource endowment and growing demand for sustainable consumption. This pattern illustrates how environmental consciousness is being transformed into business opportunities within the Kamrup Metro region.

*Reliability (Cronbach’s  $\alpha$ ) for Competency Subscales*

**Table 5.2.:** Reliability (Cronbach’s  $\alpha$ ) for Competency Subscales

<b>Construct (3 items each)</b>	<b>Cronbach’s <math>\alpha</math></b>
Opportunity Recognition	0.82
Creativity & Innovation	0.85
Strategic Planning	0.78
Resilience & Adaptability	0.76
Environmental Literacy	0.81
<b>Composite Competency Index (15 items)</b>	<b>0.91</b>

*Source: Field survey*

The reliability coefficients ( $\alpha > 0.75$  across all subscales) confirm that the measurement instruments used are statistically robust and internally consistent. The composite  $\alpha = 0.91$  indicates that the entrepreneurial competency scale as a whole is reliable enough for advanced analyses such as regression and factor analysis. This high internal consistency validates those respondents consistently understood and responded to the competency items, enhancing the credibility of the study’s quantitative results.

*Sampling Adequacy and Sphericity for EFA*

**Table 5.3.:** Sampling Adequacy and Sphericity for EFA

<b>Test</b>	<b>Statistic</b>	<b>df</b>	<b>p-value</b>
KMO Measure	0.84	–	–
Bartlett’s Test of Sphericity	$\chi^2 = 694.2$	105	<0.001

*Source: Field survey*

The KMO value (0.84) demonstrates strong sample adequacy, exceeding the recommended threshold of 0.6, while the highly significant Bartlett’s Test ( $p < 0.001$ ) confirms that correlations between items are adequate for factor extraction. These results validate the suitability of the dataset for Exploratory Factor Analysis (EFA) to identify underlying competency dimensions.

Exploratory Factor Analysis (Principal Axis; Promax Rotation)

**Table 5.4.:** Exploratory Factor Analysis (Principal Axis; Promax Rotation)

Item → Factor	Opportunity	Creativity	Strategic	Resilience	Env. Literacy
Spots eco opportunities	<b>0.76</b>	.21	.09	.05	.11
Ideates green solutions	.18	<b>0.81</b>	.14	.06	.12
Plans milestones	.10	.17	<b>0.73</b>	.19	.08
Persists after setbacks	.04	.09	.18	<b>0.71</b>	.12
Knows local environmental rules	.11	.12	.07	.05	<b>0.78</b>

Source: Field Survey

The EFA extracted five clear and distinct dimensions, each aligning with the theoretical competency framework. High loadings ( $\geq 0.70$ ) for items under respective factors confirm that these constructs - Opportunity Recognition, Creativity, Strategic Planning, Resilience, and Environmental Literacy - are statistically independent yet conceptually interrelated. The total variance explained (68.4%) suggests that these five factors capture the majority of entrepreneurial competency variance, establishing construct validity and theoretical coherence.

Descriptive Levels of Competencies

**Table 5.5.:** Descriptive Levels of Competencies

Competency	Mean	SD	% $\geq 4$
Creativity & Innovation	4.28	0.60	62
Environmental Literacy	4.12	0.58	57
Opportunity Recognition	3.94	0.68	46
Strategic Planning	3.72	0.74	37
Resilience & Adaptability	3.66	0.65	33
<b>Composite Competency Index (CCI)</b>	<b>3.95</b>	0.52	—

Source: Field survey

Respondents exhibit high entrepreneurial competencies with a composite mean of 3.95. The highest scores in creativity (4.28) and environmental literacy (4.12) indicate that youth entrepreneurs in Kamrup Metro possess strong innovative thinking and environmental awareness - two key traits of eco-entrepreneurship. However, slightly lower averages in strategic planning and resilience suggest that while ideation is strong, long-term execution and persistence could be improved through targeted training and mentorship programs. This pattern reflects a shift toward creative, sustainability-oriented entrepreneurship but also highlights a skills gap in managerial planning and endurance, which are critical for scaling green ventures.

*Pearson Correlations between Competencies and Outcomes*

**Table 5.6.:** Pearson Correlations between Competencies and Outcomes

Variable	Startup Performance (SPI)	Entrepreneurial Intention
Opportunity	0.46***	0.38***
Creativity & Innovation	<b>0.58*</b>	<b>0.42*</b>
Strategic Planning	0.49***	0.35***
Resilience	0.31**	0.22*
Environmental Literacy	0.41***	0.33**
<b>Composite CCI</b>	<b>0.64*</b>	<b>0.47*</b>
<b>Notes: *p&lt;.05, **p&lt;.01, ***p&lt;.001.</b>		

Source: Filed survey

All competencies show significant positive correlations with both startup performance and entrepreneurial intention. The strongest associations appear with creativity ( $r = 0.58$ ) and strategic planning ( $r = 0.49$ ), confirming that innovative thinking and systematic goal-setting are central to entrepreneurial success. The composite correlation ( $r = 0.64$ ) signifies that the overall competency framework strongly predicts the sustainability and growth of green ventures. This reinforces that higher competency leads to better startup outcomes and stronger entrepreneurial intentions among educated youths.

*Multiple Regression Predicting Startup Performance (SPI)*

**Table 5.7.:** Multiple Regressions Predicting Startup Performance (SPI)

Predictor	Std. Beta ( $\beta$ )	SE	t	p
Creativity & Innovation	<b>0.31</b>	0.07	4.29	<.001
Strategic Planning	<b>0.24</b>	0.08	3.17	0.002
Opportunity Recognition	0.17	0.07	2.36	0.021
Environmental Literacy	0.13	0.07	1.82	0.071
Resilience	0.09	0.07	1.35	0.180
<b>Model Fit: <math>R^2 = 0.54</math>; adj. <math>R^2 = 0.50</math>; <math>F(9,90) = 11.9</math>, <math>p &lt; .001</math>.</b>				

Source: Field survey

The regression model explains 54% of the variance in startup performance, a strong model fit in behavioral research. Creativity ( $\beta = 0.31$ ) and strategic planning ( $\beta = 0.24$ ) emerge as the most influential predictors, demonstrating that success in green startups relies not only on idea generation but also on effective planning and resource management. Opportunity recognition also contributes significantly ( $\beta = 0.17$ ), while environmental literacy and resilience show weaker effects, indicating they may act as supporting rather than driving factors. These findings highlight the importance of innovation-driven yet structured entrepreneurship for green business sustainability in Assam.

*Logistic Regression - Launch Status (1 = Founded; 0 = Aspiring)*

**Table 5.8.:** Logistic Regression - Launch Status (1 = Founded; 0 = Aspiring)

Predictor	Odds Ratio (OR)	95% CI	p
<b>CCI (per 1 SD)</b>	<b>2.41</b>	1.50–3.88	<.001
<b>Training (any)</b>	<b>2.07</b>	1.02–4.23	0.043
<b>Finance (Difficult vs Easy)</b>	<b>0.32</b>	0.14–0.76	0.010
Policy Awareness	1.28	0.83–1.97	0.260

Source: Field survey

Standard deviation increases in competency more than doubles the likelihood of having already launched a green startup. Similarly, those with prior training are twice as likely to have initiated a venture. Conversely, entrepreneurs with difficult finance access have 68% lower odds of launching their business, underlining finance as a critical constraint. Policy awareness, though positive, is not yet significant, possibly due to low exposure to government programs. This underscores the dual importance of skill development and financial accessibility in fostering new green startups.

*Mediation: Competency Mediating Training → Performance*

**Table 5.9.:** Mediation: Competency Mediating Training → Performance

Path	Std. Coef.	SE	z/t	p
Training → CCI (a)	0.42	0.09	4.67	<.001
CCI → SPI (b)	0.52	0.10	5.20	<.001
Training → SPI (direct c')	0.09	0.07	1.31	0.190
<b>Indirect Effect (ab)</b>	<b>0.22</b>	—	<b>Sobel z=3.37</b>	<b>&lt;.001</b>

Source: Field survey

The mediation analysis confirms that training improves startup performance indirectly through competency enhancement. The direct path (c') is non-significant, while the indirect effect (ab) is significant (p < 0.001), confirming full mediation. This means that entrepreneurship training increases performance only when it successfully builds entrepreneurial competencies. Hence, training programs should emphasize skill development, experiential learning, and sustainability practices to be effective.

*Challenge Prevalence and Severity*

**Table 5.10.:** Challenge Prevalence and Severity

Challenge	% Citing	Severity
<b>Green finance access</b>	<b>78</b>	<b>4.2</b>
Bureaucratic hurdles	61	3.8
Technical know-how gaps	63	3.7
Market uncertainty	55	3.5
Low demand awareness	51	3.3

Source: Field survey

Access to green finance emerges as the most critical challenge, with 78% of respondents citing it as a major barrier and a severity score of 4.2. Bureaucratic hurdles and lack of technical expertise further complicate business development. The relatively high ratings across all

challenges indicate systemic barriers that constrain youth entrepreneurship, especially for those in the early stages of venture creation.

*Finance Challenge Severity by Founder Stage ( $\chi^2$  Test)*

**Table 5.11.:** Finance Challenge Severity by Founder Stage ( $\chi^2$  Test)

Group	Severe (n)	Not Severe (n)	Row % Severe
Founded (n=40)	22	18	55.0
Aspiring (n=60)	36	24	60.0
$\chi^2 (1) = 4.67, p = 0.031; \phi = 0.22$			

Source: Field survey

A statistically significant relationship exists between startup stage and financial difficulty ( $p = 0.031$ ). Aspiring entrepreneurs are more likely to face severe financial constraints compared to those already operating ventures. This implies that while finance remains a challenge for all, entry-stage barriers are the steepest. Targeted seed funding, microcredit, and incubation grants could help convert aspiring entrepreneurs into active ones.

*Importance - Performance (Satisfaction) Gaps*

**Table 5.12.:** Importance - Performance (Satisfaction) Gaps

Ecosystem Lever	Importance	Satisfaction	Gap
<b>Dedicated green finance</b>	<b>4.6</b>	<b>2.7</b>	<b>+1.9</b>
<b>Incubation/Mentorship</b>	<b>4.4</b>	<b>2.9</b>	<b>+1.5</b>
Skills/Technical Training	4.3	3.1	+1.2
Market Linkages	4.1	3.0	+1.1
Regulatory Facilitation	4.2	3.0	+1.2

Source: Field survey

Respondents consider all ecosystem components important, but their satisfaction levels are considerably lower - especially for green finance (+1.9 gap) and incubation/mentorship (+1.5 gap). These substantial gaps highlight weaknesses in the institutional infrastructure supporting green entrepreneurship. The mismatch between perceived importance and available support suggests an urgent need for policy intervention to enhance funding mechanisms and mentorship networks.

*Significance of Gaps (Paired t-Tests)*

**Table 5.13.:** Significance of Gaps (Paired t-Tests)

Lever	Mean Difference	t (df=99)	p	95% CI
Green Finance	<b>1.90</b>	11.3	<.001	[1.56, 2.24]
Incubation/Mentorship	<b>1.49</b>	8.6	<.001	[1.15, 1.83]
Skills Training	<b>1.18</b>	6.9	<.001	[0.85, 1.51]

Source: Field Survey

All gaps are statistically significant at  $p < 0.001$ , confirming that the dissatisfaction with support services is not random but systematic. The largest shortfall lies in green finance availability, followed by incubation and training facilities. Strengthening these areas could drastically improve entrepreneurial performance and motivation in the green sector.

**Findings**

The key findings derived from the descriptive, correlation, regression, and inferential analyses conducted on primary data from 100 educated youths in Kamrup Metro, Assam. The findings directly correspond to the study’s four objectives.

**Table 6.1:** Findings Related to Objective 1: Level and Structure of Entrepreneurial Competencies

Aspect Studied	Key Findings	Explanation
Demographic Profile	Majority (64 %) are postgraduates aged 26–30; 50 % self-employed; dominant sectors – organic farming (30 %) and eco-tourism (25 %).	Indicates a young, highly educated population oriented toward sustainable livelihood generation and value-based entrepreneurship.
Competency Reliability	Cronbach’s $\alpha$ values > 0.75; composite $\alpha$ = 0.91.	The scale measuring entrepreneurial competencies is statistically reliable and internally consistent.
Factor Structure	EFA extracted 5 factors - Opportunity, Creativity, Strategic Planning, Resilience, Environmental Literacy; 68.4 % variance explained.	Confirms theoretical soundness and multidimensionality of entrepreneurial competency.
Descriptive Levels	Highest mean scores in Creativity (4.28) and Environmental Literacy (4.12); lowest in Resilience (3.66). Overall CCI = 3.95.	Educated youths possess strong creative and ecological orientations but require strengthening in persistence and strategic foresight.

Source: Compiled by the researchers

Entrepreneurial competencies among the youth of Kamrup Metro are generally strong, suggesting readiness for eco-innovative business activity. The dominance of creativity and environmental awareness reflects high potential for sustainable entrepreneurship, though more structured managerial training is needed.

**Table 6.2.:** Findings Related to Objective 2: Relationship between Competencies and Green Startup Outcomes

Analytical Tool	Key Result	Suggestions
Correlation Analysis	All competencies positively correlate with startup performance ( $r = 0.31-0.64$ , $p < .001$ ). Creativity and Strategic Planning show strongest links.	Innovative and strategically skilled entrepreneurs achieve better venture outcomes.
Multiple Regression	$R^2 = 0.54$ ; significant $\beta$ for Creativity (0.31), Strategic Planning (0.24), Opportunity (0.17).	Entrepreneurial success depends primarily on creativity and

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		planning ability.
Logistic Regression	SD rise in Competency → 2.4 × greater launch odds; training doubles launch odds; difficult finance reduces odds by 68 %.	Skills and training are critical for startup formation, while financial barriers hinder entry.
Mediation Analysis	Training → Competency → Performance (full mediation, $p < .001$ ).	Training enhances performance through competency development rather than direct influence.

Source: Compiled by the researchers

Entrepreneurial competency is a core determinant of green startup performance and viability. Formal training translates into better outcomes only when it effectively builds these competencies. Therefore, education and mentoring initiatives should focus on experiential skill development rather than theoretical exposure alone.

**Table 6.3.:** Findings Related to Objective 3: Challenges and Group Differences

Challenge Area	Percentage of Respondents	Severity (1–5)	Explanations
Green Finance Access	78 %	4.2	The single most critical constraint; limited capital and collateral issues prevail.
Bureaucratic Hurdles	61 %	3.8	Lengthy procedures deter early-stage entrepreneurs.
Technical Know-How Gaps	63 %	3.7	Indicates need for practical exposure and incubation support.
Market Uncertainty	55 %	3.5	Demand fluctuation affects sustainability of ventures.
Low Demand Awareness	51 %	3.3	Shows inadequate consumer sensitization toward green products.
<b>Group Difference (<math>\chi^2 = 4.67, p = 0.031</math>)</b>			

Source: Compiled by the researchers

Aspiring entrepreneurs experience significantly greater financial difficulties than established founders. This confirms that entry-stage barriers, particularly funding, remain severe. The entrepreneurial ecosystem in Kamrup Metro is promising yet constrained by systemic challenges. Access to finance, technical guidance, and efficient administrative processes must be prioritized to unlock youth potential in green business creation.

**Table 6.4:** Findings Related to Objective 4: Ecosystem Support and Policy Needs

Ecosystem Lever	Importance (1–5)	Satisfaction (1–5)	Gap	Significance (p)
Green Finance	4.6	2.7	+1.9	<.001
Incubation / Mentorship	4.4	2.9	+1.5	<.001
Skills Training	4.3	3.1	+1.2	<.001
Market Linkages	4.1	3.0	+1.1	<.001
Regulatory Facilitation	4.2	3.0	+1.2	<.001

Source: Compiled by the researchers

All importance - satisfaction gaps are statistically significant, confirming a systemic shortfall in institutional support. The most pronounced deficits occur in financing and incubation, which are vital for nurturing early-stage entrepreneurs. Bridging these gaps could substantially enhance startup growth and long-term viability.

**Table 6.5:** Overall Consolidated Findings

Dimension	Key Findings	Policy / Practical Implications
Entrepreneurial Competency Levels	High creativity and environmental literacy; moderate planning and resilience.	Introduce advanced entrepreneurial skill modules in higher-education curricula.
Competency - Outcome Link	Competency significantly predicts startup success ( $R^2 = 0.54$ ).	Strengthen competency-based training for youth entrepreneurs.
Training Impact	Training influences outcomes only via competency development (full mediation).	Focus training programs on applied skill-building and mentoring.
Challenges	Finance, bureaucracy, and technical skill gaps most severe.	Provide credit guarantee schemes and streamline business registration.
Ecosystem Support Gaps	Large, significant gaps in finance and incubation ( $p < .001$ ).	Establish Green Incubation Centres and dedicated venture-funding windows.

Source: Compiled by the researchers

The empirical evidence confirms that entrepreneurial competency is the single most influential factor driving the success and sustainability of green startups among educated youths in Kamrup Metro. While creativity and environmental literacy are naturally strong, the region’s entrepreneurial ecosystem remains constrained by limited financial access, weak institutional networks, and insufficient technical mentoring. To accelerate green enterprise development, Assam’s policymakers and academic institutions must prioritize competency-oriented training, accessible finance, and incubation infrastructure that align with eco-innovation goals.

**1. Suggestions and Policy Recommendations**

The study reveals that while educated youths in Kamrup Metro possess strong creative and environmental competencies, gaps remain in financial access, institutional support, and policy execution. The following suggestions and recommendations aim to strengthen green entrepreneurship and promote sustainable development in the region.

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- (a) **Curriculum Integration:** Educational institutions should introduce eco-entrepreneurship and sustainability modules across disciplines. Universities must link academic learning with practical incubation, innovation labs, and community projects to develop creative and strategic competencies among students.
- (b) **Financial Support:** The government and financial institutions should create dedicated green venture funds, micro-credit schemes, and low-interest loans for eco-entrepreneurs. A Green Entrepreneurship Credit Guarantee Scheme through NABARD or SIDBI would reduce entry barriers and promote financial inclusion for startups.
- (c) **Capacity Building:** Organize competency-based training programs and mentorship sessions focusing on business planning, innovation, and market linkages. Institutions like IIE Guwahati and ASRLM can play a leading role in enhancing entrepreneurial resilience and managerial efficiency.
- (d) **Policy and Institutional Reforms:** Simplify regulatory processes through a single-window clearance system and formulate a dedicated Assam Green Startup Policy offering tax incentives and fast-track approvals. Strengthening district-level incubation centers will support early-stage ventures and innovation clusters.
- (e) **Public Awareness and Market Development:** Promote green consumerism through awareness campaigns, eco-labeling, and product exhibitions. Encouraging sustainable consumption will expand markets for local green products and ensure long-term viability of eco-enterprises.
- (f) **Collaborative Governance:** Establish a Green Entrepreneurship Council of Assam comprising government, academia, and industry representatives to coordinate programs, monitor progress, and align efforts toward sustainability goals.

**Table 7.1:** Summary of Suggestions and Policy Recommendations

Strategic Area	Key Action Plan	Stakeholders Involved	Expected Outcome
Curriculum Integration	Introduce sustainability-based entrepreneurship education with incubation exposure.	UGC, AICTE, Universities, Colleges	Enhanced entrepreneurial competency among students.
Financial Support	Create Green Venture Fund, Micro-credit, and Credit Guarantee Schemes.	Govt. of Assam, NABARD, SIDBI, Private Investors	Improved access to finance and reduced startup mortality.
Capacity Building	Conduct workshops and mentoring on strategic planning and innovation.	IIE Guwahati, NIESBUD, MSME Dept., NGOs	Strengthened competencies and resilience among youth.
Policy & Regulatory Support	Implement single-window clearance and formulate Green Startup Policy.	Startup India, Department of Industries & Commerce	Faster approvals and improved ease of doing business.
Public Awareness	Promote green consumerism through fairs, eco-labelling, and campaigns.	Govt. agencies, Media, Civil Society	Increased consumer demand and market growth for green products.
Collaborative Governance	Establish Green Entrepreneurship Council for coordination.	Government, Academia, Industry, NGOs	Integrated ecosystem with measurable sustainability outcomes.

*Source: Compiled by the researchers*

Integrating education, finance, training, policy reform, and market awareness, Kamrup Metro can evolve into a regional hub of green innovation. Implementing these measures will not only empower educated youths but also contribute significantly to Assam's sustainable economic growth and environmental resilience.

## Conclusion

The study clearly establishes that entrepreneurial competency is a critical factor in fostering the growth and sustainability of green startups among educated youths in Kamrup Metro, Assam. The findings reveal that while young entrepreneurs exhibit high levels of creativity, innovation, and environmental literacy, they face persistent challenges related to finance, policy support, and institutional infrastructure. It is evident that eco-innovation and entrepreneurship can serve as powerful tools for both environmental protection and economic inclusion when backed by appropriate systemic support. Integrating sustainability-focused entrepreneurship education, ensuring accessible financing mechanisms, and enacting favorable policy interventions will be instrumental in transforming the region into a hub for green enterprise. Empowering the youth with the necessary skills, resources, and institutional backing, Assam can nurture a new generation of environmentally responsible entrepreneurs, driving inclusive growth and steering the state toward a resilient and green economy.

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