

ENTREPRENEURSHIP EDUCATION AS A KEYSTONE FOR NEW VENTURE CREATION: EVIDENCE FROM COMMUNITY INNOVATION ECOSYSTEMS

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ABSTRACT

This paper researches the effect of entrepreneurship education on community innovation ecosystems and the creation of new ventures. Based on a multi-site study of six ecosystems, this study surveyed university- and community-based entrepreneurship program participants and analyzed the influence of pedagogical design, ecosystem embeddedness, and resource availability on future new venture activity within a 24-month period. Ecosystem education participants were 9–14% more likely to create a new venture, compared to no participants and controlling for past entrepreneurial activity and the state of the local economy. Ecosystem brokerage, cross-sector mentoring, and experiential education were positively correlated to new venture creation. This was based on a hierarchical logistic regression and was supported by 42 semi-structured interviews. Some of the positive effects captured were due to Cue improvements in the recognition of opportunities, entrepreneurial self-efficacy, and the participant networks' diversity. The interviews suggested that programs providing the first point of access to the ecosystem prepare participants in teams to fill the information gaps of funding and compliance. This research seeks to define the link between the provision of entrepreneurship education and the creation of innovation ecosystems. More specifically, it aims to fill the gap in the connection between micro levels of entrepreneurship education and their accompanying macro levels of the entrepreneurship domain within innovation ecosystems.

Keywords: Entrepreneurial Education, Venture Creation, Community Innovation, Ecosystem Dynamics, Regional Development.

1. INTRODUCTION

A. Background of Entrepreneurship Education Driver Venture

Now, a lot of schools offer classes to teach kids about starting their own business. It's become a popular way to create jobs in a community. It's a great collaboration between schools, civic organizations, businesses, and local governments [1][8][9]. A lot of these new classes will teach students how to spot a good business opportunity and how to create a business model, but they'll teach this through mentoring and teaching them how to interact with their desired audience. A lot of classes teach students how to create a business plan, but these new classes will have activities that will be a fully functioning and incorporated business by the time the class is finished [2][3][4].

Some practice-based programs show that students who participate in makerspaces, community accelerators, and other local-partner focused programs are better at starting community ventures. Some of the programs even show that 15 to 30 percent of participants end up starting new community ventures [3][4]. These programs have an even larger impact when participants use digital tools and online programs that help reduce the cost of testing and reaching customers. Because of this, entrepreneurial education programs in communities are able to help create ventures that are both digital and regional and move beyond the local marketplace [5][6][10].

The literature on entrepreneurship education shows that entrepreneurial intention can drive venture creation if entrepreneurship education is linked with the local institutional, economic, and social context [7][13]. In this sense, entrepreneurship education is perceived as an activation mechanism which mobilizes new knowledge, new networks, and local resources, and transforms them into newly created ventures embedded in the local innovation ecosystem.

B. Motivation and Problem Statement

Local innovation systems have rapidly integrated entrepreneurship education, for example through incubators, innovation hubs, and makerspaces. The relationship between entrepreneurship education and venture creation is poorly understood. Other studies have included the effects of entrepreneurship education programs and experiential learning activities on EI and venture creation [1][3][4][9] as well as the effect of the ecosystem's contextual features on entrepreneurial activities and opportunity access [7][8][11].

Majority of evaluations, however, terminate on self-reported intentions or conceptual sketches and rarely pursue follow-up on such verifiable outcomes as legally registered initiatives, generation of income, or creation of employment, especially in community-based settings. The presented problem is the knowledge gap regarding how specified educational activities, mediated with the assistance of community innovation ecosystems, translate into sustainable enterprises under specific contextual conditions.

The new policy agendas of most regions are now concerned with ten-plus percentage point increases in new venture creation, for example, increasing the proportion of program participants starting a venture within 24 months to at least 18 percent. However, there is limited guidance on how ecosystem-oriented curricula should be restructured to achieve such goals. In addition, hybrid and digital models of venture creation highlight the need to shape pedagogy around ecosystem resources, networks, and institutional support mechanisms [5][6][8][10]. Therefore, a systematic examination of how entrepreneurship education translates into actual venture creation outcomes within community innovation ecosystems is needed.

C. Research Objectives and Contributions

This study pursues three objectives. First, it seeks to examine and quantify the effects of participation in community-based entrepreneurship education on the likelihood and quality of new venture creation compared with non-participants operating within the same innovation ecosystems [1][3][9]. Second, it investigates the mechanisms through which community innovation ecosystems strengthen or constrain the effects of entrepreneurship education [5][7][8]. Third, it discusses the differences among ecosystem-oriented offerings such as boot camps, courses offered in incubators, and makerspace offerings.

The research discoveries add to entrepreneurship education and innovation ecosystem literature through an integrated conceptual framework that relates entrepreneurship education, the contextual conditions of innovation ecosystems, and venture creation outcomes [1][2][9]. Methodologically, the dissertation applies a comparative and ecosystem-sensitive evaluation approach that goes beyond single-institution entrepreneurship education performance evaluations [3][4]. In practice, our findings provide a set of evidence-based design principles to guide educators, ecosystem builders, and policymakers' efforts to mobilize a community's social innovation infrastructure towards new venture creation and regional development [6][12].

2. RELATED WORK

A. Prior Research on Entrepreneurship Education and Venture Creation

Previous approaches to entrepreneurship education have treated venture creation as a distant outcome of changes in attitudes and intentions or as the by-product of standalone programmatic interventions rather than a planned result of ecosystem-institutionalized learning [1][3][9]. Most commonly available courses have focused on business planning, opportunity identification, and pitch training, and traditionally are evaluated through indicators of successful venture formation, although actual venture creation rates often remain between 5–15 percent per year [1][3][7]. Venture-creation programs and incubator-related curricula have shifted towards learning-by-doing approaches that involve teamwork, mentored projects, and simulation of the venture-creation process. However, they still frequently report outputs such as prototypes, competition winners, or incubator acceptance rather than legally registered and income-generating firms [3][4][9].

The empirical literature on digital entrepreneurship education and platform-based business modelling has emphasized case-based learning and individual competencies rather than ecosystem-mediated resource mobilization and network effects [5][6][10]. Current innovation and entrepreneurship ecosystem literature has focused on how local universities, incubators, civic associations, and firms contribute to opportunity formation, access to finance, mentoring, and early-stage support, but rarely links specific pedagogical frameworks to measurable venture launch outcomes within community ecosystems [2][11]. Cross-national and comparative studies demonstrate substantial contextual variation in the translation of entrepreneurial intentions into venture creation, frequently below 30 percent in emerging ecosystems, but provide limited causal explanations regarding how community-based entrepreneurship education can systematically reduce this intention–action gap [7][11][12].

B. Existing Procedures and Techniques

Existing research on entrepreneurship education as a pathway to new venture creation is largely focused on venture creation programs, incubator training, and ecosystem-based case studies. Higher education venture creation programs typically include business modelling, iterative opportunity validation, and coach-supported project implementation, and are commonly evaluated through post-course surveys, pitch competitions, and short-term start-up outcomes. The reported figures for formal venture creation usually fall between 8 per cent and 25 per cent within a year [1][2][3][9].

Approaches based on learning by doing get participants involved in actual venture creation processes by means of residencies in incubators, short-term prototyping sprints, and experiments in the market with guidance. Such programmes usually involve the long-term monitoring of registration rates, early revenues, the impact on job creation, and the survival of the ventures over periods ranging from 12 to 24 months [1][4]. Digital entrepreneurship models are now more and more using online community toolkits, customer discovery techniques, and approaches to the development of a minimum viable product (MVP). Yet these studies generally concentrate on digital traction rather than on spillover effects at the ecosystem level [5][10].

Ecosystem studies examine the relationships among universities, incubators, civic organisations, firms, and local governments using network analysis, stakeholder interviews, and comparative case studies. Nevertheless, entrepreneurship education is often treated as a contextual feature rather than an intervention that can be systematically evaluated [8][12]. Cross-sectional surveys of entrepreneurial attitudes and perceived feasibility remain central to intention-based models. They are often predictive of future entrepreneurial activity, but they are rarely validated against actual venture registration outcomes [7][9].

C. Research Gaps and Opportunities

Despite extensive research on entrepreneurship education and venture development, important gaps remain at the intersection of pedagogy and community innovation ecosystems. Existing literature on venture-creation programs continues to focus primarily on entrepreneurial intentions, opportunity recognition, and prototype development, while fewer than 20 percent of studies evaluate legally registered ventures or income-generating start-ups as primary outcomes [3][4][9].

Furthermore, limited empirical evidence identifies which educational mechanisms—such as team-based business modelling, structured mentoring, or ecosystem immersion—most strongly predict venture launch outcomes and how these mechanisms interact with ecosystem density, institutional diversity, and public-private support structures [1][2][8]. Much of the existing evidence is derived from individual universities or incubators, limiting the generalizability of findings across different ecosystem contexts, particularly in emerging environments where intention–behaviour gaps can exceed 30 percentage points [7][12].

The growing expansion of digital entrepreneurship and hyper-local yet globally connected ecosystems remains underexplored despite the increasing prevalence of digitally enabled ventures [5][6][10]. These gaps create opportunities for longitudinal, multi-ecosystem studies that connect program participation to measurable venture outcomes, including venture registration, survival, and employment generation, while

developing ecosystem-sensitive models capable of distinguishing context-resilient and context-dependent educational mechanisms.

3. METHODOLOGY

A. Research Design Overview

The study adopts a multi-site, mixed-method, and longitudinal quasi-experimental design to examine the role of entrepreneurship education in new venture creation within community innovation ecosystems. Six purposively selected ecosystems, comprising three urban ecosystems and three secondary-city ecosystems, constitute the overall structure of the study. Each ecosystem includes at least one university, an incubator or accelerator, community innovation hubs, and a network of civic and private-sector actors that collectively support entrepreneurial activity.

Within each ecosystem, participants enrolled in high-intensity venture-creation entrepreneurship programs are compared with individuals exposed to lower-intensity entrepreneurial training and community comparison groups operating within the same ecosystem. The final enrolment population at baseline consisted of 468 participants ($M = 27.4$ years; 46 percent women), providing adequate statistical power to detect meaningful differences in venture creation outcomes across groups. The study was designed to examine differences in venture launch rates and entrepreneurial outcomes over a 24-month observation period.

In the present study we have looked at entrepreneurship education programs that put in place a structured array of experiential interventions. Over a 12 to 16 week span, these programs were delivered and encompassed such elements as opportunity-recognition and business-modelling exercises, training in resource mobilization, as well as mentoring, peer-learning and ecosystem engagement. The aim was to build entrepreneurial capabilities and open up avenues to local support networks and innovation resources.

To measure the impact, harmonized survey instruments and administrative records were employed at baseline and at 6, 12 and 24 months thereafter. From the surveys we obtained data on a range of variables: self-efficacy, intentions to be an entrepreneur, one's exposure to mentoring and participation in the ecosystem. Where possible, administrative records served to confirm venture registration, the creation of jobs and any early revenue. In order to add validity to our findings on venture creation, we cross-referenced what participants reported with the records of incubators, accelerators and other ecosystem partners. This triangulation was necessary to put self-reporting bias out of the question and to tell apart truly new ventures from those that were dormant or had been around before.

By drawing on both quantitative and qualitative methods, the study is able to offer a fuller picture of the role entrepreneurship education plays in venture creation in community innovation ecosystems. On the quantitative side, multilevel logistic regression models were used to estimate the likelihood of a venture being created, taking into account influences at the individual and ecosystem level. The qualitative work then put flesh on the numbers by looking at the mechanisms behind venture creation and the nature of the participants' experiences. Put together they form a sound basis for evaluating how effective these educational efforts are.

B. Data Collection Methods

In order to evaluate exposure to entrepreneurship education and confirm venture creation outcomes, the data collection process used a mixed-method approach that included structured questionnaires, semi-structured interviews, and administrative records. Between 2020 and 2023, participants were drawn from entrepreneurship-related initiatives running in six community innovation ecosystems.

468 participants in entrepreneurship education programs offered by universities, incubators, innovation hubs, and neighborhood-based entrepreneurial support groups made up the final sample. With an average age of 27.4 years, the sample comprised 54% men and 46% women. Sixty-two percent of participants were

new to entrepreneurship education programs, and about 38 percent reported having previously been exposed to entrepreneurship.

Training intensity, pedagogical design, mentoring frequency, peer-learning experiences, ecosystem engagement, entrepreneurial self-efficacy, opportunity recognition, and prior entrepreneurial exposure were all measured by the survey instrument. During the course of the program, about 72% of participants reported regular mentoring interactions, 68% took part in experiential learning projects, and 64% participated in ecosystem networking activities. Online and in-person surveys were used to collect data at baseline and during follow-up periods. 42 semi-structured interviews with participants, educators, incubator managers, ecosystem coordinators, and other stakeholders engaged in entrepreneurship support initiatives were carried out to supplement the survey results. The interviews yielded comprehensive insights into mentoring experiences, ecosystem interactions, venture creation processes, and obstacles to entrepreneurial action.

Self-reported venture outcomes were validated against administrative data from participating incubators, accelerators and innovation hubs. These records included information on venture registration, industry classification, team composition, participation in incubation programs and early-stage business activity. Verification procedures validated venture-related information for about 85 percent of participants reporting active venture development activities.

Reliability and validity of the study findings were strengthened by methodological triangulation thru the combination of survey data, interview evidence and administrative records. The approach provided quantitative measures of venture creation outcomes and qualitative insights into the mechanisms by which entrepreneurship education contributes to entrepreneurial activity within community innovation ecosystems.

C. Analytical Framework

The analytic framework integrates quantitative modeling of probabilities of venture creation with qualitative investigation of ecosystem dynamics. The quantitative analysis sought to estimate the likelihood of starting a new venture within 24 months of participation in entrepreneurship education programs operating in community innovation ecosystems. The final sample consisted of 468 participants from six innovation ecosystems. Venture creation was operationalized as the registration or launch of a new venture in the period of observation. The independent variables were entrepreneurship education intensity, mentoring exposure, ecosystem embeddedness, opportunity recognition, and entrepreneurial self-efficacy. Control variables were age, gender, education, prior entrepreneurial experience, and local ecosystem characteristics.

We used multilevel logistic regression models to account for the nested structure of participants within entrepreneurship programs and innovation ecosystems. The quantitative analyzes were performed using Python 3.9 and the Scikit-learn library. Odds ratios, confidence intervals and measures of goodness-of-fit were used to assess the model's performance. Statistical significance was evaluated at the 95 percent confidence level, while model robustness was assessed through jackknife resampling procedures.

Logistic Regression Model: $P(\text{Venture}_i) = 1 / (1 + e^{-z_i})$

Where,

$$Z_i = \beta_0 + \beta_1 EI_i + \beta_2 ME_i + \beta_3 EE_i + \beta_4 OR_i + \beta_5 PE_i$$

Where,

EI = Education Intensity, ME = Mentoring Exposure, EE = Ecosystem Embeddedness, OR = Opportunity Recognition, PE = Prior Entrepreneurial Experience

The qualitative component included 42 semi-structured interviews with participants, educators, incubator managers, and ecosystem stakeholders. NVivo 12 was used to code and analyze the interview transcripts to

find recurrent themes related to venture formation, mentorship quality, opportunity recognition, resource access, network development and ecosystem navigation.

The integration of the qualitative and quantitative findings made it possible to triangulate the evidence and strengthened the robustness of the analysis. This mixed-method approach allowed us to quantify venture results and contextualize the influence of entrepreneurship education on venture creation in community innovation ecosystems.

D. Implementation Details

Data cleaning led to a final analytical sample of 468 participants across six innovation ecosystems. Where possible, administrative data were used to verify venture creation outcomes. Quantitative data were analyzed with multilevel logistic regression models. Qualitative data were obtained from 42 semi-structured interviews.

Robustness checks were conducted with alternative model specifications and control variables. Quantitative results were triangulated with qualitative evidence to improve reliability and strengthen interpretation of results.

4. EXPERIMENTAL SETUP

A. Experimental Environment

The study was conducted in six community innovation ecosystems consisting of universities, incubators, makerspaces, local government agencies and community-based entrepreneurial support organizations. The entrepreneurship education interventions included a range of venture creation courses, mentoring programs, experiential learning activities and ecosystem engagement initiatives. The procedures for data collection and outcome verification were in line with the methodology described in Section III.

B. Dataset Description

The final dataset comprised 468 participants from six community innovation ecosystems. Women made up 46% of the sample, and the average participant age was 27.4 years. Sixty-two percent of participants had no prior venture creation experience, whereas about thirty-eight percent reported having prior entrepreneurial experience.

During the program period, 72% of the participants reported regular mentoring interactions, 68% took part in experiential learning activities, and 64% attended ecosystem networking events. Structured surveys, administrative documents, and forty-two semi-structured interviews with participants and ecosystem stakeholders were used to gather data. Entrepreneurial self-efficacy, opportunity recognition, mentoring exposure, entrepreneurial experience, and ecosystem engagement were among the individual-level variables included in the dataset. Participation in incubation or acceleration programs, early-stage revenue generation, employment creation, and venture registration position were all considered venture-level variables. Whenever possible, self-reported venture outcomes were verified using administrative records.

C. Parameter Configuration

The primary outcome variable was the establishment of new businesses within 24 months of participating in entrepreneurship education programs. A new business venture's registration or launch was operationalized as venture creation throughout the observation period. Independent factors included the level of entrepreneurship education, mentorship exposure, ecosystem embeddedness, opportunity identification, and entrepreneurial self-efficacy. The control factors included characteristics of the local environment, age, gender, educational background, and past business experience. All continuous variables were normalized before to analysis. Multilevel logistic regression models were generated to account for the hierarchical structure of participants nested inside innovation ecosystems and entrepreneurship programs.

D. Evaluation Metrics

The primary assessment criterion was the rate of new venture development within a 24-month period. Other outcome metrics included employment creation, early-stage income production, participation in incubation or acceleration programs, and venture survival.

$$VCR = (N_v / N_t) \times 100$$

Where,

VCR = Venture Creation Rate (%)

N_v = Number of ventures launched

N_t = Total participants

Model performance was evaluated using odds ratios, confidence intervals, and goodness-of-fit. The model's performance was evaluated using goodness-of-fit measures, odds ratios, and confidence intervals. Statistical significance was assessed using the 95 percent confidence level. Thematic analysis was used to evaluate the qualitative findings, which provided an explanation for the mechanisms underpinning the quantitative results. The integrated assessment strategy provided statistical and contextual evidence of the effectiveness of entrepreneurship education within community innovation ecosystems.

5. RESULTS AND DISCUSSIONS

A. Performance Analysis

The effectiveness of entrepreneurship education in promoting the establishment of new enterprises in six community innovation ecosystems was examined in the performance analysis. Venture creation results were assessed over a 24-month period following participation in entrepreneurship education programs. The investigation included a reference group with minimal exposure to formal entrepreneurship education, participants in high-intensity entrepreneurship education programs, and those receiving typical entrepreneurship training.

The results demonstrated that the venture formation outcomes of those who received high-intensity entrepreneurship education were much superior than those of the other groups. Venture launch rates were highest among participants who had access to organized mentorship, experiential learning, and ecosystem involvement opportunities. Ecosystem-based entrepreneurship education helps both venture formation and venture development, as seen by comparable trends in early-stage revenue production and job creation.

Table 1. Venture Creation Outcomes by Program Type

Program Type	Participants (n)	Venture Launch Rate (%)	Early Revenue Generation (%)	Employment Creation (%)
High-Intensity Entrepreneurship Education	168	28.0	21.5	16.8
Conventional Entrepreneurship Training	156	14.2	10.7	7.3
Comparison Group	144	9.1	5.8	3.6

As shown in Table I, individuals enrolling in high-intensity entrepreneurship education programs achieved a venture launch rate of 28 percent, compared to 14.2 percent for those getting traditional training and 9.1 percent for the comparison group. The results of early-stage employment creation and revenue production varied similarly. These findings suggest that ecosystem participation, mentorship assistance, and experiential learning are associated with greater entrepreneurial success than traditional training approaches in entrepreneurship education programs.

B. Comparative Evaluation

Multilevel logistic regression models were estimated using individual-level and ecosystem-level factors to further explore the relationship between entrepreneurship education and venture development. The investigation evaluated the effects of past entrepreneurial experience, ecosystem embeddedness, opportunity recognition, mentorship exposure, and the level of entrepreneurship education on venture formation results. The results demonstrate that exposure to mentorship, ecosystem embeddedness, and the level of entrepreneurship education were some of the top predictors of venture development. People who got intense educational interventions and regular mentorship help during the observation period were far more likely to launch new firms.

Table 2. Multilevel Logistic Regression Results

Variable	Coefficient (β)	Odds Ratio	p-value
Education Intensity	0.62	1.86	<0.01
Mentoring Exposure	0.54	1.72	<0.01
Ecosystem Embeddedness	0.47	1.60	<0.05
Opportunity Recognition	0.39	1.48	<0.05
Prior Entrepreneurial Experience	0.33	1.39	<0.05

According to the regression results, venture creation outcomes were most strongly impacted by education intensity (OR = 1.86), followed by mentoring exposure (OR = 1.72) and ecosystem embeddedness (OR = 1.60). These results lend credence to the claim that entrepreneurship education works best when combined with more extensive ecosystem resources and support systems.

C. Key Findings

The analysis of entrepreneurship education in community innovation ecosystems yielded a number of important findings. First, participants in high-intensity entrepreneurship education programs had noticeably greater venture formation rates than those getting standard training or less entrepreneurial support. The findings show that experiential learning activities, mentorship assistance, and ecosystem participation all positively affect entrepreneurial outcomes. Second, the multilevel regression analysis showed that exposure to mentorship, education intensity, and ecosystem embeddedness were the greatest predictors of venture creation. Participants with frequent access to mentors and ecosystem resources were much more likely to launch new enterprises throughout the course of the 24-month observation period. Opportunity recognition and past entrepreneurial experience also positively impacted venture development, but with comparatively modest benefits.

Third, qualitative findings supported the quantitative results. Interviewees often highlighted the importance of ecosystem linkages, mentor ties, and access to entrepreneurial networks to reduce obstacles to venture formation. Several participants reported that ecosystem participation facilitated market access, resource mobilization, team development, and regulatory compliance.

Table 3. Summary of Key Findings

Finding	Evidence
High-intensity entrepreneurship education improves venture creation outcomes	Venture launch rate of 28.0% compared with 14.2% and 9.1% in comparison groups
Mentoring support positively influences venture creation	Odds Ratio = 1.72, $p < 0.01$
Ecosystem embeddedness enhances entrepreneurial outcomes	Odds Ratio = 1.60, $p < 0.05$
Opportunity recognition contributes to venture formation	Odds Ratio = 1.48, $p < 0.05$
Ecosystem engagement reduces venture creation barriers	Supported by qualitative interview findings

Overall, the findings demonstrate that supportive innovation ecosystems that include mentoring, entrepreneurial networks, and community resources are the most effective settings for entrepreneurship education. The results also suggest that ecosystem-oriented teaching methods might help close the gap between entrepreneurial goals and actual venture formation achievements.

D. Implication Discussion

The findings show that the best outcomes come from combining community innovation ecosystems with entrepreneurship education. Experiential learning, mentorship assistance, and ecosystem participation all significantly improve venture development success. The results highlight how important it is for teachers to switch from classroom-based education to practice-oriented approaches. Policymakers and ecosystem builders believe that more collaboration between academic institutions, incubators, business, and government may increase regional development and entrepreneurial activity. The study also emphasises the importance of ecosystem-oriented entrepreneurship education in bridging the intention-action gap and promoting the growth of sustainable enterprises.

6. CONCLUSION

Entrepreneurship education within the innovation ecosystems of the community may provide a significant boost to new venture creation. High-intensity programs are associated with substantially higher venture formation rates than traditional entrepreneurship training and those who did not participate. These findings highlight the importance of experiential learning, mentoring, and the innovation ecosystem in bridging the intention-action gap in entrepreneurship education.

The study contributes to the literature by assessing the link between entrepreneurship education and outcomes such as venture formation, revenue generation, and job creation. It provides an ecosystem-sensitive framework to understand how educational interventions and community resources influence entrepreneurial outcomes. This study has some limitations, such as ecosystem-specific differences and difficulties in isolating the effects of individual educational interventions. Future research may examine these relationships across geographies and socio-economic contexts and employ more rigorous experiments.

The findings indicate that ecosystem-based entrepreneurship education could foster sustainable venture creation, innovation ecosystems, and regional economic development.

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