

THE CONTRIBUTION OF IEDC TO ENTREPRENEURIAL MINDSET DEVELOPMENT AMONG HIGHER EDUCATION STUDENTS IN KERALA

*Rinu Raju, **Dr. Samna M

Abstract

Higher education institutions are essential in cultivating the entrepreneurial attitude, which is essential for fostering entrepreneurship and starting new businesses. This study looks into how Kerala, India's higher education students' entrepreneurial mindsets are shaped by Innovation and Entrepreneurship Development Centers (IEDCs). The purpose of the study is to evaluate how IEDC activities and programs affect students' intentions, goals, and attitudes toward entrepreneurship. The study uses a mixed-methods approach, collecting data using both quantitative and qualitative techniques. Students who have taken part in IEDC programs are surveyed and interviewed, and information from IEDC employees and program organizers is also gathered. The results are intended to highlight best practices in program design and delivery, offer insightful information about the efficacy of IEDC initiatives, and provide guidance. This research has practical implications for higher education institutions, IEDCs, and policymakers. It advances our understanding of entrepreneurship education and provides direction for the creation of programs that encourage students to develop entrepreneurial thinking.

Keywords:- IEDC, Entrepreneurial Mindset, Higher Education Students, startups, employment.

Millennials are ready to embrace this brave new world by being part of the start-up ecosystem [1] [2]. College students are pursuing this path by immersing themselves into emerging technology trends and their market

potential [3]. Most of these markets are in the electronics and information sciences arena.

Engineering, polytechnic and arts & science stream has a huge potential that is waiting to be explored [4]. At this juncture, the success rate of student start-

*Rinu Raju, Assistant Professor, Department of Commerce, St. Pius X College, Rajapuram, Part Time Research Scholar, IQBAL College, Peringammala, E-,mail: rinuraju1993@stpius.ac.in

**Dr. Samna M, Assistant Professor and Research Guide, P.G. Department of Commerce and Research Centre, IQBAL College, Peringammala, E-,mail: sannasm@gmail.com

ups in the College is relatively less (Kerala Start-up Mission, 2019) [4]. Kerala serves as a great sample to explore the campus start-up ecosystem in a developing country as it represents the epitome of entrepreneurial vision with the enormity of resources and accomplishments in this area [5]. The college students have start-ups during their studies but the start-ups from college are a minimum [6]. The possibilities for the exposure of start-up products faced a lot of barriers [7]. To overcome these barriers state government agencies like Kerala Start-up Mission (KSUM) [8] and Innovation and Entrepreneurship Development Centre (IEDC) [9] in the campus works together and gives financial and technological support to the students.

Products from the start-ups can be marketed directly to the consumers all over the world without an intermediate person for the growth of business. Social media and other related technologies are mostly handled by the educated youth [10]. The profound knowledge in the use of social media for communication gives impetus to the marketing strategies of the students. The widespread use of social media in business markets has triggered the restructuring of business models [11]. To make an online business successful, a company has to attract customers willing to shop online, deliver products to these customers, and receive payments from the customer [12].

1.1 Contributions

The novel contributions of this paper are:

1. We conduct this research based on the literature screening of key

contributions highlighting campus start-ups by the college students by evaluating their entrepreneurial inquisitiveness in campus activities on the one hand and theoretical underpinning of Business-to-Consumers (B2C) marketing trends on the other. B2C is the process of selling products and services directly to end consumers.

2. We adopt a mixed-methods approach including both qualitative and quantitative data collection methods.
3. We conduct surveys and interviews with higher education students who have participated in IEDC programs to gather data on their perceptions of the programs and the impact they have had on their entrepreneurial mindset.
4. We collect data from IEDC staff and program organizers to gain a more comprehensive understanding of the programs and their objectives.

1.2 Organization of paper

The paper's remaining sections are organized as follows: Sect 2 discusses literature survey, Sect 3 discusses problem statement, Sect 4 discusses objectives and hypothesis, Sect 5 discusses methodology, Sect 6 discusses results, Sect 7 discusses practical implications and limitations of our study, Sect 8 concludes the paper.

2. Literature Review

IEDC in the campus carries a major role to develop knowledge-based activities and networks between students

of different disciplines in and off the campus that is spread around 180 engineering colleges, arts and science colleges, polytechnic institutions across Kerala (Kerala Start-up Mission, 2019) [4].

Ghahtarani et al., in 2020, in “The Impact of Social Capital and Social Interaction on Customers’ Purchase Intention, Considering Knowledge Sharing in Social Commerce Context” explored the impact of social capital and social interaction on knowledge sharing and customer purchasing intention in the context of social commerce. Their study, involving 254 individuals with significant social commerce experience, revealed a significant relationship between dimensions of social capital and social interaction theories. Knowledge/information sharing was identified as a mediating variable.

In Matricano & Sorrentino, in 2020 in “Ukrainian Entrepreneurship in Italy: Factors Influencing the Creation of Ethnic Ventures” emphasized the necessity of extensive social interaction for effective knowledge and information sharing in business-to-consumer (B2C) organizations. They highlighted the importance of combining quality products, effective marketing, and a culture of continuous improvement and excellence.

Pradeep & Satish in 2022 conducted a study on 396 final-year undergraduate mechanical engineering students from Kerala, using structural equation modelling in their work, “A Campus Start-up Ecosystem for Mechanical Engineering Students: Challenges, Approaches, Catalysts and Solutions.” The research

identified barriers and best practices in campus start-ups and emphasized the positive role of campus-based entrepreneurship centers in mitigating challenges. Recommendations were provided for fostering a sustainable campus start-up culture.

Nambiar et al. [16] in “The Impact of Government Support on the Performance of Start-ups in Kerala, India”, analyzed the impact of government support on start-ups in Kerala, India. Through qualitative interviews with 201 start-up entrepreneurs, 2 academic faculties, and 5 mentors, the study identified key impediments in Kerala’s start-up ecosystem. Funding constraints were highlighted, with a call for increased private investments, supportive policies, and enhanced research funding for promoting a robust start-up culture in the state.

The Scope and Significance of the Study

This research encompasses the evaluation of Innovation and Entrepreneurship Development Centers (IEDCs) concentrating on their impact on college students’ entrepreneurial mindsets in the particular setting of Kerala, India. In order to fully comprehend how IEDC programs affect students’ entrepreneurial attitudes, goals, and intentions, a mixed-methods approach is used in this study. Through the integration of various viewpoints from students, IEDC personnel, and program coordinators, the study aims to offer a comprehensive understanding of the cultivation of an entrepreneurial mindset in higher education.

This study is significant because it has the potential to help policymakers, IEDCs, and higher education institutions in their efforts to encourage student entrepreneurship. The results have the potential to provide insightful information about optimal methodologies, with useful ramifications for those involved in determining the policies and procedures governing entrepreneurship education. Additionally, this study contributes to the larger body of knowledge on entrepreneurship education by offering a pertinent case study with potential international applicability. The study ultimately aims to promote entrepreneurial mindsets among higher education students in Kerala and serves as a reference for similar programs worldwide; therefore its value goes beyond the local context.

3. Problem Statement

Even though the students and colleges receive support from the government agencies, there is a deficiency in student's start-ups. The barriers to student's start-up are the dark side of entrepreneurship. From the literature, entrepreneurial inquisitiveness of college students can be analyzed by evaluating the following factors like Attitude of student, Involvement in campus activities, Government policies, Support from University, effectiveness of IEDC. The scope of B2C marketing of these campus start-up products is discussed.

4. Research Objectives and Hypothesis

Based on the survey of literature, the objectives and hypothesis were formulated. It can be seen that

Entrepreneurial Inquisitiveness (EI) of college students can be found out by their participation in Campus Start-up activities. Factor on EI is selected based on the literature. In this paper, the analysis was made only on their entrepreneurial inquisitiveness and scope of B2C marketing is discussed.

4.1 Objectives of the Study

The following objectives were taken into consideration for the evaluation of entrepreneurial inquisitiveness of engineering, polytechnic and arts & science students.

1. To analyze the role of following factors on Entrepreneurial Inquisitiveness (EI)
 - a. Attitude of college students towards EI.
 - b. Policy of KTU and colleges affecting students towards EI.
 - c. Influence of government and its organizations on college students towards EI.
 - d. Barriers on IEDC activities of college students towards EI.
2. To examine Innovation and Entrepreneurship Development Centers (IEDC) and its campus activities to develop EI.
3. To know the scope of start-ups in B2C companies by the college students.

4.2 Hypotheses

H01: Attitude of college students towards campus start-up has a positive impact on EI.

H02: Involvement of students in campus start-up has a positive impact on EI.

H03: Policy of KTU and college has a positive impact on EI.

H04: Influence of government and its organizations has a positive impact on EI.

H05: Barriers on IEDC activities has a negative impact on EI.

5. Research design and Methodology

The purpose of this study is to evaluate the contribution of Innovation and Entrepreneurship Development Centers (IEDCs) in shaping the entrepreneurial mindset of higher education students in Kerala, India. This study focuses on the impact of IEDC programs and activities on students' entrepreneurial attitudes, aspirations and intentions. The entrepreneurial mindset is a crucial factor in promoting entrepreneurship and starting new ventures, and higher education institutions play a crucial role in its development.

This study adopts a mixed-methods approach including both qualitative and quantitative data collection methods. Surveys and interviews were conducted with higher education students who have participated in IEDC programs to gather data on their perceptions of the programs and the impact they have had on their entrepreneurial mindset. Additionally, data were collected from IEDC staff and program organizers to gain a more comprehensive understanding of the programs and their objectives.

Various colleges under APJ Abdul Kalam Technological University, Kerala, India were considered and a sample of 392 final-year college students with engineering, polytechnic and arts & science spread across Kerala were chosen as they are more aware about the activities happening in campus. Data collection was done using a questionnaire that was eventually refined based on literature, feedback and market research and is analyzed using a statistical tool named "Statistical Package for Social Science". Data collected from the college students of engineering, polytechnic and arts & science across Kerala through online and direct method.

A questionnaire was developed based on the existing literature and the policies adopted by the university and the state government. For data collection, a survey was conducted of final-year college students across Kerala state with both printed questionnaires and online Google forms. The printed questionnaires were circulated to college students on a one-to-one basis at the colleges. The Google form was circulated by email to students through the nodal officers in charge of the IEDC on campus.

The students' responses were on a seven-point Likert scale. The study uses 7- point Likert scale ranging from 1- strongly disagrees to 7- strongly agree. IBM AMOS is used to test the study hypothesis because this study involves large sample size. Maximum likelihood estimator is used as the data analysis technique through Structural Equation Modeling (SEM) (Shiau, 2019) [17]. Around 392 students participated and 380

students’ responses were used as final data after error checking.

6. Results and Analysis

The study applied the data analysis in three sequential stages by mixed-methods approach. In the first stage, it examines the dimensional structure of the scales used using Exploratory Factor Analysis (EFA). In addition to this, an assessment on the reliability of the scale using internal consistency measures was made. Further, the validity and reliability of the scale was checked using Confirmatory Factor Analysis (CFA). Followed by this, in the last stage, as part of testing the study hypothesis, applied Structural Equation Modeling (SEM) [17] and Regression Analysis were made [18] (Pillinger et al. 2020).

To measure the variables the survey instruments must have sufficient normality ($p > 0.01$), reliability and validity (Maciel-Monteon et al., 2019) [19]. The internal

consistency reliability can be estimated by Cronbach’s alpha with consistency between 0.60 and 0.90 (Dalyanto et al., 2021) [20]. EFA and CFA were conducted to reduce a pool of items into subset of components/factors (Tarhan&Özge, 2021) [21].

As part of CFA, goodness-of-fit indices, Table 1 examines the goodness of fit of the data with the model, Fig 1 measurement model. From the analysis, it was observed that the overall correlated CFA model indicated a good fit ($\chi^2 = 676.119$, $df = 644$, $\chi^2/df = 1.05$, $CFI = .996$, $SRMR = 0.033$, $RMSEA = 0.011$). All these directed the study that the scale used to measure different dimensions are valid and reliable, therefore, proceed for hypotheses testing.

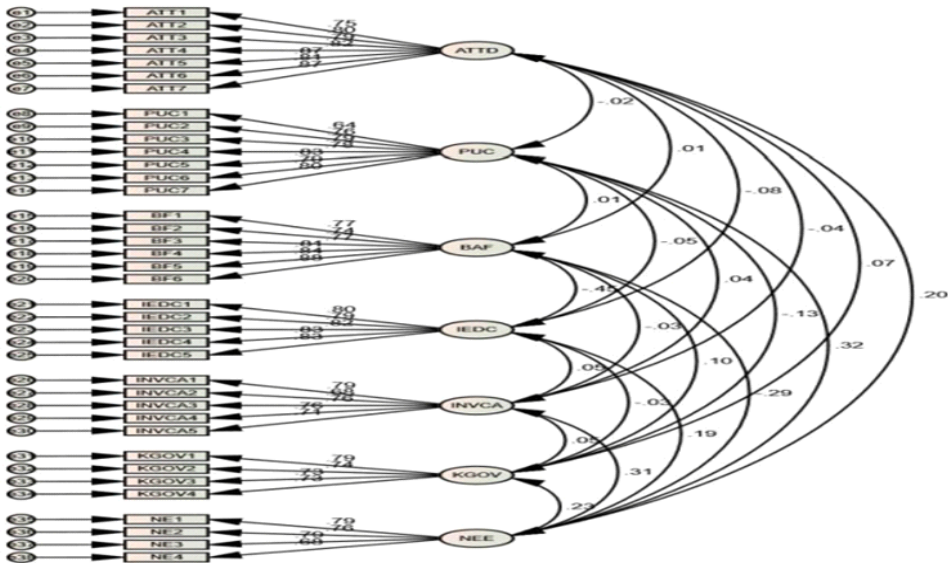
In the measurement model, the factors such as attitude is measured with seven variables, policy of university is measured with seven variables, influence

Table 1
Fit indices

Measure	Estimate	Threshold	Interpretation
CMIN	676.119	---	---
DF	644.000	---	---
CMIN/DF	1.050	Between 1 and 3	Excellent
CFI	0.996	>0.95	Excellent
SRMR	0.033	<0.08	Excellent
RMSEA	0.011	<0.06	Excellent
P Close	1.000	>0.005	Excellent

Source: Primary Data

Figure 1
Measurement model



of government organization is measured with four variables, barrier factors are measured with six factors, involvement of ME students in campus activities is measured with five factors and entrepreneurship inquisitiveness is measured with four factors. The relationship and impact over the EI were measured.

6.1 Structural Equation Modelling (SEM)

SEM can handle large no of endogenous and exogenous variables as well as unobserved variables simultaneously (Zhang &Hao, 2022) [22].

Maximum Likelihood Estimation is employed and all proposed relationships in the hypothesized model were tested simultaneously to find data consistency [23]. As shown in Table 2, the study found a satisfactory fit of the structural model

[Chisquare: $\chi^2 = 504.814$ (df= 490), $p = .001$; the ratio of Chi-square to degrees of freedom: $\chi^2/df = 1.03$; Comparative Fit Index: CFI = .998; RMSEA = .009].

6.2 Hypothesis test results

According to the results reported in Table. 3, the findings with respect to the individual hypotheses can be summarized as follows:

With regard to **H1**, a significant path estimate from ATTD to EI ($\hat{\alpha} = 0.193$, $p < 0.01$), supports a statistically significant relationship.

With regard to **H2**, the results supported that INVCA has an effect or impact on EI ($\hat{\alpha} = 0.257$, $p > 0.01$)

With regard to **H3**, the results supported that PUC has a positive impact on EI ($\hat{\alpha} = 0.382$, $p < 0.01$).

The study examined the relationship between CD to the outcome variables.

Table 2
Goodness of fit indices of SEM model

Measure	Estimate	Threshold	Interpretation
CMIN	504.814	---	---
DF	490.000	---	---
CMIN/DF	1.030	Between 1 and 3	Excellent
CFI	0.998	>0.95	Excellent
SRMR	0.042	<0.08	Excellent
RMSEA	0.009	<0.06	Excellent
P Close	1.000	>0.005	Excellent

Source: Primary Data

With regard to **H4**, KGOV has also reported a statically significant impact on EI ($\hat{\alpha} = 0.281, p < 0.05$).

With regard to **H5**, the results linking the relationship between BAF to EI also supported a statistically significant relationship ($\hat{\alpha} = -0.305, p < 0.01$).

In addition to this, the study also analyzed the standardized regression estimates to analyze the relative impact of all these independent variables on dependent variable. The results revealed PUC on EI carry highest influence in comparison with other independent variables. Fig 2 gives the total result of SEM analysis.

On the other hand of this research, the scope of start-ups into B2C companies is highly acceptable by the college students with engineering, polytechnic and arts & science. From the sample of 380 responses, it is seen that 80 per cent of them are aware of online

money transactions and are interested to do product marketing. The remaining is much interested in traditional product purchase and business methods.

6.3 Findings

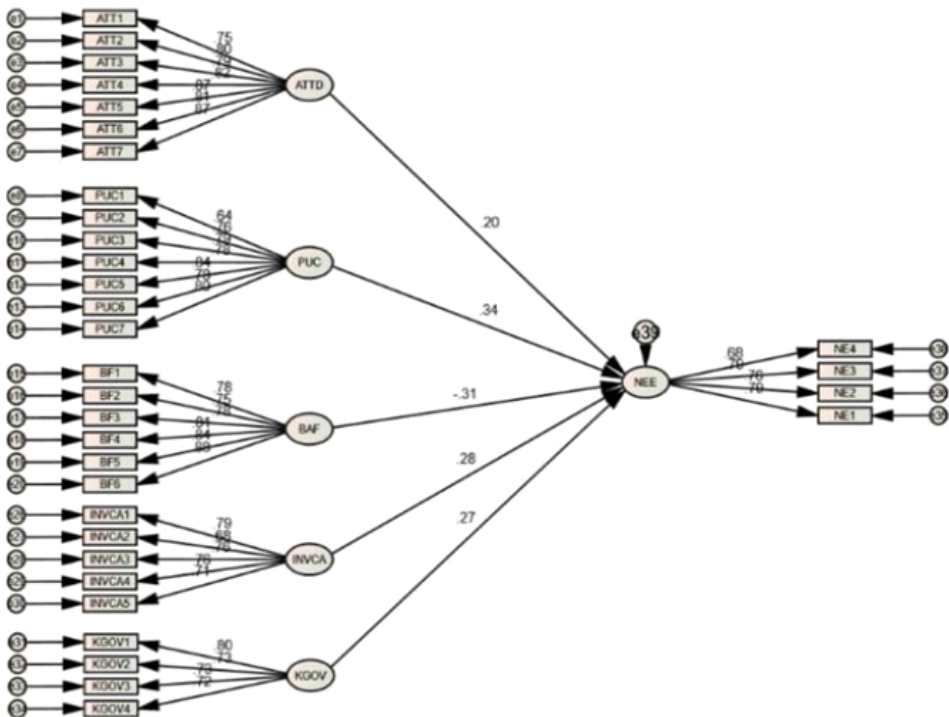
- The findings of this study provide highly valuable insights into the effectiveness of IEDC programs in promoting entrepreneurship and shaping the entrepreneurial mindset of higher education students in Kerala.
- The data collected will help to identify best practices in IEDC program designs and delivery, and inform future initiatives aimed at promoting entrepreneurship among higher education students in Kerala.
- Furthermore, this research contributes to the development of a more comprehensive understanding of the role of IEDCs in promoting

Table 3
Unstandardized Regression Weights

	Estimate	S.E.	C.R.	P	Label
EI <--- ATTD	0.193	.047	4.140	***	Par_28
EI <--- PUC	0.382	.061	6.279	***	Par_29
EI <--- BAF	-0.305	.051	-6.009	***	Par_30
EI <--- INVCA	0.257	.048	5.366	***	Par_31
EI <--- KGOV	0.281	.056	5.039	***	Par_32

Source: Primary Data

Figure 2
Result of SEM



entrepreneurship and shaping the entrepreneurial mindset of higher education students.

6.5 Discussion

It was found that students overall can develop the entrepreneurial and start-up capacity to take decisions through appropriate support from the state government and their university. But there are uncertainties that need to be eliminated. Of the 380 responses, 42 per cent indicated that lack of capital investment was a barrier and 41 per cent identified inadequate guidance and mentoring by government agencies.

42 per cent of the respondents said that the conversion of student's projects into start-ups was difficult, leading to negative growth in globally marketable products. On the other hand, 51 per cent of the students involved in IEDC activities said the experience had made them think creatively (Pandit et al., 2018) [24]. Only 33 per cent of the college students were involved in campus start-up activities – suggesting an attitude among the students that needs to be changed to improve participation. Furthermore, 39 per cent of the students agreed that interaction with entrepreneurs and benefiting from their mentorship had led to innovative curriculum projects – which means that such students may nurture their project ideas for development into prototypes and finally into the basis for an entrepreneurial venture.

Limitations

- The students' mindset, engagement and start-up awareness may have led to inadequate responses in the data.

7. Suggestions for Practical Implications

1. If we implement many innovative inclusive education programmes effectively, it may play a major role in creating start-ups in the campus.
2. Policies and programmes of Government in the area of start up business should be improved.
3. The government should continuously support self-employment activities to fight against unemployment.
4. All the campus start-up activities are supported by the IEDC which act as a catalyst for the growth of entrepreneurship.
5. Overall, the implication of the study is college students need further encouragement with potential to develop successful campus start-ups. With the support of government agencies, the participation of these students in entrepreneurial activities can therefore be improved.

8. Conclusion

The substantial contribution of this research is the development of new model for measuring entrepreneurial inquisitiveness through campus start-up activities of college students. The government supports self-employment activities to fight against unemployment. Decentralization of industrial activities will create employment opportunities to the students. The campus start-up activities are supported by the IEDC which acts as a catalyst for the growth of nascent entrepreneurship. KSUM, KTU and Government are promoting their

technological skill through different workshops and hackathons. The barriers in student's attitude can be changed by the networks between students of different disciplines and financial support from the agencies. One of the big challenges for first time entrepreneurs like start-ups is getting an enough credibility and visibility to have discussion with stake holders. B2C entrepreneur should be familiar with the intricacies faced by people in the market. It is impossible to get referrals without actual purchase.

Ecommerce efforts in developing countries are the lack of telecommunication infrastructure, qualified staff to develop and support e-commerce sites, skill among consumers which leads to delayed delivery of physical goods. Faculty members can play a major role in creating start-ups in the campus.

They identify the potential students with an entrepreneurial attitude and culture by organizing different entrepreneurial activities for the students. They require organizational support during the innovation process. In the future the survey has to be extended to all the disciplines and all the products. Also find the different marketing technique to get an easy catch to the consumers. In this paper, primarily we are focusing on the possibilities of campus start-up by the college students in their campus and secondly, the possibilities to scale up these campus start-ups in to a business- to-Customers (B2C) venture. The products developed as campus start-ups must be scale up as a market able product and it has to be marketed through online method. This is the importance of B2C marketing.

References

1. Woldoff, Rachael A., and Robert C. Litchfield. *Digital nomads: In search of freedom, community, and meaningful work in the new economy*. Oxford University Press, USA, 2021.
2. Tuff, Chris. *The Millennial Whisperer: The Practical, Profit-Focused Playbook for Working With and Motivating the World's Largest Generation*. Morgan James Publishing, 2019.
3. Fennick, Mark, and Erik PM Vermeulen. "Banking and regulatory responses to FinTech revisited-building the sustainable financial service'ecosystems' of tomorrow." *Singapore Journal of Legal Studies* Mar 2020 (2020): 165-189.
4. *Kerala Start-up Mission*. (2019) *Kerala Start-up Ecosystem 2019* 1-130.
5. Thomas, Jyotsna, and Georgee KI. "Incubation Centres and Start-ups: A Study on Kerala's Start-up Ecosystem." *SEDME (Small Enterprises Development, Management & Extension Journal)* 47, no. 1 (2020): 43-52.
6. Purg, Danica, and Arnold Walravens. "IEDC and CEEMAN: A Historical Response to the Societal Role of Business Schools." In *The New Frontiers of International Business: Development, Evolving Topics, and Implications for Practice*, pp. 433-441. Cham: Springer International Publishing, 2022.
7. Mishra, Chandan Kumar. "Digital marketing: Scope opportunities and challenges." *Promotion and Marketing Communications* (2020): 115.
8. Matricano D and Sorrentino M (2020) *Special issue: From higher education to new venture creation - Unpacking the entrepreneurship process*. *Industry & Higher Education* 34(3)119- 120.

9. Pradeep, M., and K. P. Satish. "A campus start-up ecosystem for mechanical engineering students: Challenges, approaches, catalysts and solutions." *Industry and Higher Education* 36, no. 1 (2022): 104-112.
10. Nambiar, Ranjini S., and P. Balasubramanian. "THE IMPACT OF GOVERNMENT SUPPORT ON THE PERFORMANCE OF STARTUPS IN KERALA, INDIA."
11. Maciel-Monteon, Marco, Jorge Limon-Romero, Carlos Gastelum-Acosta, Diego Tlapa, Yolanda Baez-Lopez, and Héctor Antonio Solano-Lamphar. "Measuring critical success factors for six sigma in higher education institutions: Development and validation of a surveying instrument." *IEEE Access* 8 (2019): 1813-1823.
12. Dalyanto, A. "Developing instrument to measure entrepreneur skills of vocational school students based on sustainable development." In *Journal of Physics: Conference Series*, vol. 1842, no. 1, p. 012025. IOP Publishing, 2021.
13. Pandit D, Joshi MP and Tiwari SR (2018) Examining entrepreneurial intention in higher education: an exploratory study of college students in India. *Journal of Entrepreneurship* 27(1): 25-46.

LECTURES ON BHAGAWAD GITA AND MANAGEMENT

Dr. C.V. Jayamani

Explains the application of our traditional management concepts described in Bhagawad Gita in solving modern management problems

Bhagawad Gita and Management * Bhagawad Gita - a Behavioural Approach
 * Towards Effective Communication * Managerial Excellence - Gita Perspective * Executive's Health * Personality and Excellence * Globalization - Impact on Executive Health and Efficiency * Health Management - Gita Perspective * Healthy Lifestyle for Prospective Executives * Managing Social Organizations - Traditional Way * Alternative Initiative for Eco-friendly Living

**Bharatiya Institute for Advanced Studies and Research
 Samskriti Bhavan, GPO Lane, Thiruvananthapuram**

Published in 2007

Pages 117

Priced Rs. 75

Paperback