A Discriminant Model to Assess the Entrepreneurial Talent of MBA Students in Bangalore : An Empirical Study

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Abstract

Entrepreneurs are the harbingers of new innovation and fresh ideas; they play a starring role in the economic improvement of a nation by providing employment opportunities and creating wealth. It is believed that business management courses foster entrepreneurship & innovations, and the ability of the entrepreneurs decides the success or failure of an enterprise. This paper attempted to find out why some entrepreneurs succeed and some don't, and what are the predictors of entrepreneurial success. The findings of the study revealed that entrepreneurial traits and business skills were better predictors of successful and unsuccessful entrepreneurs than entrepreneurial attitude. Further, to fathom the distinctive personalities of entrepreneurs, cluster analysis was performed. The four segments identified were lifestyle entrepreneurs, profit-seeker entrepreneurs, drone entrepreneurs, and innovative entrepreneurs. For this study, 103 entrepreneurs, who were MBA graduates, were approached. This research study developed a discriminant model which can classify new cases into successful or unsuccessful entrepreneurs. This study would be useful to bank managers, financial service providers, angel investors, & both aspiring and existing entrepreneurs.

Keywords : Entrepreneurship, entrepreneurial trait, discriminant, business management skills, entrepreneurial attitude, cluster analysis, MBA graduates

Entrepreneurship has increasingly become an attractive option for the adult masses and is extending throughout the world. As per Global Entrepreneurship Monitor report (2016), two-thirds of the world's grown-up populace believes entrepreneurship to be a decent option. The report further stated that 58% of the Indian grown-ups consider entrepreneurship as an attractive vocation. Also, one in every 14 adults is involved with some form of early-stage entrepreneurial actions. Entrepreneurship is playing a crucial role in changing the agrarian economy to industry-based economy, thereby, generating employment opportunities for urban and rural population (Shukla, Tanuku, Bharti, & Dwivedi, 2014). An upsurge of entrepreneurial development activities leads to the fiscal and social growth of the country.

As per Ferrante (2005), entrepreneurship can be defined as an aptitude to ascertain the necessary data and exploit market opportunities available in an uncertain world. High-quality entrepreneurship is crucial in the growth and success of countries (Hisrich, Peters, & Shepherd, 2013), in improving the standards of living, and in developing skills (Scarborough, 2012). The term 'Entrepreneuring' is customarily used to express the character of

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an individual rather than a process. A few authors allude "entrepreneuring" as an ability of a business visionary. As per the leading theories of entrepreneurship, potential entrepreneurs have the competence to uncover opportunities and make profits (Hitt, Ireland, Sirmon, & Trahms, 2011). Entrepreneurs are considered as 'change agents' and have the proficiency to transform the economic scene of the country (Sinha, 2016).

Entrepreneurship is typically a risk-filled career path loaded with unexpected difficulties and vulnerabilities (Mohture & Zanjurne, 2013). An entrepreneur is the one who can assume risks of business and can manage them. As per Torre (2016), entrepreneurs who succeed are not only imaginative, have inventive energy and different demeanours, but also possess strong administrative aptitudes, business expertise, and abounding contacts.

Entrepreneurship in the Past

A few decades back, entrepreneurship was not so prevalent in India. Many businesses faced difficulty in raising capital as easy finance was not available. Subhas and Vijayakumar (2011) explained the evolution of entrepreneurial concepts in India in a systematic way. The Indian economy was profoundly regulated and starting your own business was directly linked to the quantum of capital one possessed. The previous generation of the 60s, 70s, and 80s preferred jobs over entrepreneurship as jobs were more stable and at a premium. Because of the mixed economic policy, the Government of India did not spur free entrepreneurship. As per IBM Institute for Business Value and Oxford Economics Research, 90% of the new Indian companies fall flat within 5 years. The most well-known reason for failure is lack of innovation. The social stigma of failure in the Indian society is also very high. Further, many don't pursue entrepreneurship as it demands intense work and may experience insecurities, unlike the '9 to 5' kind of jobs.

Till 2005, we didn't have influential and credible business visionaries, who have become big without much capital. Consequently, acknowledgment of entrepreneurship became secondary in India. The absence of standardized savings measures, for example, joblessness, stipends, maturity benefits, etc. is forcing the citizens of the country to look up at entrepreneurship.

Upsurge of Entrepreneurship

As the Indian economy started opening up, the intensification of entrepreneurship is discernible. The government's "Make in India" campaign, an allocation of ₹ 20,000 crores for the MSME sector, making provisions for easy access to private equity funds, the introduction of the federal Ministry of Entrepreneurship & Skill Development have boosted the growth and expansion of small businesses. The small scale industries has emerged as a traditional and effervescent segment of an Indian economy (Saifil Ali & Sristy, 2010). As per the Indian government's information, micro, small and medium enterprises (MSME) contribute almost 8% of the nation's GDP, constitute 80% of the aggregate number of business ventures, contribute 40% of total exports, develop 8,000 value-added products, produce 45% of the manufacturing output, and provide employment to over 80 million persons (Ministry of Micro, Small and Medium Enterprises, 2016).

Many new-age entrepreneurs today do not originate from conventional business families. Given the viable business atmosphere, the Indian government has taken initiatives to encourage the Start-up India programme with the campaign 'Start in India and Stay in India' to check the brain drain of young entrepreneurs. Some of the other initiatives are a tax rebate, MUDRA initiative, self-certification, entrepreneurship development programs, etc.

The country's youth today are highly educated, fearless, and are ready to take risks. They prefer to experience the path of entrepreneurship and fulfill their dreams. For example : Siddharta, 22, is a motivational speaker, author, and a 'Friendz' magazine publisher ; Ritesh Agarwal, 21, founding member and CEO of OYO rooms, and many others are very successful young entrepreneurs. Today, the age limit of entrepreneurs is more spread out than it was generally seen before.

Apparently, most entrepreneurs are driven by market opportunities rather than basic needs when launching a new business. It has been estimated that India needs to generate 10 mn jobs every year to accommodate 300 million workforces by 2040 (Jain, 2015). This requirement cannot be fulfilled by existing enterprises alone, therefore, India has to support and empower its youth to start their own businesses.

To meet the growing needs of the industries, several management institutes are running entrepreneurship development programs to produce future entrepreneurs As per Accenture G-20 young entrepreneurs study (2014), young entrepreneurs are proclaimed to be the driving force to create jobs in G20 countries. Though ideas of businesses are numerous, very few people have the capability to transform their ideas into suitable organizational structures (Shane, Locke, & Collins, 2012). A country needs to invest and nourish local talent, with the goal that their creative ideas are implemented effectively. By doing so, a wave of entrepreneurship can be cultured in the country.

Why MBA for Entrepreneurship ?

According to Blackman (2016), MBA graduation can be an invaluable investment as it provides future entrepreneurs with valuable tools that help them to alleviate risk and increase the likelihood of success. Committing blunders in the midst of an MBA program has a lower opportunity cost (Garber, 2013) than committing errors in the real world. During the two-year MBA program, future entrepreneurs are surrounded by ambitious people and have access to research and guidance from top professors who will help them to plan and execute their ideas.

Matsuda and Matsuo (2017) in their research verified that MBA holders have an advantage over others while starting a new business. Further, they mentioned that an MBA degree attracts good talent and can enhance entrepreneurial performance. Pursuing MBA as a decent profession alternative is not limited to graduate students, but to a growing number of entrepreneurs who come back to business schools to get exposure and to minimize their business risks. They attend business schools to learn with reference how they can scale-up and strategize their business (Bhattacharyya, 2017).

Stanford has reported that 16% of their MBA graduates launch start-ups (Garber, 2013). Around 200 MBA graduates from IIMs become entrepreneurs every year (Soni, 2015). The initiative undertaken by business schools cannot create entrepreneurs. However, they can make you 'would-be entrepreneurs.' Usually, after graduating from business schools, most of them end up doing a job to repay their educational loans. Once the loan is cleared, one-tenth of them would like to try their luck in entrepreneurship. Waraich and Sharma (2012) said that management education provides a potential platform to develop entrepreneurial skills. There is a strong association between a decent business school and students' achieving their entrepreneurial aims.

Literature Review

The literature review comprises of studies related to entrepreneurial traits, attitudes, business skills and their effects on the success of a business.

(1) Entrepreneurial Traits : Business visionaries or entrepreneurs are intense, reasonable individuals, driven by the requirement for autonomy (Gelderen, 2016) and have a high requirement for accomplishment, and they have faith in independent work. Entrepreneurs are conceptualized as people who see the world distinctively and are futuristic. They seize opportunities which others miss out (Saifan, 2012). Social psychologists have grouped entrepreneurship based on traits such as the need for achievement (Neck & Greene, 2011), propensity to take the risk (Yurtkorua, Acarb, & Teraman, 2014), the locus of internal control (Verheul, Thurik, Grilo, & Van der Zwan,

2012), seeking comfort in uncertainty, and having a broader perspective (Khosla & Gupta, 2017).

Sánchez and Sahuquillo (2012) emphasized on the entrepreneurial motivation and commitment to the business idea for increasing venture performance. Westhead, Wright, and McElwee (2011) highlighted the role of self-confidence, trust, and uncertainty in entrepreneurship. Entrepreneurial success is correlated with a personal initiative that can be elucidated as being self-starting, pre-emptive, persuasive, adaptive, and tenacious (Copeland, 2010).

Khanna (2009) outlined that the individual attributes necessary for an effective business person are - diligent work, crave for high accomplishment, good co-ordinating capabilities, innovativeness, and high optimism. In an uncertain and competitive environment, the performance of the entrepreneurial venture is directly related to innovativeness & creativity and strong self-efficacy to execute their visions (Cassar & Friedman, 2009).

McClelland (1961) pointed out that a true entrepreneur should have the following characteristics: (a) he/she should have the capacity to assume risk, (b) he/she should have self- confidence, (c) he/she must be a hard worker, (d) he/she should be a perfect goal setter.

(2) Entrepreneurial Attitude : Attitude is the key to an entrepreneur's thinking ability and creativity. According to Nicolaides (2011), an attitude is an ideal or ominous assessment towards an object or something. Entrepreneurial attitude can be measured by cognition, affection, and behaviour (Gupta, 2013).

Three factors which determine the attitude of an individual are environment, education, and experience, known as the triple-Es (3Es) of attitude (Shaw, 2010). The success of a business is affirmatively linked to the risk-taking ability of an entrepreneur (Hall & Woodward, 2010). During the initialization phase of a business, entrepreneurs need to have the courage to take a risk and have the adaptability and determination to accomplish their objectives. When setbacks happen, it is the attitude which determines how we perceive it. If you are an optimistic sophist, you will consider disappointment as a venturing stone, else it will be viewed as a hindrance (Luthans, 2011).

(3) Entrepreneurial Business Skills : According to Hayton (2015), entrepreneurial skill is identifying customer needs, technical or market opportunities, and pursuing opportunities. As indicated by Scarborough (2012), the motivation behind entrepreneurship is to make profits and to discover something new in the market. The market environment is not consistent and forces entrepreneurs to predict changes and operate. The skill set of entrepreneurs in the areas of strategy, accounting, legal and technical knowledge help in deciding the outcome of entrepreneurial ventures (Almeida & Teixeira, 2014).

An entrepreneur is not really a specialist in one ability, but rather he/she must be jack-of-all trades (Astebro & Thompson, 2011). Entrepreneurs require a different set of skills at different stages of a business like, skills required for survival and at maturity may be distinct (Solesvik, 2012). Wickham (2006) defined skill as information or knowledge, which is exhibited by action. These include functional or task-based skills such as marketing, accounts, and administration abilities (Shaw, 2010) and recognizing social/market needs (Hunter, 2012). Business management skills are one of the elements that influence entrepreneurial performance other than knowledge, connections, and social networks (Dyer, Gregersen, & Christensen, 2009).

Mehralizadeh and Sajady (2005) in their research showed that from successful entrepreneurs' point of view, selecting appropriate personnel with relevant skills, attention to personnel training, and better human relations are some issues that affect the performance. To earn trust in the business, organizations or businesses need to have a set of moral principles or code of ethics (Bozward, 2014).

Toren (2011) mentioned five necessary skills required for entrepreneurial existence. They are - decision-making skills, planning skills, sales skills, people skills, and communication skills. Rai and Dubey (2012) categorized the skills into three areas : (a) technical skills, (b) business management skills, and (c) personal entrepreneurial skills.

Entrepreneurial success is defined as the profit growth made by the business (Ahmad, 2010). Zhang and Bruning (2011) claimed that the success of a business depends strongly on the human capital of the owner-manager. Entrepreneurial venture and entrepreneurs are interconnected. According to Coffey and Herrmann (2006), growth in terms of turnover is considered as the metric of success by most of the researchers. Vesper (2014) interpreted that many entrepreneurs consider profitability as their success factor instead of setting growth as an objective. Hornaday and Aboud (2011) expressed that those who stay for at least two years in the business are considered to be successful.

Need for the Study

Starting an enterprise or to become a business visionary is not a simple errand. There are many factors which affect the growth of a business at each stage of the business life cycle. For giving life to an idea, an entrepreneur faces many problems like uncertain environment, finance, manpower, legal aspects, family support, marketing strategy, mentorship, advice, etc. (Dutta, 2016). The government has taken several initiatives to plan policies and strategies to nurture the growth of entrepreneurship in India.

Regardless of the considerable number of activities taken by the government and support institutions to promote entrepreneurship, the rate of business failure and sickness of the industry is increasing; in fact, it has almost doubled. Because of this, the resources are getting locked; there is wastage of capital assets, crunch on production output, and an increasing unemployment in the country (DCMSME Report, 2011).

According to RBI's *Handbook of Statistics of Indian Economy*, the total number of sick SMEs in India in the year 2015 were 5,28,300 and the amount that is outstanding in the commercial banks was ₹ 253.88 billion. The sickness of the industry is a serious concern of banks and financial institutions because the loans provided by them to entrepreneurs are getting jeopardized into nonperforming assets (NPAs). Furthermore, a large number of the ones that do survive simply totter along (Badal, 2014). Can we reduce the NPAs ? Well, this question is addressed by this research.

Entrepreneurial talent is the biggest predictor of entrepreneur success. Talents are abridged versions of personality traits and scholarly capabilities (Badal, 2014). Entrepreneurial talent encourages quick learning of the situation and takes prompt actions, which in turn enable an entrepreneur to be successful. It has been hypothesized in this research that entrepreneurial talent is a component of entrepreneurial trait, entrepreneurial attitude, and entrepreneurial business skills. In this research, we try to explore these predictor variables and assess which predictor variable/s has(have) the better predicting ability.

Assessment of the entrepreneur is the most indispensable input for the success of a business undertaking. So far, only qualitative assessment based on interaction has been carried out by many banks and financial institutions. In this research, we assess an entrepreneur using quantitative analysis based on personal characteristics. This analysis will help in predicting successful vs. unsuccessful entrepreneurs. Accordingly, a decision to sanction the loan or not is decided.

The study develops a discriminant model which can predict group membership for new cases and can also identify predictors that can differentiate between unsuccessful and successful entrepreneurs. Furthermore, the study also explores the possible clusters of entrepreneurial talent.

Research Objectives

(1) To assess the adequacy of a classification, given the group membership.

(2) To assign respondents to one group among the groups.

(3) To determine which predictor variables are related to the dependent variable.

(4) To predict the value of the dependent variable, given certain values of the predictor variables.

(5) To explore the possible clusters of entrepreneurial talent.

Methodology

(1) Research Design : The study is empirical in nature and information was gathered from MBA students who wished to become entrepreneurs. The objective of this research is to understand the unresolved riddles in connection with the factors influencing business success and failures. Bangalore city was chosen as it is a hub for IT and other related industries. Many students who come from other cities for MBA education settle down in Bangalore for better opportunities. The sample size consisted of 103 entrepreneurs from Bangalore. The sample was collected from different industrial sectors such as Food & Beverages, IT & ITES, Apparel/ accessories, Professional services, E-commerce, and other small-scale businesses. The key respondent characteristics are summarized in the Tables 1 and 2. The time frame for the study is from April 2016 - August 2017. All the sample entrepreneurs were MBA grads who had completed their graduation in 2004 - 2016.

(2) Data Collection : Data collection involves both quantitative and qualitative methods. For collecting quantitative data, a structured close-ended questionnaire was used. It constituted the general profile of the entrepreneurs and their views on entrepreneurial traits, attitude, and business skills, which directly affected the success or failure of their businesses. The questionnaires were prepared on a 5- point Likert scale.

After an exhaustive literature review, major factors pertaining to entrepreneurial success/ failure were shortlisted and discussed with few field experts such as bank managers (responsible for sanctioning business loans), venture capitalists, very successful entrepreneurs, bankrupt entrepreneurs, women entrepreneurs, and microfinance institution managers. Their views were solicited, and the final version of the questionnaire was prepared.

The questionnaire had three major dimensions of entrepreneurial talent to be measured, namely, entrepreneurial traits, entrepreneurial attitude, and entrepreneurial business skills. Each dimension had 10 question statements as shown in the Appendix. The questionnaire was administered by sending post mails to entrepreneurs and by personally visiting them based upon their availability and convenience. The list of entrepreneurs to be approached was sought by approaching alumni mailing list of B-School institutes. Around 12 MBA institutes were approached and survey mails were sent to 400 entrepreneurs, out of which 85 respondents responded to our mail survey, and 23 entrepreneurs were approached personally to get the questionnaires filled up. Discarding five questionnaires because of incompleteness, a total of 103 questionnaires were finally considered for the study. Out of 103 questionnaires, 31 cited the health of their enterprises as good and 20 entrepreneurs cited it to be very good.

Table 1. Demographic Details of Entrepreneurs	
Business	**Sample Size**
Food and Beverages	16
IT and ITES	15
Apparel/accessories	22
Professional Services	14
E-commerce	19
Other	17

Table 2. Age of Respondents		
Age Group	**N**	**%**
20-30	35	34
31-40	54	52.42
41-50	11	10.67
51-60	3	2.91
Total	103	100

These 51 entrepreneurs were considered as successful entrepreneurs ; 38 entrepreneurs cited the health of their business as neither good nor bad ; and 14 entrepreneurs cited the health of the business as very bad.

These average and not viable entrepreneurs who were 52 in number were considered as unsuccessful entrepreneurs. The variables that were analyzed are given below :

(i) Entrepreneurial Traits contain 10 variables for analysis : drive and energy, responsibility, self-confidence, initiative, need for independence, persistence, optimism, innovativeness & creativity, perseverance, and tolerance for uncertainty.

(ii) Entrepreneurial Attitude traits contain 10 variables: commitment, problem-solving, risk-taking, dealing with failures, use of feedback, flexibility, need for achievement, profit-oriented, positive influence, and stress self-resolution.

(iii) Entrepreneurial Business Skills contain 10 variables for analysis: Setting goals, business plans, delegation, training subordinates, dealing with customers, talent acquisition, handling government officials and work disputes, marketing skills, and maintaining financial records.

The scale was constituted into five categories of responses: *strongly agree* (5)*, agree* (4)*, undecided* (3)*, disagree* (2)*, and strongly disagree* (1). The secondary data were collected from brochures, pamphlets, reports, magazines, and other government publications.

(3) Statistical Tools : For analysis of data, advanced statistical tools like discriminant analysis, cluster analysis, and multiple regression were used in this study. To run ANOVA, cluster analysis and to develop the discriminant model, SPSS 24 package was used. Simple descriptive statistical tools like percentages and means were also used to compare the variables.

Analysis and Results

Out of 103 respondents, 51 successful entrepreneurs and 52 unsuccessful entrepreneurs participated in this research. This study has two groups for discriminant analysis. For classification purposes, 'successful' entrepreneurs are categorized under Group 1 and 'unsuccessful' entrepreneurs have been put in Group 2. We have three predictor variables namely, entrepreneurial traits, entrepreneurial attitude, and business skills.

(1) Descriptive Statistics : The frequency distribution Table 3 shows that out of 103 entrepreneurs, 51 were successful and 52 were unsuccessful. From the group statistics Table 4, it is comprehended that two groups, for example, successful entrepreneurs and unsuccessful entrepreneurs are isolated as far as entrepreneurial traits, attitudes, and business skills are concerned. Apart from this, the same relation has been established in tests of equality of group means Table 5, where all the three predictors have a statistically significant difference.

Table 3. Entrepreneurial Talent - Frequency Distribution

	Group	Frequency	%
Successful	1	51	49.5
Unsuccessful	2	52	50.5
Total		103	100.0

Table 4. Mean and Standard Deviation of Group Statistics

Entrepreneurs		Mean	Std. Deviation	Valid N (listwise)	
				Unweighted	Weighted
Successful	Entrepreneurial Traits	37.22	3.132	51	51
	Entrepreneurial Attitude	33.94	2.976	51	51
	Business Skills	34.82	3.548	51	51
Unsuccessful	Entrepreneurial Traits	30.56	3.159	52	52
	Entrepreneurial Attitude	28.77	3.416	52	52
	Business Skills	29.38	2.583	52	52
Total	Entrepreneurial Traits	33.85	4.581	103	103
	Entrepreneurial Attitude	31.33	4.115	103	103
	Business Skills	32.08	4.120	103	103

Table 5. Test of Equality of Group Means

	Wilks's Lambda	F	df1	df2	Sig.
Entrepreneurial Traits	.467	115.340	1	101	.000
Entrepreneurial Attitude	.601	67.011	1	101	.000
Business Skills	.560	79.330	1	101	.000

Table 6. Classification Results of Discriminant Analysis

Group	Predicted Group Membership		Total
	1	2	
1	49 (96.1%)	2 (3.9%)	51
2	2 (3.8%)	50 (96.2%)	52

(2) Classification Matrix : The classification matrix is also known as confusion matrix, as represented in Table 6, which indicates that the discriminant function obtained in this study is able to classify 96.11% of the 103 objects correctly. More specifically, it also says that out of 51 cases predicted to be in Group 1, 49 are observed to be in Group 1.Similarly, from the column G-2, we understand that out of 52 cases predicted to be in Group 2, 50 are observed in Group 2. Thus, on the whole, 4 cases out of 103 are misclassified by the discriminant model with an accuracy level = (103 - 4/103)*100 = 96.11%.

(3) Significance Test : The log determinants for a test of homogeneity of covariance matrices have equal value for

Table 7. Log Determinants

Entrepreneurs	Rank	Log Determinant
Successful	3	6.985
Unsuccessful	3	6.553
Pooled within-groups	3	6.845

Table 8. Box Test

Test Results		
Box's M		8.448
F	Approx.	1.363
	df1	6
	df2	73831.553
	Sig.	**.226**

Table 9. Wilks's Lambda Value

Test of Function(s)	Wilks's Lambda	Chi-square	df	Sig.
1	.256	135.546	3	.000

Table 10. Eigen Values

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	2.905[a]	100.0	100.0	.863

a. First 1 canonical discriminant functions were used in the analysis.

all three predictors as shown in Table 7, along with Box's M value, which is 8.448 with $F = 1.363$, which is not significant at $p = .226$ and is more than .05 as indicated in the Table 8. Thus, we fail to reject the null hypothesis, which means that covariance matrices of the dependent variable are equal across groups. This is a positive signal for analysis.

The value of Wilks's Lambda ranges between 0 and 1, and a lower value indicates better discriminating power of the model. The magnitude of Wilks's Lambda, as observed from Table 9, stands at 0.256, which is less than 0.5, which suggests that the discriminant model has a very good discriminating power. The probability value, $p = 0.000$ of chi-square test is less than the value of $\alpha = 0.05$, which again explains the discriminating power of the model.

As indicated in Table 10, the model has a good strength as Eigenvalue = 2.905. The canonical correlation (R^2) explains the total variation in the dependent variable explained by independent variables. The discriminant model has $R^2 = (0.863)^2$, that is, 74.48% of the variation is explained by the predictor variables.

(4) Standardized Coefficients : The standardized discriminant function coefficients in the Table 11 serve the purpose of beta weights in multiple regressions (partial coefficient) : they indicate the relative significance of the independent variables in predicting the dependent variable. The predictor variable having a large absolute value of coefficients corresponds to greater discriminating ability. The values of the standardized canonical discriminant function coefficients, as observed from Table 11, for the three predictor variables are : entrepreneurial traits (0.745) followed by business skills (0.619) and attitude (0.442). The standardized canonical discriminant function coefficients suggest that the variables - entrepreneurial traits (0.745) and business skills (0.619) are better predictors of 'successful' and 'unsuccessful' entrepreneurs than entrepreneurial attitude (0.442).

(5) Discriminant Model : Unstandardized discriminant function coefficients are used to develop the discriminant model as shown in the Table 12. These coefficients would be used like unstandardized beta (regression) coefficients in multiple regressions. The data are used to construct the discriminant function equation which can be used to classify the prospective entrepreneurs (for instance: to classify new MBA students into either successful or unsuccessful groups).

The discriminant function obtained is :

### Table 11. Standardized Canonical Discriminant Function Coefficients

Predictor Variables	Coefficients
Entrepreneurial traits	.745
Attitude	.442
Business Skills	.619

Table 12. Canonical Discriminant Function Coefficients

Predictor Variables	Coefficients
Entrepreneurial traits	.237
Attitude	.138
Business Skills	.200
(Constant)	-18.742

Table 13. Group Centroids

Functions at Group Centroids	
Entrepreneurial talent	Centroid
Successful	1.704
Unsuccessful	-1.671

-1.671 0 1.704

Unsuccessful   Successful
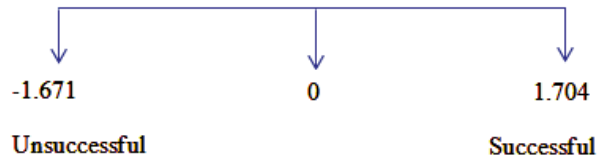
$$D = -18.742 + 0.237 * traits + 0.138 * attitude + 0.20 * skills$$

Centroids are the mean discriminant scores for each group. The Table 13 is used to establish the cutting point for classifying cases. If the discriminant score of a respondent falls to the right of mid-point, we classify him/her as a successful entrepreneur.

For example: A new age entrepreneur is administered a questionnaire on entrepreneurial traits, entrepreneurial attitude, and business skills (refer to Appendix). The total score for entrepreneurial trait is 38, total score for entrepreneurial attitude is 42, and total score for business skills is 44. These scores are put in the discriminant function equation and the result is as given below :

$$D = -18.742 + 0.237 * 38 + 0.138 * 42 + 0.20 * 44$$
$$\mathbf{D = 4.86}$$

By using discriminant equation and group centroid value, it can be interpreted that a new age entrepreneur will fall under successful entrepreneur category as the discriminant value obtained is 4.86, which is positive (greater than 0).

(6) Cluster Analysis : Cluster analysis is a multivariate method whose main role is to aggregate group objects based on the characteristics of the group (Setyaningsih, 2012). Cluster analysis creates subgroups from samples, which are homogeneous to each other and heterogeneous from other groups (Garson, 2007). In this study, we performed a cluster analysis of the entrepreneurial talent of entrepreneurs. The intent of this analysis was to generate subgroups that provide insights into the possibility of segmentation of entrepreneurs and naming them on the basis of entrepreneurial traits, attitude, and business skills.

We used hierarchical clustering with agglomeration schedule, in which every object is an individual cluster at the beginning of the algorithm. The clusters are then progressively consolidated into groups until only a single cluster remains. For calculation of the clusters, Ward's method is used because it gives equal- sized clusters and data set will not include outliers (Mooi & Sarstedt, 2011).

For measuring variances, the Euclidean distance method was used. After hierarchical method, for understanding characteristics of each cluster, K-means clustering method was used. K-means algorithm uses the within-cluster variation for forming homogenous clusters. By visualizing the dendrogram as shown in Figure 1, four clusters were selected for further research. In the K-means method, the clustering process begins by
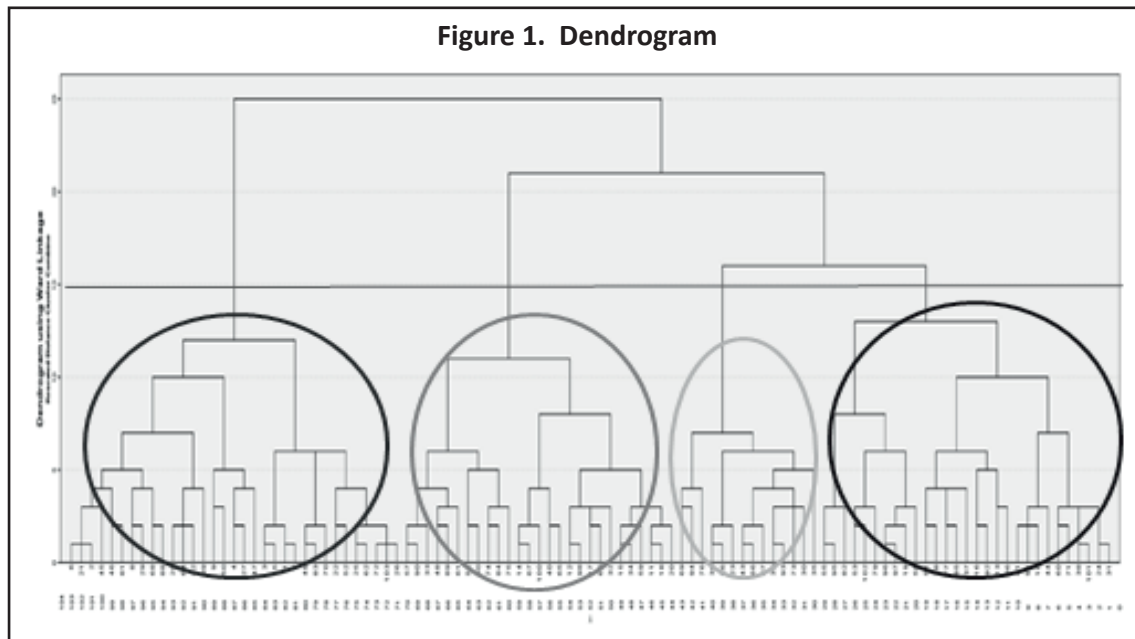
Figure 1. Dendrogram

Table 14. Number of Cases in Each Cluster

Cluster 1	12
Cluster 2	36
Cluster 3	29
Cluster 4	26

arbitrarily assigning objects to a number of clusters. This will give initial cluster centres, and then the objects are again assigned to a certain cluster on the basis of their minimum distance to other cluster centres. After this, the final cluster centres are formed as indicated in Table 14. By analyzing the mean value of each variable from Table 15, different characteristics of entrepreneurs belonging to each cluster can be explained.

(i) Cluster 1 - Lifestyle Entrepreneurs : This cluster entrepreneurs are driven by energy and are self-confident. They have a strong urge to be independent and crave for freedom in their decision making. They have tolerance for uncertainty and are committed to their work. They take the risk for doing what they want. They define their own goals and do not like to delegate their work to subordinates. They are inclined towards innovative products, not for profit's sake, but for self-satisfaction. They have an undifferentiated approach towards dealing with failures ; they possess flexibility and need for achievement. They want to serve their customers in building a good customer relationship with them and are less focused on marketing their products. They are good at maintaining financial records. They are very passionate about what they are doing and support a lifestyle of freedom and opportunity. Such entrepreneurs can be categorized as Lifestyle entrepreneurs.

(ii) Cluster 2 - Profit - Seeker Entrepreneurs : Entrepreneurs belonging to this cluster are driven by entrepreneurship energy. They are responsible, self-confident, and take initiative. They have a strong need for independence. They are persistent and optimistic in their approach and are committed to work. They set goals and develop a business plan. They are self-centred and inclined towards profit. They are not willing to take risks for innovative ideas or innovative products, but they have good marketing skills and maintain financial records. Their

Table 15. Final Cluster Centers

Variables	Clusters			
	1	2	3	4
Drive & Energy	3.93	3.85	3.12	4.09
Responsibility	2.86	3.77	2.86	3.88
Self - Confidence	4.07	4.23	3.14	3.45
Initiative	2.64	3.77	3.42	4.06
Need for Independence	3.00	4.00	3.16	3.91
Persistence	3.21	3.54	2.70	3.73
Optimism	2.86	3.62	2.91	3.64
Innovativeness & Creativity	3.21	3.46	2.72	4.20
Perseverance	2.71	3.54	3.16	4.12
Tolerance for Uncertainty	3.71	3.15	2.81	3.61
Commitment	3.64	3.85	2.81	3.64
Problem-Solving	3.07	3.23	3.14	3.58
Risk Taking	4.07	2.00	2.93	4.12
Dealing with Failure	2.93	2.77	2.88	3.58
Use of Feedback	2.57	3.15	2.98	3.12
Flexibility	3.00	3.15	2.65	3.33
Need for Achievement	3.36	3.46	2.70	3.27
Profit - Oriented	2.71	3.85	2.86	3.30
Positive Influence	3.57	3.15	2.70	3.21
Self - Resolution of Stress	3.29	3.00	2.86	3.36
Setting Goals	3.21	4.23	3.30	3.85
Developing Business Plan	3.43	4.08	3.21	3.64
Delegation	2.93	2.85	3.02	3.09
Training Subordinates	3.36	3.46	2.79	3.67
Dealing with Customers	3.79	3.31	2.93	3.52
Handling Government Officials	3.00	2.69	2.81	3.06
Handling Work Disputes	3.00	3.00	2.44	3.24
Talent Acquisition	3.93	3.15	2.84	3.00
Marketing Skills	3.36	3.69	3.05	3.85
Maintaining Financial Records	4.07	3.62	2.74	3.36

focus is in and around the business, and by all means, they want to end-up making profits. This kind of entrepreneurs can be categorized as Profit-seeker entrepreneurs.

(iii) Cluster 3 - Conservative/Drone/Traditional Entrepreneurs : This cluster consists of those entrepreneurs who are persistent in their work. They are moderate risk takers and believe in positivity. They are not persistent in problem-solving, don't use feedback for business decisions, and are not much focused on profit and customer relations. This cluster entrepreneurs are not very enthusiastic, lack confidence, are less innovative, not good in handling work disputes and in talent acquisition. They are not keen on executing marketing skills and maintaining

financial records for the business. They are extremely customary in their approach and decline to utilize the open doors that come in their direction. They are exceedingly self-battled and adhere to their set practices. Such entrepreneurs can be characterized as conservative or drone entrepreneurs.

(iv) Cluster 4 - Innovative Entrepreneurs : This cluster's entrepreneurs are very energetic and have a strong drive for entrepreneurship. They are always responsible for their work and take initiatives. The need for independence is high. They are very optimistic about their businesses. These entrepreneurs are very creative and innovative and have strong perseverance as compared to any other cluster. They are committed to long term business growth and are persistent in problem-solving. They have the appetite to take business risks and are ready to deal with failures. They are neutral in using feedback and are not much focused on profits. They are good at setting goals, developing a business plan, and training their subordinates. They possess good marketing skills and are good at handling customers. However, they are not so keen in handling government officials and maintaining financial records pertaining to the business. Innovation excites them, and they want to have an innovative approach in all their dealings. They spot potentials for innovations and pioneer new products. These entrepreneurs are brilliantly lazy and believe in smart work and not hard work. Such entrepreneurs can be categorized as Innovative entrepreneurs.

From the above clusters, one can infer that there is a significant difference in entrepreneurial identity characteristics, thereby recommending that entrepreneurship is not likely reducible to personality characteristics alone.

Managerial Implications

This study can be used to prepare a self-assessment tool for screening entrepreneurs. Post assessment of this tool can help entrepreneurs to introspect and identify their strengths, blind spots, and inherent biases in their personality. Furthermore, the same analysis will help entrepreneurs to understand what affects their business performance. Awareness of their weaknesses and subjective biases will help entrepreneurs to undergo training in specific areas.

It is found from our study and other research studies that entrepreneurs are successful because they are alert to environmental opportunities and respond very fast to the market needs. Entrepreneurial personality is influenced by level of education as well as psychological and cultural factors (social and religious). Entrepreneurs should be team players and must carry a lot of patience and should not give-up easily. They should be self-confident and must be ready to take calculated risks. There are some people who take maximum risk and there are people who are not ready to take even a little risk. Most of the entrepreneurs are found to be in the middle when it comes to taking risks. They are ready to take risks to start a business or to keep their business running, but they are not ready to take risks just to prove the point that they are risk takers.

An entrepreneur can be entrepreneurial if he/she practices both effectual reasoning and casual reasoning. Casual reasoning starts with a predetermined goal, whereas effectual reasoning allows goals to develop unexpectedly over time. Both are significant as effectual reasoning helps an entrepreneur to identify the unexplored market opportunities, and casual reasoning helps an entrepreneur to grow and increase the market share of the company.

The prominent reason for entrepreneurs to fail is their grandiose expectations from their business. Such expectations come because they are self- delusional and rapacious. They often are not adaptable to unforeseen situations and conditions. Most entrepreneurs start their business with a positive note; however, when their expectations fail, they quit. Due to lack of persistence, they give-up very fast, before reaching their goal. To build a true foundation, an entrepreneur requires at least two-three years of sustenance in the market.

It is always advised to undertake a job in the industry that you are keen in starting a business. If required, follow

someone who has been successful in that business and take professional training. Also, read and research to understand all critical aspects of running a business.

Education makes people more receptive to entrepreneurship. The elective courses on Entrepreneurship at B-schools help students to develop leadership capabilities and improve managerial & analytical skills. They orient students on entrepreneurial issues and give perspectives on good business practices. B-school students can use the instrument developed in this study to test whether they possess successful entrepreneurial traits or not. Furthermore, the educational institutes can improvise their curriculum to enhance entrepreneurship qualities in students based on the instrument feedback.

Banks, financial specialists, angel investors, or other sponsoring agencies can utilize this model for evaluating the capability of an entrepreneur and take the decision to release business loans. By adopting this discriminant model, banks may lessen the number of NPAs in the nation. This model can also be used by EDCs (entrepreneurship development cell) of educational institutes (IITs, IIMs, & others) to provide professional training and consultancy to their members. This study performed cluster analysis to identify different homogeneous groups of entrepreneurs based on personality characteristics. Based on cluster characteristics, varied training programs can be initiated by experts.

Conclusion

Entrepreneurs are the nucleus of a business. They play the role of a catalyst in business success and economic development of the country. Entrepreneurial talent decides the success or failure of the business and is of varying degree. Significant portions of certain personality traits are very dominant among successful entrepreneurs, for instance: the ability to deal with uncertainty, tolerate ambiguity, and willingness to take risks. Interaction of personality, behaviour, and environment is crucial for the success of entrepreneurship. Management education can have a lasting influence and develop a passion for entrepreneurship. The discriminant model developed here would be very useful for bank managers and financial service providers to evaluate the capability of entrepreneurs. Aspiring entrepreneurs can also use this model to gauge their potential for entrepreneurship. Further, this study establishes the fact that entrepreneurial achievement/success is a component of entrepreneurial traits, attitude, and business skills.

Limitations of the Study and Future Research Directions

The geographical extent of this research was constrained to the Bangalore locale of Karnataka state. This can be one of the confinements of the study as the outcomes cannot be summed up to the whole populace of entrepreneurs. Success is often evaluated individually or subjectively ; therefore, there is no consensus on a single definition of success. This study used qualitative dimensions for measuring the success of entrepreneurs on the basis of their opinions and not quantitative dimensions such as sales, profits, year on year growth rate, etc. to adjudge them as successful/unsuccessful entrepreneurs. Quantitative dimensions could have made the model more robust. The discriminant model developed here has used only MBA graduates turned entrepreneurs. In the market, one can find successful or unsuccessful entrepreneurs without an MBA degree or graduation.

Future studies can be undertaken to elicit a sturdy model which includes non-graduates, graduates, and post graduates. The model developed here has a variance of 74.48%, which means 25.52% of the variance goes unexplained by the existing predictor variables (see Table 10). Future research can be conducted to identify the remaining predictor variables. An impending research can be undertaken to develop a discriminant model from a banker's perspective by using variables such as prospective credit rating, available collateral, financial standing, etc.

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Appendix

Please rate the below statements between 1 to 5. Here 5 means *strongly agree* and 1 means *strongly disagree* :

Entrepreneurial Traits

1) I have a strong drive and energy towards entrepreneurship.
2) I always like to take responsibility.
3) I can be very persistent when situations demand.
4) I am self-confident while taking decisions.
5) I take lot of initiatives in life.
6) I like being independent while taking decisions.
7) I exhibit tolerance during uncertainty.
8) I am very optimistic in my approach.
9) I am very innovative and creative in my actions.
10) I carry lot of perseverance to accomplish a task.

Entrepreneurial Attitude Traits

1) I believe in long term commitments.
2) I carry persistence while solving a problem.
3) I am a risk seeker.
4) I am good at handling failures.
5) I always use feedback for improvement.
6) I am a very flexible person.
7) I have a strong urge for achievement.
8) I am a profit oriented person.
9) I exhibit positive influence in my work place.
10) I believe in self-resolution.

Entrepreneurial Business Skills

1) I always set goals for my business.
2) I always develop business plans.
3) I believe in delegating.
4) I show keenness in dealing with work disputes.
5) I recommend training subordinates.
6) I love to deal with customers.
7) I am good at marketing a product/service.
8) I believe in ethical competition.
9) I recommend talent acquisition to meet organizational needs.
10) I am comfortable in handling government officials.