Development and Validation of Scale to Assess the Entrepreneurial Skills of Graduate Students

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Abstract – Skill is thought of as a quality of performance which does not depend solely upon a person's fundamental, innate capacities but must be developed through training, practice and experience. Entrepreneurial skills are the basic skills necessary to enable you start, develop, finance and succeed in your home enterprise. Various validation measures such as face validity, content validity, construct validity, criterion-related and discriminate validity ware employed to standardize the questionnaire to measure the entrepreneurial skill among graduate students. The factor analysis was used to assess the factors in the constructed scale .The reliability of scale was found to be 0.7707 and the explorative factors analysis confirmed the four dimensions (factors) present in the scale. The four factors were general (30 statements), Managerial (30 statements), Manufacturing (25 statements) and marketing (25 statements).The Questionnaire with 110 statements is developed and validated for measuring the entrepreneurial skills among graduates.

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INTRODUCTION

Lot of people becomes entrepreneur by accident, not by choice. We should promote entrepreneurship through education. Very few students go to B-Schools to become an entrepreneur. Those that do are usually second-generation entrepreneurs (Singh. A.K.,2009).

The increased interest fostered by factors such as recognition that quality of education received sometimes does not develop the specific skills needed in the venture creation and management process. While in college, few students, but increasing in number, think they will pursue entrepreneurship as their major life goal. Even among those that do, relatively few individuals will start a business immediately after graduation, and even fewer will prepare for a new venture creation by working in a particular position or industry. This mandates that entrepreneurs continually supplement their education through books, trade journals, seminars, or taking courses in weak areas. Generally, skills that need to be acquired through seminars or courses include creativity,

financing, control, opportunity, identification, venture evaluation, and deal making.

The skills required by entrepreneurs can be classified into three main areas: technical skills, business management skills, and personal entrepreneurial skills. Technical skills involve such things as writing, listening, oral presentations, organizing, coaching, being a team player, and technical know-how (Gupta.C.B. et al.,).

Entrepreneurial skill can be defined as the ability to create something new with value by devoting the necessary time and effort, assuming the accompanying financial, psychic and social risks, and receiving the resulting rewards of monetary and personal satisfaction and independence (Hisrich & Peters, 2002).

Business management skills include those areas involved in starting, developing, and managing an enterprise. Skills in decision making, marketing, management, financing, accounting, production, control, and negotiation are essential in launching and growing a new venture. The final skill area involves personal

entrepreneurial skills. Some of these skills included in this classification are inner control (discipline), risk taking, innovativeness, persistence, visionary leadership, and being change oriented.

Today the scientific method is taught not only to potential scientists in professional schools at graduate or post-graduate levels, but to everyone, starting at an early age, as an essential mindset and skill that forms the core of all education—in line with reading and writing and arith-metic.

Dr. A.P.J. Abdul Kalam, the former President of India (The Hindustan times, 6th April 2005), recommended that entrepreneurship be made a subject in schools and colleges to orient students towards setting up enterprises that would provide them with creativity, freedom and the ability to generate wealth.

This paper therefore attempts to explore briefly the concept of entrepreneurial skills and a methodology for construction of tool to measure the entrepreneurial skills among graduate students.

MATERIALS & METHODS

Construction of scale

A primary goal of scale development is to create a valid measure of an underlying construct. We discuss theoretical principles, practical issues, and pragmatic decisions to help developers maximize the construct validity of scales and subscales. First, it is essential to begin with a clear conceptualization of the target construct. Moreover, the content of the initial items pool should be over inclusive and item wording needs careful attention. Next, the item pool should be tested, along with variables that assess closely related constructs, on a heterogeneous sample representing the entire range of the target population. Finally, in selecting scale items, the goal is dimensionality rather than internal consistency; this means that virtually all interitem correlations should be moderate in magnitude. Factor analysis can play a crucial role in ensuring the dimensionality and discriminate validity of scales (Lee Anna Clark, & David Watson, 1995).

Creation of an item pool and face validity

Once the scope and range of the content domain have been tentatively identified, the actual task of item writing can begin. No existing data analytic technique can remedy serious deficiencies in an item pool. Accordingly, the creation of the initial pool is a crucial stage in scale construction. The fundamental goal at this stage is to sample systematically all content that is potentially relevant to the target construct (David Watson, 1995).

In the present study the statements were identified, adapted and compiled a pool of five hundred statements on student's entrepreneurial skills on likert scale format. The five hundred items were initially screened using face validity with the expertise around 250 questions were screened using face validity.

Content validity

In item generation, the primary concern is content validity, which may be viewed as the minimum psychometric requirement for measurement adequacy and is the first step in construct validation of a new measure (Schriesheim et al., 1993) Content validity must be built into the measure through the development of items.

Content validity was assessed by a panel of 5 subject expert's made up of entrepreneur, academics, statistician, psychologists and entrepreneur (business idea, developer and trainer). The purpose was to depict those items with a high degree of agreement among experts.

Construct validity

Scaling of items, it is important that the scale used generates sufficient variance among respondents for subsequent statistical analysis (Timothy R. Hinkin 1995). A scale cannot have construct validity unless it is unidimensional. It is acceptable to have a multidimensional construct, but scales must be unidimensional. If a researcher is attempting to measure a multidimensional construct, several unidimensional scales must be used. This is known as a second order factor model (Steven C. Dunn et al., 1994).

The assessment of reliability could be considered part of the testing stage of the newly developed measure. There are two basic concerns with respect to reliability, consistency of items within a measure and stability of the measure over time (Timothy R. Hinkin 1995).

To evaluate the construct validity, a pilot study was conducted in which 100 graduate students (50 boys and 50 girls) from the four streams of education (Arts, Science, Commerce and Professionals). The final version of the questionnaire included One hundred and ten items, which were randomly ordered.

Criterion-related validity

Criterion-related validity refers to how well a scale correlates with the criterion it is trying to predict. If the criterion exists in the present, then it is called concurrent validity; if the criterion exists in the future, then it is called predictive validity (Steven C. Dunn et al., 1994).

To evaluate the criterion related validity the present study used the scale from website (http://www.mvp.cfee.org/en/selfassessskills.html) was based on 9 statements in Likert scale of 1-4 points for 100 graduate students (50 boys and 50 girls) from the four streams of education (Arts, Science, Commerce and Professionals).

Discriminant validity

Discriminant validity by factor analyzing their self-esteem with several affective measures with the resulting factor structure supporting the validity of the measure. Factor analysis is the most commonly used analytic technique for data reduction and refining constructs (Ford, McCallum & Tait, 1986) and was frequently used in the reviewed studies.

The questionnaire was given to forty MBA students for the discriminate validity.

Results & discussions

The researcher identified, adapted and compiled a pool of five hundred statements for the construct or constructs under consideration to measure the student's effectiveness and focus on their entrepreneurial skills. The items that were misclassified were omitted only one hundred and ten items were the outcome of standardization for this study. In this study all the items in questionnaire were standardized to get response on likert scale format. Likert scale was used because of the 5 point rating which agreed with the tool administered. Likert scaling is a bipolar scaling method, measuring either positive or negative response to a statement.

The five hundred items were initially screened using face validity with the expertise around 250 questions were screened using face validity.

A team of 5 subject experts were given the questionnaire for content validity. The subject expert's team consists of entrepreneur, academics, statistician, psychologists and entrepreneur (business idea, developer and trainer). Content validity must always be considered when eliminating items from a scale. Scales with too many items can create problems with respondent fatigue or response biases.

The questionnaire was modified using face validity, content validity and it is tested for difficulty and ambiguity. The final questionnaire was framed with two sections; section one questions contains primary information which is of 17 questions and section two contains main information of entrepreneurial skills which is of 110 questions in 5 point scale format which is convenient for the students to answer. Then the questionnaire is tested reliability and validity for standardization

The questionnaire was developed scientifically. The questionnaire on entrepreneurial skill of graduate students consists of two sections, Section-A consists of 17 items about the general background information of the respondents, and Section-B consists of 110 items in likert scale format about the main data that is entrepreneurial skills on four dimensions namely General skills, Managerial skills, Manufacturing skills and Marketing skills of the respondents was developed using face validity, content validity and criterion validity.

The aim of a pilot study is to try out the research approach to identify potential problems that may affect the quality and validity of the results.

The importance of good instrumentation and clearly defined data-collecting procedures should not be underestimated and should be tested carefully to ensure their applicability under the conditions given by the context in which the method is to be used.

Table 1: Reliability analysis of scale developed

Entre preneurial skills	Number of items	Max score	Correlation	Reliability Index	P value	Remark
General	30	150	0.7381	0.8493	<0.001 **	High reliable
Managerial	30	150	0.7610	0.8643	<0.001 **	High reliable
Manufacturing	25	125	0.6652	0.7990	<0.001 **	Very reliable
Marketing	25	125	0.7149	0.8337	<0.001 **	High reliable
Total	110	550	0.7707	0.8705	<0.001 **	High reliable

Reliability was perfumed using the pilot study

Criterion-referenced tests are used to determine which of certain specified objectives of instruction a particular pupil has attended. The criterion-referenced test is the basic for interpreting the information provided the criterion in attainment of all instructional objectives.

Table 2: Comparison of present scale with standard scale*: Criterion validity

Statements	Item-Total correlation	Factor loadings			
		Factor 1	Factor 2	Factor 3	Factor 4
1. I am a person who is ready to take responsibility	0.847	**0.848**	0.291	0.265	0.243
2. I want to be economically independent	0.858	**0.821**	0.298	0.291	0.263
3. I feel responsible for my mistakes and take corrections	0.856	**0.833**	0.312	0.263	0.256
4. I persevere till I can achieve my dream	0.850	**0.832**	0.278	0.293	0.251
5. I have a supportive network of friends, family and advisers	0.863	**0.827**	0.317	0.261	0.277
6. I'm flexible and able to take advice	0.858	**0.828**	0.297	0.283	0.264
7. I am a person who makes decision within a reasonable time frame	0.848	**0.824**	0.290	0.283	0.255
8. I set goals & articulate a vision	0.855	**0.802**	0.312	0.276	0.280
9. It is important to me to make a mark in this life	0.857	**0.823**	0.312	0.261	0.273
10. I have self confidence and self esteem	0.850	**0.844**	0.291	0.253	0.266
11. I have a strong need to work independently	0.852	**0.831**	0.274	0.266	0.291
12. I don't start something without a clear vision and plan of action	0.846	**0.823**	0.305	0.262	0.256
13. Once I start a project I pursue it inspite of challenges	0.839	**0.843**	0.277	0.263	0.248
14. I believe that 'failure' is just a learning opportunity	0.847	**0.831**	0.294	0.265	0.259
15. I am a person who gets self motivation & influence others	0.844	**0.828**	0.308	0.247	0.259
16. Where others see problems, I see opportunity	0.831	**0.798**	0.293	0.275	0.253
17. I am able to adopt new circumstances & work according to it	0.858	**0.819**	0.316	0.253	0.285
18. For me, everything is possible if I believe I can do it	0.859	**0.825**	0.302	0.262	0.285
19. I am basically a people person	0.834	**0.841**	0.262	0.252	0.266
20. I have a hard time functioning in uncertain or ambiguous situations	0.846	**0.756**	0.324	0.282	0.293
21. Being too ambitious is often perceived poorly	0.840	**0.787**	0.313	0.282	0.259
22. I am the kind of person to see the glass as half empty instead of half full	0.847	**0.779**	0.325	0.283	0.266
23. I prefer being my own boss	0.852	**0.817**	0.304	0.275	0.263
24. I am good in contact	0.850	**0.825**	0.297	0.275	0.259

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25. I believe that other person is having skill / knowledge in one or the other field	0.860	**0.819**	0.294	0.273	0.291
26. I am good in managing conflict	0.852	**0.802**	0.300	0.278	0.284
27. I am good in team building	0.849	**0.815**	0.277	0.289	0.275
28. I accept and act upon the good points made by others	0.852	**0.826**	0.278	0.262	0.294
29. I anticipate what task needs to be done	0.838	**0.803**	0.281	0.255	0.296
30. I am often consulted when my friends are in trouble	0.840	**0.863**	0.257	0.240	0.274
31. : I enjoy working with other people	0.810	0.345	**0.772**	0.268	0.320
32. I can easily delegate work to people	0.841	0.324	**0.725**	0.355	0.315
33. I enjoy supervising people and monitoring their progress	0.807	0.316	**0.761**	0.311	0.268
34. I am a good observer	0.827	0.360	**0.763**	0.280	0.323
35. I foresee opportunities and threats in uncertain situations	0.827	0.339	**0.731**	0.280	0.307
36. I enjoy the challenges involved in solving a tough problem	0.825	0.323	**0.759**	0.290	0.337
37. I enjoying dealing with new ideas and situations	0.821	0.341	**0.781**	0.274	0.313
38. I keep detailed and accurate records	0.825	0.320	**0.739**	0.329	0.300

39. I'm good at organizing things and seeing tasks to completion	0.824	0.373	**0.715**	0.301	0.352
40. I'm prepared to take risks where other people hesitate	0.813	0.330	**0.758**	0.265	0.298
41. I like to be in control of whatever jobs I'm doing	0.822	0.335	**0.779**	0.287	0.314
42. I am good at managing my time	0.813	0.298	**0.760**	0.319	0.300
43. I find new ways to solve problems	0.829	0.329	**0.744**	0.315	0.332
44. I set priorities and organize to achieve them	0.827	0.361	**0.755**	0.286	0.325
45. I produce accurate, clear, error-free writing	0.821	0.335	**0.719**	0.310	0.290
46. I know how to assemble, motivate, and empower an effective team	0.826	0.303	**0.755**	0.307	0.303
47. I speak on behalf of others	0.813	0.270	**0.729**	0.315	0.269
48. I am good in official correspondences (letter)	0.832	0.277	**0.756**	0.314	0.300
49. I often follow my gut instinct	0.818	0.308	**0.739**	0.284	0.312
50. I always try to take calculated risks	0.814	0.326	**0.725**	0.296	0.320
51. I change my communication style according to the circumstances	0.805	0.332	**0.756**	0.265	0.309
52. I can visualize myself as head of my own company	0.823	0.324	**0.751**	0.286	0.283
53. I believe in organizing my	0.814	0.336	**0.780**	0.243	0.322

tasks before getting started						67. I am a highly creative person	0.818	0.276	0.331	0.303	**0.763**
54. I can persuade people by talking to them	0.820	0.315	**0.759**	0.306	0.312	68. I am able to develop new product from the existing one	0.833	0.291	0.323	0.315	**0.758**
55. I am capable of quick response	0.815	0.294	**0.761**	0.303	0.334	69. I want to build something that will be recognized publicly	0.818	0.344	0.316	0.239	**0.763**
56. I work in a systematic way	0.817	0.345	**0.771**	0.288	0.294	70. I am capable of imagining how we can make things work	0.835	0.302	0.325	0.275	**0.783**
57. I can plan my work in advance, in detail	0.819	0.313	**0.776**	0.288	0.313	71. I always insist on getting facts	0.829	0.338	0.351	0.284	**0.739**
58. I admire the principle "measure twice, cut once" (or "look before you leap")	0.806	0.336	**0.737**	0.244	0.320	72. I can easily imagine many ways to satisfy a need	0.823	0.276	0.307	0.266	**0.806**
59. I possess criticizing nature	0.800	0.257	**0.682**	0.334	0.314	73. I am not afraid to take risk	0.824	0.320	0.343	0.247	**0.743**
60. I want to share the challenge of creating 100 new millionaires by 2012	0.814	0.349	**0.681**	0.341	0.306	74. I enjoy doing something just to prove that you can	0.813	0.287	0.341	0.270	**0.745**
61. I am able to convey my ideas clearly	0.817	0.323	0.357	0.274	**0.748**	75. I apply my skill to develop things differently	0.836	0.286	0.298	0.316	**0.791**
62. I always try to get new ideas for producing new product/service	0.824	0.289	0.302	0.317	**0.764**	76. I am good at organizing things	0.831	0.304	0.321	0.315	**0.762**
63. I take initiative in tasks	0.835	0.322	0.331	0.289	**0.764**	77. I am proactive in tasks	0.821	0.311	0.303	0.317	**0.753**
64. I know how and where to find information and how to use it	0.846	0.299	0.342	0.289	**0.786**	78. I am curious to learn new aspects	0.824	0.339	0.340	0.232	**0.782**
65. I study myself and then decide	0.827	0.302	0.337	0.283	**0.764**	79. I understand others problems and work according to that	0.825	0.302	0.332	0.252	**0.782**
66. I set and work toward short-, medium-, and long-term goals	0.835	0.271	0.342	0.310	**0.774**	80. I usually find what I need without searching	0.822	0.271	0.280	0.314	**0.707**
						81. I am good at solving technical problems or	0.832	0.278	0.321	0.360	**0.728**

breakdowns						else				
82. If I take something apart, I remember how I did it and can I put it together again	0.816	0.309	0.312	0.292	**0.761**	95. I try to be the first or the best in my area of competency	0.806	0.252	0.324	**0.753**	0.260
83. I am a good listener	0.817	0.274	0.301	0.283	**0.771**	96. It is easy for me to motivate others to work with me	0.839	0.263	0.279	**0.800**	0.273
84. Physical capability is my strong point	0.811	0.312	0.267	0.281	**0.753**	97. There is a time for thought but action is more important for me	0.827	0.304	0.271	**0.767**	0.262
85. I can handle heavy manual work without problems	0.809	0.336	0.311	0.307	**0.702**	98. I evaluate the quality of my own work	0.828	0.261	0.291	**0.795**	0.262
86. I am known to be very persistent because I know I can't accomplish much on the first try	0.825	0.285	0.267	**0.751**	0.315	99. I do make suggestions to my friends about how things might be improved	0.823	0.281	0.262	**0.802**	0.239
87. I don't mind failing if I learn something in the process	0.822	0.332	0.278	**0.762**	0.262	100. I was expected to do odd jobs around the house before I was 10 years of age	0.802	0.222	0.283	**0.709**	0.254
88. I am doing work that I really like	0.822	0.271	0.258	**0.797**	0.261	101. I believe making use of new technology is investment (profitable)	0.822	0.304	0.254	**0.783**	0.253
89. I can convince selling a product to any customer	0.826	0.239	0.241	**0.790**	0.285	102. I am good in making professional contacts	0.827	0.252	0.242	**0.824**	0.252
90. I am often selected to represent my class or college in debate	0.814	0.190	0.289	**0.754**	0.257	103. I am good in estimation and budgeting	0.808	0.226	0.248	**0.786**	0.268
91. I know how to sell and can describe what selling involves	0.817	0.289	0.243	**0.767**	0.284	104. I work as per the schedule for a given day	0.816	0.258	0.252	**0.798**	0.231
92. I am good in managing money	0.814	0.256	0.253	**0.816**	0.222	105. I am able to understand the psychology of a person	0.815	0.272	0.281	**0.750**	0.271
93. I shoot for excellence in everything I do	0.805	0.318	0.254	**0.773**	0.253	106. I am good in maintaining records	0.820	0.275	0.300	**0.791**	0.240
94. I have no problem working for someone	0.814	0.270	0.272	**0.771**	0.239	107. I imagine how objects drawn on paper	0.834	0.275	0.277	**0.794**	0.274

will look in reality				
108. I have a demonstrable talent for selling products	0.822	0.289	0.294	**0.789**	0.201
109. I want just rewards for my efforts	0.804	0.246	0.236	**0.784**	0.212
110. I am good in networking	0.819	0.270	0.281	**0.786**	0.246

Present study scale was based on 110 statements in likert scale of 1-5 points and Standard scale (http://www.mvp.cfee.org/en/selfassessskills.html) was based on 9 statements in Likert scale of 1-4 points

Item-Scale Correlations: An item analysis was made to examine the item reliability. Item Analysis is used to construct reliable measurement scales, to improve existing scales, and to evaluate the reliability of scales already in use. (Neuman, 2005).

Factor Analysis: It was assumed that the scale devised to measure entrepreneurial skills is unidimensional. For examining the factor structure and dimensionality of the scales factor analysis is an appropriate statistics (Abdi, 2007). Factor analysis was utilized to check the unidimensionality of the scale to assess the entrepreneurial skills (Chandra Sekhar, 2007).

Table 3: Confirmative Factor analysis for scale of items for measuring entrepreneurial skills

Statements	Item-Total correlation	Factor loadings			
		Factor 1	Factor 2	Factor 3	Factor 4
1. I am a person who is ready to take responsibility	0.847	**0.848**	0.291	0.265	0.243
2. I want to be economically independent	0.858	**0.821**	0.298	0.291	0.263
3. I feel responsible for my mistakes and take corrections	0.856	**0.833**	0.312	0.263	0.256
4. I persevere till I can achieve my	0.850	**0.832**	0.278	0.293	0.251
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5. I have a supportive network of friends, family and advisers	0.863	**0.827**	0.317	0.261	0.277
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21. Being too ambitious is often perceived poorly	0.840	**0.787**	0.313	0.282	0.259
22. I am the kind of person to see the glass as half empty instead of half full	0.847	**0.779**	0.325	0.283	0.266
23. I prefer being my own boss	0.852	**0.817**	0.304	0.275	0.263
24. I am good in contact	0.850	**0.825**	0.297	0.275	0.259
25. I believe that other person is having skill / knowledge in one or the other field	0.860	**0.819**	0.294	0.273	0.291
26. I am good in managing conflict	0.852	**0.802**	0.300	0.278	0.284
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28. I accept and act upon the good points made by others	0.852	**0.826**	0.278	0.262	0.294
29. I anticipate what task needs to be done	0.838	**0.803**	0.281	0.255	0.296
30. I am often consulted when my friends are in trouble	0.840	**0.863**	0.257	0.240	0.274
31. : I enjoy working with	0.810	0.345	**0.772**	0.268	0.320

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38. I keep detailed and accurate records	0.825	0.320	**0.739**	0.329	0.300
39. I'm good at organizing things and seeing tasks to completion	0.824	0.373	**0.715**	0.301	0.352
40. I'm prepared to take risks where other people hesitate	0.813	0.330	**0.758**	0.265	0.298
41. I like to be in control of whatever jobs I'm doing	0.822	0.335	**0.779**	0.287	0.314
42. I am good at managing my time	0.813	0.298	**0.760**	0.319	0.300
43. I find new ways to solve problems	0.829	0.329	**0.744**	0.315	0.332
44. I set priorities and organize to achieve them	0.827	0.361	**0.755**	0.286	0.325
45. I produce accurate, clear,	0.821	0.335	**0.719**	0.310	0.290

error-free writing				
46. I know how to assemble, motivate, and empower an effective team	0.826	0.303	**0.755**	0.307	0.303
47. I speak on behalf of others	0.813	0.270	**0.729**	0.315	0.269
48. I am good in official correspondences (letter)	0.832	0.277	**0.756**	0.314	0.300
49. I often follow my gut instinct	0.818	0.308	**0.739**	0.284	0.312
50. I always try to take calculated risks	0.814	0.326	**0.725**	0.296	0.320
51. I change my communication style according to the circumstances	0.805	0.332	**0.756**	0.265	0.309
52. I can visualize myself as head of my own company	0.823	0.324	**0.751**	0.286	0.283
53. I believe in organizing my tasks before getting started	0.814	0.336	**0.780**	0.243	0.322
54. I can persuade people by talking to them	0.820	0.315	**0.759**	0.306	0.312
55. I am capable of quick response	0.815	0.294	**0.761**	0.303	0.334
56. I work in a systematic way	0.817	0.345	**0.771**	0.288	0.294
57. I can plan my work in advance, in detail	0.819	0.313	**0.776**	0.288	0.313
58. I admire the principle "measure twice, cut once" (or "look before you leap")	0.806	0.336	**0.737**	0.244	0.320
59. I possess criticizing nature	0.800	0.257	**0.682**	0.334	0.314

60. I want to share the challenge of creating 100 new millionaires by 2012	0.814	0.349	**0.681**	0.341	0.306
61. I am able to convey my ideas clearly	0.817	0.323	0.357	0.274	**0.748**
62. I always try to get new ideas for producing new product/service	0.824	0.289	0.302	0.317	**0.764**
63. I take initiative in tasks	0.835	0.322	0.331	0.289	**0.764**
64. I know how and where to find information and how to use it	0.846	0.299	0.342	0.289	**0.786**
65. I study myself and then decide	0.827	0.302	0.337	0.283	**0.764**
66. I set and work toward short-, medium-, and long-term goals	0.835	0.271	0.342	0.310	**0.774**
67. I am a highly creative person	0.818	0.276	0.331	0.303	**0.763**
68. I am able to develop new product from the existing one	0.833	0.291	0.323	0.315	**0.758**
69. I want to build something that will be recognized publicly	0.818	0.344	0.316	0.239	**0.763**
70. I am capable of imagining how we can make things work	0.835	0.302	0.325	0.275	**0.783**
71. I always insist on getting facts	0.829	0.338	0.351	0.284	**0.739**
72. I can easily imagine many ways to satisfy a need	0.823	0.276	0.307	0.266	**0.806**
73. I am not afraid to take	0.824	0.320	0.343	0.247	**0.743**

risk					
74. I enjoy doing something just to prove that you can	0.813	0.287	0.341	0.270	**0.745**
75. I apply my skill to develop things differently	0.836	0.286	0.298	0.316	**0.791**
76. I am good at organizing things	0.831	0.304	0.321	0.315	**0.762**
77. I am proactive in tasks	0.821	0.311	0.303	0.317	**0.753**
78. I am curious to learn new aspects	0.824	0.339	0.340	0.232	**0.782**
79. I understand others problems and work according to that	0.825	0.302	0.332	0.252	**0.782**
80. I usually find what I need without searching	0.822	0.271	0.280	0.314	**0.707**
81. I am good at solving technical problems or breakdowns	0.832	0.278	0.321	0.360	**0.728**
82. If I take something apart, I remember how I did it and can I put it together again	0.816	0.309	0.312	0.292	**0.761**
83. I am a good listener	0.817	0.274	0.301	0.283	**0.771**
84. Physical capability is my strong point	0.811	0.312	0.267	0.281	**0.753**
85. I can handle heavy manual work without problems	0.809	0.336	0.311	0.307	**0.702**
86. I am known to be very persistent because I know I can't accomplish much on the first try	0.825	0.285	0.267	**0.751**	0.315
87. I don't mind failing if I learn	0.822	0.332	0.278	**0.762**	0.262

something in the process					
88. I am doing work that I really like	0.822	0.271	0.258	**0.797**	0.261
89. I can convince selling a product to any customer	0.826	0.239	0.241	**0.790**	0.285
90. I am often selected to represent my class or college in debate	0.814	0.190	0.289	**0.754**	0.257
91. I know how to sell and can describe what selling involves	0.817	0.289	0.243	**0.767**	0.284
92. I am good in managing money	0.814	0.256	0.253	**0.816**	0.222
93. I shoot for excellence in everything I do	0.805	0.318	0.254	**0.773**	0.253
94. I have no problem working for someone else	0.814	0.270	0.272	**0.771**	0.239
95. I try to be the first or the best in my area of competency	0.806	0.252	0.324	**0.753**	0.260
96. It is easy for me to motivate others to work with me	0.839	0.263	0.279	**0.800**	0.273
97. There is a time for thought but action is more important for me	0.827	0.304	0.271	**0.767**	0.262
98. I evaluate the quality of my own work	0.828	0.261	0.291	**0.795**	0.262
99. I do make suggestions to my friends about how things might be improved	0.823	0.281	0.262	**0.802**	0.239
100. I was expected to do odd jobs around the house before	0.802	0.222	0.283	**0.709**	0.254

I was 10 years of age					
101. I believe making use of new technology is investment (profitable)	0.822	0.304	0.254	**0.783**	0.253
102. I am good in making professional contacts	0.827	0.252	0.242	**0.824**	0.252
103. I am good in estimation and budgeting	0.808	0.226	0.248	**0.786**	0.268
104. I work as per the schedule for a given day	0.816	0.258	0.252	**0.798**	0.231
105. I am able to understand the psychology of a person	0.815	0.272	0.281	**0.750**	0.271
106. I am good in maintaining records	0.820	0.275	0.300	**0.791**	0.240
107. I imagine how objects drawn on paper will look in reality	0.834	0.275	0.277	**0.794**	0.274
108. I have a demonstrable talent for selling products	0.822	0.289	0.294	**0.789**	0.201
109. I want just rewards for my efforts	0.804	0.246	0.236	**0.784**	0.212
110. I am good in networking	0.819	0.270	0.281	**0.786**	0.246

Results are Factor loading obtained by Varimax rotation of factor analysis

The primary purposes of either exploratory or confirmatory factor analysis in scale construction are to examine the stability of the factor structure and provide information that will facilitate the refinement of a new measure. Because of the objective of the task of scale development, it is recommended that a confirmatory approach be utilized (Timothy R. Hinkin 1995).

CONCLUSION

In the present study the methodology to construct scale for entrepreneurial skill for graduate students were developed. The scale developed was statistically validated. The validation measures such as face validity, content validity, construct validity; criterion –related and discriminant validity were used to standardize the scale. The four dimensions or factors were revealed by factor analysis such as General, Managerial, manufacturing and marketing. The scale can be used to measures the entrepreneurial skills of graduate students

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