

Entrepreneurial Education in Public Sector Institutes of Rawalpindi/Islamabad

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Abstract : *This paper analyses the extent to which the concept of entrepreneurship is being inculcated in the courses being taught at the public sector universities across various disciplines. Three public sector universities from the twin cities of Rawalpindi and Islamabad were taken into consideration and the data was collected through websites of the institutes and through questionnaires that were filled by students as well as faculty members. The questionnaire for the study was replicated from the paper of Askun and Yidrim on entrepreneurship education in Turkish Public Universities published in 2011. Results of the study show that entrepreneurship education is dependent on the type of institute.*

Keywords : *Entrepreneurship Education, Public Sector Institutes, Chi-square, Nominal Variables, Ordinal Variables, Gamma Test, Contingency Coefficient.*

1. Introduction

Entrepreneurship is a dimension of business that has been categorized as a vital contributor for a growing economy. In the current scenario, for a country like Pakistan that year after year remains

stuck in a poverty trap, establishment of an entrepreneurial mindset is crucial to propel it towards development and progress. However, despite its vital importance, entrepreneurship remains a challenging concept in Pakistan.

To effectively inculcate an entrepreneurial mindset in the population of nation, an effective foundation for an entrepreneurial education first has to be established. This study aims at analyzing how much the concept of entrepreneurship is being promoted on an educational level across various disciplines. For this purpose, the study takes into consideration public sector universities of the twin cities of Rawalpindi and Islamabad and examines which institutes are offering entrepreneurial courses, in which disciplines is it being most emphasized upon and lastly, whether it is being focused upon more on an undergraduate or a post graduate level.

Entrepreneurial education at higher education level has been subject to great deal of attention over the past few years (Li, Zhang & Matlay, 2003). It is however, being more emphasized upon on a post graduate level (McKeown et al, 2006). The advancement of technology has revolutionized the way we do our businesses and with that the importance of entrepreneurship has increased dramatically. In terms of imparting education in this domain, the most extensively used methods include creation of business plans, class discussions and guest speakers (Solomon, 2007); with the business plans and other traditional methods dominating the field (McKeown et al, 2006). When it comes to the information base available on this subject matter, recent journals and periodicals discussing the trends and latest news in the market are constituted as the primary sources as they enable the students to relate the theories studied in class to real life examples (Solomon, 2007).

Despite all this, there are universities that are offering entrepreneurial education in their course material but it is of little use at the end of the day. A study on Ethiopian Universities discusses that entrepreneurial education there is mostly in the

developmental stages and is primarily being provided in business schools alone. While it is of utmost importance that entrepreneurial education be incorporated in other disciplines as well. Other than that, in many institutes the effectiveness of the courses being provided in this domain is highly questionable as the education being provided is more in context of knowledge *about* entrepreneurship not *for* entrepreneurship (Gerba). Similarly, a study on entrepreneurship education in public universities in Turkey, quite similar to the scope of this paper, found out that the courses being provided in the universities are not merely enough for imparting the skills or the establishment of mindsets that go on to improve the implementation of such education in entrepreneurial ventures (Aşkun & Yıldırım, 2011).

In the same context, Kirby (2006) in his study validates that the establishment of mere infrastructure and increasing short term spending is not quite enough for establishment of truly entrepreneurial institutes. The key here is the establishment of entrepreneurial cultures and mindsets in order to make the entrepreneurship related knowledge truly useful.

In relation to the effectiveness of the entrepreneurship education being provided, some studies also show that culture and surroundings also has a role to play in it. A comparative study of entrepreneurship education in US and Korea goes on to show that the level of receptiveness and impact of entrepreneurship education in both the countries differs based on each country's unique cultural context towards this idea. The study goes on to validate that the American students, belonging to a more entrepreneurship oriented culture are more knowledgeable in ventures related abilities and knowledge but the impact of entrepreneurship education in Korea is much more than that in US suggesting the impact of entrepreneurship education in countries with low or developing entrepreneurship oriented culture is more significant

(Li, Chang & Lim, 2005). On the other hand there are economies like China, that have greatly benefited over the past few decades from the entrepreneurial potential inherent in its business spheres but where entrepreneurship education in itself remains a relatively new and developing concept (Li, Zhang & Matley, 2003). Same is the case with South Africa, where though the entrepreneurship ventures have been in motion since the 1990s but where the concept of entrepreneurship education as a subject matter remains as a relatively newer concept (Co & Mitechel, 2006).

Entrepreneurship ventures serve as the main driving force for the economy of any country which is why it has now been started to get recognized as a vital domain of subject that should be taught and cultivated at higher education level. However, there remains a gap in the knowledge being imparted in this domain. The overall impact of entrepreneurship education though being positive remains questionable as the success of it is now being more and more considered in the domain of how much it is being applied in the professional sphere on the industrial level (Lanero et al, 2011).

2. Present Study

The purpose of this study is to bring to light how much emphasis is being put into developing an entrepreneurial mindset among the youth of the nation. Entrepreneurship is a fundamental pillar that boosts the economy and this study is very strategically important in the aspect that it analyzes how much entrepreneurship is being inculcated in the courses across various disciplines. This study will show which disciplines are focusing more on entrepreneurship and which are not. Furthermore, it will also tell which universities in the public sector are focusing more on entrepreneurship and also tell whether it is being focused upon more on an undergraduate or a post graduate level.

The study is particularly targeted towards educators as these results would help us identify the gaps in the entrepreneurship education in the universities and would assist the educators in determining in which disciplines the concept on entrepreneurship needs to be inculcated.

Participants

The sample comprised of public sector universities in Rawalpindi and Islamabad. The population of the public sector universities in the region included around 12 universities out of which NUST, International Islamic University and COMSATS were chosen for the study. Two types of respondents were taken into consideration i.e. students and faculty. Total number of participants in these three institutes was chosen as per equal allocation in stratified random sampling and within an institute, they were chosen as per proportional stratified random sampling according to the number of entrepreneurial courses a single department was offering. Total sample of 120 respondents was taken (110 students and 10 faculty members).

Instrument

The questionnaires (illustrated in appendix B) were used to take the responses from teachers and students. The questionnaire design was taken from the study of Askun and Yidrim in 2011 on Turkish Public Universities, when they analyzed the entrepreneurship education (Askun & Yidrim, 2011)

On the other hand, for recording the total number of entrepreneurial courses being offered by a department, secondary resource i.e. institute's website was used.

Method of examination

In order to evaluate the data and test the hypotheses developed, SPSS 17.0 was used. Cross tab was run on it, in which sig (p) values of Contingency

Coefficients, Gamma test and Chi-square were used to see the possible associations between variables.

3. Hypothesis Development

In order to determine the dependency between department type, institute and respondents; and total entrepreneurial courses offered, decision making ability of students under constraints, Title of faculty, variety of topics covered in these course, reading material and teaching method used by the faculty, following hypotheses were developed.

Hypothesis 1

Ho: Various institutes and the total entrepreneurship courses offered there are not dependent

H1: Various institutes and the total entrepreneurship courses offered there are dependent

This hypothesis is developed as every institute has its own culture about entrepreneurship, some promote it and some don't.

Hypothesis 2

Ho: The two variables department type and total entrepreneurial courses offered are not dependent

H1: The two variables department type and total entrepreneurial courses offered are dependent

The development of this hypothesis is replication of the one tested by Askun and Yidrim in 2011 on Turkish Public Universities.

Hypothesis 3

Ho: The Institute and Decision making ability of students under various constraints are not dependent

H1: The Institute and Decision making ability of students under various constraints are dependent

This hypothesis was developed in order to see whether decision-making ability of students vary

across the institutes or not as each university has its own curriculum and course contents that may or not develop this ability among students.

Hypothesis 4

Ho: Type of department and ability of students to make Decision under various constraints are not related.

H1: Type of department and ability of students to make Decision under various constraints are related.

Development of this hypothesis would help us in determining that whether the institutes are centralized when it comes to determining the course content or each type of department enhance different abilities of students.

Hypothesis 5

Ho: Respondents (students or faculty) and Decision making ability of students under various constraints are not dependent

H1: Respondents (students or faculty) and Decision making ability of students under various constraints are dependent

This hypothesis was developed to ensure that there is no reporting error between the respondents and that their responses are true.

Hypothesis 6

Ho: Various institutes and the title of the faculty teaching entrepreneurial course over there are not dependent

H1: Various institutes and the title of the faculty teaching entrepreneurial course over there are dependent

As the policy of government universities are not similar, the hypothesis constructed was used to test this when it comes to the status of teacher.

Hypothesis 7

Ho: The Department type and title of faculty teaching entrepreneurial courses are not dependent

H1: The Department type and title of faculty teaching entrepreneurial courses are dependent

The development of this hypothesis is further research of the study done by Askun and Yidrim in 2011 on Turkish Public Universities, when they analyzed the status of teachers teaching entrepreneurship course (Askun & Yidrim, 2011)

Hypothesis 8

Ho: Institution and variety of topics covered in entrepreneurial courses offered are not related.

H1: Institution and variety of topics covered in entrepreneurial courses offered are related.

This hypothesis was developed in order to see whether all institutes cover similar topic in the entrepreneurship courses or different, as different institutes have different cultures and perception about the importance of entrepreneurship and mindsets of administration and faculty over there, which design the course content, also differ.

Hypothesis 9

Ho: Type of department and variety of topics covered in entrepreneurial courses offered are not related.

H1: Type of department and variety of topics covered in entrepreneurial courses offered are related.

Development of this hypothesis helped us in determining that whether the institutes are centralized when it comes to determining the course content and the topics to be covered under the entrepreneurship courses or each type of department has its own set of requirements that have to be covered in the course.

Hypothesis 10

Ho: Respondent and variety of topics covered in entrepreneurial courses studied are not related.

H1: Respondent and variety of topics covered in entrepreneurial courses studied are related.

Responses about variety of topics covered from two different types of respondents were compared through this hypothesis testing to see whether there is a reporting error from either of them or not.

Hypothesis 11

Ho: Institutes and the reading material being employed over there are not dependent

H1: Institutes and the reading material being employed over there are dependent

As the policies and way of conducting things of government universities are not similar, the hypothesis constructed was used to test this when it comes to the reading material being employed by the faculty of entrepreneurial courses.

Hypothesis 12

Ho: The two variables department type and reading material used by Faculty are not dependent

H1: The two variables department type and reading material used by Faculty are dependent

Development of this hypothesis would help us in determining that whether the institutes are centralized when it comes to the reading material

that is employed by the faculty of entrepreneurship courses or each type of department uses different type of reading material, which best suits it.

Hypothesis 13

Ho: Respondents (student or faculty) and the reading material being employed are not dependent

H1: Respondents (student or faculty) and the reading material being employed are dependent

Responses about the employed reading material from two different types of respondents were compared through this hypothesis test to ensure that there is not any reporting error from either of them

Hypothesis 14

Ho: Various institutes and teaching methods used for entrepreneurship courses over there are not dependent

H1: Various institutes and teaching methods used for entrepreneurship courses over there are dependent

Differences in the culture and hence the way of teaching led us to develop this hypothesis, as the faculty in an institute abides by the requirements of the administration, so it adopts the method that is accepted in that particular institute. These requirements are a reflection of the perception that the administration has for each type of method and its effectiveness.

Hypothesis 15

Ho: The two variables department type and method of teaching the entrepreneurship courses are not dependent

H1: The two variables department type and method of teaching the entrepreneurship courses are dependent

Development of this hypothesis would help us in determining that whether the institutes are

centralized when it comes to the method through which the entrepreneurship courses are to be taught or each type of department has its own set of teaching aids that it thinks would be better for it.

Hypothesis 16

Ho: Respondent (student or faculty) and the method of teaching the entrepreneurship courses are not dependent

H1: Respondent (student or faculty) and the method of teaching the entrepreneurship courses are dependent

This hypothesis was developed to compare the responses of students and faculty, when they responded to the method of teaching, and ensure that there isn't any reporting error by either of the two types of respondents.

Indices

Types of departments were divided into two broad categories. Business department and Social Sciences Institute are represented as 1. On the other side, Engineering Faculty and Sciences and Technology Institute are represented as 2.

Total entrepreneurship courses being offered in an institute were divided into three categories. 0 represents absence of entrepreneurship courses in the department. Index of 1 represents some (i.e. 1-3) entrepreneurship courses being offered. While index of 2 represents relatively more (i.e. 4 and more) entrepreneurship courses offered in the department

The responses of the strategic ability of students to make decisions in constraints, risk-taking etc were recorded as 0 and 1. 1 represents the decision making ability of students while 0 represents that they couldn't make decision under the constraints.

Titles of the faculty teaching entrepreneurship course were divided into two categories, as our aim was to differentiate academicians from practitioners. Therefore, 1 represents lecturer,

assistant professor, associate professor and professor while 2 represents the entrepreneur/practitioner.

The indices used for variety of topics covered in the entrepreneurship courses are 1 and 2. 1 represents less than 4 topics, while 2 represents that 4 or more topics (from our given list in questionnaire) are covered in the course.

Reading material being employed by the faculty of entrepreneurship courses was divided in two categories. Use of any one of the material i.e. either already developed ones or own material of the faculty is represented as 1. While a combination of both the types of material is represented by 2.

Teaching methods used by the faculty were also divided into two broad categories. Use of only one of the method i.e. either theoretical, case studies or practical application of concepts is represented as 1. While a combination of two or more types of methods is represented by 2.

4. Results

As per indication of table 1, on the basis of Chi square, Contingency coefficient and gamma coefficient results $p - value < 0.05$ we conclude that institute and total number of Entrepreneurial courses offered at post graduate level are dependent. In Islamic university, in 17 departments Entrepreneurial courses are totally not offered, while in COMSATS and NUST these were offered in 10 and 5 departments respectively. 1 being some Entrepreneurial courses are offered at departments of the universities, NUST is leading when it comes to departments offering some (1-3) Entrepreneurial courses with 11 departments doing this. However, In COMSATS and ISLAMIC only 4 and 3 such departments were found, respectively. In NUST only one department in such that offer four or more entrepreneurial courses while not any department of COMSATS or ISLAMIC offer more than 3 entrepreneurial courses.

As per indication of table 2, on the basis of Chi square, Contingency coefficient and gamma coefficient results $p - value < 0.01$ we conclude that institute and the ability to make strategic decisions in different constraints are dependent. At COMSATS, 4 respondents were of the opinion that they were not able to make strategic decisions in different constraints, while Islamic University has only 2 respondents in this domain. Whereas in NUST 24 respondents were of the opinion that they were not able to make strategic decisions in different constraints. In COMSATS 35 respondents learned to make strategic decisions under different constraints while in ISLAMIC 29 of them are in favor of this. Whereas in NUST 26 of them learned to make strategic decisions in different constraints. The popular reply in COMSATS and Islamic University was that respondents learnt to make strategic decisions in different constraints. However, at NUST, the respondents who learnt to make strategic decisions in different constraints were almost equal to those who did not learn to make strategic decisions in different constraints.

As per indication of table 3, on the basis of Chi square, Contingency coefficient and gamma coefficient results $p - value < 0.01$ we conclude that institute and the teaching method used in Entrepreneurial courses are dependent. Teaching method used in entrepreneurial courses varies from institute to institute. In COMSATS 5 responses indicates that only one single method (either theoretical, case studies or practical application of concepts) is used for teaching these courses, while ISLAMIC has 9 responses in this case. In NUST 25 respondents indicated that for teaching these courses faculty solely relies on one single method. On the other hand 34 responses from COMSATS indicated that combination of two or more types of methods are used by the faculty for better understandings of students, while in NUST 25 respondents agrees with this. In ISLAMIC 22

responses identified that combination of different teaching methods are used.

As per indication of table 4, on the basis of Chi square and Contingency coefficient $p - value < 0.01$ we conclude that institute and reading material provided in Entrepreneurship courses are dependent. In COMSATS 16 responses indicates that only one type of reading material (either already developed ones or own material of the faculty) is used by the faculty, while in ISLAMIC 24 of the respondents agrees with this. In NUST 45 respondents said that only one type of reading material is used by the faculty in entrepreneurial courses. On the other side, from ISLAMIC 31 respondents indicates that combination of both the types of materials are used by the faculty to provide better understandings of the students, while in COMSATS only 31 were in favor of single type of reading material used. Whereas, in NUST 50 respondents replied that combination of reading material are used by the faculty.

As per indication of table 5, on the basis of Chi square, Contingency coefficient results $p - value < 0.01$ we conclude that Department type and teaching method used in Entrepreneurial courses are dependent. In business and social sciences schools 27 respondents indicates that only one single type of teaching method (either theoretical, case studies or practical application of concepts) is deployed for teaching entrepreneurial courses, while in engineering schools 12 responses was in favor of usage of one single type of teaching method. On the other hand in business schools 29 responses indicated that combination of two or more types of methods are used by the faculty members, whereas in engineering schools 52 of the respondents agrees that combination of teaching methods are used frequently.

As per indication of table 6, on the basis of Chi square as well as Contingency coefficient results

$p - value < 0.01$ we conclude that department type and reading material provided are dependent. In business and social sciences schools 47 of the responses indicated that one single type of reading material (either already developed ones or own material of the faculty) is provided by the teachers for the assistance of students in getting better insights of entrepreneurial courses, while in engineering schools 38 respondents replied in favor of single type of reading material. In business schools 9 responses indicated that combination of both the types of materials are provided, whereas in engineering schools 64 respondents agreed that combination of reading materials are used.

As per indication of table 7, on the basis of Chi square as well as Contingency coefficient results $p - value < 0.01$ we conclude that respondent and reading material provided are dependent. The numbers of students in the universities with single type (either already developed ones or own material of the faculty) of reading material provided were 81. Whereas, the numbers of teachers in the universities with single type of reading material provided were 4. On the other side responses of students who are provided with combination of both of the reading materials were 29 in number, whereas 6 responses from teachers indicated the provision of combination of reading materials.

As per indication of table 8, on the basis of Chi square, gamma coefficient as well as Contingency coefficient results $p - value < 0.01$ we conclude that institute and total number of topics covered in Entrepreneurial courses are dependent. In COMSATS 0 response indicated that less than 4 topics are covered related to entrepreneurial courses, while in ISLAMIC the same is indicated by 9 of the respondents. Whereas in NUST 23 of the responses indicates that less than four topics are being covered in the entrepreneurial courses. On the other side in which more than 4 topics are covered in this domain, in ISLAMIC 22 responses indicated that more than 4 topics are covered, while in

NUST27 respondents indicates it. Whereas in COMSATS 39 of the responses replied that more than 4 topics are being covered in entrepreneurial courses.

As per indication of table 9 values, on the basis of Chi square, gamma coefficient as well as Contingency coefficient results $p - value < 0.05$. So, we can say that department type and topics being covered in this domain are dependent. In Business schools 26 of the responses indicates that less than 4 topics are being covered in entrepreneurial courses. But in other schools mostly engineering schools only 6 responses were there in favor of this. On the other side in which more than 4 topics are being covered, in engineering school 58 respondents also indicated that. While in Business schools only 30 responses indicate more than 4 topics are covered in their departments.

As per indication of table 10 values, on the basis of Chi square, gamma coefficient as well as Contingency coefficient results $p - value < 0.05$. It indicates that respondent and topics being covered in Entrepreneurial courses are dependent. 32 students responded that less than 4 topics are being covered in their departments while 0 teachers indicated that. On the other side, more than 4 topics are being covered; 78 students indicated that. While 10 teachers indicate that more than 4 topics are being covered in their departments in the field of entrepreneurial courses.

As shown in table 11, 62.7% of the departments are offering 0 Entrepreneurship courses where as 31.4% of the departments are offering 1 Entrepreneurship course. 2% of the departments are offering 2 Entrepreneurship courses while another 2% are offering 3 Entrepreneurship courses. 0% are offering 4 Entrepreneurship courses. 2% are offering 5 Entrepreneurship courses.

Frequencies of Variables

As shown in table 12, 34.2 % of the departments are using Theoretical, Case Studies & Practical Application of Concepts as their preferred teaching method. 16.7 % of the departments are using Theoretical as their preferred teaching method. 15.8 % of the departments are using Theoretical and Practical Application of Concepts as their preferred teaching method. 12.5 % of the departments are using Theoretical and Case Studies as their preferred teaching method. 10.8 % of the departments are using Practical Application of Concepts as their preferred teaching method. 5% of the departments are using Case Studies as their preferred teaching method. 5% of the departments are using Case Studies & Practical Application of Concepts as their preferred teaching method.

As shown in table 13, 25% of the entrepreneurship courses offer the ability to make strategic decisions. 75% of the entrepreneurship courses don't offer the ability to make strategic decisions.

As shown in table 14, 5% of the departments offer 1 topic in their entrepreneurship course. 8.3 % of the departments offer 2 topics in their entrepreneurship course. 13.3 % of the departments offer 3 topics in their entrepreneurship course. 15 % of the departments offer 4 topics in their entrepreneurship course. 13.3 % of the departments offer 5 topics in their entrepreneurship course. 19.2% of the departments offer 6 topics in their entrepreneurship course. 25.8% of the departments offer 7 topics in their entrepreneurship course.

As shown in table 15, 35.8% of the teachers use already developed materials. 35% of the teachers use Own readings and text materials (secondary research). 29.2% of the teachers use Own readings and text materials (secondary research) & already developed ones

As shown in table 16, 40% of the teachers have the title lecturer. 20% of the teachers have the title professor. 20% of the teachers have the title practitioner/entrepreneur. 10% of the teachers have

the title assistant professor. 10% of the teachers have the title associate professor.

5. Limitations and Further Research

The study is limited in its scope as it the results can be said to be just time specific, as this study is conducted in 2012. Furthermore, the results of this study cannot be generalized to accommodate the whole population of the twin cities of Rawalpindi and Islamabad or all the public sector universities in the country. It also does not take into consideration the variability in the requirements of various disciplines, within a same type of department, to accommodate the aspect of entrepreneurship. Hence, researches should replicate the study further in order to reach at a generalized conclusion.

For some variables, that don't have values greater than 5, Chi-square may not be an adequate test and other tests could be used by further researchers to make the results more accurate.

Some variables, that include topics covered in an entrepreneurship courses and reading material employed by the faculty, are depending on the type of respondent. This means that there is a reporting error by either the faculty or the student. Hence further research should be carried out in this domain to see the reasons for reporting errors and get a more accurate response.

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APPENDIX A: Questionnaires

Institute: NUST Business School

Degree: BBA

Introduction note: This survey is for an Entrepreneurial Research assigned as the final project of the Research Methodology course being taught by Ms.Ayesha Nazuk Rao.

Your privacy will be highly preserved.

Questionnaire for Teachers

Name of the Institute: _____

Q1. Which of the following categories best describes your institution?

- A. Business School
- B. Engineering Faculty
- C. Social Sciences Institute
- D. Science and Technology Institute

Q2. Which of the following teaching methods are used? (More than one option may be chosen here)

- Theoretical
- Case Studies
- Practical Application of Concepts

Q3. What is your qualification?

- A. Bachelors
- B. Masters
- C. MS/MPhil
- D. PhD.

Q4. What is your current Profile/Title?

- A. Lecturer
- B. Assistant Professor

C. Associate Professor

D. Professor

E. Practitioner/Entrepreneur

Q5. Are these courses covered in a manner which allows your students to make strategic choices under resource constriction, initiating, autonomy, and risk taking?

A. Yes

B. No

Q6. Which of the following topics are covered in the Entrepreneurial courses that are taught at your institute? (More than one option may be chosen here)

Stages of Development

Opportunity Recognition

Identifying and acquiring financial, human and technical resources

Market Entry

Legal Requirements of new businesses

Growth Issues; New market development and expansion strategies

Institutionalizing innovation

Q7. Do you utilize your own collections of readings and text materials or use already-developed ones?

Own collection of readings and text materials (in terms of secondary research)

Already developed ones

Thank you for your time.

Institute: NUST Business School

Degree: BBA

Introduction note: This survey is for an Entrepreneurial Research assigned as the final project of the Research Methods course being taught by Ms.Ayesha Nazuk Rao.

Your privacy will be highly preserved.

Questionnaire for Students

Name of the Institute: _____

Q1. Which of the following categories best describes your institution?

A. Business School

B. Engineering Faculty

C. Social Sciences Institute

D. Science and Technology Institute

Q2. Which of the following teaching methods are used? (More than one option may be chosen here)

Theoretical

Case Studies

Practical Application of Concepts

Q3. Are these courses covered in a manner which allows you to make strategic choices under resource constriction, initiating, autonomy, and risk taking?

A. Yes

B. No

We highly appreciate your input in this survey.

<http://www.ijmsbr.com>

Q4. Which of the following topics are covered in the Entrepreneurial courses that are taught at your institute? (More than one option may be chosen here)

- Stages of Development
- Opportunity Recognition
- Identifying and acquiring financial, human and technical resources
- Market Entry
- Legal Requirements of new businesses
- Growth Issues; New market development and expansion strategies
- Institutionalizing innovation

Q5. Do you utilize your own collections of readings and text materials or use already-developed ones?

Own collection of readings and text materials (in terms of secondary research)

Already developed ones

Q6. Does your university provide information on the web concerning entrepreneurship, new creation and small business to both students and entrepreneurs?

A. Yes

B. No

We highly appreciate your input in this survey.

Thank you for your time.

APPENDIX B: Result Tables

Table 1: Institute and number of departments offering Entrepreneurial courses

	Total number of Entrepreneurial courses			Total
	0	1	2	
Institute COMSATS	10	4	0	14
ISLAMIC	17	3	0	20
NUST	5	11	1	17
Total	32	18	1	51

Table 2: Institute and learn to make strategic decisions in different constraints

	Learn to make strategic decisions in different constraints		Total
	0	1	
Institute COMSATS	4	35	39
ISLAMIC	2	29	31
NUST	24	26	50
Total	30	90	120

Table 3: Institute and teaching method used in Entrepreneurial courses

	Teaching method used in Entrepreneurial courses		Total
	1	2	
Institute COMSATS	5	34	39
ISLAMIC	9	22	31
NUST	25	25	50
Total	39	81	120

Table 4: Institute and reading materials provided in Entrepreneurial courses

	Reading materials provided		Total
	1	2	
Institute COMSATS	16	23	39
ISLAMIC	24	7	31
NUST	45	5	50
Total	85	35	120

Table 5: Department type and teaching method used in Entrepreneurial courses

	Teaching method used in Entrepreneurial courses		Total
	1	2	
Index department type 1	27	29	56
2	12	52	64
Total	39	81	120

Table 6: Department type and reading materials provided in Entrepreneurial courses

	Reading materials provided		Total
	1	2	
Index department type 1	47	9	56
2	38	26	64
Total	85	35	120

Table 7: Respondent and reading materials provided

	Reading materials provided		Total
	1	2	
Respondent student	81	29	110
Teacher	4	6	10
Total	85	35	120

Table 8: Institute and topics covered in Entrepreneurial courses

	Topics covered		Total
	1	2	
Institute COMSATS	0	39	39
ISLAMIC	9	22	31
NUST	23	27	50
Total	32	88	120

Table 9: Department type and topics being covered in Entrepreneurial courses

Index department type	Topics covered		Total
	1	2	
1	26	30	56
2	6	58	64
Total	32	88	120

Table 10: Respondent and topics covered in Entrepreneurial courses

Respondent	Topics covered		Total
	1	2	
student	32	78	110
Teacher	0	10	10
Total	32	88	120

Table 11: The total number of courses being offered in various departments

Number of Courses	Frequency	Percentage (%)
0	32	62.7
1	16	31.4
2	1	2
3	1	2
4	0	0
5	1	2
Total	51	100

Table 12: The teaching method used by the Faculty

Teaching Method	Frequency	Percentage (%)
Theoretical, Case Studies & Practical Application of Concepts	41	34.2
Theoretical	20	16.7
Theoretical and Practical Application of Concepts	19	15.8
Theoretical & Case Studies	15	12.5
Practical Application of Concepts	13	10.8
Case Studies	6	5
Case Studies & Practical Application of Concepts	6	5
Total	120	100

Table 13: Entrepreneurship courses offering the ability to make strategic decisions

Encouraging Strategic Decisions	Frequency	Percentage (%)
Yes	30	25
No	90	75
Total	120	100

Table 14: The variety of topics covered in Entrepreneurship Courses

Number of Topics	Frequency	Percentage (%)
1	6	5
2	10	8.3
3	16	13.3
4	18	15
5	16	13.3
6	23	19.2
7	31	25.8
Total	120	100

Table 15: The teachers utilize their own reading material or use already developed ones

Kind of Material Used	Frequency	Percentage (%)
Already developed ones	43	35.8
Own readings and text materials (secondary research)	42	35.0
Both	35	29.2
Total	120	100

Table 16: Teachers title

Title of the teacher	Frequency	Percentage (%)
Lecturer	4	40
Professor	2	20
Practitioner/Entrepreneur	2	20
Assistant Professor	1	10
Associate Professor	1	10
Total	10	100