

Journal of Economics and Sustainable Development ISSN 2222-1700 (Paper) ISSN 2222-2855 (Online) Vol.4, No.11, 2013



# Business Mentoring and Entrepreneurship Development in Selected States of Nigeria

Benjamin Ibe Chukwu, PhD, FIIA, MIRDI<sup>1</sup>; Onyeizugbe Chinedu Uzochukwu, PhD, MNIM<sup>2</sup>

- 1. Department of Management, University of Nigeria, Enugu Campus, Enugu State, Nigeria e-mail: <a href="mailto:benjaminichukwu@yahoo.com">benjaminichukwu@yahoo.com</a>
- 2. Department of Business Administration, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria e-mail: edu\_phd@yahoo.com

#### **ABSTRACT**

There exist a hiatus between teaching and practice of Entrepreneurship Development in Nigeria .This exacerbates unemployment, affects the nation's gross domestic product as a well as economic growth and development. As a result this paper examined business mentoring as a panacea for entrepreneurship development in Nigeria. The study was limited to six states selected from six geo-political zones of the country. Guided by Social Cognitive Career Theory (SCCT) as well as Behavioral-Elastic Model, the research sought to ascertain if there was a positive relationship between effective learning and entrepreneurship development. In pursuance of the objective of the study, the cross-sectional survey research design was adopted. A sample of 131 individuals selected from the various states was used for the study. One research question and one hypothesis were formulated to guide the study. A structured questionnaire was designed to elicit data from the respondents. Personal interviews were also conducted with some selected members of the sample. A pilot study was conducted using a test-retest method to establish the reliability of the research instrument. The validity of the research instrument was also tested. Pearson Product Moment Correlation was used for testing the hypothesis and t-test was used for testing the level of significance of correlation coefficient at 5% error and 3 degrees of freedom. Among others, the findings of the research reveal that there is a positive relationship between effective learning and entrepreneurship development in Nigeria; and that one can acquire entrepreneurial skills through mentoring. It is recommended that National University Commission should as a matter of urgency introduce business mentoring in University Curriculum and should be backed by relevant policy; and there is a need for additional research into the long-term impact of mentoring relations vis- a- vis cost benefit analysis of the

Key Words: Business Mentoring, Learning, Entrepreneurship development, Panacea, Correlation.

## 1. INTRODUCTION

The relatively stable economic environment of the colonial and immediate post-colonial era in Nigeria produced a generation of educated elites whose mindset was shaped to seek and secure paid employment in the public sector of the economy. Employment in the private sector was accepted with a large measure of reluctance and as a waiting strategy (Onyeizugbe, 2011). Self employment was held in ridicule. Higher educational institutions did not emphasize "Business mentoring for entrepreneurship development".

In the last twenty years, efforts to promote entrepreneurship development have resulted in the creation of a range of small business mentoring enterprise development programmes (Hailey, 1993). There is no generally acceptable model, and different institutions including universities, technical colleges and enterprise agencies did not provide a variety of entrepreneurship or small business mentoring courses (Hailey, 1993). These mentoring programmes are designed to motivate potential entrepreneurs, raise awareness of entrepreneurship generally, and help promote entrepreneurial learning. Other programmes try to remove barriers and constraints to business success by providing managerial and technical skills and helping entrepreneurs prepare a viable business plan.

Ugwu (2006) argues that most entrepreneurship related policies and programmes in Nigeria fall short of appropriate business mentoring frameworks. Some of the policies are poor and lack clear entrepreneurial learning vision and commitment which pose serious threats to entrepreneurship development in Nigeria. If the quadruple upon which the entrepreneurship development is founded is lost, there is an urgent need for entrepreneurial learning programmes in Nigeria. Arising from the above, therefore, this study seeks to fill in the gap by ascertaining whether business mentoring is a panacea for entrepreneurship development in Nigeria.

## 1.1 Objectives of the study

The objective of the study is to ascertain the extent to which there is a positive relationship between effective learning and entrepreneurship development in Nigeria.

#### 1.2 Research Question

To what is there a positive relationship between effective learning and entrepreneurship development in Nigeria?



## 1.3 Hypothesis

The following hypothesis is formulated to guide this study.

 $H_0$ : 1 There is no positive relationship between effective learning and entrepreneurship development in Nigeria.  $H_A$ : 1 There is a positive a relationship between effective learning and entrepreneurship development in Nigeria.

#### 2 REVIEW OF RELATED LITERATURE

# 2.1 Conceptual Clarification

It will be necessary define some words as they are used operationally. This words are Learning and Entrepreneurship.

Learning is defined as relatively permanent change in behavior as a result of reinforced practice. The change in behavior does include change due to illness, fatigue, maturation and use of intoxicants (Chauhan, 1985).

The term entrepreneurship was first used by Richard Cantillion, an Irish living in 1755; Cantillion claimed that the essence of the function of the entrepreneur is to bear risk. According to Ijeoma(2005), the word entrepreneurship may described in terms of specific functions which the entrepreneur performs or in terms of characteristics and generally associated activities which the entrepreneur is expected to perform. Banjoko (2003), states that entrepreneurs are the pivot on which the economy of a nation rotates and a nation that lacks entrepreneurs finds it difficult to industrialized and grow economically. Entrepreneurship can be developed through fiscal policies, training and guidance. Ejiogu(2004) summarized the concept as a person who identifies business opportunities and organizes the required resources to initiate successful business activity.

## 2.2 Conceptual Framework

Whereas entrepreneurs are individuals or persons, entrepreneurship is a process. It is based on this perspective that Hisrich, Peters and Shepherd (2005) posit that entrepreneurship is a process of creating something new with value by devoting the necessary time and efforts assuming the accompanying financial, psychological, behavioral and social risks and receiving the resulting rewards of monetary and personal satisfaction and independence. Dolliner (2008) perceives it as the creation of an innovative economic organization for the purpose of gain or growth under conditions of risks and uncertainty. To Thorbjorn and Richard (2008), entrepreneurship is the act of creating a new combination that ends one economic order and clears the way for a new one. These views of entrepreneurship include all enterprises in new fields or in older ones at all economic levels (that is at all levels of business whether small or big enterprise e.g. Agriculture, Manufacturing, Distribution, Processing and Services).

The development of entrepreneurship boils down to a fairly simple principle that human beings are endowed with the urge to create or to bring into being something that has never existed or never worked so well before (Ile, 2001).

Schumpeters (1934) describes entrepreneurship as a process of innovation, the carrying out of new combinations of already existing productive means.

The understanding of business mentoring and learning process relating to entrepreneurship development is of great importance. The learning process that is involved in business and entrepreneurship development is poorly understood, yet programmes have been devised and interventions are made in entrepreneurship development (Sullivan, 2000). Furthemore, Sullivan (2000) posits that business mentoring is a means of supporting new-start entrepreneurs through the provision of "expert" help and assistance in overcoming problems. The business mentor gives the entrepreneur a useful insight into running a business perhaps through learning from the mentor's previous experience.

Beach (1980) defines entrepreneurial learning as the human process by which skills, knowledge, habit and attitude are acquired and altered in such a way that entrepreneur's behavior is modified.

Perhaps most crucially, this definition highlights learning as achieved only where it becomes or leads to some intention to behave in a modified way. Another view comes from Kolb (1984) who stated that learning was experiential, "a process whereby concept are derived from and continuously modified by experience ... an emergent process whose outcomes represent only historical record not knowledge of the future". This concept of "emergence" or continuous development is one that sits well with contemporary thought and the ideology" of such as total quality management and organizational learning. As report in Rae and Carswell (1999), Watson and Harris (1999) believe that the notion of emergence can help us explore how people learn continually through changing, doing, experimenting and redefining their sense of how they work in a whole life process of development. It may also be argued that learning entails "not only a process of adaptive learning in order to cope with change and survive, but also what has been deemed as "generative" learning which embodies the capacity to create and "bring forward" experience, rather than wait for (and learn from) it". This process may also include bringing forward the learning of the customer and other stakeholders (Hamel and Prahalad, 1994).



#### 2.3 Theoretical Framework

This study is anchored on two sets of theories namely: Social Cognitive Career Theory( SCCT) propounded by Lent Brown and Hackett (1994) and Behavioral –Elastic Model by John Kunkel.

In essence, "Social Cognitive Career Theory" (SSCT) proposes that career interests, goals and choices are related to self-efficacy, beliefs and outcome expectations. Based on this, mentoring and learning activities that enhance entrepreneurs' self-efficacy and outcome expectations will increase their interest and goals for an entrepreneurial career. SSCT is, therefore chosen among various entrepreneurship models because it holds some premise on the front of prediction and inculcation of entrepreneurial behavior which business mentoring and learning are meant to achieve. Self-efficacy is the people's judgments of their capabilities to organize and execute course of action required to attain designated type of performance. Whereas self-efficacy is concerned with "Will I be able to do this "outcomes are concerned with "If I do this, then what will be the result?" Entrepreneurship mentoring envisions and is characterized by a systematic cultivation and development of the natural entrepreneurial skills by inculcation through instruction and training.

The Behavorial-Elastic Model as cited by Agbaeze(2007) posits that entrepreneurship is a function of past and present social structure milieu; adding that it is influenced by identifiable sociological factors. His emphasis is on reward and punishment syndrome. Entrepreneurship pursuit in this context involves calculable risks and an associated reward. It is the societal values and norms that determine the entrepreneurial skills. He concludes that certain government policies in this regard could facilitate or discourage entrepreneurship (Kunkel as cited by Agbaeze, 2007).

## 2.4 Roles of Business Mentoring in Entrepreneurship Development

Business Mentoring takes place in a variety of social- economic contexts and as such its precise role may change depending on the environment and the objectives of that mentoring relationship. While a mentoring cannot effectively "lecture" to an individual entrepreneur's prior experience, they may be in a position to give meaning to or aid understanding of that experience (Sullivan, 2000)

The role of the mentor is to enable the entrepreneur to reflect on actions and perhaps to modified future action as a result; it is about enabling behavioral and attitudinal change. In all, it is about facilitation that enables the entrepreneur dissect, reflect and learn from what could be termed "critical" incidents". This type of research is supported by work undertaken by Deakins and Freel (1996) that revealed that the entrepreneur acquires the ability to learn through experience and that learning process appeared to be the result of critical incidents in which the entrepreneur required to make strategic and/or operational decisions. Such an approach (of experiential learning) is evident in the thoughts of Williams (1998) that is goal directed, experiences are the substance from which learning emerges; beliefs- i.e. norms and values, and through them behavior- reflect achieved learning. Perhaps of greater importance, in this context, is the view of entrepreneurs who, when asked by Choueke and Armstrong (1992) to identify which format of learning was influential in their personal development responded: Past experience (95 percent of the sample), Learning from colleagues (61percent) and Self –learning (54 percent). Again such a view was supported through earlier work by Armstrong (1990) that also found experience to be the major source of learning. If we accept such findings then we need to find ways to help entrepreneurs to reflect on any learning from critical incidents In other words, we need to encourage and facilitate double-loop learning.

# 2.5 The Nature and Timing of Support

Assuming that entrepreneurial teaching is largely experiential then one must consider the notion that entrepreneurs may demand specific skills and encounter specific incidents at certain times in their career. In particular, we would wish to support entrepreneurs as and when they have experienced a critical incident in order to facilitate double-loop learning.

In attempting to recognize the evolution of entrepreneurs and their .enterprises "a life cycle approach or model" would usefully reflect the types of challenges businesses encounter as they mature. One such model is the Churchill Phase of Management Model. Essentially, Churchill portrays business moving through a life-cycle over which the managerial needs and, therefore, the nature of support required would alter. The phase of management and the challenges likely to be encountered in each phase are shown in table 1.



**Table 1: Phases of Management** 

Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	
	Survival	Stabilization	Growth	Rapid Growth	Resource maturity	
			Orientation			
Develop	Sufficient	Maintain customer	Developing	Maintain	Control financial	
variable	sales for	base and market niche	resources and	adequate	gain from growth	
product/service	breakdown		sales for	cashflow and	and eliminate	
			growth	establish	inefficiencies	
				expense		
				controls		
Deliver	Generate cash	Eliminate problems	Develop	Increasing	Professionalizing	
product/service	to grow, pay	draining cash	management	customer	management,	
	expenses,		and internal	based and	finance, budget,	
	service in		systems to	market share	etc.	
	business		growth			
Develop an	Continue	Company can stay	If cashflow	Professional	Well developed	
adequate	business	here learning	outstrips	managers may	financial resources	
customer base	development	environmental/other	growth, firm	replace		
	within niche	changes	may drop	original owner		
			back to			
			earlier phrase			
			or go			
			bankrupt			

Source: Adapted from Churchill and Lewis, 1983.

In response to meeting such challenges, Churchill's work identified the management of leadership skills that entrepreneurs received as being of most important during each particular phase as shown in Table 2

Table 2: Top Ten Management/Leadership skills Per Phase

Phase1	Phase 2 Survival	Phase 3	Phase 4 Growth	Phase 5 Rapid	Phase 6 Resource	
	r nase 2 Sulvival	Stabilization	Orientation	Growth	Maturity	
Conception	F' '1				,	
Communication	Financial	Financial	Communication	Communication	Communication	
	Management	Management				
Administration	Communication	Vision	Motivating others	Vision	Motivating others	
Vision	Marketing	Planning and	Financial	Planning and goal	Financial	
		goal setting	management	setting	management	
Time	Vision	Communication	Vision	Financial Planning and		
Management				management	setting	
Planning/goal	Motivating	Motivating	Planning/ goal	Problem solving	Problem solving	
setting	others	others	setting	decision making	decision making	
Human resources	Planning/ goal	Relationship	Relationship	Relationship	Customer/vendor	
	setting	building	building	building	relations	
Business and	Customer/	Problem solving/	Business technical	Motivating self	Ethics/culture	
technical	vendor relations	decision making	knowledge		knowledge	
knowledge					-	
Financial	Employee	Employee	Problem	Leadership/manage	Motivating self	
management	development	development	solving/decision	ment skills	, and the second	
			making			
Problem	Problems	Marketing	Leadership/	Human resources	Leadership/	
solving/decision	solving/ decision		management skills		management skills	
making	making					
Leadership/	Business/	Business/	Human resources			
management	technical	technical				
skills	knowledge	knowledge				

Source: Adapted from Churchill and Lewis, 1983.

The original Churchill Lewis model (1983) was revalidate and updated as the result of additional research. This research found that while there are distinctive and predictable stages in growth, these do not necessarily happen



sequentially. It was therefore felt proper to rename stages as phases to highlight the non-sequential nature of the model. This fits the research conducted by Deakins and Freel (1996) that learning and ability progress in a series of disconnected jumps which depend on the experience of the entrepreneur.

Onyeizugbe (2011) posits that National University Commission in Nigeria has not pursued that implementation of policy on business mentoring and entrepreneurial learning to fully exploit the potentials of the entrepreneurs usefully. Williams (1998) developed a process model of organizational learning that incorporates four common characteristics of individual and organizational learning namely:

- Goal-directed-organizational learning occurs within context of the mission and strategic goals of the organization.
- Based on experience- consisting of the confirming/disconfirming experiences of decision-making agents, e.g. top management teams
- Impacts behaviors and cognition- Beliefs of the decision making agents, particularly beliefs relating to powerful stakeholders, are formed, strengthened, or weakened as a result of these experiences.
- Changes are relatively stable- Once beliefs are commonly held; they become embedded in the culture of
  the organization through associated artifacts. Organization culture is therefore, an input as well as an
  output of learning experiences.

## 3 METHODOLOGY

This study is limited to six states in Nigeria. The selected states are Rivers state, Anambra state, Lagos state, Benue state, Kaduna state and Borno state. These states were selected from the six geo-political zones of Nigeria via simple random sampling technique. From the 6 states, a sample of 131 people was selected through proportionate stratified random sampling method. Data for this study were collected from both primary and secondary sources. The primary data were collected from systematically planned questionnaire administered to the members of the sample. Added to this were oral interviews conducted with some members of the sample essentially to elicit their views, opinions, attitudes and preferences regarding business mentoring and entrepreneurship development in Nigeria. The structured questionnaire instrument was validated to ensure that it measured what it is supposed to (adequate coverage of the research topic), construct validity (capacity of the instrument, to actually measure the meaning of the concept/construct of the research). Some copies of the questionnaire were given to some selected members of the respondents. The aim was to ascertain the extent to which they understood the content of the instrument. Using Spearman's rank correlation approach, the reliability of the instrument was ascertained.

The secondary data were obtained basically from journals as well as texts. The secondary data were adjudged to be reliable because they were published by renowned authors.

The data obtained were presented in tables and corresponding values expressed in percentages. Pearson Product Moment Correlation was used for testing the hypothesis and t-test was used for testing the level of significance of the correlation at 5% error and 2-degrees of freedom.



#### 4 DATA ANALYSIS

Table 3: Contingency Table on the Correlation between Effective Learning and Entrepreneurship Development in Nigeria

Paired observation of x and y, n = 5	Business mentoring can facilitate the acquisition of entrepreneurial skills among Nigerians		$x^2$	y <sup>2</sup>	ху
Strongly agree	42	40	1764	1600	1680
Agree	36	41	1296	1681	1476
Indifference Disagree	22	21	484	441	462
Strongly disagree	17	16	289	256	272
Total	14	15	196	225	210
	131	131	4029	4203	4100

Source: Field survey, 2013.

If we refer to the computation in Annexure  $A_1$  and  $A_2$ , we have the following:

The sampled correlation coefficient r = 0.98

Coefficient of determination  $r^2 = 0.9604$ 

Number of paired observations n=5

Critical value of t= 3.182

Calculated value of t=8.54

Source: Statistical Analysis (Annexure  $A_1$  and  $A_2$ ). The computation of r using data in table 3 gave a value of 0.98. This indicates that there is a positive relationship between effective learning and entrepreneurship sdevelopment in Nigeria.

A necessary and sufficient condition (NASC) for us to make inference about the population based on the sample correlation coefficient (r) is to test for the significance of the correlation.

In other words, at 5% error can we conclude that the population correlation coefficient is different from zero or whether the value obtained above could be attributed to chance? The test to achieve this is test of significance of correlation coefficient.

Still referring to annexure  $A_1$  and  $A_2$ , we have:

Ho:  $\rho = 0$ , the correction in the population is zero.



 $H_A$ :  $\rho \neq 0$ , the correlation in the population is different from zero.

Critical value of t=3.182

Calculated value of t=8.54

#### **Decision rule:**

Reject Ho if the calculated t is less than -3.182 or greater than 3.182.

Do not reject Ho if the calculated t lies between -3.182 and 3.182.

#### **Decision:**

Since calculated t is greater than 3.182, we reject Ho and then conclude that the correlation in the population is different from zero.

By inference from this analysis, we reject the null hypothesis. And, by extension, we accept the alternate hypothesis which states that there is a positive relationship between effective learning and entrepreneurship development in Nigeria.

#### 5. FINDINGS

The findings of the test of the hypothesis show that there is a significant positive relationship between effective learning and entrepreneurship development. This is in line with the position of Armstrong (1990) that learning from critical incidents (double-loop learning) can affect the development of entrepreneurs. This finding is also in line with Churchill phases of management model which portrays entrepreneurship business as moving through a life-cycle over which the entrepreneur needs to learn from the mentor in tackling the challenges of the business life cycle. This also supports the view of Argyris (1992) that entrepreneurs require effective learning capability if they are to succeed in a complex, competitive and challenging business world.

# 6. CONCLUSION

The importance of effective learning to entrepreneurship development in Nigeria is beyond reasonable doubt in ever-changing dynamic business world. We believe that effective learning is well-served through a mentoring relationship where entrepreneurs are encouraged to engage in reflective learning. We believe that the support of a mentor with suitable skills, knowledge and experience together with access to appropriate expertise elsewhere represents an effective support system. Such as the Churchill and Lewis life cycle development approach could prove useful in identifying the skills and knowledge to be required at developmental phases, but the point at which specific entrepreneurs and business reach those phases is likely to differ. It is the mentors who could provide a useful service in identifying development where knowledge and skills are required and give support in accessing the appropriate training or other provision to meet identified needs.



#### 7. RECOMMENDATIONS

Based on the findings, it is imperative that steps should be taken to enhance business mentoring for entrepreneurship development in Nigeria. The National University Commission should as a matter of urgency introduce business mentoring in the University curricula to fully exploit the potentials of entrepreneurs. There is, however, a need for additional longitudinal research into the long-term impact of mentoring relations vis-a-vis other support mechanisms, and, of cost-benefit analysis of various options over the longer term. Those responsible for supporting new-start programmes require engaging in some analysis as to the effectiveness of alternative programmes of mentoring.

#### REFERENCES

Agbaeze, E.K.(2005), Development of Entrepreneurship: The Nigeria Perspectives. Enugu: Precision Publishers Ltd; 224P.

Armstrong, R.K. (1990), How Do Managers Learn? Unpublished Research paper, Lancaster University, CSML.

Banjoko, S.A. (2003), Entrepreneurship as a Pivot on which the Economy of a Nation Rotates. Lagos: University of Lagos Press.

Beach, D. (1980), Personnel: The Management of People at work, New York: Macmillan.

Churchill, N.C and Lewis, V.L. (1983), The Five Stages of Small Firm Growth, *Harvard Business Review*, 53:43-54

Deakins, D. and Free L, M. (1998), Entrepreneurial Learning and the Growth Process in SMEs', the Learning Organization, 5(3).

Dolliner, M.J. (2008), Entrepreneurship Strategies Resources, Delhi: Pearson Education.

Hailey, J. (1993), Training for Entrepreneurs: International Perspectives on the Design of Enterprise Development Programmes, Cranfield Working Paper, No 49, Cranfield School of Management.

Ejiogu, A. (2004), Factors that Influence Behavior. Lagos: Panaf Printing Press.

Hamel, G. and Prahalad, C.K. (1994), Competing for the Future, Boston: Harvard Business Press.

Hisrich, R.D; Peters, M.P and Shepherd, O. I. (2008), Entrepreneurship, New Delhi: Teta, McGraw Hill.

Ile, N.M. (2001), Entrepreneurship Development. The Nigerian Perspective, Umuahia: Distinctive Press.

Kolb, D.(1984), Experiential Learning: Experience as a Source of Learning and Development, NJ: Prentice Hall, Englewood.

Onyeizugbe(2011), Entrepreneurship Education as an Imperative for Self – Reliance. A Paper Presented at Tansian University, Oba, Anambra State on Students` Orientation Week, November 2011.

Rae, D. and Carswell, M. (1994), Understanding Entrepreneurial Learning. Development of a Conceptual Model and its Application in the Design of more Effective Learning Experiences.

Schauhan, S.S(1985), Advanced Educational Psychology. India: Vani Educational Books, 487P.

Schumpeter, J.A. (1934), The Theory of Economics Development, Cambridge: Harvard University Press.

Sullivan, R.(2000), Entrepreneurial Learning and Mentoring. International Journal of Entrepreneurial Behaviour and Research, 6(3):160-175.



Thorbjorn, K. and Richerd, S. (2008), Capital Entrepreneurship making Project through the Unmaking of Economic Orders, University of Southern Denmark.

Watson, T. and Harris, P. (1999), The Emergent Manager, London: Sage.

Willams, A. (1998). Organizational Learning and the Role of Attitude Surveys, *Human Resource Management Journal*, 8(4).

# ANNEXURE A<sub>1</sub>

Computation of Hypothesis 1 Results Based on the Data Collected from the Respondents and Test of Level of Significance for the coefficient Correlation.

Recall that Pearson's product moment correlation coefficient for a sample is given by:

Using 
$$r = \frac{n\Sigma xy - \Sigma x\Sigma y}{\left[n\Sigma x^2 - (\Sigma x)^2\right] \left[n\Sigma y^2 - (\Sigma y)^2\right]}$$
 $n = \begin{cases} 5, \Sigma x = 131, \Sigma y = 131, \Sigma x^2 = 4029 \\ \Sigma y^2 = 4203, \Sigma xy = 4100 \end{cases}$ 
 $r = \begin{cases} 5(4100) - (131)(131) \\ \left[5(4029) - (131)^2\right] \left[5(4203) - (131)^2\right] \end{cases}$ 
 $= \begin{cases} \frac{3339}{3391.21} = 0.98 \end{cases}$ 

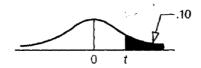
Coefficient of determination  $r^2 = (0.98)^2 = 0.9604$ 

Recall that the formular for the t-test for the correlation coefficient is given by

$$t = r \sqrt{\frac{n-2}{1-r^2}} ; \text{ with } n-2 \text{ degrees of freedom}$$
 Substitute 
$$r = 0.98, \qquad n=5, \text{ to obtain:}$$
 
$$t = 0.98 \sqrt{\frac{5-2}{1-(0.98)^2}} = 0.98 \sqrt{\frac{3}{1-0.9604}}$$
 
$$= 8.54$$



# ANNEXURE A<sub>2</sub> Student's t Distribution



	}	Level of Significance for One-Tailed Test					
df	0.10	0.05	0.025	0.01	0.005	0.0005	
	Level of Significance for Two-Tailed Test						
	0.20	0.10	0.05	0.02	0.01	0.001	
1	3.078	6.314	12.706	31.821	63.657	636.619	
2	1.886	2.920	4.303	6.965	9.925	31.599	
3	1.638	2.353	3.182	4.541	5.841	12.924	
4	1.533	2.132	2.776	3,747	4.604	8.610	
5	1.476	2.015	2.571	3.365	4.032	6.869	
6	1.440	1.943	2.447	3.143	3.707	5.959	
7	1.415	1.895	2.365	2.998	3.499	5.408	
8	1.397	1.860	2.306	2.896	3.355	5.041	
9	1.383	1.833	2.262	2.821	3.250	4.781	
10	1.372	1.812	2.228	2.764	3.169	4.587	
11	1.363	1.796	2.201	2.718	3.106	4.437	
12	1.356	1.782	2.179	2.681	3.055	4.318	
13	1.350	1.771	2.160	2.650	3.012	4.221	
14	1.345	1.761	2.145	2.624	2.977	4.140	
15	1.341	1.753	2.131	2.602	2.947	4.073	
16	1.337	1.746	2.120	2.583	2.921	4.015	
17	1.333	1.740	2.110	2.567	2.898	3.965	
18	1.330	1.734	2.101	2.552	2.878	3.922	
19	1.328	1.729	2.093	2.539	2.861	3.883	
20	1.325	1.725	2.086	2.528	2.845	3.850	
21	1.323	1.721	2.080	2.518	2.831	3.819	
22	1.321	1.717	2.074	2.508	2.819	3.792	
23	1.319	1.714	2.069	2.500	2.807	3.768	
24	1.318	1.711	2.064	2.492	2.797	3.745	
25	1.316	1.708	2.060	2.485	2.787	3.725	
26	1.315	1.706	2.056	2.479	2.779	3.707	
27	1.314	1.703	2.052	2.473	2.771	3.690	
28	1.313	1.701	2.048	2.467	2.763	3.674	
29	1.311	1.699	2.045	2.462	2.756	3.659	
30	1.310	1.697	2.042	2.457	2.750	3.646	
40	1.303	1.684	2.021	2.423	2.704	3.551	
60	1.296	1.671	2.000	2.390	2.660	3.460	
120	1.289	1.658	1.980	2.358	2.617	3.373	
∞	1.282	1.645	1.960	2.326	2.576	3.291	

Source: Lind, Mason and Marchal (2000). Basic Statistics for Business and Economics. Boston: McGraw-Hill Inc.

This academic article was published by The International Institute for Science, Technology and Education (IISTE). The IISTE is a pioneer in the Open Access Publishing service based in the U.S. and Europe. The aim of the institute is Accelerating Global Knowledge Sharing.

More information about the publisher can be found in the IISTE's homepage: <a href="http://www.iiste.org">http://www.iiste.org</a>

# CALL FOR PAPERS

The IISTE is currently hosting more than 30 peer-reviewed academic journals and collaborating with academic institutions around the world. There's no deadline for submission. **Prospective authors of IISTE journals can find the submission instruction on the following page:** <a href="http://www.iiste.org/Journals/">http://www.iiste.org/Journals/</a>

The IISTE editorial team promises to the review and publish all the qualified submissions in a **fast** manner. All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Printed version of the journals is also available upon request of readers and authors.

# **IISTE Knowledge Sharing Partners**

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digtial Library, NewJour, Google Scholar

























