A STUDY OF TECHNOLOGICAL CAPABILITIES AND INNOVATIONS IN THE FURNITURE MAKING INDUSTRY IN SOUTHWESTERN NIGERIA

BY

JIDE JOSEPH OBEMBE

B.Sc. (Economics) University of Ife

MBA (Management) University of Ibadan

M.Tech (Management) FUTA

A THESIS SUMBITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF DOCTOR OF PHILOSOPHY IN TECHNOLOGY MANAGEMENT,

AFRICAN INSTITUTE FOR SCIENCE POLICY AND INNOVATION, OBAFEMI AWOLOWO UNIVERSITY,

ILE IFE, NIGERIA

JUNE, 2013

POST GRADUATE THESIS

AUTHORIZATION TO COPY

AUTHOR: Jide Joseph OBEMBE

TITLE: A Study of Technological Capabilities and Innovations in the Furniture Making Industry in Southwestern Nigeria

DEGREE: Ph.D. (Technology Management)

YEAR: 2013.

I, Jide Joseph OBEMBE hereby authorize the Hezekiah Oluwasanmi library to copy my thesis, in whole or in part, in response to request from individual researchers and organizations for the purpose of private study or research.

Signature…… **Date**……..

CERTIFICATION

This is to certify that this research work was conducted by OBEMBE Jide Joseph and had been read and approved as meeting the requirements of African Institute for Science Policy and Innovation, Obafemi Awolowo University, Ile-Ife, Nigeria.

Professor M. O. Ilori

(Supervisor)

Professor J. B. Akarakiri

(Co-Supervisor)

Professor O. O. Jegede

Chief Examiner & Director of Institute

DEDICATION

This report is dedicated to the Almighty God and Oyeyinka, Boluwatife, Omobolanle, and Oluwamayomikun.

ACKNOWLEDGEMENT

All glory be to God Almighty, the author of all things, who saw me through this course of study. My special appreciation goes to my able indefatigable supervisor Professor M.O Ilori for his interest, guidance, inspiration, constant accessibility and brotherly advice all times to see the project to perfect completion. I am grateful to Prof. J.B. Akarakiri for his interest, availability all times, attention and advice to this research work to come to fruition.

I am grateful to Prof. O. O. Jegede, the Director of African Institute for Science Policy and Innovation for his valuable advice and encouragement throughout the course of this study. I am also grateful to my lecturers in the persons of Prof. T. O. Oyebisi, Prof. F.E. Ogbimi, Dr. I. O. Akinwunmi, Dr. I. A. Irefin and Dr. (Mrs.) G. O. Binuyo for their advice, motivation and inspiration throughout the course of this study.

I am greatly indebted to Dr. A. O. Abimbola, Prof. E. E. Okoko, Dr. J. O. Ojo, Dr. B. A. Oluwale for their contributions to the success of this course by carefully reading the manuscript of the study. I also thank Dr. M. A. Adegbite, Brother A. Olayinka for their innumerable contributions to the success of this study.

I thank my wife, who stood by me morally, spiritually and financially towards the glorious success of the programme. May God Almighty continuously bless you, Amen. I also thank Prof. S. O. Agunbiade and Mr. G. O. Abe who prayed, encouraged and supported me in this research work. Thank you all, God bless - Amen.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABSTRACT

The study assessed the level of technological capabilities in the furniture making industry in Southwestern Nigeria. It also examined the nature and extent of innovation as well as the factors influencing technological learning and innovations in the industry. Furthermore, it evaluated the effects of technological capabilities, innovations and clustering on the performance of the firms in furniture industry. This was with a view to recommending policy measures to enhance the innovative performance of the furniture makers.

The study covered Lagos, Oyo, Ondo and Ekiti States because of the predominance of the industry in these selected locations. The sample population consisted of 319 master furniture makers and 352 join man and apprentices. The questionnaire administered to master furniture makers/companies and elicited information on the bio-data of the respondents, their technological capabilities, the nature and extent of innovations generated and factors influencing technological learning and innovations in the industry. It also elicited information on the effects of the innovations on the performance of the furniture makers. The second set of questionnaires on the skilled join man and apprentices elicited information on the technological learning and the language used in instructing them. Personal observation and focus group discussion were employed to obtain more information on clustering advantages. Both descriptive and inferential statistics techniques were employed for data analysis.

The result showed that majority (75.5%) of the master furniture makers expended between ₦10000 and ₦200,000 in setting up their workshops. About 24.5% of the respondents invested between ₦200,001 and ₦2,000,000 in setting up their workshops. This showed that investment capability level of the industry was very low. The sources of investment of master furniture makers were mainly from

personal savings (74.0%), and family input (18.8%). The furniture makers had strong linkages with customers (4.25) and raw materials suppliers (4.03) and their associations (3.9) but little or no linkage with technical school, polytechnic, university and research institution. Learning in the industry was mainly through on the job training (91.5%). About 2.2% learnt furniture jobs through formal education while the remaining 6.3% learnt furniture skills through both formal education and on the job training. Over 67.8% of the respondents reported to have spent 3 - 4 years in learning their furniture skills, while about 14.7% claimed to have spent 4 - 5 years. Majority (76.7%) of the master furniture makers were trained using Yoruba language and also used Yoruba language to train their apprentices. There was a significant difference ($F = 10.82$; $P \leq 0.001$) among the reasons for embarking on modifying furniture products. These reasons include creativity, intrinsic, motivation, competition, social among others.

In conclusion, the furniture makers possess high minor change capability which had justified some innovations. However, their investment and linkage capabilities were very low. Policy measures to enhance innovative performance of the furniture makers were established, such as establishment of furniture clusters by states and local governments.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Technology is very critical for all activities in converting raw materials into commercial uses. Ilori (2006) described technology as systematic knowledge for the manufacture of products, for the application of processes or for rendering of services, including any integrally associated managerial and marketing techniques. This definition implies that there is no industry without technology. Therefore industry operates effectively and efficiently with the acquisition of technology. African countries lag clearly behind developed countries when it comes to accumulating technology capabilities, and upgrading.

Nigeria is the most populous country in Africa (Akintoye, 2008). The population totaled, 88,992,201 in 1991 and it was 140,003,542 in 2006 (National Beaureu of Statistics (NBS, 2007). More than 50% of the Nigeria population is engaged in agriculture. So also the country is one of Africa's most endowed economies, with abundance of both natural and human resources (Olufemi, 2005).

The Nigerian economy has grown out of recession to the path of recovery (NBS, 2007). There was a positive real Gross Domestic Product (GDP) growth rate between 2003 and 2007 but without a definite pattern. The real GDP which stood at 10.23% in 2003, rose significantly to 10.48% in 2004, but fell to 6.22% in 2007 (NBS, 2007).

From the analyses of both input and output indicators of technology development in Nigeria, it is clear that the country still has a long way to go to improve its technological capabilities, absorptive capacity and macroeconomic policy (Adewuyi, 2000). The output of research and development (R&D) is at a very low level. This is closely related to the level of

funding and the existing gap between research and development (R&D), institutions and the beneficiary as well as the industrial sector. For National Capacity to increase tremendously there is need for mutually-beneficial interaction among Universities, research institutes and private industries to develop the science and technology (S&T) base of the country (Adewuyi, 2000).

The manufacturing sector of the Nigerian economy has not been performing well. The output from the sector declined in 2004, as the index of manufacturing production fell by 1.0 percent. Production in the sub-sector was constrained by a number of factors, among which were: low aggregate demand, high cost of production, deficient infrastructural facilities and the relatively poor quality of "Made in Nigeria" goods. Investments under the small and medium industries equity investment scheme (SMIEIS) decreased from N4.67 billion in 2003 to N1.46 billion in 2004 (CBN, 2004).

The formal sector of the Nigeria economy depends mostly on imported technology. It has not performed impressively in recent years. This was evident from its fluctuation between growth and decline within the past three decades (Central Bank of Nigeria CBN, 2005). Between 1980 and 1985, the GDP registered negative growth of -3.4% per annum; however, between 1987 and 1995, it grew by 3.5% per annum. In 1998 and1999, the GDP growth was 2.4% and 2.7% respectively. However, it fell below the minimum 3.0% target for the year 2000. The average industrial capacity utilization in the same year stood at 31%, representing a marginal increase of 2% over the 1998 figure National Beaureu of Statistics (N B S, 2007).

The existence of low capacity utilization in the Nigerian industrial sector could be attributed to unavailability of spare parts. This makes industries dependent on imported technology, and not being able to replace the spare parts of old machinery when necessary hampers growth. Such machines become idle especially when these spare parts are not available in the market and their foreign manufacturers have advanced beyond such technology (Akerele,

2003). There is also the problem of lack of needed infrastructures for the economy to grow, especially power, road and water supply.

Imported technologies may be foreign to the recipient countries, thereby difficult to maintain. The non-availability of appropriate expertise to man the technology and the designed technologies that are not friendly to the environment may lead to higher running cost and inefficiency of the equipment imported. According to Stewart, (1982), the use of advanced country's technology often leads to advanced country`s techniques of management.

1.2 Statement of the Problem

Nigeria is self-reliant in furniture manufacturing because of the abundance of human and material resources. The industry has produced many innovations; however, there is not much documented information about the characteristics of these innovations. Similarly, there is a dearth of information on the technological capability of the operators of the industry in Nigeria. Many of the firms in the industry exist as stand-alone and in cluster forms. Also, the effects of clustering on the technological capabilities and innovations of the firms have not been established, hence the study.

1.3 Research Questions

The following research questions are addressed in the study:

(i) What are the technological capabilities possessed by the furniture making industry in southwestern Nigeria?

(ii) What are the nature and extent of innovations generated by the industry?

(iii) What are the factors influencing technological learning and innovations in the industry?

For more information, please **contact ir-help@oauife.edu.ng**