THE TRAINING OF ARTISANS FOR HOUSE BUILDING PROJECTS IN SOUTH WESTERN NIGERIA

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SUBMITTED IN FULFILMENT FOR THE REQUIREMENTS FOR THE DEGREE OF PHILOSOPHIAE DOCTOR IN CONSTRUCTION ECONOMICS IN THE FACULTY OF ENGINEERING, THE BUILT ENVIRONMENT AND INFORMATION TECHNOLOGY AT THE NELSON MANDELA METROPOLITAN UNIVERSITY

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DECLARATION

I**, ONI OLUWOLE JOSEPH** on this day 27th of August 2014 declare that:

- The work in this thesis is my own personal effort;
- Sources used or referred to have been acknowledged; and
- The thesis has not been submitted in full or partial fulfilment for the requirements of an equivalent or higher qualification in any recognized educational institution previously.

O.J. Oni

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ABSTRACT

The current shortage of artisans in the Nigerian house construction sector has constrained the productivity of the sector and exacerbated the nation's housing problem. The persistent neglect of the artisan training system has negatively impacted on the stock of artisans available for house construction projects. Nigeria's large and fast-growing population of over 140 million with an estimated growth rate of 3.2% has engendered increased investment in shelter provision; especially by individuals and families due to fast rising housing rentals-mainly in the urban centres. Past policies have not adequately addressed the realities of the skills crisis occasioned by inadequate and neglected apprenticeship training and poorly developed vocational education and training systems.

The fallout of this is manifested in the difficulties faced by developers in sourcing suitably qualified and experienced artisans for house construction projects. In response to this challenge, an upsurge of migrant artisans and craftsmen from neighbouring West African nations like Togo, Benin Republic and Ghana to Nigeria has occurred in the recent times. They were attracted by building contracting firms to fill the gap created by inadequate artisan supply that is currently being experienced locally. This development is totally unacceptable as it exacerbates the overarching socio-economic problems in Nigeria, especially the already high unemployment rate which is estimated to be 23.9%.

This study has consequently investigated the inadequate training of house construction artisans in South Western Nigeria; evolving interventions and developing a strategic model for improving the artisan training system to ensure an adequate and sustainable artisan supply in the house construction sector. The model incorporates best practices, rethinking strategies and integrated approaches in mitigating the identified challenges. The model is underpinned by reviewed literature and empirical findings. Quantitative surveys and interviews were utilised as the data sources.

The research findings show that the factors which negatively impact on the artisan training system in the house construction sector include: the poor image of artisans in society; lack of recruitment strategies for attracting potential artisans; inadequate policy framework for training and employment; a faulty and rigid National Qualification Framework (NQF); the non-participation of employers in training; a poor funding mechanism; a weak regulatory framework and corrupt practices in training administration.

Recommendations for addressing the inadequate training of artisans include education policy reforms to give priority to vocational education; a new regime of funding for vocational education and training; a review of the National Qualification Framework to integrate the

vocational colleges with the university system; a reform of the regulatory framework; public re-orientation on the societal image of the artisans; adoption of a new approach of public-private partnership in artisan training; the provision of incentives schemes to attract potential artisans and the appropriation of the proposed model for an integrated approach to addressing the challenges.

Key words: Training, Systems, Artisans, Improvement, Strategies, Nigeria

DEDICATION

This thesis is dedicated to the glory of God and my immediate family; my lovely wife Helen, and my amazing children, Favour, Goodness and Mercy for their sacrifice and support throughout the period of my absence from home in the preparation of this thesis.

TABLE OF CONTENTS

	DECLARATION	**i**
	ACKNOWLEDGEMENTS	**ii**
	ABSTRACT	**iii**
	DEDICATION	**v**
	TABLE OF CONTENTS	**vi**
	LIST OF TABLES	**xiv**
	LIST OF FIGURES	**xvi**
	LIST OF ACRONYMS AND ABBREVIATIONS	**xvii**
	CHAPTER 1 BACKGROUND TO THE STUDY	**1**
1.0	INTRODUCTION	1
1.1	BACKGROUND TO THE PROBLEM	1
1.1.1	Importance of human resources	3
1.1.2	Artisan shortages in the house building sector	3
1.2	THE PROBLEM STATEMENT	4
1.3	DELIMITATIONS	4
1.4	DEFINITION OF TERMS	5
1.5	ASSUMPTIONS	6
1.6	IMPORTANCE OF THE STUDY	6
1.7	AIM AND OBJECTIVES	8
1.8	THE STRUCTURE OF THE THESIS	8
1.9	CONCLUSION	10
	CHAPTER 2 THEORETICAL FRAMEWORK	**11**
2.0	INTRODUCTION	11
2.1	EDUCATION AND TRAINING EVALUATION	11
2.1.1	Approaches to education and training evaluation	11
2.1.1.1	Tyler’s model	12
2.1.1.2	Scriven’s model	13
2.1.1.3	Owen’s approach	13
2.1.1.4	Kirkpatrick’s model	14
2.1.1.5	Brinkerhoff’s approach	15
2.1.1.6	The input-process-output (IPO) model	16
2.1.1.7	Justification of the IPO model for this research	21
2.2	PREVIOUS STUDIES	22
2.3	CONCLUSION	27

CHAPTER 3 ARTISAN TRAINING MODELS AND THE STATE OF ARTISAN TRAINING IN NIGERIA 28
3.0 INTRODUCTION 28
3.1 MODELS OF ARTISAN TRAINING 28
3.1.1 The school-based model 28
3.1.1.1 Strengths of the school-based model 29
3.1.1.2 Weaknesses of the school-based model 29
3.1.2 The dual model 30
3.1.2.1 The strengths of the dual model 30
3.1.2.2 Weaknesses of the dual model 31
3.1.3 The informal training model 32
3.1.3.1 Strengths of the informal model 32
3.1.3.2 Weaknesses of the informal model 33
3.2 THE STATE OF ARTISAN TRAINING IN NIGERIA 33
3.2.1 The vocational technical college model in Nigeria 33
3.2.1.1 Inadequate funding 34
3.2.1.2 Inadequate physical infrastructure 35
3.2.1.3 Obsolete training facilities and equipment 35
3.2.1.4 Inadequate policies 36
3.2.1.5 Inefficient regulatory mechanism 37
3.2.1.6 Lack of continuous development of VET instructors 38
3.2.1.7 Parents and guardians 38
3.2.1.8 Inadequate curricula and textbooks 39
3.2.1.9 Quality of entrants 39
3.2.1.10 Weak recruitment strategies 39
3.2.1.11 Inadequate teaching and learning processes 40
3.2.1.12 Poor employers' participation in training 40
3.2.1.13 Assessment and certification 41
3.2.1.14 Graduates of the colleges 41
3.2.1.15 Employment 42
3.3 A REVIEW OF THE TRADITIONAL APPRENTICESHIP MODEL IN NIGERIA 42
3.3.1 The training providers 43
3.3.2 Funding and training facilities 43
3.3.3 Teaching and learning methods 43
3.3.4 Assessment and certification 43
3.3.5 Regulation 44
3.3.6 Employment 44

3.4 A PESTLE ANALYSIS OF CONTEXTUAL FACTORS IMPACTING ON THE ARTISAN TRAINING SYSTEM 45
3.4.1 The political environment in Nigeria 46
3.4.2 Economic environment 47
3.4.3.1 Poor public perceptions of artisans 48
3.4.4 Technological environment 48
3.4.5 Legal environment – unfavourable employment policy 49
3.4.6 Ethical factors 49
3.5 SUMMARY 50
3.5.1 Main problem 50
3.5.2 Sub-problems 50
3.5.3 Hypotheses 50
3.6 CONCLUSION 51
CHAPTER 4 INTERNATIONAL PERSPECTIVES ON ARTISAN TRAINING SYSTEMS 52
4.0 INTRODUCTION 52
4.1 THE UNITED KINGDOM (UK) 52
4.1.1 The challenges 52
4.1.2 Responses 52
4.2 MALAYSIA 53
4.2.1 The challenges 53
4.2.2 Responses 54
4.3 THE UNITED STATES OF AMERICA 55
4.3.1 The challenges 55
4.3.2 Responses 56
4.4 NEW ZEALAND 57
4.4.1 The challenges 57
4.4.2 Responses 58
4.5 SOUTH AFRICA 59
4.5.1 The challenges 59
4.5.2 Responses 59
4.6 SUMMARY 60
4.6.1 Main problem 62
4.6.2 The hypotheses 62
4.7 CONCLUSION 62
CHAPTER 5 RESEARCH METHODOLOGY 64
5.0 INTRODUCTION 64

5.1 RESEARCH DEFINITION AND PURPOSE 64
5.2 RESEARCH PHILOSOPHY 64
5.2.1 Philosophical worldviews / paradigms 65
5.2.1.1 The post-positivist paradigm 65
5.2.1.2 The social constructivist paradigm 66
5.2.1.3 The advocacy and participatory paradigm 67
5.2.1.4 The pragmatic paradigm 67
5.3 RESEARCH METHODOLOGY 68
5.3.1 Quantitative methodology 69
5.3.2 Qualitative methodology 70
5.3.3 The mixed-methods strategy 71
5.4 RESEARCH DESIGN 72
5.4.1 Justification for the research design and the methodology adopted for the study 72
5.5 PROCEDURE FOR DATA COLLECTION 73
5.5.1 Primary data 73
5.5.1.1 Survey 73
5.5.1.2 Interview 74
5.5.1.3 Focus group 75
5.5.1.4 Observation 75
5.5.2 Justification for primary data collection methods 76
5.5.3 Target groups 76
5.5.4 Unit of Analysis 77
5.6 RESEARCH INSTRUMENT 77
5.6.1 The questionnaire 77
5.6.1.1 Questionnaire development 77
5.6.1.2 The interviews 78
5.6.1.3 Identifying a sufficient sample size 78
5.6.1.4 Sampling for the interview 80
5.6.1.5 Secondary data 80
5.6.1.6 Literature Review 81
5.6.2 Pilot study 81
5.6.3 The criteria governing the admissibility of data 82
5.6.4 Validity 82
5.6.5 Reliability 83
5.6.6 Research ethics 83
5.7 DATA ANALYSIS 84

5.7.1 Data Cleaning 84
5.7.2 Analysis of qualitative data (Interview) 84
5.7.3 Analysis of quantitative data 85
5.7.3.1 Descriptive statistics 85
5.7.3.2 Mean scores 85
5.7.3.3 Inferential statistics 86
5.8 CONCLUSION 88
6 CHAPTER 6 DATA ANALYSIS AND PRESENTATION 89
6.0 INTRODUCTION 89
6.1 POPULATION DISTRIBUTION OF QUESTIONNAIRES AND RESPONSE 89
6.2 DEMOGRAPHIC INFORMATION 90
6.2.1 Company category 91
6.2.2 Profession 91
6.2.3 Gender of respondents 91
6.2.4 Ages of respondents 92
6.2.5 VT Colleges 92
6.2.5.1 Position of the respondents 92
6.2.5.2 Gender of respondents 93
6.2.5.3 Ages of respondents 93
6.2.6 Master artisans 93
6.2.6.1 Mode of training 94
6.2.6.2 Category of employment 94
6.2.6.3 Trade name 94
6.2.6.4 Gender of respondents 95
6.2.6.5 Age of respondents 95
6.2.6.6 Experience of respondents 95
6.3 RESPONSES FROM PROFESSIONALS AND EMPLOYERS 96
6.3.1 Responses from professionals and employers on VT Colleges 96
6.4 RESPONSES FROM THE COLLEGE MANAGEMENT AND STAFF MEMBERS111
6.4.1 Introduction 111
6.5 RESPONSES FROM THE MASTER ARTISANS 117
6.6 ANALYSIS AND PRESENTATION OF INTERVIEWS 121
6.6.1 Poor societal perception of artisans 121
6.6.2 Funding 121
6.6.3 Vocational teachers 122
6.6.4 Youth unemployment 122

6.6.5 Parental influence 122
6.6.6 Corruption and poor political leadership 122
6.6.7 Integration with the university system 123
6.6.8 Summary of the interview analysis 124
6.7 TESTING OF THE RESEARCH HYPOTHESES 124
6.7.1 Introduction 124
6.7.2 The research hypotheses 124
6.7.2.1 Hypothesis 1: Government policy framework for the training of construction artisans in the colleges is inadequate 125
6.7.2.2 Hypothesis 2: Government policy framework for the training of construction artisans in the traditional apprenticeship system is inadequate. 126
6.7.2.3 Hypothesis 3: The funding mechanism for the vocational education sub-sector is poor. 127
6.7.2.4 Hypothesis 4: The recruitment strategies for attracting new entrants into the artisan training in the colleges are ineffective. 128
6.7.2.5 Hypothesis 5: The coordination and regulation of the traditional apprenticeship system of artisan training is poor 129
6.7.2.6 Hypothesis 6: The National Qualification Framework under which the vocational college system of training operates is faulty. 130
6.8 RESEARCH FINDINGS 131
6.8.1 Introduction 131
6.8.2 Policy issues 131
6.8.3 Recruitment 132
6.8.4 Regulation 132
6.8.5 Funding 133
6.8.6 Physical infrastructure and training facilities 133
6.8.7 Staffing 134
6.9 CONCLUSION 134
CHAPTER 7 DEVELOPING STRATEGIES AND AN ARTISAN TRAINING MODEL 135
7.0 INTRODUCTION 135
7.1 THE STRATEGIC VISION 135
7.1.1 The current position 135
7.1.2 Artisan training best practices and results of the investigation 135
7.1.3 Key strategic issues 137
7.1.4 Identification of stakeholders 137
7.1.5 Roles of stakeholders 137
7.1.5.1 Roles of government 138
7.1.5.2 Roles of employers 138

7.1.5.3 Roles of training providers 138
7.1.5.4 Roles of parents and guardians 139
7.1.5.5 Roles of trainees 139
7.2 IMPLEMENTATION PLAN 139
7.2.1 Paradigm shift on the image of vocational education and training in society 139
7.2.2 Effective collaboration between stakeholders 139
7.2.3 Integration of vocational training with the general education 140
7.2.4 Capacity building for artisan instructors 140
7.3 THE PROPOSED MODEL FOR ARTISAN TRAINING SYSTEM IN NIGERIA 140
7.3.1 The basis for the artisan training model 140
7.3.2 The motivation for the artisan training model 141
7.3.3 The construction of the model 142
7.3.4 The details of the artisan training model 143
7.3.5 How to apply the model 150
7.4 CONCLUSION 151
8 CHAPTER 8 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS 152
8.0 INTRODUCTION 152
8.1 RESEARCH OVERVIEW 152
8.2 ACHIEVEMENT OF THE RESEARCH OBJECTIVES 152
8.2.1 Objective 1 153
8.2.2 Objective 2 153
8.2.3 Objective 3 154
8.2.4 Objective 4 154
8.2.4.1 Regulation and coordination 154
8.2.4.2 Funding and infrastructure 155
8.2.4.3 Recruitment 155
8.2.4.4 Employers' participation in training 155
8.2.4.5 Objective 5 155
8.3 LIMITATIONS OF THE STUDY 156
8.4 GENERAL CONCLUSION 157
8.5 RECOMMENDATIONS 157
8.5.1 Recommendations for government / policy makers 157
8.5.1.1 Leadership and policy 157
8.5.1.2 Regulatory framework 158
8.5.1.3 Funding mechanisms 158
8.5.1.4 National qualifications framework 159

8.5.1.5 Private sector participation 159
8.5.2 Recommendations for the Nigerian construction industry 160
8.5.3 Recommendations for education ministries / training providers 160
8.5.4 Recommendations relating to effective collaboration between stakeholders 160
8.5.5 Recommendations for research and academics 161
8.6 CONTRIBUTION TO KNOWLEDGE 161
8.7 AREAS FOR FURTHER RESEARCH 161
REFERENCES **163**
ANNEXURE A **180**
ANNEXURE B **193**
ANNEXURE C **200**
ANNEXURE D **207**
ANNEXURE E **211**

LIST OF TABLES

Table 1.1: States and capitals in South Western geopolitical zone of Nigeria 5
Table 3.1: The education allocation as a percentage of the total annual national budget of Nigeria 34
Table 3.2: Vocational education budgetary allocation as a percentage of the education allocation 35
Table 5.1: Guide for the interpretation of results (a) 85
Table 5.2: Guide for the interpretation of results (b) 86
Table 5.3: Cronbach's alpha scale 88
Table 6.1: Vocational college management and staff 89
Table 6.2: Master artisans 90
Table 6.3: Professionals 90
Table 6.4: Company category 91
Table 6.5: Respondent profession 91
Table 6.6: Gender of respondents 92
Table 6.7: Age of respondents 92
Table 6.8: Position of the respondents 93
Table 6.9: Gender of respondents 93
Table 6.10: Ages of respondents 93
Table 6.11: Mode of training 94
Table 6.12: Category of employment 94
Table 6.13: Trade name 94
Table 6.14: Gender of respondents 95
Table 6.15: Age of respondents 95
Table 6.16: Experience of respondents 96
Table 6.17: Policy related factors affecting the training of artisans in the VT colleges 97
Table 6.18: Attraction of trainees to the VT colleges 97
Table 6.19: Government regulation of the VT colleges 98
Table 6.20: Funding of the vocational technical education subsector 99
Table 6.21: Impact of inadequate funding on the VT education subsector 99
Table 6.22: Factors affecting the competence of artisans produced from the VT colleges 100
Table 6.23: Policy factors impacting the TAT system 101
Table 6.24: Recruitment factors impacting the TAT system 102
Table 6.25: Effect of government regulation on the TAT system 103
Table 6.26: Funding of the TAT system 104

Table 6.27: The adequacy of the TAT programme 104
Table 6.28: Teaching and learning strategy under the TAT programme 105
Table 6.29: Regulation of the TAT programme 105
Table 6.30: Factors affecting the participation of employers in the artisan training Programme 106
Table 6.31: Factors affecting the morale of artisans from the two systems 107
Table 6.32: Strategies for improving the traditional apprenticeship system 108
Table 6.33: Strategies for improving the participation of employers in the artisan training . 109
Table 6.34: Strategies for improving the college system of training 110
Table 6.35: Recruitment and admission strategy 112
Table 6.36: Staffing in the VT colleges 112
Table 6.37: Teaching and learning strategy 113
Table 6.38: Student assessment policy and procedures 113
Table 6.39: Physical infrastructure, training facilities and library resources 114
Table 6.40: Regulatory mechanism: the NBTE as the regulatory body. 115
Table 6.41: Government policy and level of funding 115
Table 6.42: Administrative services 116
Table 6.43: Strategies for improving the VT College system of training 117
Table 6.44: Recruitment of new entrants to training 118
Table 6.45: Learning strategy 118
Table 6.46: Policy framework and funding of the training 119
Table 6.47: Government regulation of artisan training 119
Table 6.48: Proposed strategies for improving the training 120
Table 6.49: Test of means against reference constant (value) related to Hypothesis 1 125
Table 6.50: Test of means against reference constant (value) related to Hypothesis 2 126
Table 6.51: Test of means against reference constant (value) relating to Hypothesis 3 127
Table 6.52: Test of means against reference constant (value) relating to Hypothesis 4 128
Table 6.53: Test of means against reference constant (value) relating to Hypothesis 5 129
Table 6.54: Test of means against reference constant (value) related to Hypothesis 6 130
Table 7.1: Details of inputs component of the artisan training model 145
Table 7.2: Details of process component of the artisan training model 146
Table 7.3: Details of process component of the model continued 147
Table 7.4: Outputs and impacts components details of the model 148
Table 7.5: Context details of the model 149

LIST OF FIGURES

Figure 1.1: The content structure of the thesis 10
Figure 2.1: An IPO model of a general education system 18
Figure 3.1: Summary of challenges confronting the artisan training system in Nigeria 45
Figure 3.2: Contextual factors impacting on the artisan training system (PESTLE Model) ... 49
Figure 7.1: The proposed artisan training model for Nigeria 144

LIST OF ACRONYMS AND ABBREVIATIONS

AU	African Union
CBN	Central Bank of Nigeria
CIDB	Construction Industry Development Board
CITB	Construction Industry Training Board
IPO	Input-Process-Output
CSCS	Construction Skills Certification Scheme
FGN	Federal Government of Nigeria
FHA	Federal Housing Authority
HIA	Housing Industry Authority
ITF	Industrial Training Fund
NBTE	National Board for Technical Education
NDE	National Directorate of Employment
NHA	National Housing Authority
NQF	National Qualification Framework
VET	Vocational Education and Training
UNESCO	United Nations Educational, Scientific and Cultural Organisation

CHAPTER 1
BACKGROUND TO THE STUDY

1.0 INTRODUCTION

This thesis addresses the problem of artisans training for house building projects in South Western Nigeria. The problem of housing shortage is a major concern in many developing nations of the world. In Nigeria, it manifests itself in inadequate quantity and quality of houses. Artisan shortages have been identified as a major challenge to providing adequate housing in Nigeria (Jinadu, 2004:45; Akindoyemi, 2005:5). This study investigates the shortage of skilled artisans for house construction and develops strategies for improving the artisans training system for adequate house construction.

This chapter provides a background to the problem statement, which establishes the basis for the study. This is followed by delimitations and assumptions, which are clearly stated. Definitions of basic terms, the importance of the study and the aim and objectives are also highlighted. The chapter ends with the outline of the thesis.

1.1 BACKGROUND TO THE PROBLEM

This part covers the international housing situation, housing in Nigeria and the importance of human resources for the house construction process.

Housing has been accepted as one of the three basic needs of mankind. After the provision of food, it is the most important need for the physical survival of mankind (Agbola and Olaoye, 2008:2). The physical and moral well-being of a nation is greatly enhanced by adequate housing; it also boosts work efficiency, individual development and social stability. Housing has been one of the most suitable indices of a person's standard of living and other standing in the society (Osowe, 2011:10). Housing problems remain a global phenomenon in the developed and developing nations of the world; no single nation of the world can boldly claim to have addressed all the housing challenges of its people. The degrees and dimensions of the problem may vary from one country to the other. The housing situation in some selected countries is as follows:

- Ghana - The available statistics indicate that there is a critical national shortage of over 400,000 units. The annual national production capacity is estimated to be 42,000 units. According to Mahama (2009:2) an estimated 120,000 housing units would be needed annually to address the shortfall.
- Bolivia - This is a nation with a population of over 9 million people. Statistics here show that out of the entire national population, 58% live in huts which fall below the minimum living

conditions. The figure of homes that accommodate three or more people in one bedroom is estimated at 31% of the whole population (Habitat for Humanity, 2010a).

- Thailand - The National Housing Authority (NHA) of Thailand states that the substandard housing dwellers in the country are estimated at 8.2 million people. The situation in the capital, Bangkok is most critical because its population has grown to an estimated 11-12 million people (NHA, 2010:3).
- Australia - In Australia, the Housing Industry Association (HIA, 2011) reports that unless the nation increases the pace of house construction, the shortfall will jump to half a million housing units by the year 2020. The current gap is estimated to be 109,000 homes. It is projected that the population will grow from 22 to 36 million by 2050. This will exacerbate the housing affordability of the nation even more. In most regions and cities of Australia, the fact remains that well-located and affordable land for house construction is not available (HIA, 2011).
- United Kingdom - The United Kingdom (UK) is experiencing its worst housing crisis ever as part of the aftermath of the global economic meltdown (Stephens, 2012:270). Available statistics reveal that an average annual net supply of 150, 000 housing units are added, but against a government target of 240,000 units. This demonstrates a substantial shortage in level of output and is further worsened by the deterioration in affordability. Persistent under-supply creates the conditions in which inflationary trends may build up in the housing market (NHF, 2010:7).
- Brazil - Statistics relative to the Brazilian housing situation are staggering. The estimated national housing shortfall was put at 7.2 million units. Even more disturbing is the estimated figure of 5.5 million units of vacant properties. The realities in the cities are that there is acute overcrowding and perturbing housing deterioration. More than 50 million people are estimated to be dwelling in inadequate housing conditions (Habitat World, 2008).
- Nigeria - Nigeria has a population of over 140 million and an estimated growth rate of 3.2% (NPC, 2006). Consequently, Nigeria has an enormous housing deficit, estimated at 12-14 million housing units (Akeju, 2007:2; Aikhorin, 2008:4). At an estimated cost of N2.5 million per housing unit, Nigeria would need N35 trillion (about USD24 billion) to fund a housing shortfall of 14 million housing units.

Many factors are responsible for this acute housing problem the world over; these are entrenched in the components of the housing delivery system (Jinadu, 2004:112). They are listed below:

- Land;
- Finance;
- Human resources;
- Building materials;

- Government policies;
- Construction technology, and
- Regulatory mechanisms.

This study investigates the human resources aspect with specific focus on the shortage of artisans required for house construction in Nigeria. This has been identified by several authors as a major challenge to adequate housing provision (Jinadu, 2004:114; Akindoyemi, 2005:5; Agbola, 2005:10; Olaoye, 2007:12; Adeloye, 2008:2; Agbola and Olaoye, 2008:5; Nworah, 2008:3; UN-Habitat, 2008:6; Awe, Stephenson and Griffith, 2010:252; Eneh, 2010:41; Fatimilehin, 2010:5).

Despite the invaluable and colossal contribution that adequate housing makes to personal, family and national development, the challenge of sourcing adequate artisans for housing construction is a big constraint to adequate housing provision in Nigeria, as envisaged in the National Housing Policy of 2006 (Sanni and Alabi, 2008:16).

1.1.1 Importance of human resources

Osman-Gani (2004:1) identifies human resource as the single most important factor of economic development. Consequently, a strong emphasis on development of human resources and continuous investment in them is essential for the growth of any nation (Osman-Gani, 2004:1). In the view of Agbola and Olaoye (2008:9) human resource development is akin to economic growth and as such, serious attention must be paid to it. Human resources constitute the second largest single component of resource inputs required for house building; both the qualitative and quantitative supply of human resources are vital in the house building process (Jinadu, 2004:45). Skilled artisans such as masons and carpenters are central to the house construction process. Their shortage would hinder the realisation of housing provision.

1.1.2 Artisan shortages in the house building sector

Sanni and Alabi (2008:6) observe that persistent neglect of the artisan training system by government has led to drastic fall in enrolment of new intakes into the building trades. Consequently, this has created a gap between demand and supply of artisans. This gap became wider with increased investment in shelter provision especially by individuals and families due to the fast- rising housing rentals caused by pressure for accommodation, especially in the urban centres (Agbola, 2005:20). Dainty, Root and Ison (2004:280) contend that employers' indifference to investment in artisan training negatively impacts on the supply of the required workforce for construction work. In Nigeria, employers' participation in artisan training is almost non-existent. This further widens the gap between the demand and supply of skilled artisans. The consequences of this are manifested in the difficulties faced by developers in sourcing suitably qualified and experienced artisans for house construction projects. Adeloye (2008:2) laments that there is a lack

of trained artisans in the country, and that there is an urgent need to sort out an appropriate building construction training scheme that would focus on training artisans and reward those skills appropriately. According to Nworah (2008:3) there has been an upsurge of migrant artisans and craftsmen from Togo, Benin Republic and Ghana to Nigeria in recent times. They are recruited by building contracting firms to fill the gap created by the shortage of locally trained artisans.

1.2 THE PROBLEM STATEMENT

The inadequate training of artisans for the construction of houses is an impediment to housing delivery in South Western Nigeria. The demand for more housing units in Nigeria is increasing rapidly due to the exponential growth rate of its population. This was estimated at 3.2% by the Nigeria National Population Commission (NPC, 2006). Consequently, more construction artisans such as masons and carpenters are needed for house construction purposes. Jinadu (2004:160) submits that the rise in disposable income since democratic government returned in 1999 has impacted on the housing affordability of many public servants. Many of whom could not afford their own houses, are now able to own their houses, and are also in the process of building their own shelters. This has continued to impact on the demand for artisans.

The Federal Government of Nigeria (FGN) Vision 20:2020, a developmental plan to transform Nigeria to one of the first twenty economies of the world by the year 2020, is another point of concern that requires a large stock of artisans for its realisation. Housing construction forms one of the major physical infrastructure projects to be addressed in the plan, given the nation's enormous housing deficit. In the first National Implementation Plan (NIP) of Vision 20:2020, covering from 2010 to 2015, an estimated sum of one hundred and eighty billion Naira (USD1.2 billion) is to be spent on housing to construct 840,000 housing units (FGN-FNIP, 2010:49). Sourcing the required number of house construction artisans for this task is a big challenge that necessitates critical attention and an urgent response. The informal housing subsector which refers to housing stock built and owned by individuals and families inevitably requires a substantial chunk of trained artisans for the construction process. According to FGN (2009:34) the informal housing subsector accounts for 80% of housing delivery efforts in Nigeria. However, the current situation reveals that there is an acute shortage of these much needed artisans both in quantity and in quality for house construction processes.

1.3 DELIMITATIONS

The study was limited to five artisan trades within three states in South Western Nigeria. It includes all the vocational technical colleges in the three states. The trades include bricklaying, carpentry, plumbing, painting and electrical installation. These are the most commonly demanded trades for house construction works, and as such, form a proper representation of all the artisans. The study

area, the South Western zone of Nigeria, is made up of six states which are politically and characteristically divided into three major sections namely Lagos-Ogun; Oyo-Osun and Ondo-Ekiti sections. Each of the three sections is homogeneous as regards people, culture and other socio-political and economic characteristics (Ojuade, 2006:2). For proper representation, the study focuses on three states; one from each section of the zone is included for analysis. The six states within the zone are shown in Table 1.1. The study sample was limited to artisan employers, vocational college management and staff members, education ministries officials, master artisans and professionals like civil engineers in the study area. The thirteen vocational technical colleges in the study area were all sampled because of their limited number and the possibility that some may decline to participate in the research for the fear of revealing classified information.

Table 1.1: States and capitals in South Western geopolitical zone of Nigeria

State	Capital
Lagos	Ikeja
Ogun	Abeokuta
Oyo	Ibadan
Osun	Oshogbo
Ondo	Akure
Ekiti	Ado Ekiti

1.4 DEFINITION OF TERMS

The following will be used as the working definitions throughout the study.

- ***Apprenticeship:*** This is a form of on-the-job training which allows the apprentice to learn by observation and practice (Iyamu and Uwameiye, 2002:2-4). It is an agreement between a master-artisan and the apprentice, one in which the apprentice is trained for a specified craft or trade through practical experience under the supervision of the master-artisan.
- ***Artisan:*** Eneh (2010:38) posits that an artisan is a skilled manual worker who practises some trade or handicraft; a person who does skilled work with his or her own hands. Examples are masons, welders and plumbers.
- ***Education:*** According to Armstrong (2003:526) education can be described as the exposure to new ideas, concepts and knowledge in a relatively systematic way. Usually, the objective of it is to increase knowledge or to change attitudes and beliefs. The essence of education is the acquisition of the knowledge, understanding and the values needed in all areas of life instead of merely acquiring knowledge, skills and abilities on certain areas of work.
- ***Technical education:*** Technical education is that type of education that leads to the acquisition of skills, fundamental scientific knowledge and abilities. It is an organised programme of courses and training experiences which start with an exposure into career

options. It involves essential academic and life skills and enables attainment of high academic standards and preparation for work-related and further education (Maclean and Wilson, 2009:25).

- ***Training:*** Training is the process of acquisition of knowledge, skills, and abilities (KSA) through the teaching of vocational or practical skills and knowledge that relates to specific competencies (Buckley and Caple, 2005:45). It is a process of learning which concerns the acquisition of knowledge, development of skills, rules, and modifying attitudes with the goal of enhancing the capacity and performance of the trainee (Aamodt, 2007:13).
- ***Vocation:*** The Merriam-Webster Collegiate Thesaurus (2008:840) defines vocation as a particular trade, occupation, craft, business, profession or a calling. It can also mean the regular occupation for which a person is particularly suited or qualified.
- ***Vocational education***: Vocational Education is any type of education whose fundamental intention is to prepare persons for employment in recognised jobs. It has also been described as the aggregation of all educational experiences well-packaged and offered by an institution to help the learner to obtain basic work-related and practical skills (Oharisi, 2007:78). This is a type of education that teaches skills which are directly related to a specific job or profession, in contrast to generic education whose approach to a subject is essentially abstract. Specifically, vocational and technical education provides individuals with the skills necessary to become productive citizens in the workplace (Oni, 2006:3).

1.5 ASSUMPTIONS

Assumptions refer to the conditions that are accepted as true without proof (Leedy and Ormrod, 2003:5). In relation to the sub-problems, the following assumptions give direction to the understanding of the study as conceptualised:

- Obtaining information from artisan employers and construction professionals should not be difficult and that the data obtained from them would be reliable;
- Authorities of vocational and technical training colleges would grant easy access to needed data and such data would represent the true state of enrolment and graduation of trainees, and
- Master artisans would be readily available to give their unbiased opinion on artisan training and careers.

1.6 IMPORTANCE OF THE STUDY

There are two major systems for artisan training in Nigeria, namely the Vocational Technical Education system (Formal Training) and the Traditional Apprenticeship system (Informal Training).

A close look at these two reveals that they are performing poorly in the training and supply of an adequate number of artisans for house building processes (Olaoye, 2007:13).

Jinadu (2004:114) observes that human resource remains one of the major components of housing delivery system. This is evident at every stage of the house construction process especially in a developing nation like Nigeria, where most of the site operations are manually carried out. The success of these processes depends to a large extent on the adequate training of artisans. Therefore, an investigation into the perceived shortages of artisans both in quantity and quality will contribute immensely to efforts directed towards addressing housing shortages.

The American Educational Research Association (2006:33-40) explains some of the ways in which new research can be considered important and contribute to existing knowledge:

- If the study is a contribution to an existing line of theory and empirical research, it should clarify the contributions and also present the exact aspect in which the study contributes to advancing, testing, or elaborating that theoretical perspective.
- If a study is intended to establish a new line of theory, it should make clear what that new theory is, how it connects with other existing theories and evidence, the need for the new theory and the areas of the application.
- If the study is motivated by practical concerns, such concerns should be clearly spelt out, and the importance of the concerns should be clarified, and the way this investigation can address those concerns.
- If the study is motivated by a lack of information about a problem or an issue, it should make clear what information is lacking, its importance and how this investigation will address the inadequate information on the problem.

This study was motivated by practical concerns in the house construction subsector and the trend of development in the training of skilled artisans for housing delivery in Nigeria.

According to Olaoye (2007:129) both the traditional apprenticeship and the formal technical and vocational college systems that produce the skilled artisans needed for construction of houses have been operating at a diminishing rate in Nigeria. Sanni and Alabi (2008:22) maintain that most master artisans are ageing and have a low enrolment of apprentices to mentor. In the same vein, most technical colleges that were established primarily to feed the industries with skilled artisans have been poorly patronised lately (Olaoye, 2007:130).

Agbola (2005:9) argues that there is a mistaken assumption by policy makers that skilled artisans are readily available for housing delivery in Nigeria, consequently, little or no attention is paid to this problem area in policy formulation. Usiwoma and Mgbor (2005:334) submit that the artisan training system has failed to deliver due to poor policy formulation and implementation in Nigeria. There is also a perceived dearth of literature on artisan training for the construction industry

generally in Nigeria. It is against this backdrop that this research is being undertaken. It will not only make a significant contribution to the body of knowledge on artisan training for housing delivery, but will also develop appropriate strategies for adequate and sustainable training of artisans for adequate housing delivery.

1.7 AIM AND OBJECTIVES

The study is aimed at evaluating and developing strategies for improving the performance of the artisan training system for housing delivery in South Western Nigeria.

The specific objectives are to:

- Examine the existing trends in artisan training for house building projects in South Western Nigeria;
- Analyse the effects of government policies on the training of artisans for housing delivery;
- Appraise the models of artisan training for house building projects in South Western Nigeria;
- Identify the challenges militating against the adequate training of artisans for housing projects in South Western Nigeria, and
- Develop strategies and a model for the improvement of the artisan training system.

1.8 THE STRUCTURE OF THE THESIS

The study is reported in an eight chapter of a thesis consisting of the following:

Chapter 1: This chapter provides the background to the research. It describes the general state of artisan training system for the house construction process and the housing shortages internationally with particular reference to Nigeria. The chapter then introduces the formulation of the problem, a discussion of the research aim, objectives, justification, delimitation of the scope of the study and the research key assumptions. The chapter concludes with an outline of the thesis.

Chapter 2: This chapter presents the theoretical framework for the conduct of this research. It outlines the concepts and ideas underlining the research and connects it to the existing body of knowledge in which the research is located and it introduces the variables of the research and the general framework for data analysis. The chapter presents the model of a general education system using the input-process-output (IPO) model and a detailed critique of the IPO model as the theoretical framework for the study. It then justifies the adoption of the IPO model for this research.

Chapter 3: This chapter presents an appraisal of the alternative models of artisan training and a contextual review of artisan training models in Nigeria. It opens with a review of the three basic models of artisan training namely, the school-based model, the dual model and the informal model.

The strengths and weaknesses of these models are highlighted. The chapter closes with a review of the two artisan training models currently operational in Nigeria.

Chapter 4: This chapter presents a review of the literature on artisan training practices from other countries around the world as compared with what obtains in Nigeria. The chapter opens with the review of countries which include the UK, Malaysia, the United States of America, New Zealand and South Africa. It concludes with a synthesis of the various strands from the beginning of the thesis and prepares a basis for the empirical stage of the study.

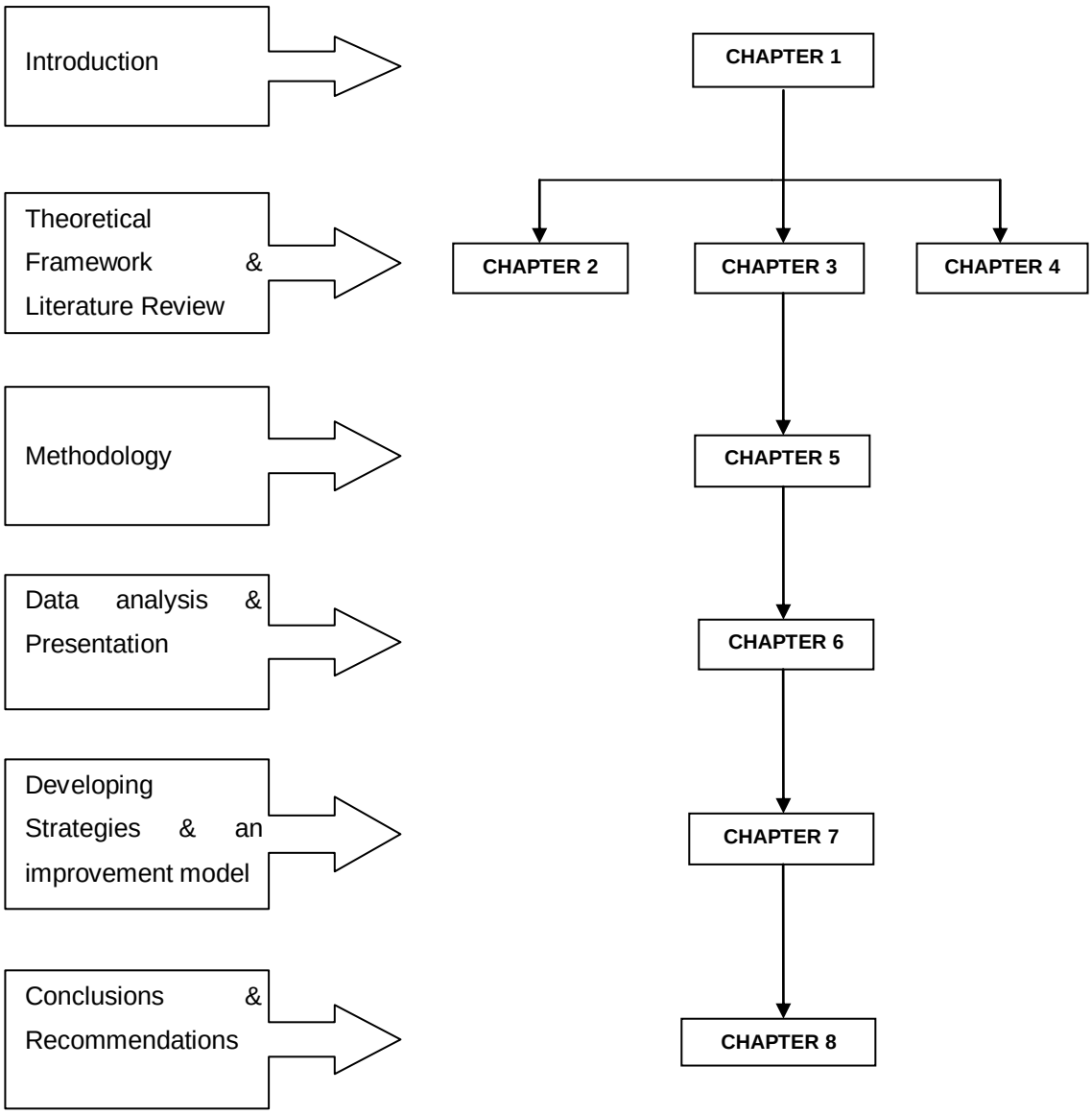
Chapter 5: This describes the methodology adopted for the conduct of the research. The chapter also justifies this research's philosophical position and the adopted methodology. It concludes by describing the research design / strategy, the data collection instruments, and the ensuing validity and reliability of the instruments.

Chapter 6: This chapter presents data as well as the analysis and discussion of the research results. Each section of the data generated is discussed with reference to the problem, sub-problems, hypotheses and the objectives of the study. This is followed by the testing of the formulated hypotheses.

Chapter 7: This chapter articulates the strategies for improving the artisan training system for the house construction sector in South Western Nigeria; it also proposes a model as an enabler of the strategies.

Chapter 8: In this chapter an overview of the research is presented, the achievement of the research objectives and a summary of the findings together with the conclusions and recommendations. Consideration is also given to the research limitations, its contribution to knowledge and the areas for further research. Figure 1.1 shows the content structure of the thesis.

Figure 1.1: The content structure of the thesis



1.9 CONCLUSION

Chapter One has established that a problem exists relating to artisan training for house construction in South Western Nigeria, and that this needs to be addressed. The literature has revealed that research on the training of artisans for house building purposes especially in Nigeria is still limited. This reinforces the need for this study and its contribution to reducing housing challenges and artisan shortages in the Nigerian construction industry at large. The next chapter presents the theoretical framework for the study.

CHAPTER 2
THEORETICAL FRAMEWORK

2.0 INTRODUCTION

This chapter presents the theoretical perspectives that are central to the conduct of this research. It outlines the concepts and ideas underlining the research with the purpose of establishing a footing for the rest of the research. It therefore connects the research to the existing body of knowledge in which it is located, and introduces the variables of the research and the general framework for the data analysis. The chapter opens with an appraisal of alternative approaches / models for education and training evaluation. It then proceeds to a review of the input-process-output (IPO) model as the theoretical framework for the study. After this, it justifies the adoption of the IPO model for this research.

2.1 EDUCATION AND TRAINING EVALUATION

The central concern of this research is the assessment and improvement of the artisan training system for house building projects in the study area. Training assessment and improvement is rooted in educational evaluation. According to Owston (2008:606) evaluation is the process of gathering information about the merit or worth of an object or a system for the purpose of improvement or making decisions about its effectiveness. Improvement is the concept of assessing the output of a particular system or process, and then modifying the system or process in order to increase the efficiency or the effectiveness. An evaluation is a course of action used to assess the value or worth of a system (Farell, *et al.* 2002:20). In the opinion of Darabi (2002:219-228) evaluation could be a set of research questions and methods geared towards reviewing processes, systems, activities and strategies for the purpose of improving them in order to achieve better results. The real purpose of an evaluation is not just to find out what happened, but to use the information to make the project or the system better. Evaluation is an integral part of all aspects of the education and training process. Evaluation is the reflective link between the dream of what should be and the reality of what is (Hansen, 2005:447-462; Kahan and Goodstadt, 2005:344; Preskill and Catsambas, 2006:5-22). Evaluation is a means to an end and not an end itself and in this case, the end is the improvement of the artisan training system.

2.1.1 Approaches to education and training evaluation

This research is set out to evaluate the artisan training system for house building projects in South Western Nigeria with the view to developing appropriate strategies for improving the training system. Improvement cannot be achieved without proper evaluation of the system in order to

ascertain what is working and what is not. Thereafter, appropriate improvement strategies can be developed. In order to realise this, there is a need to employ the most appropriate approach for the evaluation.

Stufflebeam and Shinkfield (2007:9) maintain that various evaluation approaches and models have been developed for different purposes and applied to a variety of objects. For instance, the Kirkpatrick evaluation model, Brinkerhoff's approach, Owen's evaluation model, the IPO model, Tyler's Model and Scriven's Model (Brinkerhoff and Dressler, 2003:11-16; Scriven, 2004:183-195; Kirkpatrick and Kirkpatrick, 2006: 11; Miller and Butler, 2008: 12-25).

Alternative evaluation approaches / models appraised in this research before a the decision on the appropriate one was taken include the following:

i) Tyler's model
ii) Scriven's model
iii) Owens approach
iv) Kirkpatrick's model
v) Brinkerhoff's approach
vi) IPO model

Each of these models is discussed in the following sections, highlighting the focus of each, and the limitations of each.

2.1.1.1 Tyler's model

The Tyler's evaluation model was developed by Ralph W. Tyler in the 1960s. It is an example of an objective-oriented evaluation model. Typically, the objective-oriented evaluation is an internal study done by a developer and the usual purpose is to determine whether the programme objectives have been achieved (Stufflebeam and Shinkfield 2007:160). Tyler's model was developed primarily for use in educational evaluation, and specifically, in curriculum modification and classroom objectives. Tyler's approach could be used in the guidance of student learning and could support the diagnosis and subsequent remediation of weaknesses in the learning process. It could also enable teachers to modify learning objectives. Therefore, making the curriculum to be more realistic in terms of learning (Stufflebeam and Shinkfield, 2007:160-161).

The limitations of Tyler's model

The limitations of Tyler's model are:

- The main attention of Tyler's model is focused on terminal processes that yield information only after a full cycle of the object of evaluation has occurred. Therefore, the information is neither timely nor pertinent for improving the object under evaluation;

- The information often obtained from Tyler's evaluation model is often far too narrow to constitute a sufficient basis for judging the merits and worth of the object;
- The model does not uncover the positive and negative side effects; and
- It may give credit to unworthy objectives (Stufflebeam and Shinkfield, 2007:161)

From the foregoing, it is clear that Tyler's model is not applicable to this research.

2.1.1.2 Scriven's model

Scriven's model was developed by Michael Scriven in 1967; it is an example of a consumer-oriented approach to evaluation. In the consumer oriented approach, the consumer acts as the enlightened evaluator. The focus of this approach is on assisting consumers to choose among competing programmes or products. The essential question asked by this evaluation is, "Would an enlightened consumer choose this programme or product?" Thus, the approach regards the consumer's welfare as the primary justification for the programme. Scriven's model was originally developed for curriculum evaluation (Scriven, 2004:183-195).

The limitations of Scriven's model

The limitation of Scriven's model is that it can be so independent of the programme staff that it might not assist in serving the consumers any better. Stufflebeam and Shinkfield (2007:205) argue that an evaluation of this kind conducted too early can stifle the creativity of the developers.

Based on the foregoing submissions, the Scriven model is too narrow in its focus and its purpose does not serve the goal of this research and therefore, it is not suitable.

2.1.1.3 Owen's approach

Owen's approach (Owen, 2006) is a typical adversary evaluation approach which adopts the legal paradigm for evaluation. The adversarial approach was developed in response to the dominant objectifying approaches to evaluation. Thus, two teams of evaluators representing two opposing views of the programme or product argue their cases based on the evidences (the collected data). A neutral panel of judges is appointed to decide which side has made a better case; and it gives a verdict after careful consideration of all the evidences presented (Alkin and Christie, 2004:12-63). Owen (2006) suggested that the major areas of application of his adversarial approach in educational evaluation to include exploring the values of a new and those of an existing curriculum; selecting new textbooks; revealing different interpretations of the same data by various representatives; informing teachers, supervisors and administrators; and arriving at the decision to be implemented.

The limitations of Owen's approach

Many of the limitations of this approach arise as a result of its competitive nature, the complexity of the process, and the need for skilled individuals who are willing to perform the various roles needed for a hearing. The main limitations of this approach are:

- This form of evaluation may provoke venomous debate; and the subsequent conflict may have a negative impact on the outcome of the evaluation;
- The focus of the evaluation may shift to assigning blame or guilt to various parties;
- As adversary-oriented models are conflict-based, the likelihood for reaching an agreeable outcome is thereby reduced;
- Key stakeholders are not always equally skilled, and articulate individuals are placed at an advantage;
- This method can be time-consuming and expensive;
- It is sometimes difficult for hearing members to develop specific, operational recommendations; and
- Time-limitations may only allow for a rather narrow focus (Miller and Butler, 2008: 12-25).

From the foregoing arguments, it is abundantly clear that Owen's adversarial approach to evaluation is not appropriate for this research as it cannot lead to the achievement of the goal of this research.

2.1.1.4 Kirkpatrick's model

Donald Kirkpatrick's four-level evaluation model is often employed for evaluating learning processes (Kirkpatrick, 2006:5). It was first published in a series of articles in 1959 in the Journal of American Society of Training Directors and later in 1994, it was published in a book entitled "Evaluating Training Programmes". This model is designed for the evaluation of training and developmental programmes but its focus is on the impact of short-term organisational training programmes for employees. It focuses on four levels of training outcomes: reactions, learning, behaviour, and results. The major question guiding this kind of evaluation is, "What impact did the training have on the participants in terms of their reactions, learning, behaviour, and organisational results?" (Kirkpatrick and Kirkpatrick, 2006:11).

The four steps of evaluation consist of**:**

- Step 1: Reaction – What are the thoughts and feelings of the participants about the training?
- Step 2: Learning - What did they learn? (The increase in knowledge and skills as a result of the training).

- Step 3: Behaviour - (What changes in behaviour, attitude and performance resulted from the learning process? (capability to perform the newly learned skills while on the job).
- Step 4: Results - What are the effects on the bottom line of the company resulting from the training in terms of reduced cost, improved quality and increased efficiency?

The need for training and development has become inevitable in the wake of rapid advancement in technology which has resulted in ever-increasing competition, higher customer's expectation of product and service quality plus the need to reduce costs. Thus, organisations spend huge amounts of money on the training and development of their employees in order to improve competencies, behaviour and attitudes. The Kirkpatrick model seeks to help organisations evaluate the impact of such trainings on the employees' performance and the overall productivity of the company in order to justify such expense (Kirkpatrick and Kirkpatrick, 2006:11).

The limitations of Kirkpatrick's Model

Critics of the Kirkpatrick model contend that it only focuses on what happens after the training (training outcomes) but not on the input and the processes involved in the training (Brinkerhoff, 2005:86-101; Chang, 2010:27). The Kirkpatrick model presents an oversimplified perspective of training effectiveness that does not consider individual or contextual influences in the evaluation of training. Studies have shown that there are a number of organizational, individual, and training design and delivery factors that can influence training effectiveness before, during, or after training (Salas and Cannon-Bowers, 2001:471-495; Brinkerhoff, 2005: 86-101).

2.1.1.5 Brinkerhoff's approach

Brinkerhoff's evaluation approach was advanced by Robert Brinkerhoff, a professor of education at the Western Michigan University, USA in 2003. It was intended to address some shortcomings in the existing models, especially the Kirkpatrick's model. In this approach, the main attention is focused on instances of success as contrasted to what is not working in a training programme (Brinkerhoff, 2005:86-101). Therefore, this approach is also referred to as Success Case Method (SCM). The essence of this is to identify, analyse and document any success the training programme might be having so that assuming these successes are worthwhile, they could be built upon and extended. This is actualised by contrasting the least successful instances with the most successful instances, and also ascertaining the factors that seem to contribute to success or the lack of it (Stufflebeam and Shinkfield, 2007:163-165). The thrust of Brinkerhoff's approach is 'not to throw out the baby with the bathwater'. According to Brinkerhoff (2003) many evaluation approaches lead to overall judgement, thus, the few successes a training programme may be having are thrown out with the general bathwater. The main strength of this approach is to ensure that the positive points of a training programme is credited.

The limitations of Brinkerhoff's approach

The main limitations include:

- Brinkerhoff's approach does not seek to produce a comprehensive assessment of a training programme's merit and worth;
- Compared with a comprehensive assessment of the training's worth and merits, Brinkerhoff's approach is narrow in what it assesses; and it focuses mainly on the short-term findings, and
- It is best considered as an alternative approach that is relatively quick but yet provides a reasonable means of getting critically important information for use on a training programme's success (Stufflebeam and Shinkfield, 2007:163-167).

It can be deduced from the foregoing submissions that Brinkerhoff's approach is not comprehensive enough to suit the purpose of the evaluation involved in this research given the vast coverage of an entire training system in the research.

2.1.1.6 The input-process-output (IPO) model

The input-process-output (IPO) model was developed by David S. Bushnell in 1990 with the aim of finding an evaluation tool that would help maximise the overall performance of a training system. According to Bushnell (1990:41-43) the essence of the IPO model of training evaluation is to determine whether a training system is achieving the right results both on short term and long term perspectives. It also serves to identify and analyse the aspects of the training needing improvement so that appropriate strategies can be developed for optimal outcomes. The IPO model takes into consideration the context, input, process and outputs of the training (Bomberger, 2003:43). Thus, the IPO model is an improvement over Kirkpatrick's and Brinkerhoff's models (Chang, 2010:27).

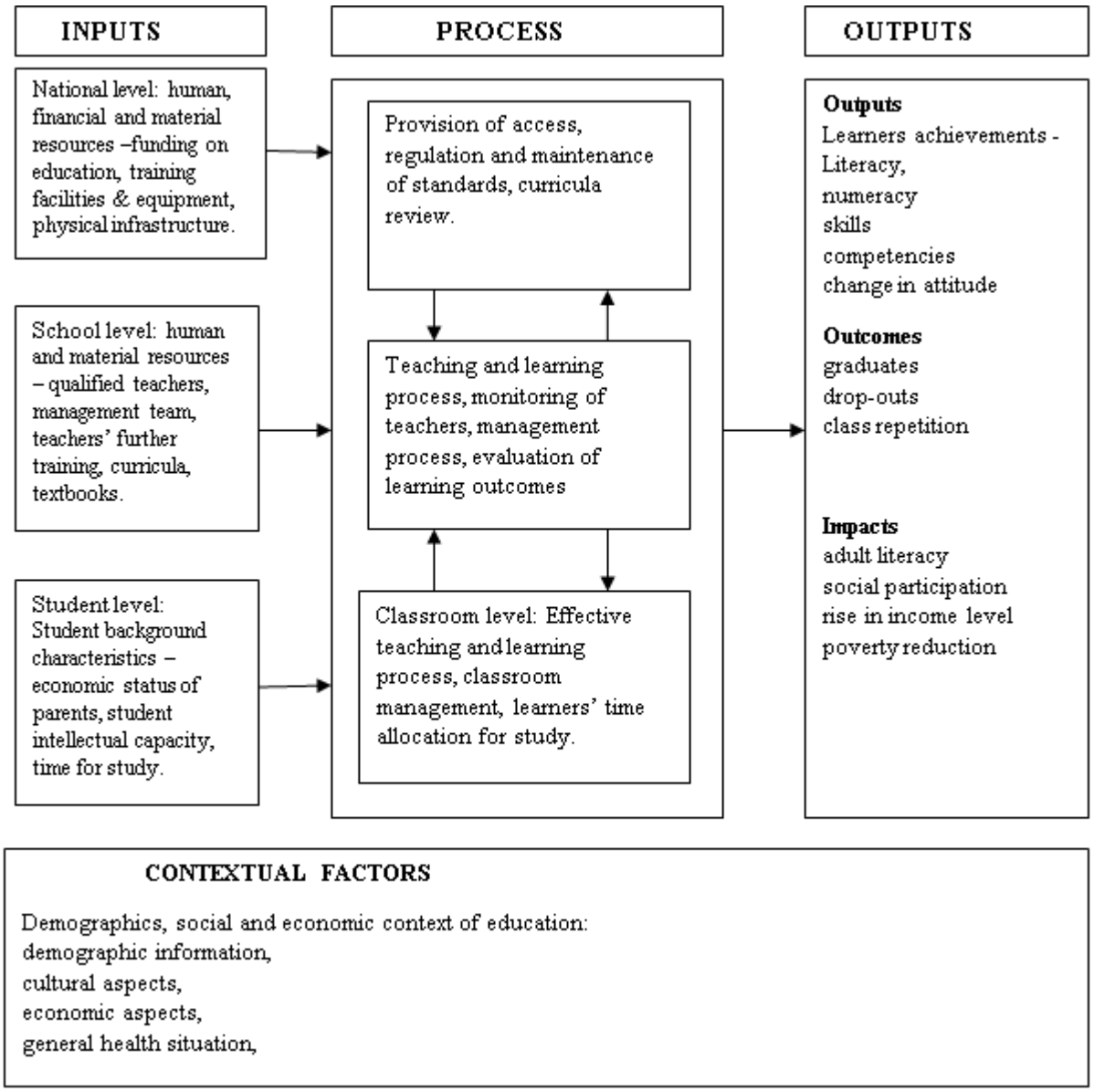
The key assumption that underpins the IPO model is that the nature of the inputs into a training system, the processes involved and the characteristics of the context (the environment) determine the quality of the training outputs (Robertson, 2004:37-39). In practice, the model first assesses the input factors that might affect the performance of the training system. Such input factors include financial resources allocated to the training, the qualifications of the instructors, the background of the trainees, the training content or course materials, training facilities / equipment and instructional materials. The input assessment is followed by an evaluation of the processes. Chang (2010:27) posits that the processes are a set of value-adding activities such as teaching, learning and training assessment methods. The outputs of the training are observed both in short term results (outputs) and long term results (outcomes and impact). The short term results include the students' reaction to training. These cover immediate learning achievements, such as the knowledge and skills gained, any change in attitude and improved competencies arising from the training. The

long- term results comprise the number of graduates who emerge from the training, labour market effects, the competitiveness and the economic returns from the training (Russ-Eft, Bober, Teja, Foxon and Koszalka, 2008:3-12).

Scheerens (2011:37-40) argues that the system of general education captures education as a productive system whereby the inputs are transformed into outputs. Tawil, Akkari and Macedo (2011:8-13) posit that the analytical model of a general education system is commonly depicted with an input-process-output (IPO) model. The model derived its impetus from the view of education as a production process. The premise behind this approach is that the quality of input into the educational process and the contextual factors determine the nature of the outputs from the system. Scheerens (2011:37-40) submits that the contextual factors include demographics, economic and the socio-cultural context of education. Artisan training is a vocational form of education. There is a consensus amongst many authors that the IPO model of a general education system also provides the basis for understanding the artisan training system (European Commission, 2006:14; European Centre for the Development of Vocational Training-CEDEFOP, 2008a:16-18; Onwuakpa and Anyanwu, 2009:7-9; Necesito, Santos and Fulgar, 2010:192-194; Scheerens, 2011:37-40; UNESCO, 2011:8-13). Figure 2.1 shows an IPO model of a general education system.

Figure 2.1: An IPO model of a general education system

Source: Scheerens (2011: 49)



Components of a general education system

The components of a general education system are discussed under the following sub-headings:

- ***Inputs:*** It has been argued that the inputs component of a general education system encompasses the real resources involved in the education process (CEDEFOP, 2008b:7). These resources include human, financial and material resources. Substantiating this assertion, Bloom (2006:10) contends that the inputs form the investments component of the general education system. However, in the opinion of Scheerens (2011:37-40), there are three levels of inputs involved in the component especially when viewed from a schematic representation of the system. These include, first, the national level, second, the school level and third, the student level. It is further argued (Scheerens, 2011:37-40) that the resource inputs on the various levels differ, but they complement each other in an integrated manner to achieve optimal results. Inadequacy of resource inputs from any of the levels would affect the overall outputs of the system Specifically, the resource inputs involved at the national level include the financial allocation to education, the physical infrastructure, the training facilities and the equipment. CEDEFOP (2008b:17) and Tawil *et al.* (2011:8-13) posit that those at the school level include qualified teachers, management / leadership team, further training for teachers and instructional materials such as textbooks. The student level inputs include the intellectual capacity and the allocated time for study.
- ***Process:*** The European Commission (2006:14) maintains that the process component covers the series of actions and interactions that take place between the trainees and the inputs and also between the inputs themselves to transform the inputs into outputs. Bloom (2006:10) argues that the process component is the functioning centre or the operation room of the system. At the national level the processes include access provision, regulation and control, standard maintenance and the curricula review (Scheerens, 2011:37-40). School level processes include teaching and learning activities, school management / leadership and the assessment of learning outcomes. The classroom level processes essentially include pedagogical factors such as effective teaching and learning strategies, classroom management strategies and the time available for students to study (CEDEFOP, 2008b:17; Tawil *et al.,* 2011:8-13).
- ***Outputs:*** Scheerens (2011:39) contends that the output component of the system captures both the immediate and long term results of the training. An analysis of the output component reveals three levels which include: one, the individual; two, the institutional and three, the national / societal levels. The results at the individual level are referred to as outputs, while those at the institutional level are called outcomes and at the national / societal level the results are described as impacts (Scheerens, 2011:39). The individual level results are the immediate learning achievements which include literacy, numeracy, skills and competencies,

and changes in attitude. The definition of literacy is evolving and pluralised. However, the most commonly accepted is the one given by the United Nations Educational, Scientific and Cultural Organisation (UNESCO). It states that literacy is the "ability to identify, understand, interpret, create, communicate, compute and use printed and written materials associated with varying contexts. Literacy involves a continuum of learning in enabling individuals to achieve goals, to develop knowledge and potential, and to participate fully in the community and wider society" (UNESCO, 2004). As regards numeracy, it refers to the knowledge and skills required to effectively manage and respond to the mathematical demands of diverse situations (UNESCO, 2004). In the case of skills, simply stated it means the ability and capacity or proficiency acquired through deliberate and systematic training to smoothly and adaptively carryout complex activities. Competencies speak to the combination of observable and measurable knowledge, skills, abilities and personal attributes that contribute to enhanced employee performance and ultimately result in organisational success (UNESCO, 2004). The acquisition of these will produce a change in attitude. The outcome results / indicators include the number of graduates, drop-outs and class repetitions. The impact indicators refer to the long term returns on education such as adult literacy, social participation, labour market effects, a rise in income level, competitiveness, poverty and unemployment reduction in society (CEDEFOP, 2008a:20-24; Scheerens, 2011:39).

Context: In an attempt to gain full understanding of the input-process-outputs model of a general education system, Tawil *et al.* (2011:8-13) contend that it is critical to clarify the context because of its impacts on the system. Scheerens (2011:39) posits that context essentially refers to the local school environment, regional administration or the national environment, depending on the level of analysis. However, a general or national view of the training system usually captures the context from the national perspective. Demographic developments, cultural aspects, general state of the economy and the general health situation are the essentail contextual factors (CEDEFOP, 2008a:20-24; Scheerens, 2011:39).

Strengths of the IPO model

The following arguments present the strengths of the IPO model:

- It encourages the use of evaluation continuously and systematically in order to improve and adapt the system to current needs and challenges;
- One of the problems with evaluation in general is getting the findings applied. The IPO aims to ensure that its findings are used through an on-going evaluation process;
- The IPO also takes a holistic approach to evaluation, aiming to paint a broad picture for the understanding of a system and its context and the processes at work;

- The use of the IPO model aids decision making at all levels and stresses improvement. The framework is flexible enough to give room for the examination of different components or situations within the whole system, and
- Comparatively, the IPO model provides more information to evaluators and stakeholders than many other models (Liong, 2005:18-25; Chang, 2010:25-27).

Weaknesses of the IPO model

Basically, the model operates on the premise that the quality of the output is determined by the type of inputs, the nature of the processes involved and the characteristics of the context (environment). However, it has been argued (Robertson, 2004:27) that one weakness of the IPO model is that although the model attempts to clarify all the processes that are involved in the education system by specifying the components (inputs, processes and outputs and the elements in each component) there seems to be no defined way to determine the exact component that caused a specific result. That is outputs and impacts as results are not directly traceable to specific factors but are rather a function of the combined effects of the various elements in the input and process components. For instance, numeracy as a product of the system cannot be traced specifically to one cause but a combination of a number of inputs and processes.

2.1.1.7 Justification of the IPO model for this research

The following arguments are advanced for the adoption of the IPO model for this research:

- UNESCO (2011:21) argues that the input-process-output model of evaluation has dominated international discourse as the appropriate approach for evaluating education and training systems. Essentially, the basis for this domination is rooted in the simplicity of the IPO's methodology of dealing with a rather complex phenomenon.
- The IPO model adopts a systems view of evaluation. It is not focused on individual assessment, but on providing ongoing evaluation information. Through this perspective, the purpose of evaluation is not to prove but to improve (Stufflebeam, 2003:31-62). This research investigates not just a segment of an educational activity but the whole system of the artisan training which involves a variety of inputs such as human resources, infrastructure, the financial aspect and a number of processes such as teaching and learning. It is therefore compelling to employ a model with a systems perspective of evaluation, and the one that is globally accepted in order to achieve the aim of the research.
- The European Centre for the Development of Vocational Training CEDEFOP (2008b:16-18) advocates the IPO model as the suitable approach for assessing vocational education and training systems. The quality of a training system is very important to the achievement of the training objectives. Therefore, the selection of an appropriate tool to determine the quality is

crucial to obtaining reliable results. The IPO model is a suitable tool for measuring the quality of vocational education and training system (CEDEFOP, 2008b:16-18)

- Bloom (2006:10-15) states that the IPO model captures all the necessary areas of concern relating to education quality assessment in a simplified style and thus, constitutes an efficient apparatus for evaluating educational systems for quality assurance.
- In the argument to support the IPO model, Onwuakpa and Anyanwu (2009:7-9) posit that the model provides a superior logical basis for understanding a training system. This view is affirmed by Necesito *et al.,* (2010:192-194) and Scheerens (2011:37-40).
- The orientation of the IPO model is improvement of training systems through a comprehensive, analytical and rational approach that is born out of reviewing different components of the system as well as immediate and long term results of training (Stufflebeam and Shinkfield, 2007:325-327). Arguably, this comprehensive and all-inclusive approach is more acceptable to research at the doctoral level.

The focus of this research is on the improvement of the artisan training system through the application of an appropriate evaluation tool (IPO Model). The model is an all-inclusive evaluation tool. The variables considered in the evaluation include the human, financial and material inputs. Others are infrastructure, teachers, curricula, textbooks, teaching and training process, the assessment process, competencies and socio-economic returns. The evaluation of these variables involves the collection of both quantitative and qualitative data. The IPO model has served to guide the conduct of this research.

2.2 PREVIOUS STUDIES

Numerous research studies have been carried out in different parts of the world on artisan training and the skills shortages in construction. Some of the studies are reviewed below:

- ***MacKenzie, Kilpatrick and Akintoye (2000):*** This study examined response strategies to UK construction skills shortages. The study employed postal questionnaire survey to obtain the perceptions of employers in the industry on appropriate response strategies to the skills challenge. The study suggested long-term training plans, taking steps to address the poor public image of artisans and the encouragement of employers to support artisan training.
- ***Bedford (2003):*** Bedford (2003) investigated artisan shortages in the New Zealand construction industry employing a questionnaire survey. The findings indicated that the factors responsible for the New Zealand skills shortages included poor investment in training, international competition for the skilled workforce, constraints in attracting and keeping people in the industry, poor conditions of service and poor pay. It was recommended that funding of training should be enhanced and conditions of service should improved.

- ***Dainty et al. (2004):*** In a related study, Dainty *et al.* (2004) conducted research into a regional strategy for bridging the skills gap in the UK construction labour market. The study employed focus group discussion to elicit the perceptions of key stakeholders in the industry within East Midland region of the UK. The sample investigated included employers, professionals and key clients. The findings indicated acute shortages and the need for the industry to develop strategic approaches for addressing the situation. The study advocated engaging employers in training, attracting new people into training; better funding strategies and regular publication and review of labour market information.
- ***DoL (2004) and OATELS (2004):*** The United States Department of Labour-DoL (2004) and the Office of Apprenticeship Training Employment and Labour Services-OATELS (2004) investigated skills shortage in the American construction industry. Workshops were held with key stakeholders in the industry to discuss the skills shortages and to suggest solutions. The findings identified the major challenges to include an inefficient recruitment effort, image problem, the skills development of youth and a low capacity at the entry level. The study suggested a pre-employment programme, media campaign to boost artisan image, the provision of attractive market information for the youth and the sponsorship of summer construction camps for high school students.
- ***Watson and Sharp (2007):*** The study investigated the barriers to skills development in the construction labour market with the focus on Brighton and Hove, South East England. Interviews were conducted with employers, staff members of training college, funding agencies and regulatory authorities to obtain useful information for the study. Findings indicated that the structure of the labour market constituted a barrier to skills development. It was suggested that apprenticeship system be revived and that a Youth Training Scheme be reintroduced to complement the training efforts and also to involve employers in training.
- ***CIOB (2009):*** CIOB (2009) probed into skills shortages in construction, apprenticeship training and the likely future of the industry in terms of skills concerns. The study employed a web-based questionnaire to elicit the perceptions of industry professionals who were mainly drawn from the UK (97%) and the remaining (3%) from the rest of the world. The findings from the study confirmed that there was skills shortage in the industry and a prediction of a decline in the near future. The study advocated that training should be given priority; as a well-trained workforce is critically vital to the industry's recovery and growth.
- ***Dainty, Ison and Briscoe (2005):*** In another study, Dainty, Ison and Briscoe (2005) examined the construction skills challenges in the UK by eliciting information from small and medium-sized construction enterprises (SMEs) through focus group discussions and interviews. The findings revealed that the SMEs are finding it difficult to attract required workers to meet the demands in the industry; there is a decline in the number of new

entrants and a reluctance on the part of the employers to sponsor training. The study advocates lobbying for policy interventions, a paradigm change in the area of training and improving the synergy between training providers, employers and regulatory bodies in order to proffer lasting solutions to the skills challenge.

- ***McGuinness and Bennett (2006):*** A related research examined the level of skills shortages as an outcome of the mismatch between training provision and the employment structure in the construction industry (McGuinness and Bennett, 2006). Telephone interview was employed to elicit the relevant data from industry stakeholders in Northern Ireland, UK. The findings reconfirmed earlier studies, showing that there is a mismatch between training provision and employment structure. It was suggested that that the multi-skilled training programme be revived to complement the traditional apprenticeship training.
- ***Morgan, Raidén and Naylor (2008):*** Morgan, Raiden and Naylor (2008) conducted an enquiry into public policies on training and skills development in the UK construction industry. The study was motivated by the concerns of the small construction organisations whose skills needs were perceived to be neglected in policy formulation in favour of the larger ones. Twelve small and medium-sized organizations in South West Wales were interviewed. The findings indicated that the policy framework for construction skills failed to capture the training priorities of the industry and did not adequately cater for the small construction firms. A reform of the construction skills policies was advocated by the study.
- ***Chan and Dainty (2007):*** The Construction skills shortage was investigated from the perspectives of policy and research efforts (Chan and Dainty, 2007). The study was based on synthesis of literature. A critical review of the past research and policy efforts directed toward skills concerns in the UK was carried out. The findings indicated that previous attempts had little impact on resolving the skills challenge. A regional approach was suggested coupled with a paradigm shift to redefine skill development.
- ***Lobo and Wilkinson (2008):*** Lobo and Wilkinson (2008) in another research project probed into the New Zealand construction skills challenges and offered solutions for addressing them. Interviews were conducted with stakeholders in the industry which included professionals, governments, trade unions, contractors and property developers to obtain data for the study. The findings linked the shortages to inadequate training, poor societal image of construction workers, poor pay in the industry and a decline in enrolment into construction trades. The study advocated long term planning for training in the industry and effective collaboration between government, education and other stakeholders to address the construction shortages.
- ***Aman (2008):*** The study addressed the shortages of local skilled workers in Malay construction industry with the view of identifying the causes and proffering appropriate

solution. The data for the study was gathered through questionnaire and interviews. The findings indicated that the major factors responsible for the poor participation of the local workforce in the construction industry included harsh and unsafe working conditions and temporary employment status of workers. It was suggested that there should be improved focus on training provision, better safety practice and an image enhancement of working conditions of construction artisans.

- ***Aibinu and Francis (2010):*** In an Australian study, Aibinu and Francis (2010) examined the nature and extent of the skills shortages within the states and sectors in the Australian construction industry. An online questionnaire survey was carried out involving human resources managers of some selected companies. The findings indicate that the skill shortages differ across Australia. There was also a lack of quality and experienced candidates; this lack was linked to inadequate training and comparatively low remuneration within the construction industry.

It is pertinent to note that all the studies highlighted above were conducted outside the African context and as such, they do not capture the peculiarities of the African skills challenges in the construction industry. However, studies conducted within the African context are reviewed below:

- ***Uwameiye and Iyamu (2002):*** Uwameiye and Iyamu (2002) investigated the training methodology of the local apprenticeship system in Edo and Delta states, Nigeria. Questionnaire survey was employed in the study. It was found that there were no formal curricula used for the training and competency assessment of graduating apprentices was based on the opinion of clients. The study suggested a short term refresher courses for local trainers, a revisit of the apprenticeship scheme and adult evening classes to address the level of literacy amongst the local master artisans.
- ***Muya, Price and Edum-Fotwe (2006):*** Muya, Price and Edum-Fotwe (2006) examined the funding of construction craft skills training in Zambia. Semi-structured interview was employed to obtain relevant information from construction craft schools and contractors. The findings revealed poor funding of training, inadequate number of teaching staff, poor infrastructure, outdated curricula and ill-equipped training workshops. The study recommended strong financial commitment on the part of government to training and better partnership among the key stakeholders in the industry.
- ***Sanni and Alabi (2008):*** In a related research, Sanni and Alabi (2008) examined the traditional apprenticeship approach of training house building artisans in Saki, Nigeria. Questionnaire survey was utilised for the study. The findings indicated that existing artisans were ageing, there was a declining enrolment of new apprentices, and a quest for quick riches among the youth. The study suggested a review of government policies on artisan training and an improved funding method to cater for free tuition training of artisans.

- ***Chileshe and Haupt (2009):*** Chileshe and Haupt (2009) investigated the factors impacting career decisions of high school students towards the construction industry in South Africa. After an extensive literature review was conducted, postal questionnaire survey was employed to obtain the primary data for the study within the Western Cape Province. The findings revealed that remunerations, working conditions, opportunities for lifelong learning and the poor public image of the construction industry were identified as most important factors that impacted career decisions.
- ***Omodia (2009):*** In a related research study, Omodia (2009) looked into conceptual and methodological perspectives of manpower development in the Nigerian construction and other industries. The study was based on a review of the literature; it specifically evaluated the effort of government and the private sector with reference to apprenticeship and on-the-job training. The study suggested an improvement of the state regulatory functions and improved funding to enhance training and development in Nigeria.
- ***Dike (2009):*** Dike (2009) examined the challenges confronting vocational education and training in Nigeria and linked the skills shortages being faced in some sectors of the economy like construction with government's neglect of education and training in relevant skills. It was essentially based on the synthesis of literature. It suggested that the leaders should move from rhetoric to actions in revamping the vocational and technical training of youth in order to address the growing unemployment and poverty in the country.
- ***Eneh (2010):*** Eneh (2010) researched into the declining technical and apprenticeship training in some selected industries in Nigeria using questionnaire survey and interview. The study revealed that there was a rapid declining trend in apprenticeship training in the industries investigated including construction. The decline was linked with preference for general education, quest for quick riches among young people and poor image of artisans in society. It was suggested that government should engage in youth re-orientation and improve funding of vocational skills training in the various industries.
- ***Draai (2011):*** Draai (2011) examined artisan training in the South African construction industry using the Nelson Mandela metropolitan bay area as a case study. An empirical study was conducted employing questionnaire survey among contractors in the study area. The findings indicated that there were shortages of artisans for construction purposes and a poor performance of the training institutions. It was also found that there was reluctance on the part of employers to get involved in artisan training because of the risk of losing the artisans after the training. The study suggested the revival of the apprenticeship scheme to address the artisan shortages.

A review of these studies indicates some gaps that this research stands to bridge. First, none of the studies employed a systems approach to addressing the artisan skills challenge. Secondly,

only a few of them focused on Nigeria and especially the construction industry. Thirdly, within the Nigerian context, in-depth studies of this type particularly at the doctoral level are still few. Therefore, this study stands to enrich the literature in this area of research.

2.3 CONCLUSION

This chapter has presented the theoretical framework of the study. It has reviewed the alternative models for education and training evaluation. It has then proceeded to a review of the input-process-output (IPO) model as the theoretical framework for the study. It has also reviewed the previous studies related to the current study. The next chapter presents a review of artisan training models and state of artisan training in Nigeria.

CHAPTER 3
ARTISAN TRAINING MODELS AND THE STATE OF ARTISAN TRAINING IN NIGERIA

3.0 INTRODUCTION

This chapter presents an appraisal of alternative models of artisan training and a review of the state of artisan training in Nigeria. It opens with the identification of the three basic models of artisan training, namely, the school based, the dual and the informal models. It then highlights the strengths and weaknesses of the three models. The chapter closes with a review of the two operational models of artisan training in Nigeria.

3.1 MODELS OF ARTISAN TRAINING

Available evidence reveals the consensus of authors that there are three basic models of artisan training which include the school-based, the dual and the informal models (Carrero, 2006:157-160; DFID, 2007; Kogan, 2008:43; CEDEFOP, 2008a; World Bank, 2012; Werner, Núria, Ricarda, and Klaus, 2012:2-7; ILO, 2012; Carroll, 2013:56). These may be modified as one moves from one region of the world to the other. The three models are discussed in the next sections.

3.1.1 The school-based model

Werner *et al.* (2012:2-7) describe the school-based model of artisan training as a schooling system that provides youth with practice-oriented knowledge and skills required in specific occupations and learning. According to the European Centre for Development of Vocational Training, (CEDEFOP, 2008a) the aim of general education is to provide youths with general, often academically oriented knowledge as the foundation for further education and training; while school-based vocational education follows a formal curriculum that combines general and occupation-specific knowledge to equip youths with occupational oriented knowledge and skills for the world of work. Variations in the types of school-based model may arise with respect to the academic level of vocational schooling (World Bank, 2005). Essentially, skills acquired under this model are mostly general and transferable between employers. The school-based vocational training affords youth the opportunity to acquire the skills that are needed to earn a living and to be relevant within the economy. Especially for those who do not have the ability to continue with the higher education track (Werner *et al.,* 2012:2-7). However, critics have argued (Kogan, 2008:43; Carrero, 2006:157-160) that the vocational schooling pathway is poorly perceived by the public. It is considered to be a dead-end for academically aspiring youth; given the low percentage of youths who practically

manage to further their education after vocational schooling due to discrimination of vocational qualifications within the general education circles.

3.1.1.1 Strengths of the school-based model

Available evidence (Carrero, 2006:157; CEDEFOP, 2010) indicates some of the strengths of the school-based training system which include:

- ***Unified curricula:*** In the informal model, the training content is determined by the individual trainers. However, under the school-based model, the curriculum of training is moderated by the appropriate government regulatory organ and the same standards are benchmarked and sustained in all the different training institutions.
- ***Transferable skills:*** Skills acquired from the school-based model are generally transferable between employers due to the standardised curricula of training and the regulated certification examination conducted at the end of the training period (UNESCO, 2010; CEDEFOB, 2008a)

3.1.1.2 Weaknesses of the school-based model

The drawbacks identified with the school-based model include skills mismatch; reduced parental influence and limited learning prospects.

- ***Skills mismatch:*** According to DFID (2007) and, Tattara and Valentini (2009:197-212) the school-based model is characterised by a weak linkage between the skills required in the labour market and the training provided by the training institutions. This is due to the absence of employers' inputs in the training design and delivery. Consequently, skills mismatch and obsolescence characterise the graduates from the system; making it difficult for young vocational graduates to enter the labour market (Roger and Zamora, 2011:380-396).
- ***Reduced parental influence:*** Werner *et al.,* (2012:2-7) argue that the adoption of a vocational education track at the basic school level which is the practice in some European countries has the capacity of reducing parental influence on the background and educational choices of the young people in society. This is so because the young ones have to make career choices too early in life when they are yet to be sufficiently informed and guided by their parents on career issues.
- ***Limited learning prospects:*** Opportunities for further education are often limited for those who have chosen the vocational track at the basic school level. In cases where this is possible, it usually necessitates a higher cost for crossing to the general education track for the purpose of lifelong learning and further career opportunities (Carrero, 2006:32).

3.1.2 The dual model

According to Malcomson, James and Barry (2003:197-227) the dual model of artisan training combines general, transferable skills acquired under the school-based system together with structured learning on the job and actual work experience within a training company. Graduates acquire occupation-specific skills that render them employable by the training company or other employers. A balance is maintained between the specialised skills obtained from the industry and the transferable; curricula-based skills from the classroom through the conduct of terminal, standardised certified examinations. Given the rapid technological changes taking place in today's world, a dual model of artisan training may find it less cumbersome in its degree of responsiveness to any changes in training provision. This is made possible as the firms constantly adapt their training to the skills demanded in the labour market. The dual system might offer a more profitable learning and working environment for practically oriented youth, as it increases their motivation and engagement in training. Furthermore, the early contact with firms and work experience would facilitate easier entry into the labour market after graduation (Werner *et al*., 2012:2-7).

3.1.2.1 The strengths of the dual model

Germany is typically noted for the operation of a dual model of artisan training. This may contribute to the phenomenally low rate of unemployment in the country which was put at 8% as compared with other nations of the world ranging between 16% and 30% (World Bank, 2012). According to Carroll (2013:3) the German model of vocational training is occupation-specific since it pairs classroom studies with on-the-job training. The Government regulations define the duration, content and syllabus of the training. Usually, students apply for a specific apprenticeship at a company to complement the classroom learning. A small stipend is paid by the employer to the apprentice. The week is divided into three days of practical learning to acquire a real world experience at the firm; the other two days are allocated to the classroom learning on theoretical aspects of the training. After passing the prescribed standardised examinations, the apprentices are awarded certificates that are recognised by the federal government of Germany to work anywhere in the nation.

Werner *et al.* (2012:2-7) posit that there are currently 350 officially recognised occupations in Germany identified with the advice of employers and trade unions. Essentially, training companies sign a contract for the period of apprenticeship as guided by the government regulations; while the monitoring and standardisation required of the company are carried out by the German Chamber of Crafts. The thrust of the German regulatory framework for the training and certification process is directed towards ensuring proficiency, transparency and transferability of the skills provided in the training process. Joint consultative efforts are also made by all the stakeholders to continually adapt the training content and standards to changing labour market needs. The German dual

model has been found effective and sustainable; as a result of the German success, some other nations have replicated this model, for instance, Austria, Denmark and Switzerland. The strengths of the dual model are discussed in the next sections.

- ***Demand-driven training:*** The active participation of employers and enterprises from the private sector is very instrumental as this helps to identify unmet training needs in the design so that any necessary improvements can be made. The training content is therefore continuously adapted to meet the changing requirements of the labour market. Thus, the products of the training are constantly relevant to the demands of the labour market (OECD, 2010)
- ***Opportunity for diverse training providers:*** Unlike the school-based system where training providers are confined to institutions, trainees from the dual system have the advantage of tapping from diverse trainers who can come from the private enterprises in the industry and the formal training institutions. This implies a richer and better training experience that translates into higher competence. The school-based part of the dual apprenticeship is provided by the vocational colleges covering both general and occupation-specific education, while the structured on-the-job learning and real work experience are offered by the company.
- ***High employability:*** Engagement by stakeholders in the training design, delivery and coordination of the dual system strongly positions the graduates for better employability after completing their training. They are kept abreast of development in the industry during the course of their training and there are chances that many would be absorbed by private enterprises and the employers that have trained them.
- ***Incentivised model:*** It is pertinent to note that the costs of school-based training are taken care of by the government while the company pays a stipend to the trainees (Werner *et al.*, 2012:2-7). In essence, attractive training incentives are offered within the German model as a major recruitment strategy for potential trainees. Besides, the qualifications are fully recognised and accepted for further learning prospects within the German education system.

3.1.2.2 Weaknesses of the dual model

Malcolmson *et al.* (2003:5) argue that in the highly competitive labour market of today where workers are paid for their marginal productivity, some form of general education is crucial in order to enable the trainees to enter further employment relationships. Firms have no incentives to invest in general schooling as workers can leave directly after the training period causing the firm to lose all the investment in the general education. Therefore, in order for firms to offer general and specific training, the worker is required to bear the cost of the general training. However, this drawback could be addressed by either providing government-funded school-based general

education or firm-based general training, with workers paying for their own training costs. Other approaches are to make trainees accept a wage lower than their marginal productivity during their training period, or the trainees should sign a contract to stay with the firm beyond the training period to serve for the stipulated period in order to offset the training costs (Euler, 2013:16).

3.1.3 The informal training model

The International Labour Organisation (ILO, 2012) describes the informal training model, (also called the traditional apprenticeship system) as the one that operates outside of the formal vocational schooling. It may involve a transfer of knowledge or skills within a family from father to son. It may also exist as an arrangement between a master artisan and an apprentice in which the apprentice enters into a contract with the master to learn specific skills or a trade for a stated period of time, usually between three to five years and for a specified sum of money as a training fee. Ahadzie (2009:261-275) submits that in some cases apprentices may receive shelter and food during training. It is essentially on-the job learning. This system of training is common in North Africa, Sub-Saharan African countries and also in India. The Skills acquired under this system are not easily transferable due to the lack of complementing part of formal schooling for the acquisition of general skills, and the absence regulatory framework and standardised certification after the training. The master artisan can issue certificates to trainees, but these are not formally recognised by government. Such certificates are only useful within the informal sector (ILO, 2012; Werner *et al.,* 2012: 2-7).

Given the high cost of schooling and the high level of poverty in many Sub-Saharan African countries, secondary school education is jeopardised for many youth. The alternative for them is to enrol in traditional apprenticeship training. Evidence shows that informal apprenticeships are estimated at between 50% to 90% of young people in countries such as Gambia, Ghana, Senegal, Madagascar, Zambia, Tanzania, Mali and Malawi (Fabienne and Jens, 2012:7-15; Werner *et al.,* 2012:2-7).

3.1.3.1 Strengths of the informal model

Some of the strengths of the informal model of training are identified and discussed below:

- ***Safety net for disadvantaged youths:*** Given the high level of poverty and unemployment in countries where this model is common, it serves as a safety net to young people from disadvantaged backgrounds, especially those who cannot afford the cost of formal education. Enrolment in informal training gives them a good opportunity to earning a living within a very short period of time and at an affordable cost. Young people that otherwise would have been involved in socially deviant behaviour such as hooliganism, prostitution and

armed robbery are gainfully engaged in economic activities that make them responsible and useful citizens to their families and the nation.

- ***Contribution to the local economy:*** When compared with the school-based model, the informal training model has the advantage of being closer to the current needs of employers in the informal labour market, thus, making a substantial contribution to the local economy, which represents a large proportion of the national economy in many countries (ILO, 2012).

3.1.3.2 Weaknesses of the informal model

The identified weaknesses of the informal model are discussed under the following subheadings: restricted learning; limited exposure and non-transferable skills.

- ***Restricted learning:*** In the informal model, the training is conducted with the trainees learning simply by observing the master artisan at work in their trade and skill. Ahadzie (2009:261-275) notes that in the informal model, training is generally found to be purely practice-oriented and completely devoid of any theoretical backing. It is essentially based on the job-at-hand. Consequently, the learning process might be restricted only to the production of a specific type of outputs, leaving apprentices with only partial knowledge of their respective trade after completing the training.
- ***Limited exposure to latest technology:*** The Informal training model is constrained by major barriers in the form of technological advancement. The informal trainers suffer from a lack of access to credit facilities to continuously upgrade their skills and training facilities in response to changing technology. This limits their training content to obsolete skills that cannot match up with the modern technology and advancement (Ahadzie, 2009:261-275).
- ***Non-transferable skills:*** Since the curricula are not structured in this training model, it means that skills are not easily transferable (DFID, 2007; World Bank, 2012; Carroll, 2013). This constitutes a limitation in employment options for the graduates.

3.2 THE STATE OF ARTISAN TRAINING IN NIGERIA

In Nigeria two models are in operation, namely the technical and vocational college system (formal / school-based model) and the traditional apprenticeship system (informal model). The following sections discuss the state of these two models.

3.2.1 The vocational technical college model in Nigeria

The review of the vocational technical college model in Nigeria is carried out in the next sections.

3.2.1.1 Inadequate funding

The World Bank (2004) observes that the overall expenditure on education at all levels as a share of both Gross Domestic Product (GDP) and total government spending in Nigeria, has fallen over time and is below what is obtainable in most developing nations. The government seems to pay lip service to its commitment to education, given the wide gap between political pronouncements and actual financial commitment to human capital development. For instance, available data reveal that from the annual national budgets from year 2006 to year 2010, the total budgetary allocation to the education sector stood between 7% and 10% of the total budget (National Budget Office, 2011). While the United Nations Educational Scientific and Cultural Organisation (UNESCO) recommends that at least 26% of the national budget should be allocated to education, Aturu (2011:3) however observes that in Nigeria, it has always been less than 11%. Table 3.1 shows the comparison of education allocation as a percentage of the national budget.

National Budget office data shows that the situation with vocational and technical education subsector is exacerbated by its marginalisation in the sharing of education allocation from the national budget. The vocational subsector is relegated and given almost no attention as part of the educational sector. For instance, the available data indicates that out of the total allocation for education from the national budget between years 2006 and 2010, vocational education only got an average 3% to 4% while the general education took over 95% each year as indicated in the Table 3.2 below (National Budget Office, 2011).

Table 3.1: The education allocation as a percentage of the total annual national budget of Nigeria

Source: National Budget Office (2011)

Year	Education Allocation (N)	Education share of the total budget (%)
2006	166.6 Billion	8.8
2007	224.7 Billion	9.8
2008	210.4 Billion	10.
2009	216.6 Billion	8.8
2010	249.6 Billion	7.4

Table 3.2: Vocational education budgetary allocation as a percentage of the education allocation

Source: National Budget Office (2011)

Year	Total Education Allocation (N)	General Education Share (N)	VET Share (N)	VET share Of the total (%)
2006	166.6 Billion	161.6 Billion	5.0 Billion	3.0
2007	224.7 Billion	217.9 Billion	6.8 Billion	3.0
2008	210.4 Billion	203.4 Billion	7.0 Billion	3.3
2009	216.6 Billion	209.8 Billion	6.8 Billion	3.1
2010	249.6 Billion	240.1 Billion	9.1 Billion	3.7

3.2.1.2 Inadequate physical infrastructure

Boyi (2008:5) observes that the state of the infrastructure in the vocational colleges is very poor to the extent that some of the colleges do not even have workshops to demonstrate practical lessons. Some buildings have had their roofs removed, windows and doors damaged and have insufficient desks for students. In the opinion of Ekunke (2008:31-36) many of the existing structures are dilapidated due to the protracted neglect and no recent funding has been allocated for infrastructure development in the training colleges. The learning conditions are far too deplorable making it difficult for any meaningful learning to take place. Consequently, the trainees lack the motivation to do their best in the training process, while the morale of the teachers is largely low. This unfavourable learning environment negatively impacts on the quality of the ultimate outcomes of the training.

3.2.1.3 Obsolete training facilities and equipment

The quality of training in Nigerian vocational colleges is rated as low (African Union, 2007:23); the training equipment is obsolete and there is a lack of instructional materials. Many of the vocational colleges do not have workshops and even those colleges that have workshops largely lack the necessary equipment needed for meaningful training (Boyi, 2008:5).

Evidently, from the foregoing discussion, there is a sound basis in the literature for the hypothesis that funding mechanism for the vocational education sub-sector is poor. However, it is essentially important that this assertion be validated through empirical evidence. This is reported in Chapter Six of this report.

3.2.1.4 Inadequate policies

The technical and vocational colleges have been generally ineffective and largely neglected by government (Aturu, 2011:3). Education policies are unfavourable to the vocational segment, making no proper provision for its integration into the National Qualification Framework (NQF). With the non-flexible NQF in operation, career progression is made difficult for vocational graduates (Aturu, 2011:3). The situation in South Africa as an example is instructive. According to the South African Qualifications Authority (SAQA, 2013) the National Qualifications Framework (NQF) is an integrated system that encourages lifelong learning by recording levels of learning achievement and recognising acquired skills and knowledge. There are ten levels on the NQF. These levels are divided into three bands: General education and training; further education and training (which covers vocational learning) and higher education and training. Levels 1 to 4 are equivalent to grades 9 to 12 in high school or vocational training; Levels 5 to 7 are intended for college diplomas and technical qualifications, while Levels 7 to 10 are for university degrees. All learning is recognised within an integrated system of the NQF. A qualification is a formal recognition of the learning achievements. With the approval of the authority, a qualification can be registered on the NQF at a certain level. A prescribed number of credits will be awarded to the successful completion of a registered qualification (SAQA, 2013).

The National Qualifications Framework Act (NQF Act No. 67, 2008) states that the SAQA is the statutory body that oversees the development of the NQF and the monitoring of the training standards. The specific objectives of the National Qualifications Framework as provided for in the Act are to:

- Establish a unified / harmonised national structure for learning outcomes;
- Simplify access to, and the portability of furtherance within education, training and career track;
- Boost the quality of education and training;
- Fast-track and amend the unjust dichotomy and intolerance within education, training and job opportunities, and
- Promote the total individual development of every learner and the overall socio-economic growth of the country (NQF Act No. 67, 2008).

It is pertinent to note that there is no such statutory body as SAQA in Nigeria to harmonise all learning achievements recognised by the national constitution. The enabling policy provision to establish such an integrated national qualifications framework is absent till date. Consequently, learning takes place in a disjointed fashion and recognition of prior learning is subject to various interpretations of individual institutions. Essentially, all the components of an ideal NQF do exist within the system namely, general education (covering the primary to senior secondary school);

vocational and technical education (covering the technical colleges and the polytechnics); and higher education (covering from bachelor degree to doctorate). However, these segments are not integrated into a unified system or framework that recognises all prior learning in order to make room for lifelong learning. Aturu (2011:2-3) bemoans the level of discrimination against the vocational education and training track in Nigeria noting that the qualifications are not recognised by most universities for further learning while inferior status is accorded its graduates both in terms of remunerations and appointments in the labour market. This poor image of artisans in society is one of the major challenges of artisan training in the country. In a related development, Dike (2008:5-7) argues that the protracted skills shortages in the country coupled with the growing youth restiveness and unemployment are attributable to the indifference of the policy makers to address the imbalance and faulty structure of the education sector. There is therefore an urgent need to address the faulty, fragmented national qualifications framework through objective engagement of the key stakeholders within the sector through appropriate reform of education policies. A reform that will make provision for an integrated and flexible NQF that unifies all the segments of the education system.

3.2.1.5 Inefficient regulatory mechanism

The government regulatory agency for the vocational and technical education in Nigeria is the National Board for Technical Education (NBTE). As stipulated by the policy establishing the NBTE (Act No.16 1985; Act No. 9 of 1993), the Board shall have among other responsibilities: To set and uphold standards in technical colleges, polytechnics and other related institutions in the country; to carry out quality assessments of programmes of all institutions under it for the suitability of awarding diplomas and certificates and for entry into the national examinations of such institutions; to set and review standards for skills as required by developments in technology and the labour market needs; to carry out periodic reviews of assessment standards for trainees and students; and to establish national certification scheme for artisans and technicians in partnership with the relevant ministries and agencies. It shall also carry out enlightenment programme to increase enrolment in vocational technical institutions and eliminate disparity between VET graduates and their university counterparts (NBTE Act No.16 1985; Act No. 9 of 1993).

However, the African Union (2007:23) observes that VET in Nigeria is largely uncoordinated and lacks proper government regulations and interventions; this is due to operational inefficiencies of the NBTE. Programme accreditations in many technical colleges have been long overdue and the standard of training has fallen below the acceptable benchmark. In the opinion of Dike (2006:2) the NBTE is weak and failing in its responsibilities; it has almost neglected the technical colleges to run on their own. The scope of operation of the NBTE may be too wide as it is responsible for all polytechnics, monotechnics and technical colleges. Over the years, many polytechnics have been

added to the existing number in response to population growth from the time of NBTE policy was formulated. Consequently, the policy establishing NBTE is long overdue for reform. In a related development, the stakeholders within the Polytechnic subsector have always requested and lobbied the lawmakers for the establishment of a separate regulatory body, the National Polytechnic Commission, (NPC) to focus solely on polytechnic affairs. However, it is pertinent to note that these attempts are yet to yield any meaningful fruits in policy formulation (Aturu, 2011:3-8).

3.2.1.6 Lack of continuous development of VET instructors

The delivery of quality artisan training depends to a large extent on the proficiency of the instructors. The proficiency of a vocational instructor is assessed based on the sound theoretical knowledge, technical expertise and the level of pedagogical aptitude. The African Union (2007:23) asserts that the quality of training in Nigerian vocational colleges is low; this is partly attributable to the inadequate training policy for vocational instructors as it is difficult to offer what one does not possess. Abassah (2011:57-63) laments the inadequate attention given to the training of vocational teachers in Nigeria this is due to the undue emphasis placed on general education qualifications at the expense of vocational and technical ones. Many universities do not offer courses in technical education that can help to train instructors for the vocational colleges. Those that offer such programmes are poorly patronised as young people are not attracted to such programmes again. Abassah (2011:57-63) further observes that the motivation level of VET teachers are low as they suffer poor public image, are poorly remunerated and largely remain underdeveloped as there are no provisions for in-service training and capacity building through workshops, conferences and further studies.

Clearly, a solid foundation has been established in the literature for the hypotheses that government policy framework for the training of artisans in the colleges is inadequate; and the National Qualification Framework under which the college system operates is faulty and rigid. As these form part of the hypotheses in this study, it is important to note that empirical evidence is required to validate these assertions. This is encapsulated in Chapter Six of this report.

3.2.1.7 Parents and guardians

Given the societal image of vocational technical colleges in Nigeria, most parents who send their children to the colleges are from the lower ranks of society. African Union (2007:14) prescribes the roles of parents and guardians to include that of support, encouragement and rejection of the perception of vocational pathway as meant only for the less academically endowed and the children of the poor in the society. However, most parents within the Nigerian context do not agree with this assertion; they rather prefer their children to follow the general education pathway instead

of vocational line. According to Dike (2011:3) there is an undue emphasis placed on paper qualification from the university system in Nigeria with poor consideration for skills. This is one of the major factors responsible for high the rate of youth unemployment because many of the graduates have certificates but they lacking employability skills.

3.2.1.8 Inadequate curricula and textbooks

Abassah (2012) laments the dearth of relevant textbooks for instructional purposes and the poorly equipped libraries in the vocational colleges. Arguing further Abassah (2012) maintains that the teachers' class notes mostly given to trainees as reference materials are grossly inadequate to inform and prepare the trainees for the world of work. In the opinion of Roger and Zamora (2011:380-396) the college training curricula has a weak link between the skills needed in the labour market and the content of the training offered. This is a direct result of the absence of industrial input into the training process. As a result, there is a skills mismatch and the graduates from the colleges find it difficult to access the labour market after the completion of their training (Ekunke, 2008:31-35).

3.2.1.9 Quality of entrants

There is a poor societal perception of vocational education; this of course is borne out the philosophy of the policy makers on vocational education and training in Nigeria that view VET as meant for the educationally disadvantaged and the children of the poor. According to Atsumbe (2010:5) it is disturbing that this philosophy drives the recruitment and admission of entrants into the vocational colleges. The best are meant for the general education pathway, while the left over are encouraged to seek admission into the vocational colleges. This of course, determines the level of intellectual capacity of the trainees in the colleges and ability to learn which is usually considered to be below average (Atsumbe, 2010:5).

3.2.1.10 Weak recruitment strategies

Various authors have identified a number of recruitment approaches (Akintoye *et al*., 2000:854-856; Chan and Dainty, 2007:375-386; Chan and Moehler, 2007:409-418; Morgan *et al.,* 2008:238-252) as alternative strategies for marketing training in construction sector to young people. These include, *inter alia,* the establishment of construction academies in high schools to activate their interest in construction; annual school tours by industry leaders to mobilise young people to enlist in construction occupations; sponsorship of construction summer camps and the offer of scholarships for prospective trainees. However, Aturu (2011:2-3) submits that the recruitment drive for prospective trainees into the vocational technical colleges in Nigeria is low, given the poor public perception of artisans and the government discriminatory treatment of the vocational sub-sector in the scheme of things. Thus, there is not enough motivation for the VET teachers and the

other stakeholders to be actively involved in mobilisation and recruitment efforts. Aturu (2011:2-3) further submits that there is practically little or no intervention funding coming from any source as scholarships for prospective trainees. Consequently, enrolment figures remain far below the carrying capacities of most of the vocational colleges.

The foregoing discussion provides good underpinning in the literature for the hypothesis that the recruitment strategies for attracting new entrants into the artisan training in the colleges are ineffective. However, it is essentially important to validate the claim with empirical evidence. The empirical testing of the hypotheses in the study is reported in Chapter Six.

3.2.1.11 Inadequate teaching and learning processes

Atsumbe *et al*. (2012) posit that training process in the colleges is focussed mostly on the theoretical aspects of the curricula at the expense of the much needed practical aspects. This is attributable to a lack of training facilities and equipment in the colleges. Inadequate funding allocated to the colleges prevents them from acquiring cutting edge training equipment. Thus, the trainees from these colleges enter into the world of work only to discover a wide gap between their skills and labour market needs. This development accounts for the low employability of the graduates from the colleges. The Student Industrial Work Experience Scheme (SIWES) was designed to expose trainees to a real work environment during the course of their training and prepare them for the world of work. Atsumbe (2005:54-61) notes that the SIWES has become a mere formality as most of the trainees do not find placements during the period due to poor coordination and the unwillingness of industry stakeholders.

3.2.1.12 Poor employers' participation in training

Ferranti *et al.* (2003:53) posits that globalisation and the attendant competitiveness in the global job market are arguably some of the critical factors that call for dedicated attention and cutting edge delivery of vocational training in any given nation in order to remain relevant. Given the impact of the recent global financial crisis which has exacerbated unemployment rate globally; it has been argued that young people are mostly affected; and that one of the major strategies to mitigate this challenge is vocational training (Werner *et al.,* 2012:Online). The involvement of the industry in training is vital in order to keep abreast with the developments in technology and adapt the training content appropriately. Employers' participation in training is described by Clarke and Winch (2004:509) as educational philosophy that embeds strong theoretical underpinning from the school / college classrooms with work experience provided by the employers in the industry. However, Raidén and Dainty (2006:63-79) argue that for employers to engage in training in a competitive business climate, such effort would need support from public institutions. Chan and

Moehler (2008) opine that such involvement is only made possible through synergies among the education ministry, government and the industry.

Despite the crucial role played by vocational training in providing young people with skills for the labour market, Wolter (2012:1-2) laments the poor participation of employers in the training. The attitude derives from the substantial investment that the employers would have to commit to the training project and the fear of the apprentices moving away to other employers after the completion of the training. The foregoing scenario vividly captures the situation in Nigeria. Dike (2008:Online) submits that the involvement of the employers in training is almost non-existent. There are no incentives from government to motivate the employers; and the situation is exacerbated by the absence of an appropriate public institution like the Construction Industry Development Board (CIDB) as argued by Raidén and Dainty (2006:63-79) to drive the training in the construction industry.

3.2.1.13 Assessment and certification

Within the Nigerian context each college is saddled with the task of trainees' assessment prior to certification. The assessment is largely tailored to the limit of the content of work covered within the colleges giving the various challenges; and largely lacking in the labour market requirement. However, there is a nationally coordinated examination for artisans seeking better recognition; the Trade Test I, II and III. The Trade Tests are designed for different trades at different proficiency levels. Trainees are usually advised by the college management to go for the trade test after leaving the college.

According to Scheerens (2011) the output component captures the direct and immediate results of the training. Usually, these are observed at the individual and institutional levels. The immediate results of the training on the trainees as individuals; and the results obtained by the institution in terms of its graduates. In the opinion of the European Commission (2006:14) output indicators include competencies of trainees and the number of graduates of the college. Given the low quality of the training process, which is more of theoretical teaching than practical; Atsumbe *et al.* (2012:5) posit that the competencies of the trainees usually fall below labour market requirement after graduation. Consequently, many of the vocational college graduates remain unemployed years after college, adding to the poverty level in the society. Some have returned to peasant farming in a bid to survive.

3.2.1.14 Graduates of the colleges

According to Abassah (2011:4) the vocational colleges are poorly patronised in terms of the number of applicants seeking admission. Most young people prefer to repeat matriculation examinations before entering into the university for four or more times to seeking for admission into

vocational colleges. The graduates of the colleges are very few in society given its poor image and the low patronage. Atsumbe *et al.* (2012:5) note that the impact of the vocational colleges is very low in the world of work.

The outcomes of the training cover its national impacts in terms of employments provision for the graduates, income earnings and a social contribution in form of reduction in poverty and unemployment in the society. Scheerens (2011) identifies indicators to include the training graduates in employments, income earnings, and contributions to the national productivity.

3.2.1.15 Employment

Given the challenges associated with the vocational training colleges in Nigeria, Atsumbe *et al.* (2012:3) contends that it is not surprising to find many of its graduates unemployed years after graduation. The skills of the graduate do not match the labour market requirements. The labour market needs are driven by the constant changes in technology and there is the need for any artisan seeking employment opportunity to be abreast of the latest development in the industry and upgrade their skills accordingly in order to remain relevant and employable. Dike (2008:Online) maintains that there is the need for urgent intervention in the Nigerian vocational education and training subsector in order to mitigate the current level of poverty and unemployment in the country.

3.3 A REVIEW OF THE TRADITIONAL APPRENTICESHIP MODEL IN NIGERIA

Traditional apprenticeship in Nigeria exists as a form of an agreement between a master-artisan and the apprentice. The apprentice is trained for a specified craft or trade through practical experience under the supervision of the master-artisan. It is a form of on-the-job training which allows the apprentice to learn by observation and practice (Uwameiye and Iyamu, 2002). This is a common method of training youths in trades and crafts to become empowered economically through jobs like carpentry, painting, building, decorating, and farming. Uwameiye and Iyamu (2002) posit that it was an institution within the African setting before colonial rule. Every male child born into a family was naturally inducted into his father's craft, and it was easy to spot a young boy as a member of a family simply by seeing him displaying expertise in a particular trade. However, Eneh (2010:49-50) observes that the youth have developed an apathy to skill acquisition as they prefer alternative approaches that will fetch quick money instead of learning a vocation. The present stock of artisans is ageing and many of them do not have new apprentices to mentor. Consequently, knowledge transfer is made difficult and this poses the great danger of extinction of the apprenticeship system.

3.3.1 The training providers

The individual master artisans are the training providers in this model. According to Uwameiye and Iyamu (2002) in the traditional apprenticeship contract, a fixed fee is made payable by the apprentice to the master and in return, the apprentice is attached to the master's shop for instance, carpentry, welding, for a stipulated training period. The master has full control of the training without any input from the government (Uwameiye and Iyamu, 2002). The set-up for a training workshop is made up of the master (skilled), journeyman (semi-skilled) and the apprentice (unskilled).

3.3.2 Funding and training facilities

Usiwoma and Ngbor (2005: 325-335) note that the master artisan is fully in charge of the training and any related funding in the traditional apprenticeship model. The apprentices or the parents however pay an agreed training fee to the master artisan. This could be in the form of instalments or one-off depending on the agreement and the financial strength of the apprentices involved. The training facilities and equipment are solely provided by the master artisan. In essence, government does not provide any form of funding for the traditional apprenticeship model.

3.3.3 Teaching and learning methods

According to Usiwoma and Mgbor (2005:327) the traditional apprenticeship training is essentially an on-the-job training and the method of training is mainly by observation. The implications of this are that learning of apprentices is dependent on the flow of jobs to master. In a development where the patronage of the master's business is low, the apprentices have nothing to learn. There are no formal curricula of training to guide the training programme. Rather the apprentices learn from the master on the jobs at hand from clients. Omoruyi and Osunde (2004:24) observe that the training is essentially lacking in theoretical aspects on the explanation of principles behind operations. The educational background of most of the apprentices is limited to primary school. This situation is similar to most of the master artisans who are also from same training background. The training is described by Usiwoma and Mgbor (2005:327) to be purely mechanistic.

3.3.4 Assessment and certification

The assessment of apprentices in this form of training is determined by customers or clients. The apprentices are given tasks to perform independently after a reasonable length of time on the training. This is repeated more and more as the training period nears completion. The competence of the apprentice is confirmed by the assessment of the customers to the master artisans. At the end of the training, the master artisan issues an independent certificate to the apprentice. This permits him to start the operation of his own business outfit (Usiwoma and Mgbor, 2005:327).

3.3.5 Regulation

Government is not involved in any way in the whole training process. The accreditation of master artisans, determining the appropriate duration for the training, prescribing training curricula, funding or supporting the apprentices, assessment and certification processes and regulation of practice after graduation everything is fully in the control of individual master artisans. This development has negatively impacted on the quality of training offered and the competencies of the graduates from this system of training. The certificates offered from this type of training are not officially recognised in government and corporate circles (Omoruyi and Osunde, 2004:33; Usiwoma and Mgbor, 2005:328; Eneh, 2010:49-50).

3.3.6 Employment

However, this form of apprenticeship as small-scale enterprises have provided employment for many youth and contributed immensely to the growth of both the local and national economy. They also meet the needs of the young school leavers who needed to be empowered vocationally (Omoruyi and Osunde, 2004:34).

From the foregoing arguements, it is clear that there is a sound footing in the literature for the hypotheses that the government policy framework for the training of artisans in the traditional apprenticeship system is inadequate; and that the coordination and regulation of the traditional apprenticeship system is poor. However, the validity of these assertions through empirical testing is inevitably required to further lend credence to them. This is addressed in Chapter Six of this report.

Figure 3.1 shows a summary of the challenges confronting the artisan training system in Nigeria.

Figure 3.1: Summary of challenges confronting the artisan training system in Nigeria

Source: Researcher's construct

3.4 A PESTLE ANALYSIS OF CONTEXTUAL FACTORS IMPACTING ON THE ARTISAN TRAINING SYSTEM

The context of a system refers to the macro-environment in which the system operates. Downey (2007:Online) argues from the strategic management point of view that a comprehensive understanding of the operating environment of an organisation or a system is critical to its success. According to Downey (2007:Online) a PESTLE analysis is a strategic analytical tool employed to determine and evaluate the key components of the macro-environment of an organisation / system

and how the system interacts with these contextual factors in order to improve the systems' efficiency. The six factors represented by the alphabets in the acronym **P-E-S-T-L-E** are translated as follows: P - political, E - economic, S- social, T - technological, L - Legal and E - ethical issues impacting on the operation of the system (Downey, 2007:Online). The dynamics between the artisan training system and these contextual factors are critical to the productivity and the outputs of the system.

The elements in the factors with regards to the artisan training system are detailed as follows:

- **Political:** Issues relating to government stability, education policies, quality of political leadership, corruption level, bureaucracy in education administration.
- **Economic:** This concerns the unemployment rate, poverty level and competition.
- **Social:** Population growth rate, societal perception of VET, youth attitude towards skills acquisition, attitude towards importation of artisan services.
- **Technological:** Basic infrastructural level, rapid technological changes.
- **Legal:** Employment laws, discrimination against VET qualifications
- **Ethical:** Ethical recruitment practice, maintenance of standards.

A detail discussion of the various contextual factors is presented in the following sections.

3.4.1 The political environment in Nigeria

According to Mukoro (2005:3) Nigeria is a federal state with a cluster of diverse ethnic nationalities lacking the cohesive force that is needed to form a unified national ideology. Leaders struggle to take control of the centre so as to dispense privileges to their kinsmen from the same ethnic group. There is unequal distribution of political power on a regional and ethnic basis. This resulted into in an unbalance socio economic development as the struggle to control the centre by ethnic leaders has degenerated into ethno-political tension. This largely accounts for the failure of many national development policies and programmes. For instance, education policies have been made only theoretically; when it comes to implementation, ethnic politics and the lack of sound political leadership and will have always hampered the implementation and progress.

In the opinion of Dike (2011:4) the poor political leadership is the major cause of the problems facing Nigeria. The political system lacks checks and balances to control the autocratic tendencies in government and to hold political office holders accountable for their actions. There is a lack of ethical politics and values. Corruption is, however, a greater part of the problem facing the country as it creates wide gap between the leaders and the followers, which hampers socio-economic development. For instance, budgetary allocations for vocational education subsector that are meant for infrastructure, training equipment and other training facilities are often tampered with by political office holders along the bureaucratic procedures of disbursing the fund. What finally gets

down to the colleges are not sufficient enough to execute any meaningful projects. Dike (2011:4) contends that there is also a lack of political will in the leadership to prioritise education and to especially lay appropriate emphasis on vocational education and training among youth, despite the high rate of youth unemployment in the country. This accounts for poorly developed artisan training system, manifested in the unregulated informal training system and neglected technical colleges (Olaoye, 2007:12). More recently, there are secession moves by some religious and ethnic groups, for instance, the fundamentalist "Boko Haram" which continuously sends threat signals to the existence of Nigeria (Oluwa, 2012:2). The group's activities have constituted a serious attention diversion to the present administration, focussing more on security at the expense of national development of which vocational education and training forms a part (Musa, 2006:10).

3.4.2 Economic environment

The World Bank (2011) reports that the Nigeria economy is mainly dependent on crude oil; accounting for 95% of its exports. The oil boom of the 1970s which led to the neglect of its then productive agricultural sector, coupled with the long period of military rule laden with corrupt practice and the mismanagement of public funds. The attendant consequences range from an almost total collapse of the basic infrastructure and social services, to a high level of poverty among the citizenry. Available data (NBS, 2012) reveal that the poverty level stands at 69% and unemployment rate at 21%, human development index (HDI) at 0.459, which gives the country a rank of 156 out of 187 nations. The inflation rate is 10.8%, (Global Finance, 2012; NBS, 2012). According to African Union (2007:17) vocational training is an essential tool to reduce poverty and unemployment. It is essentially designed to develop the skills for practicing particular occupations as well as learning designed to prepare for entry or re-entry into the world of work. Oketch (2007:220) maintains that in most cases the learning is patterned to generally lead to direct labour market entry which is a potential strategy for addressing poverty and unemployment in society. It is pertinent to note that this philosophy is yet to be fully understood and captured in the policies and programmes of the political leadership in Nigeria. Thus, vocational colleges are neglected by successive administrations giving primary attention to general education in policies and resource allocation.

3.4.3 Social environment

Nigeria has a population of over 140 million and an estimated growth rate of 3.2% (NPC, 2006). The World Bank (2013) has put the latest estimate of Nigeria's population as at July 2013 at 170 million. Consequently, Nigeria has an enormous unemployment challenge and stiff competition in the labour market. The few available job opportunities only go to the best skilled applicants; and obviously the poorly skilled artisans would remain unemployed. It is pertinent to note that despite the huge unemployment challenges confronting the nation, there is still a shortage of well skilled

artisans suitable to meet the construction labour needs. For instance, Nworah (2008:Online) reports that there is an influx of migrant artisans and building tradesmen from Togo, Benin Republic and Ghana in recent times to Nigeria. They are attracted by the building contracting firms to fill the gap created by inadequate local artisan supply. This development is unacceptable and thus, demands urgent intervention.

3.4.3.1 Poor public perceptions of artisans

Aturu (2011:3) submits that there is generally a poor public perception of artisans and vocational education pathways. It has been considered as a career path for the less academically endowed. African Union (2007:23) argues that the public views VET as meant for the rural poor and the economically disadvantaged to learn a trade in Nigeria. This perception has been fuelled by the low academic requirements for admission and limited prospects for further education and career development. African Union (2007:23) further states that the worst impression is sometimes created by government that the primary objective of vocational education is to keep the dropouts off the streets. They should rather project this type of training as an effective strategy to train skilled workers for employment and for sustainable livelihoods. Dike (2008:Online) asserts that the youth generally have poor orientation towards vocational education and skills acquisition. There is therefore an urgent need for youth re-orientation. First, through appropriate policy reforms that give due recognition to vocational education pathways; and then, through the media which is a potent tool. The religious organisations would also help in the task.

3.4.4 Technological environment

There are enormous infrastructural challenges in Nigeria. The most important of these is the inadequate electricity supply. The equipment and tools in the workshops and laboratories required for the training of artisans need an efficient electrical power supply to function. Given the huge population of the country and the limited power generation, which stands at 4500 Megawatts (PHCN, 2013), most households and institutions still run on generators. This practice is counterproductive to the nation's economy. The crux of the power problem is the fact that government has refused to privatise the generation and distribution of electricity despite its protracted failure to deliver. The privatisation process that started over ten years ago is yet to produce any meaningful results due to corrupt practices of the political office holders involved in the process. Another concern is the rapid changes in technology globally. This is impacting on every sector including construction. Clients' requirements are changing fast and this requires continuous adaptation of the artisan training curricula to meet the labour market needs. Internet services are not available in most of the vocational training colleges. Mobolaji (2012:Online) observes that internet penetration is still low within the country and that there is the need to fast-

track the broadband deployment in order to catch up with the pace of global development in information communication technology.

3.4.5 Legal environment – unfavourable employment policy

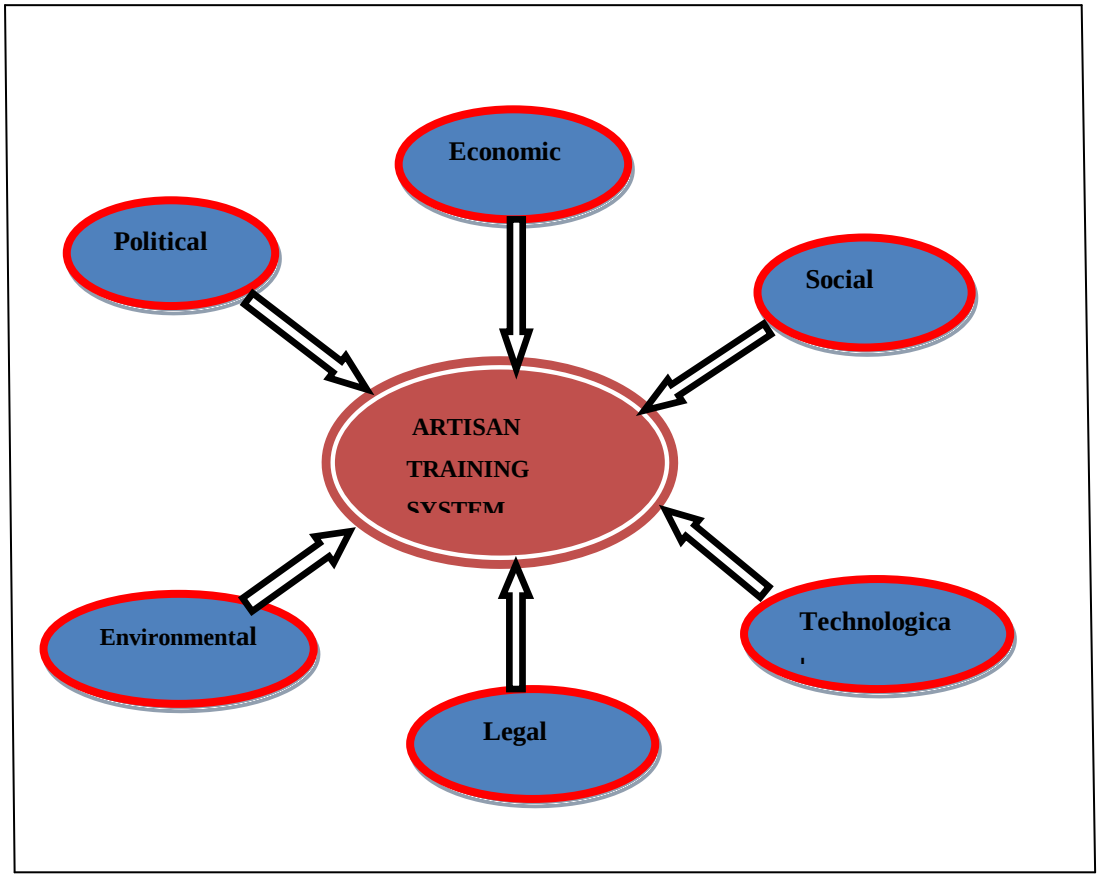
Aturu (2011:2) opines that government employment policies discriminate against vocational graduates giving superiority to general education certificates over VET in remunerations and appointments. This has generated unending debates and ill feelings from VET graduates. Dike (2006:2) laments that the policy makers are biased towards vocational education and find it difficult to agree that VET graduates are in no way inferior to their counterparts from general education background. This is one of the factors that make youth and even parents avoid vocational education and training pathway.

3.4.6 Ethical factors

According to Fatimilehin (2010:Online) Nigeria loses a lot of money in capital flight to immigrant skilled artisans and yet there is a serious unemployment crisis within the country. For instance, construction employers outsource workmen to make up for the inadequate local supply (Nworah, 2008: 3). This recruitment practice is unethical; and it negatively impacts on the national economy. Instead of engaging the services of foreign artisans while unemployment is high at home; government should compel the construction contracting firms and other employers to support the upgrading of the training of local artisans to meet to the required standard in the industry.

Figure 3.2: Contextual factors impacting on the artisan training system (PESTLE Model)

Sources: Researcher's construct



3.5 SUMMARY

The problem of inadequate training of artisans for the construction of houses in South Western Nigeria has been reviewed. The review shows that both the vocational technical college and the traditional apprenticeship training models in Nigeria are performing poorly in the training and supply of an adequate number of artisans for housing delivery. A number of challenges confronting the artisan training system in Nigeria have been identified and reviewed. From the foregoing discussion, it is essential to summarise in terms the main problem and the sub-problems being addressed in this study. It is necessary also from the forgoing discussion to propose some hypotheses to be empirically tested in the study. These are captured in the next sections.

3.5.1 Main problem

The inadequate training of artisans for the construction of houses is an impediment to housing delivery in South Western Nigeria.

3.5.2 Sub-problems

Sub-problem 1: The government policy framework for artisan training is inadequate.

Sub-problem 2: The necessary recruitment strategies for attracting potential artisans are lacking.

Sub-problem 3: The vocational education and training system has become ineffective.

Sub-problem 4: The traditional apprenticeship system of training artisans is performing poorly.

Sub problem 5: The National Qualification Framework is faulty and rigid.

Sub-problem 6: The involvement of employers in artisan training is poor.

3.5.3 Hypotheses

Hypothesis 1: Government policy framework for the training of construction artisans in the colleges is inadequate.

Hypothesis 2: Government policy framework for the training of construction artisans in the traditional apprenticeship system is inadequate.

Hypothesis 3: The funding mechanism for the vocational education sub-sector is poor.

Hypothesis 4: The recruitment strategies for attracting new entrants into the artisan training in the colleges are ineffective.

Hypothesis 5: The coordination and regulation of the traditional apprenticeship system of artisan training is poor.

Hypothesis 6: The National Qualification Framework under which the vocational college system of training operates is faulty and rigid.

3.6 CONCLUSION

This chapter presented a review of the three basic models of artisan training. It also identified and appraised the two models operational in Nigeria. It then summarised the various dimensions of the artisan training challenges into the main and the sub-problems. The chapter closed with the formulation of a set of hypotheses to be tested in the study. The next chapter, Chapter Four, presents a review of artisan training practices from different countries around the world.

CHAPTER 4
INTERNATIONAL PERSPECTIVES ON ARTISAN TRAINING SYSTEMS

4.0 INTRODUCTION

This chapter presents a review of artisan training practices from other countries around the world. The countries are selected from various regions of the world based on the United Nations Development Programme (UNDP, 2013) Human Development Index (HDI) report. And also on the basis of places where lessons can be learnt from successful approaches adopted in addressing artisan training challenges. UNDP (2013) described the level of development in the selected countries as comparatively high. The nations and the HDI figures include: the USA representing the Americas with HDI figure of 0.937 (very high); New Zealand, representing the Pacific, with 0.919 (very high); the UK representing the Europe, with 0.875 (very high); Malaysia representing Asia with 0.769 (high) and South Africa representing Africa with HDI figure of 0.554 (medium). The chapter also summarises the various strands earlier discussed, highlights the gaps in knowledge and restates of the hypotheses of the study.

4.1 THE UNITED KINGDOM (UK)

Skills challenges and responses within the UK construction industry are discussed in the next sections.

4.1.1 The challenges

Identified construction skills challenges include poor employers' participation in artisan training, image problem, difficulty in attracting new entrants, inadequate funding and a high drop-out rate among young trainees (Dainty *et al.,* 2004:276; Dainty *et al.,* 2005:387-398; Watson and Sharp, 2007:123-127).

4.1.2 Responses

In the UK, construction artisan skills development is given prime attention and there have been continuous policy adjustments and introduction of approaches and initiatives to address areas of challenges (Dainty *et al.,* 2004:276). For instance, over the last decade, labour market policies have attempted to mitigate factors leading to unpopularity of career choices in the industry and also encourage employers to participate in training (Watson and Sharp, 2007:123-127). There is a dedicated government organ for training artisans in the construction industry, the Construction Industry Training Board (CITB). This board provides incentives to employers as a way of encouraging them to participate in artisan training (Dainty *et al*., 2004:276).

The launching of the Construction Skills Certification Scheme (CSCS) in 1995 was another milestone achievement. The CSCS was an attempt to address the image and recognition problem of artisans by registering competent construction artisans within the UK through certification that the holder has undergone prescribed health and safety training and testing in the industry (CSCS, 2003). In a related development, MacKenzie *et al.* (2000:254) observe that the introduction of Investors in People (IiP) initiative in early 1990s was another step in the right direction. It was aimed at motivating the UK employers to invest in the training and development of their workers which was also adopted in the construction sector. Whittock (2002:449) opines that efforts have been made in recent time to address artisan shortages through diversification of the recruitment base. Dainty *et al.* (2004:277) further posit that placement and standardisation of remunerations have also been addressed while a number of skill research projects were initiated and funded. In response to high dropout rate among young trainees (as high as 50%), MacKenzie *et al.* (2000:254) opine that a change in recruitment strategies was adopted with a shift towards adults which were found to be more committed than young people. Proactive approaches were employed in artisan skills development. One of such is the National Construction Week. This is a whole week of media campaign organised by CITB to showcase innovations, new techniques and professional practices in construction. It is aimed at attracting potential artisans to the industry (MacKenzie *et al.,* 2000:277). An attempt was also made to revive the Youth Training Scheme to improve the training drive (Watson and Sharp, 2007:123-127). In the opinion of Dainty *et al.* (2005:393-398) lobbying for policy interventions on skills concerns and creating synergy between key stakeholders such as training providers, employers and regulatory bodies are also being explored.

4.2 MALAYSIA

A review of the Malaysian situation relating to the training of artisans for construction projects is discussed in the next sections.

4.2.1 The challenges

Hassan *et al.* (2010:232) observe that the Malaysian construction workforce has been largely traditional and labour-intensive. They come from various backgrounds with varying skills and qualifications. Yet the industry has been experiencing shortage of skilled artisans. In many instances, in the face of the inadequate supply of skilled artisans, inferior alternatives have been used or at the extreme of cases, works had to stop (Salleh and Abdul Aziz, 2001:15). According to Abdul-Aziz (2001:789) the number of Malaysians working at the construction sites especially at the operative level is critically diminishing and they are being replaced with imported cheap and unskilled workers. Craft-based training is essentially offered by the twenty (20) training and

vocational institutes scattered throughout the country. Despite this, demand has far outstripped supply. Abdul-Aziz (2001:790) further observes that most of the training offered were very fragmented and uncoordinated. In the opinion of Jaafar *et al.* (2007:180-184) the training within the industry is inadequate and resources allocated to training are largely insufficient. In a related development, Aman (2008:12) submits that the shortage is exacerbated by the fact that most construction organisations are unwilling to invest in the training of their workers. The governments have tried to motivate the private sector to help generate skilled and semiskilled manpower by offering incentives but responses were very low.

4.2.2 Responses

The traditional way of response to overcome the shortage of skills has been to employ foreign workers. The Malaysian Trade Union Council MTUC (2006:Online) reports that there are well over 500,000 foreign construction workers within the industry and most have very little training or competency to work on construction projects. Also in response to the skills challenge, the Construction Industry Development Board (CIDB) as the organization entrusted to promote construction training at the industry level, have implemented strategies to address this problem. One of such is the launching of Construction Industry Master Plan (CIMP) which is an initiative for the industry to revive the training of skilled artisans. (CIDB, 2008:10) states that construction related training courses, partnership training arrangements with the industry, encouragement of training organisations to conduct training and the introduction of the Contractors Continuing Development (CCD) scheme are areas that must be promoted in the initiative. Likewise, CIDB has started strengthening both the vocational and academic training provisions through closer collaboration with the stakeholders in education and the industry. Significant progress has been made in training since CIMP was launched (CIDB, 2008:10). However, some critics contend that skills gaps are still persisting within the industry. Training within the industry was very poor before CIDB was established and the launching of CIMP. There is little evidence that this has significantly improved.

Given the rapid changes in demands at the workplace, Bereiter (2002:215) contends that continuous training has become inevitable because useful life of knowledge acquired has become very short. Commenting further, Bereiter (2002:214) notes that in the Malaysian construction industry, there is a long way to go. This is so especially in the areas of the welfare and career wellbeing of the trainees after the completion of their training. These areas have been neglected in the past. All too often this is forgotten. Poor consideration for human resource management, the disconnection between the vocational, academic and professional qualification framework are obvious contributors to the skills challenge, Bereiter (2002:212) asserts.

4.3 THE UNITED STATES OF AMERICA

Given the importance attached to education and training in the US, construction skills development strategies are being reviewed from time to time using different policy options and initiatives. For instance, the American Employment and Training Administration (ETA, 2004:10-18) submits that the construction industry is listed among the top ten sources of economic growth and employment generation through the next decade. The annual growth rate of the industry was estimated at 1.3% within the period. The US Bureau of Labour Statistics BLS (2004:7) projects that between 2004 and 2014 employment in construction will grow by an estimated 800,000. Artisans in construction, such as carpenters and electricians, are also useful in other industries. Therefore, training solutions that focus these trades would benefit other industries as well. In response to this, ETA and the Office of Apprenticeship Training Employment and Labour Services (OATELS) with the Department of Labour (DoL) hosted a Construction Workforce Solution Forum to develop innovative solutions to address construction skills challenges. Four major challenges were identified confronting adequate supply of artisans. These together with the adopted strategies are discussed in the following sections.

4.3.1 The challenges

The challenges confronting the training of artisans for construction in the United States of America are discussed in the following paragraphs:

- **Image and outreach:** According to ETA (2004:14-16) the industry leaders observe that construction occupations are perceived as dangerous. Other factors that have contributed to the declining number of entrants into the industry and those willing to stay include perceived poor safety records, poor image of the industry and harsh working conditions. For instance, most youth, parents and guidance counsellors are ignorant of the skills required by many occupations in the industry. The career choices of these young people are to a great extent influenced by the people around them who are not informed about the opportunities and benefits that are available in the construction industry.
- **Recruitment:** It has been observed by a number of industry leaders that there is a shortage of workforce in the construction industry. The industry has been facing challenges recruiting individuals from two particular demographic classes namely youth and non-traditional labour pools (e.g. women). A lack of awareness of job opportunities in the industry, among other reasons, is attributable to challenges being faced in recruiting from these two groups.
- **Skill development and training capacity for youth:** Industry leaders report that employability skills required in construction industry are deficient in some youths. For instance, math and communication skills required in the industry, while others could have a stronger work ethic. At the same time, industry leaders report that the capacities of some

training providers are inadequate to serve the best interest of the youth in the area of their skills needs. For instance, there is a lack of relevant textbooks and adequate curricula for training in some vocational-technical high schools. Therefore, spending time in apprenticeship programmes would be of immense benefits to the vocational teachers in such schools (ETA, 2004; DoL, 2004).

- **Skill development and training capacity at entry level and incumbent workers:** Challenges facing entry-level workers, for instance, those who have limited proficiency in English face safety and advancement challenges. The skills to properly use the increasingly complex technology in the construction industry is lacking in other entry-level workers. Challenges being faced by incumbent workers include the necessity to enhance their management and leadership skills. Some workers have little experience working with non-traditional labour pools. Some training colleges no longer have the capacity to admit new intake while some education and training providers that serve new entrants and incumbent workers are inadequate.

4.3.2 Responses

Strategies adopted to mitigate the image and outreach challenges include a national media campaign to boost the image of the artisans in construction, the creation of construction academies in high schools, provision of scholarships and establishment of “Skills to Build America Future” (SBAF) initiative jointly sponsored by (DoL) and National Association of Home Builders utilising a wide array of innovative strategies to promote opportunities in the house building trades.

In terms of responses to the recruitment problem, the strategies adopted were that high school science and mathematics subjects were created to target the construction industry; the skills acquired are transferable to industry, technical colleges and apprenticeship programmes. Others include providing youth with state-level labour market information on wages, benefits, and career ladders via the internet; partnering with local high school trade classes in order to recruit youth; packaging internet-based and DVD games about different construction operations and occupations. Construction firms and organisations should provide students with tours of job sites and guest speakers (OATELS, 2004). For recruiting non-traditional and locals, adopted strategies include targeting training to prisoners, starting pre-apprenticeship or apprenticeship programmes in prisons, and involving local vocational rehabilitation staff. In addition, marketing the industry in non-traditional venues, such as graduations and other social events, focusing on the benefits of working within the industry are also possible options.

Approaches adopted for addressing skills development and training capacity of youth according to OATELS (2004) include involving both the teachers and school administrators in externships that are sponsored by trades in order to bridge the gap between education and the workplace. Others

include sponsoring teachers and school administrators to participate in initiatives like Construction Workforce Solution Forum, where innovative training approaches are exhibited and to acquire continuing education credits; organising field trips, packaging summer construction camps that would afford the students rich learning experiences, hands-on learning exercises and other rich learning activities. Construction businesses are to collaborate with school systems to help form industrial and academic skills curriculum that would prioritise employability. Others are stakeholders in the industry and associations should synergise to support apprenticeship programmes. These programmes need to include standardized basic skills curricula for each construction trade. National marketing drive should be invigorated among industry stakeholders. This should be specifically targeted at the youth through attractive marketing information on the construction industry.

Responding to entry level related challenge, DoL 2004 and OATELS (2004) submit that the development of a pre-employment programme is one of the approaches that can boost the skill levels of entry-level workers. This should be led, supported, and funded by the collaboration between labour management organizations, DoL and industry associations. Enhanced opportunities and pathways should be offered to workers in under-represented groups to undergo management and leadership skills training. Equipment manufacturers and local colleges should partner to create a skill training programme for specific construction occupations. This approach would offer students opportunities to pursue employments with companies involved in the programmes. Finally, a comprehensive construction career pathway should be developed through the collaborative efforts of a wide spectrum of stakeholders in construction including employers, associations, DoL and labour management organisations. The pathway should make provisions for workers to choose among different options at different levels in their career (ETA, 2004:14-16).

4.4 NEW ZEALAND

A review of the New Zealand construction skill challenges and response strategies adopted is presented in the next sections.

4.4.1 The challenges

The Construction Industry Council of New Zealand reports that the building industry is the nation's biggest physical asset having a value of $275 billion, with an annual growth rate of $11 billion (CIC, 2005:7). However, due to the increasing demand for infrastructure, the building industry in New Zealand is currently experiencing a severe skills shortage. Indications from economic projections in New Zealand have revealed that the skills shortage is more critical in the building and construction sector of the economy (NZIER, 2004:13). The New Zealand Department of Labour DoL (2005:12) advances reasons for skills shortages in the construction industry of New Zealand to include sharp

decline in the number of new entrants into the construction trades, low completion rates of artisans in training, net outflows of long-term migrants in the trades occupations since early 2000s and unattractive nature of some occupations in terms of wages and working hours. Bedford (2003:63-68) opines that the factors responsible for the New Zealand skills shortages include poor investment in training, international competition for skilled workforce, the fast growing knowledge economy, constraints in attracting and keeping people in the industry and poor conditions of service and pay. Hodgkinson (2004:56) argues that sharp drop in the number of people entering the trades reported by the DoL was due to the image of the industry and perceived low wage rates. The New Zealand Department of Building and Housing posits that the building industry depends on informal training system majorly to offer training to its workforce (DoBH, 2004:10). Emigration of skilled construction workers further exacerbates the skills shortage in the New Zealand building industry and immigration is not filling the gaps created by this development (DoL, 2005:26).

4.4.2 Responses

In terms of responses to the challenge in New Zealand, Lobo and Wilkinson (2008:46) posit that there has been a considerable improvement in government expenditures on the industry training in the past few years. The response strategy from the industry towards skilled individuals has been in the area of wage increases in order to attract new hands and also retain existing staff. Construction businesses have invigorated their investment in marketing to high school students through increased partnership with high schools and colleges (Fletcher, 2005:53). Similarly, the Construction Skills Programme has been adopted by an Industry Training. Lobo and Wilkinson (2008:42-51) report that the people were not encouraged to train people in the building industry trades. The reason for this was the lack of information about such trades and a poor image of the industry in society which limited the interest of potential trainees. Another strategy was the adoption of an outcome-driven training approach. Under this approach training is directly linked to employment opportunities immediately the training was completed. This would need partnership between education, industry and government. Lobo and Wilkinson (2008:48) further submit that government should provide incentives for employers to participate in training and also hire school career counsellors to help in the areas of critical skills shortages. Government should also increase funding for Industry Training Organisations in order to attract more trainees into the industry. For education, one important approach educational institutions could adopt is to close the gap between universities, polytechnics, industry training organisations. Collaboration across traditional boundaries between different tiers of educational institutions and between industry and other training providers would immensely help to mitigate the skills challenges (Lobo and Wilkinson, 2008:48). The option of adapting overseas training models was also considered for New Zealand; prominent among the options was the German dual model of training where there are technical

and academic schools, a model which has recorded successes in addressing skill challenges (Fletcher, 2005:53).

4.5 SOUTH AFRICA

A review of the artisan training challenges peculiar to the South African construction industry and the response approaches are discussed in the next sections.

4.5.1 The challenges

In the Republic of South Africa, skills shortage across a range of different sectors of the economy has been a pressing issue. It is more acute in the construction sector because its growth and efficiency is being constrained by the shortage (Mulder, 2007:60; Anderson, 2008:81). According to Murray and Roberts (2009:13) construction industry in South Africa has been enhanced and demand for related human capital has increased and that the primary challenge lies in the development of basic skills. Hall and Sandeland (2009:216) argue that there is a strong indication that within the South African construction sector, every company is facing the challenge of severe skills shortages especially among artisans and supervisors. Economist Intelligence Unit EIU (2008:4) posits that skills shortages in particular, remain a serious constraint in South Africa and that this is critical to national development. EIU (2008:4-5) further argues that skills concerns are so crucial to the development of South African economy that high premium is placed on it in policy and political agenda. Given the high unemployment rate in the country, this was put at 25% according to the 2011 labour statistics released by Statistics South Africa (Stats SA, 2011:7) This is one of the highest in the world, ranked 173rd out 199 countries surveyed (CIA, 2011)

4.5.2 Responses

In response to the identified challenges, efforts are being put in place to mitigate them. A number of government initiatives are being explored ranging from skills development to encouraging employers. For instance, the creation of Sector Education and Training Authority (SETA) in year 2000 was a step in the right direction. SETA is meant to develop the basic skills of the people in order to make them employable in any sector of the economy. The arm of SETA that focuses on skills development in the construction industry is the Construction Education and Training Authority (CETA) providing training and certification for construction artisans.

- **National Artisan Moderation Board (NAMB):** Further in terms of responses, the South African government through the Department of Higher Education and Training (DHET, 2013) has recently launched the National Artisan Moderation Board (NAMB) whose focus is to coordinate artisan training and development nationally.The NAMB is to work with South African Qualification Authority (SAQA) to provide career advice to youth on artisan trades, to

create awareness on career opportunities, attract new entrants, take charge of testing and certification in artisan trades and professionalise artisan occupations (DHET, 2013).

- **Image problem and employers' participation:** Construction has always had image problem among the young people globally (ETA, 2004:14-16; DoL, 2005:7; O'Donnel *et al.,* 2008:60; Hassan *et al.,* 2010:234;) and the same is true in South Africa. Therefore, O'Donnell *et al.,* (2008:62) argue that effort to address current construction skills shortages must start with a serious campaign to boost the image of the industry and its careers in society.

Newman *et al.* (2008:19) submit that employers are required to carry out skills surveys to establish the education levels and the potential for development in their people, and to develop a solid plan for skills development, and that when suitable training is executed. The organisation may claim back its contribution to training in form of tax refund. Hall and Sandeland (2009:216) posit that solutions are being found in assessing and developing skills among the local workforce. However, the practicable short-to-medium-term strategies to plug the skills gap lie in combining the construction company workers with locally sourced labour that are complemented by immigrant workers.

4.6 SUMMARY

The foregoing discussion has established that a problem exists relating to artisan training for house construction in South Western Nigeria. Furthermore, the problem needs to be investigated empirically in order to develop appropriate solution for addressing it. The discussion has revealed that that there are three fundamental models of artisan training. The formal / school-based, the informal and the dual models. The strengths and weaknesses of these models have been highlighted. It has been established also that only two models are operational in Nigeria, these are referred to as the vocational technical college and the traditional apprenticeship training systems. A contextual review of these two models in Nigeria has been carried out.

The discussion has also established the IPO model of general education as the theoretical framework for this study. The IPO model provides the connection between the research and the existing body of knowledge in which it is located, which is education and training evaluation. It also outlines the concepts and ideas underlining the research. It therefore provides a footing for the research and the general framework for data collection. A detailed critique of alternative models and approaches of education and training evaluation has also been presented. The appraisal covers the Kirkpatrick model, Brinkerhoff's approach, Owen's model, the IPO model, Tyler's model and Scriven's model. The justification for the adoption of the IPO model as the appropriate framework for this research has also been established. The discussion has also identified the challenges confronting the two artisan training models operational in Nigeria.

This current chapter has presented a review of artisan training practices around the world. The discussion shows that artisan training challenge in construction is global in nature. However, the nature and dimension of artisan training challenge may differ from one country to the other. A number of approaches to mitigate different aspects of artisan training challenges have also been reviewed.

However, it is important to note that the articulation of appropriate and effective strategies for addressing a problem requires a current and an in-depth understanding of it within the context under investigation. This therefore calls for a thorough empirical investigation of the Nigerian situation to vividly capture the nature and the dimension of the of artisan training challenges. Additionally, the absence of empirical evidence in support of the hypotheses formulated in this study also points to the need for their verification. The results of the empirical investigation would provide a springboard for developing appropriate strategies for addressing the problem within the Nigerian context.

In order to properly investigate the problem, it is essential to recall the goal of this research. The primary focus of this research is the evaluation and improvement of the artisan training system for house building projects in South Western Nigeria. Evaluation has been described as the process of gathering information about the merit or worth of a system for the purpose of its improvement or making decisions about its effectiveness (Preskill and Catsambas, 2006:15-22). Therefore, an evaluation must take actions to assess various aspects of a system and in this case the inputs, the processes and the outputs of the artisan training system in the study area. The evaluation process would produce a reflective link between the dream of what should be and the reality of what actually is (Hansen, 2005:447-462). It should be noted that the formulation of effective artisan training improvement strategies is capable of adding value to the system and will also boost the productivity of the house construction industry.

The current problem in Nigeria requires a thorough investigation and a comprehensive understanding in order to articulate appropriate solutions. However, not many of this type of enquiry have been conducted on the training of artisans within Nigerian construction industry. This situation therefore demands sound evaluation skills which can contribute to the articulation of strategies, policy decisions and pragmatic solutions. Training evaluation could help to develop a comprehensive understanding of the peculiar situation in Nigeria. Therefore, the concept of training evaluation is applied to resolve this problem.

At this junction, it is important to restate the main problem, the objectives and the hypotheses that have been formulated in the study in order to refocus the goal of the study.

4.6.1 Main problem

The inadequate training of artisans for the construction of houses is an impediment to housing delivery in South Western Nigeria.

4.6.2 The hypotheses

- Government policy framework for the training of construction artisans in the colleges is inadequate.
- Government policy framework for the training of construction artisans in the traditional apprenticeship system is inadequate.
- The funding mechanism for the vocational education sub-sector is poor.
- The recruitment strategies for attracting new entrants into the artisan training in the colleges are ineffective.
- The coordination and regulation of the traditional apprenticeship system of artisan training is poor.
- The National Qualification Framework under which the vocational college system of training operates is faulty and rigid.

The aim and objectives of the study indicate its destination. These have been clearly formulated for the thesis in section 1.7 and they are restated here as follows:

The study is aimed at evaluating and improving the performance of the artisan training system for housing delivery in South Western Nigeria.

The specific objectives are to:

- Examine the existing trends in artisan training for house building projects in South Western Nigeria;
- Analyse the effects of government policies on the training of artisans for housing delivery;
- Appraise the models of artisan training for house building projects in South Western Nigeria;
- Identify the challenges mitigating against the adequate training of artisans for housing projects in South Western Nigeria, and
- Develop strategies and an improvement model for the artisan training system.

4.7 CONCLUSION

Moving towards bridging the gaps in knowledge concerning inadequate artisan training for house construction in Nigeria, this chapter has reviewed artisan training practices around the world. It has also presented a summary of the previous discussion from the outset of the thesis and restated the

study objectives and the hypotheses. This prepares a footing for the empirical stage of the research. The next chapter presents the methodology for the conduct of the research.

CHAPTER 5
RESEARCH METHODOLOGY

5.0 INTRODUCTION

This chapter presents the philosophical and methodological foundations for the conduct of research. It presents the justification for the approach adopted and discusses the procedures for data collection to explore the aims, objectives and the hypotheses of this study. It opens with research definition and purpose, and then discusses the research philosophy and the different philosophical worldviews. It also addresses the research methodology and it reviews various methods of data collection. It then justifies the approach adopted for the study; and concludes with the discussion of the procedure for the data collection and analysis employed for the study.

5.1 RESEARCH DEFINITION AND PURPOSE

Leedy and Ormrod (2010:2) define research as a "systematic process of collecting, analysing and interpreting information (data) in order to increase our understanding of phenomenon about which we are interested or concerned." According to Gupta and Singh (2009:4) the purpose of research is to discover answers to questions through the application of a scientific procedure. It aims at finding out the truth which is hidden and which has not been discovered as yet. Objectives of research are grouped and can be captured in the categories below (Gupta and Singh, 2009:4):

- To gain familiarity with a phenomenon or achieve a new insight into it;
- To discover new knowledge through critical investigation;
- To find out the frequency with which something occurs or associates with something else;
- To make predictions through hypotheses testing of a causal relationship between variables;
- To achieve new insight into a phenomenon and its explanation, and
- To develop new theory or contribute to existing ones.

5.2 RESEARCH PHILOSOPHY

Bryman (2006:11) notes that research philosophy suggests assumptions about different perspectives of the world which informs the choice of the research strategy and the procedure of executing the research. Therefore, in executing a research project, it is essential for the researcher to have a clear understanding of the general philosophical issues about research. Easterby-Smith, Thorpe and Lowe (2008:56) advances three important reasons why exploration of philosophy is significant to research methodology, they include the following:

- A good understanding of research philosophy assists the researcher to assess different methodologies and methods with the view of avoiding wrong methodology and unnecessary work.
- It enables the researcher to carefully select the appropriate research methods, which include the type of data needed and where to find them, how the data will be collected, analysed and interpreted. How it provides answers to the research questions.
- A thorough grasp of research philosophy may aid the researcher to be creative in the adaptation of methods that were previously outside the researcher's experience. This may also help to generate further questions on the subject being researched.

5.2.1 Philosophical worldviews / paradigms

According to Creswell and Clark (2009:6) a worldview means a basic set of beliefs that guide action. Worldview refers to the framework of ideals, values and belief systems through which an individual interprets the world and interacts with it. Worldview could also be seen as a "mental lens" or cognitive and perceptual maps that are continually used to find our way through the social landscape and surrounding (Mackenzie and Knipe, 2006:1-12). In the opinion of Bryman (2009:45) a paradigm can be described as an all-encompassing system of practice and thinking that define the nature of enquiry along three dimensions of research process; namely, ontology, epistemology and methodology. Paradigm implies a pattern, structure and framework of system of scientific and academic ideas, values and assumptions. It can also be described as a basis for comprehension or for interpreting social reality (Cohen, Manio and Morrison, 2009:9). In the opinion of Denzin and Lincoln (2005:67) research paradigm can be summarised as 'an interpretive framework'.

Creswell and Clark (2009:5-13) suggest that researchers need to make explicit the philosophical worldview or paradigm underlying their research project as this shows the researcher's assumptions about the nature of the social world and the type of knowledge to be obtained. This will help explain why they chose quantitative, qualitative, or mixed methods approaches for their research. Creswell (2009:7-9) identifies four different types of worldview / paradigm as follows:

- The postpositivist;
- The social constructivist;
- The advocacy / participatory, and
- The pragmatic paradigm.

5.2.1.1 The post-positivist paradigm

Cresswell (2009:7) submits that post-positivism (also called *post-empiricism*) represents the thinking after positivism, challenging the traditional notion of the absolute truth of knowledge and

recognising that we cannot be “positive” about our claims of knowledge when studying the behaviour and actions of humans. It is an amendment of the traditional positivist stance. According to Cresswell (2009:7-8) positivists assume that things can be studied as hard facts and the relationship between these facts can be established as scientific laws. In the view of Babbie (2005:34) positivism generally represents the belief in a logically ordered objective reality that can come to be known. The basic reasoning of positivism assumes that an objective reality exists which is independent of human behaviour and is therefore not a creation of the human mind (Nongiba, 2008:87).

Positivists believe that the researcher and the subject / person under investigation are independent of each other. This is quantitative research principle. Post-positivists accept that theories, background, knowledge and values of the researcher can influence what is observed (Eriksson and Kovalainen, 2008:34). However, like positivists, post-positivists pursue objectivity by recognising the possible effects of biases. Post-positivists believe that a reality exists, like positivists do; however, they hold that it can be known only imperfectly and probabilistically. It is not a rejection of the scientific method, but rather a reformation of positivism to meet the critiques (Creswell and Clark, 2007:23). Post-positivist holds a deterministic philosophy in which causes determine effects. Thus, the problems studied by post-positivists reflect the need to identify and assess the causes that influence the effect or outcome, such as can be found in experiments. It is also reductionistic in that the intention is to reduce the ideas into a small, discrete set of ideas to test, such as variables that comprise hypotheses and research questions. Knowledge that develops from post-positivist lens is based on careful observation and measurement of the objective reality that exists (Creswell, 2009: 7).

5.2.1.2 The social constructivist paradigm

Creswell (2009:8) states that social constructivism, often combined with interpretivism, is a perspective typical of qualitative research. Qualitative researchers are mainly concerned with the perceptions, meanings and interpretations given by individuals to their environment, actions and practices. This is because individuals’ beliefs stimulate, and are constitutive of, conducts and actions (Guba and Lincoln, 2005:191-215). As social constructivists, many qualitative researchers posit that all types of knowledge are constructed within the cognitive framework and theoretical concepts of an individual and as such are devoid of all understandings of the external world but are solely subjective interpretations (Eriksson and Kovalainen, 2008:12).

Following this worldview, it is further contended (Denzin and Lincoln, 2008:1-44; Creswell, 2009:8; Creswell and Clark, 2011:843) that all knowledge is based on the values, ideas and judgments of the individuals, and can therefore only be locally and contextually defined. Social constructivists hold the assumptions that individuals seek the understanding of the world in which they live and

work and develop subjective meanings of their experiences (Creswell, 2009: 8). These meanings are varied and multiple, leading to the researcher looking for the complexity of views rather than narrowing meanings to a few categories or ideas. The goal of the researcher is to rely as much as possible on the participants' view of the situation being studied. Recognising that background shapes interpretation, the researcher seeks to know how interpretation flows from personal, cultural and historical experiences. The researcher's intention is to make sense or to interpret the meanings that others people have about the world (Guba and Lincoln, 2005:191-215).

5.2.1.3 The advocacy and participatory paradigm

- The proponents of the advocacy and participatory philosophical paradigm contend that constructivist stance did not go far enough in advocating for action agenda to help maginalised people (Creswell, 2009:10). This paradigm holds that research inquiry needs to be intertwined with politics and political agenda. Thus, the research contains an action agenda that may change the lives of the participants, the institution where an individual works or lives, and the researcher's life. Moreover, specific issues need to be addressed that speak to important social issues of the day. Issues such as empowerment, inequality, oppression, domination and suppression (Cresswell, 2009:10).
- The researcher often begins with one of these issues as the focal point of the study. This stance also believes that the researcher proceeds collaboratively so as not to further maginalise the participants as a result of the inquiry. In this sense the participants may help design questions, collect data, analyse information and reap the rewards of the research. It is further argued by Creswell (2009:39) that advocacy research provides a voice for the participants, raising their consciousness or advancing an agenda for change to improve their lives. It thus becomes a united voice for reform and change.
- This philosophical worldview focuses on individual and group's needs that may be maginalised or disenfranchised in the society. Thus, Davison *et al*. (2004:65-86) posit that the theoretical perspectives may be integrated with the philosophical assumptions that construct a picture of the issue being examined, the people to be studied and the changes that are required. Applicable here include radicalised discourse, critical theory, queer theory and disability theory.

5.2.1.4 The pragmatic paradigm

Pansiri (2005:195-198) contends that recent debates reveal that, though pragmatists paradigm is fairly recent when compared with the other philosophical worldviews. However, it has positioned itself as a contending paradigm. Whereas positivism emphasizes that an objective reality actually exists which is independent of human behaviour and therefore not a creation of the human mind

(Babbie, 2005:34; Pansiri, 2005:191-206; Nongiba, 2008:87). Constructivism contends that knowledge is constructed within the cognitive framework and the theoretical concepts of an individual and is devoid of the external world but are solely subjective interpretations (Eriksson and Kovalainen, 2008:34; Denzin and Lincoln 2008:1-44; Myers, 2009:15). Pragmatism as a paradigm however, is concerned with solution to problems, that is, "what works". To a pragmatist, the mandate of research is not to find truth or reality, the existence of which are perpetually in dispute, but to facilitate the human problem-solving approach (Johnson and Onwuegbuzie, 2004:14-26). Pragmatism rejects the sharp differences between the two philosophical stances (positivism / post-positivism and constructivism), but rather embraces both points of view and as such, it welcomes both qualitative and quantitative methods. Positivism believes that inquiry is value-free while constructivism believes that enquiry is value bound. However, pragmatism believes that values are important in a research process when it comes to interpreting the results, and at the same time, external reality should be accepted and given the right explanations (Tashakkori and Teddlie, 2010:803-826).

Regarding the appropriate methodology for pragmatic research, Creswell (2009:212); Tashakkori and Teddlie (2010:822) argue that in terms of the mode of inquiry, pragmatism embraces the two extremes normally taken by post-positivism and those that favour constructivism. The former emphasizes quantitative methodology while the latter emphasises qualitative methodology; pragmatism therefore is the rallying point for the two opposing ends in methodological differences. As the arbiter of the "paradigm war" in the research arena, pragmatism has positioned itself as the foundation of the mixed-method research (Johnson and Onwuegbuzie, 2004:14-26; Tashakkori and Teddlie, 2007a:7-11; 2007b:207-11).

Creswell (2003:212) posits that a mixed-method study may also be seen as one in which the researcher tends to base knowledge claims solely on pragmatic grounds and employs strategies of inquiry that involve collecting data either simultaneously or sequentially to best understand the research problem. Creswell (2003:212) further contends that, instead of methods being important, the research problem is the most important issue and individual researchers have the freedom of choice regarding the methods, techniques and procedures of research that best meet their needs and purposes.

5.3 RESEARCH METHODOLOGY

Myers (2009:10) states that research methodology is a strategy of enquiry which moves from underlying assumptions to research design and data collection. Research methodology according to Creswell (2009:11) refers to the strategies of enquiry adopted to collect and analyse data in a research process. Fellows and Liu cited by Sutrisna (2009:51) submits that research methodology could also be described as the principles and procedures involved in a logical thought out

processes that are applied in an inquiry. In differentiating methodology from method, Morenikeji (2006:74) argues that method refers to the research techniques or tools used in collecting data while methodology refers to the overall strategy of inquiry. Sutrisna (2009:51) states that within a research methodology, there may be various research tools used to accomplish the aim and objectives of a research. In essence, method is a sub set of methodology. For instance, research methods involve the conduct of experiments, surveys, interviews and tests. Cresswell (2009:11-14) identifies three types of research methodologies to include the quantitative, qualitative and mixed methods.

5.3.1 Quantitative methodology

According to Struwig and Stead (2010:4), the quantitative strategy of enquiry into a social or human problem is based on a collection of large representative samples through structured data collection procedures and the testing of hypotheses formulated with variables derived from the research problem, measured with numbers, and analysed with statistical procedures, in order to determine whether the predictive generalisations of the study hold true.

Creswell (2009:16) posits that the quantitative research methodology is generally associated with the positivist / post-positivist paradigm. It usually involves collecting and converting data into numerical form so that statistical calculations can be made and conclusions drawn. Pathirage *et al.* (2008:4) state that this approach focuses on the process of testing hypotheses. It seeks to gather factual data and study relationships between facts. The analysis of quantitative data yields quantitative results and conclusions are drawn from them. Statistical analysis permits researchers to discover complex causal relationships and to determine to what extent one variable influences another.

The strengths and weaknesses of quantitative methodology are presented as follows:

Strengths

- Precision - through quantitative and reliable measurement;
- Control - through sampling and design;
- Ability to produce causality statements through the use of controlled experiments;
- Statistical techniques allow for sophisticated analyses, and
- Ease of replicability (Creswell, 2009:16; Struwig and Stead, 2010:4).

Limitations

- Due to the complexity of human experience it is difficult to rule out errors or to control all the variables; People do not all respond in the same ways as inert matter in the physical sciences;

- The mechanistic nature of the method tends to exclude any notions of freedom, choice and moral responsibility;
- Quantification can become an end in itself;
- The method fails to take account of people's unique ability to interpret their experiences, construct their own meanings and to act on these;
- It leads to the assumption that facts are true and the same for all people at all the time;
- It is not totally objective because the researcher is subjectively involved in the very choice of a problem as being worthy of investigation and in the interpretation of the results (Creswell, 2009:16; Struwig and Stead, 2010:4).

5.3.2 Qualitative methodology

According to Creswell (2007:11) "a qualitative research methodology is defined as an inquiry process of understanding a social or human problem, based on building a complex, holistic picture, formed with words, reporting the detailed views of informants, and conducted in a natural setting". Denzin and Lincoln (2003:61) opine that qualitative research approaches its subject matter from interpretive and naturalistic point of view. It attempts to give meaning to or make sense of phenomena in a social constructivist paradigm that emphasises the socially constructed nature of reality (Eriksson and Kovalainen, 2008:5). It is about recording, analysing and attempting to uncover the deeper meaning and significance of human behaviour and experience, including contradictory beliefs, behaviours, thoughts, attitudes and emotions. Researchers are concerned with getting a rich and complex understanding of people's experience and not merely obtaining information which can be generalized to other larger groups (Creswell, 2007:9).

Under this methodology, Keegan (2008:59) submits that the approach to data collection and analysis is methodical but allows for greater flexibility than in quantitative research methodology. Data is collected on the basis of observation and interaction with the participants. For instance, it can be done through focus groups, participant observation and in-depth interviews. In qualitative study, data is neither converted into numerical form nor analysed statistically. The process of collecting data may be carried out in stages rather than once and for all (Marschan-Piekkari and Welch, 2004:74).

The strengths and weaknesses of the qualitative methodology are outlined by Anderson (2010:141) and highlighted as follows:

Strengths:

- Issues can be examined in detail and in depth;
- Interviews are not restricted to specific questions and can be guided or redirected by the researcher in real time;

- The research framework and direction can be quickly revised as new information emerges;
- The data are based on human experience that is obtained is powerful and sometimes more compelling than quantitative data;
- Complexities about the research subjects and / or topic are discovered that are often missed by more positivistic inquiries, and
- The findings can be transferable to another setting.

Limitations:

- The research quality is heavily dependent on the individual skills of the researcher and more easily influenced by the researcher's personal biases and idiosyncrasies;
- Rigour is more difficult to maintain, assess, and demonstrate;
- The volume of data makes analysis and interpretation time consuming;
- It is sometimes not as well understood and accepted as quantitative research within the scientific community;
- The researcher's presence during data gathering, which is often unavoidable in qualitative research, can affect the subjects' responses;
- Issues of anonymity and confidentiality can present problems when presenting findings, and
- The findings can be more difficult and time consuming to characterize in a visual way.

5.3.3 The mixed-methods strategy

Creswell (2003:458) and Johnson, Onwuegbuzie and Turner (2007:112-133) have traced the origin of mixed-methods research strategy to its use among fieldwork sociologists and cultural anthropologists in the early 20th century. However, the mixed-methods strategy has developed rapidly in recent years.

Authors have argued that this methodology is a preferred approach (Creswell, 2003:458; Collins *et al.* 2006:48; Creswell and Clark, 2007:79; Johnson *et al.,* 2007:112-133; Bryman, 2007:8-22; Tashakkori and Teddlie, 2010: 803-823). This methodology is essentially rooted in the pragmatic paradigm and it came to limelight as a result of the inadequacies associated with either qualitative or quantitative methodology when used alone (Onwuegbuzie and Leech, 2005:376-183; Hesse-Biber and Leavy, 2011:277). Mixed-methods strategy has been described as a strategy of research inquiry where the researcher combines quantitative and qualitative research methods, techniques, tools, concepts and languages into a single study for the purpose of breadth and depth of understanding (Johnson and Onwuegbuzie, 2004:14-26; Greene *et al.* 2005:278). Summarising the opinions of various authors, Collins *et al.,* (2006:78-79) captures mixed methods strategy as follows:

- Mixed-methods are used to improve the accuracy of research data;

- Mixed methods strategy helps to capture a more complete and robust picture of the issue by combining information from complementary sources of data;
- The method provides a leverage as it is a way of compensating for specific strengths and weaknesses peculiar with single method (quantitative or qualitative);
- Mixed methods are used as a way of developing the analysis and building upon initial findings by using contrasting kinds of data or methods, and
- The approach has often been used as an aid to sampling; for instance, questionnaires being used to screen potential participants for inclusion in an interview programme (Collins *et al.,* 2006:78-79).

5.4 RESEARCH DESIGN

The research design of a study is the aggregation of the paradigm, the methodology and the methods adopted for the study; it serves to plan, structure and execute the research in order to optimize the results (Creswell, 2009:16). Research design can be viewed as the master plan of the research, or the logic behind the execution of the research. Yin (2009:240) states that research design *"is an action plan to get from here to there",* that is, moving from the research problem and questions to the findings and conclusions. Research design encapsulates the philosophical assumptions controlling the conduct of the research, the strategy of enquiry, and the methods of data collection and analysis (Creswell and Clark, 2007:5). Three research designs have been identified by Creswell (2009:16) to include quantitative, qualitative and mixed methods designs.

5.4.1 Justification for the research design and the methodology adopted for the study

Given the nature of the built environment researches that combine highly complex, technical and social issues together, it is therefore situated at the centre of the natural and social sciences. This implies that some aspects of positivism (natural science) and constructivism (social science) can both be relevant; therefore a mix of both the qualitative and quantitative is advocated to complement each other (Shakantu, 2004:173; Van Wyk, 2009:6). In the argument to support the mixed-methods design in the Built Environment research, Du Toit (2009:43-49) maintains that mixed-methods research approach serves to neutralise the weaknesses of singular approach if employed alone and at the same time, it combines the strengths of both methodologies (qualitative and quantitative) in a single study. Thus, the research outputs would be richer and better balanced. Supporting the adoption of the mixed methods methodology, Brewer and Hunter (2006:4) argue that the major purpose of a combined or mixed method is to "attack a research problem with an arsenal of methods that have no overlapping weaknesses in addition to their complementary strengths".

Love *et al.* (2002:294) further posit that Construction Management and Economics combines the elements of both the natural and the social sciences. Therefore, a balanced approach to research within its sphere would be the mixed-method approach, which involves the combination of qualitative and quantitative methodologies.

As earlier pointed out, pragmatism is the research paradigm that is concerned with the solution to human problems, that is, "what works" (Johnson and Onwuegbuzie, 2004:14-26; Pansiri, 2005:191-206). Mixed methods have been argued as the appropriate methodology for pragmatic research (Creswell, 2003:212; Johnson and Onwuegbuzie, 2004:14-26; Tashakkori and Teddlie, 2007a:7-11; Tashakkori and Teddlie, 2010:822). Therefore, in light of the research problems highlighted in Chapter One, which are located within the Built Environment research spectrum; and that the study is seeking to find solutions to practical human problems that centre on the shortage of artisans for house construction in South Western Nigeria; It is therefore logical that the research adopts the pragmatic philosophical assumptions and mixed methods strategy for collecting and analysing the data in this study. From the foregoing arguments, questionnaire survey, a quantitative method and semi-structured interview, a qualitative method are adopted for this research. These two methods of data collection complement each other. The semi-structured interview serves to elicit rich data on the opinions, values, feelings and experiences of the respondents while the questionnaire survey helps to cover larger number of respondents and also aids in generalisability and replicability of the research.

5.5 PROCEDURE FOR DATA COLLECTION

The following sections articulate the process that the researcher employed in gathering the data for this study.

5.5.1 Primary data

According to Hox and Boeije (2005:593) primary data refers to the original data collected for a specific research problem at hand employing appropriate procedures that best suit the problem. Teddlie and Tashakkori (2009:31) list methods of primary data collection within the pragmatic domain to include survey, interview, observation and focus group. These are discussed in the following sections.

5.5.1.1 Survey

According to Marshall and Rossman (2006:125-126) survey is a suitable method of data collection if a researcher wants to make inferences about a large group based on information obtained from a relatively small number of individuals in that group. The fundamental goal here is to reveal statistically the variability of some characteristics in a population. Characteristically, a number of

questions are usually used in a survey with the responses being coded in a standardised format to obtain data. A survey can be conducted in writing, via telephone, by electronic mails or face-to-face. The advantages of survey include generalisability, replicability, accuracy, relative ease of administration and management. While the disadvantages include weakness in studying social relationships, relatively expensive and it may sometimes produce questionable results (Marshall and Rossman, 2006:125-126).

5.5.1.2 Interview

The interview is a qualitative method of data collection and it is widely used in social science research to gather detailed information about the experiences and opinions of participants on the subject matter under examination. It is also useful to get feedbacks on a project, programme or system and the opinions of stakeholders concerning the project or system. Interview helps the researcher to obtain rich insights from the participants in terms of their opinions, values, experiences and feelings. Three types of interviews are usually employed in social science research; these include the unstructured, the semi-structured and the structured interview (Creswell, 2003:33).

- ***Unstructured interview:*** In the unstructured interview, the researcher does not hold the control over the interview through a set of predetermined questions but rather encourages the respondents to exercise unfettered freedom to respond to the questions in accordance to their own terms. At most the researcher may use a memory aid as a brief to deal with a certain range of topics. Sometimes the interviewer may ask just a single question to kick start the process and the interviewee is then allowed to freely respond (Kumar, 2005:123; Silverman, 2005:235-240)
- ***Semi-structured interview:*** Bryman (2004:52) posits that the semi structured interview involves a situation where the interviewer asks the questions and then allows the interviewee to respond freely in his own opinion. Here the interviewer prepares a list of questions on some specific topics to be covered; this is called an interview guide. This means that the questions may not strictly follow the exact plan outlined on the guide. The interview is guided by the interviewer, but allows the various areas of the subject to arise naturally (Bertrand and Hughes, 2005:79). Issues may be picked up from the answers provided to a question as the interview progresses.
- ***Structured interview:*** Structured interviews usually have a fixed number of questions and predetermined responses provided. All the interviewees are asked the same questions and are allowed to choose answers from the same set of alternative answers prepared ahead of the interview (Haigh, 2008:113). This does not allow the researcher to obtain insights from the participants' experience, feelings, opinions and values.

The advantages of interview method are as follows: With unstructured and semi-structured interviews, the participants can raise the issues from their own opinions and bring in their experiences in their own words. The researcher may obtain rich insight into the issue being studied. In terms of the disadvantages; unstructured interviews may be costly and time-consuming to conduct and transcribe. Unstructured interview may have some challenges with the privacy of the participants.

5.5.1.3 Focus group

This method has its roots traced to marketing research but it has been adapted in other aspects of social science research. It entails the researcher and a group ranging from seven to ten similar respondents who engage in discussion about specific topics. A supportive environment is created by the researcher for the participants to freely discuss the relevant issues, expressing their opinions as focused questions are asked on some specific subject matter (Marshall and Rossman, 2006:125-126).

The advantages of focus groups include: participants' opinions and experiences can be obtained and discussion among the groups may generate new information. The disadvantages include: The task of getting people organised together and motivating them may be difficult, time consuming and expensive. It is usually not generalisable and some opinions that may be useful to the study may be silenced by the group especially if the topic is not popular within the group. The method may require a skilled facilitator.

5.5.1.4 Observation

Observation is a qualitative method of data collection in which the researcher systematically documents and describes the complex actions, behaviours and events in a social setting. The record from this process is called field notes (Marshall and Rossman, 2006:98-100). The key assumption of this method is that values and beliefs are expressed through actions and behaviours. This method is employed to obtain information about the behaviour of individuals and groups. It is also adopted when other methods are not suitable for the research or when participants are unwilling and unable to provide data from other methods. Two types exist, which include participant and evaluator observations:

- Participant observation refers to the type of observation about a system, project or programme that is taken by the people the programme is meant to serve.
- Evaluator observation is the observation conducted by and external observer to document events, actions and behaviours of participants in a system or progarmme (Marshall and Rossman, 2006:98-100).

5.5.2 Justification for primary data collection methods

Brewer and Hunter (2006:4) contend that both positivist and constructivist approaches have associated weaknesses. De Leeuw (2005:235-236) posits that in research design, effort should be made to minimise errors and to optimise the data collection procedures while working within reasonable timeframe and the available budget.

From the foregoing arguments, questionnaire survey and semi-structured interview methods of data collection were adopted in this research. The questionnaire survey is a quantitative approach that provides a description of phenomena through trends and opinion of samples from which conclusions can be drawn and generalisation made about the population from the survey results (Creswell, 2009:145). While semi-structure interview is a qualitative method of data collection that allows for a richer and more complex understanding of people's experience that is not allowed in the questionnaire method. The combination of data from complementary methods helps to obtain a more comprehensive and robust data. This provides a better picture of the problem being studied; and it also aids the articulation of the strategies for resolving it. Mixing the methods of questionnaire survey with semi-structured interview also provides a leverage as it is a way of compensating for the strengths and weaknesses peculiar to any single method (Johnson and Onwuegbuzie, 2004:14-26; Greene *et al*., 2005:278). This balance in methodology of data collection serves to improve the accuracy of the research data and helps to produce better conclusions from the study (Collins *et al.,* 2006:78-79).

5.5.3 Target groups

In order to obtain robust data for gaining an in-depth understanding of the skills shortage in construction, Dainty *et al.* (2004:278) suggest that it is essential to canvass the opinions of key industry stakeholders on current issues impacting on the labour market. This would help to gain a comprehensive understanding of the problem and also aid the development of effective strategies for resolving it. From the foregoing, multiple target groups of key stakeholders were adopted for this study which include artisan employers, professionals like civil engineers and builders, training providers both from the formal and the informal settings. That is, technical training college staff and management, and the master artisans. The other group that was included comprised the education ministry officials representing government interest in the training of artisans. The questionnaires were administered based on the availability and willingness of the respondents to participate in the study. This factor accounts for the differences in the number of questionnaires distributed to different groups.

5.5.4 Unit of Analysis

The unit of analysis refers to the major entity that is being analysed in a study. It provides answer to the question "What or who is being studied". Examples of units of analysis in social science research include individuals, groups, organisations, towns, states and social interactions like divorces and arrests. (Trochim, 2006:23). Since this research is studying the training regime. Therefore, unit of analysis for the study is the artisan training system.

5.6 RESEARCH INSTRUMENT

The main tools used for the data collection were questionnaires and a semi-structured interview guide.

5.6.1 The questionnaire

The questionnaire method was adopted for this study for the following reasons:

- A large amount of information is required from the respondents in a wide geographical area;
- It helps to save time spent on the study since a lot of data can be obtained within a short period of time;
- It is relatively cost-effective;
- It does not require a lot of attention and time from the respondents, especially from busy executives as they only need to tick on the answers, which could be done within a short period of time and also at their convenience, and
- The data capture is made simple for the purpose of analysis by using a computer software program (Teddlie and Tashakkori, 2009:35; Struwig and Stead, 2010:4).

5.6.1.1 Questionnaire development

As one of the tools for the data collection, the questionnaires for the study were designed with the aim of making them easy for respondents to complete. The guidelines suggested by Struwig and Stead (2010:90) for the content and phrasing of the questions were followed in developing the instruments. The essence here is to phrase the questions in such a way that respondents will easily and precisely understand and interpret each question, and not be influenced to give specific answers. Scaled response questions such as the Likert-type scale, are preferable to other forms of questions as they provide ordinal data and they were thus employed in the questionnaire. Guidelines for the design of a questionnaire according to Struwig and Stead (2010:90) include: (i) clear and precise instructions should be provided; (ii) the questionnaire should be divided into logical sections; (iii) start with simple questions; (iv) proceed from general questions to specific questions; (v) avoid technological terms; (vi) employ the vocabularies familiar to the respondents; and (vii) too many questions should be avoided. The questionnaires were structured into sections

in order to capture information focused on specific aspect of the problem under investigation. Such sections include for instance, general information, government policies, recruitment strategies, assessment procedures and improvement strategies.

The questionnaires were administered to the respondents by hand. This was adopted by the researcher in order to obtain a reasonable response rate that would help realise the aim of the study. Given the low penetration of the internet and inefficient postal services in the study area, these constraints did not allow the use of electronic or surface mail services. The researcher made further efforts to increase the response rate as suggested by Babbie and Mouton (2005:260-261) by making telephone calls and sending electronic messages (SMS) to remind the respondents of the questionnaires.

It is important to note that multiple target groups of key stakeholders were adopted (Dainty et al., 2004:278) for the purpose of obtaining a robust data that would provide a comprehensive understanding of the problem which would aid in the development of appropriate solutions to the problem. The target groups described above were categorised into four for the purpose of obtaining information from them for the study. Thus, three questionnaires and one interview guide were used for the study. One questionnaire for the master artisans; one for the college staff members and management; and one for the employers and the professionals.

5.6.1.2 The interviews

The interview guide was designed to obtain information from the officials of the education ministries. Samples of the questionnaires and the interview guide are contained in the annexes A to D. Interviews were conducted with directors of vocational education in the ministries of education of the three states under investigation. Purposive sampling method was adopted to determine the sample to be interviewed, (see the section on sampling for interviews). There were three states included in the study area and three education directors in charge of vocational education, one in each state. All the three directors were sampled for sufficient representation. In order to obtain rich responses, the interviewees were given assurances that, the views that they expressed would be treated as anonymous and the research reports would not reveal anything connected to them. Despite such assurances not all the target respondents granted the interviews because of the fear of possible consequences from the authorities. Samples of the interview guide are contained in annexure D

5.6.1.3 Identifying a sufficient sample size

Simple random sampling techniques were adopted in the questionnaire survey for this research. Fellow and Liu (2003:139) argue that random sampling technique is a pragmatic way of collecting research data and it also ensures that the sample provides a fair representation of the population.

The researcher encountered the challenge of the non-availability of the databases of the target groups in the study area for research purposes. This has been observed by the (World Bank, 2012) stating that there is a lack of statistical data for research purposes in Nigeria. However, the researcher made necessary efforts to overcome the challenge in order to realise the research objectives. In pursuit of the goal of obtaining sufficient and representative data that would yield reliable results, the researcher overcame the challenge by following appropriate guidelines provided by scholars (Gay *et al.,* 2009:133; Leedy and Ormrod, 2010:213-214) in such situations. Leedy and Ormrod (2010:213) suggest a basic rule for determining a sufficient sample from a population as "the larger the sample, the better". More specific guidelines were provided by Gay *et al.* (2009:133); Leedy and Ormrod (2010:213-214) for obtaining a sufficient and representative sample from a population while employing simple random sampling technique using N to represent the population size as follows:

- Where N=100 or less, sample the entire population;
- Where N= about 500, sample 50%;
- Where N= about 1500, sample 20%, and
- Where N= about 5000 or more, the sample size of 400 is adequate, the population size notwithstanding (Leedy and Ormrod, 2010:213-214).

From the foregoing guidelines, the researcher took the upper limit as the benchmark while randomly sampling the target groups. A total of 715 questionnaires were administered to different target groups; the details are given as follows. 450 questionnaires were distributed to employers and professionals. The employers included building contractors, government departments and institutions. While the professionals included architects, civil engineers, quantity surveyors, builders and construction managers.

The training providers are essentially vocational technical colleges and the informal traditional master artisans. A total population of thirteen (13) vocational technical colleges are located within the study area and for proper representation all the 13 colleges were sampled for the study representing 100 percent. Questionnaires were administered to the management and staff of each of the 13 vocational technical colleges; in all, a total of sixty five (65) questionnaires were given out. The traditional trainers were randomly sampled as they were not regulated and there were no databases to ascertain their total population. A total of 201 questionnaires were administered in the three states under investigation. Sixty seven (67) questionnaires went to each state.

The researcher ensured that the instruments were evenly distributed across the geographical coverage of the study area in order to give a representative sample. The works and services departments of Local Government Authorities and of the state ministries of works were included in the sample. Building contractors, Maintenance / Technical departments of educational institutions,

and construction sites where professionals as well as artisans work were also contacted for inputs. Networking with previously established contacts of construction professionals was also exploited by the researcher.

5.6.1.4 Sampling for the interview

Purposive sampling is the use of certain key informants, members of the population of interest who know much about the issue being investigated and are both able and willing to share their knowledge (Lyon and Hardesty, 2005:287-294). The purposive sampling technique also called judgment sampling, is peculiar to qualitative research; and it comprises of the selection of informants for inclusion in a research based on the qualities the informants possess (Tongco, 2008:105-147). It is a non-random sampling method. In the judgment of the researcher, purposive sampling sets out to find people who can and are willing to provide the information by virtue of their knowledge or experience or position (Garcia, 2006:221). The directors that are directly responsible for the administration of vocational and technical education in the three state ministries of education are strategically positioned to give unique information on artisan training in the vocational colleges they oversee. This forms part of the focus of this study. All the three directors were approached for participation in the study but one declined on the basis of divulging official information of the government, which was claimed to be risky and above his control and for the fear of the implications of his involvement in the study. In essence, two directors out of a total of three consented to participate in the research and were interviewed for this research. Arranging for the interview involved rescheduling of appointments and lots of telephone calls as the directors were having tight schedules in the offices.

The first interview was conducted on 5th July 2012 which lasted for about 45 minutes and it was recorded using electronic devices. Following research ethics, the permission of the interviewee was sought before recording the interview. The second interview took place on 12 July 2012, but the interviewee did not permit electronic recording of his voice for personal and security reasons, however, notes were taken by the researcher.

5.6.1.5 Secondary data

As compared with primary data, secondary data refers to the existing data collected originally for a different purpose and reused for another research question (Hox and Boeije, 2005:593). Secondary data used for this study were obtained from the National Bureau of Statistics (NBS), the Nigerian official statistical agency. Others include the National Budget Office, National Population Commission, UNDP and the World Bank.

5.6.1.6 Literature Review

Materials from both published and unpublished sources were used for the review of literature in this study. Published sources included official government reports, institutional publications, peer reviewed journals, conference proceedings, books, magazines, research institutions' reports and the internet. Unpublished sources included theses from universities and other educational institutions. The online library databases of the Nelson Mandela Metropolitan University were also consulted for information. Major among the databases that provided information for the study include:

- Emerald Insight;
- EBSOCO HOST;
- Science direct, and
- Taylor and Francis.

5.6.2 Pilot study

According to Simeon (2011:1-6) pilot study is the pre-testing of research instruments. Such instruments include questionnaires and interview guides. In the opinion of Lancaster, Dodd and Williamson (2004:7-12) one of the major purposes of a pilot study is to take care of all the likely problems that the respondents may encounter in completing the questionnaire and to ensure that the researcher will not have problems during the analysis of the data collected from the field (Simeon, 2011:1-6). A pilot study can also help obtain information about the time it took to complete the questionnaire, and whether the instructions and questions were clear enough. The approach used for the pilot study in this study was as follows:

- The questionnaire and the interview guide were given to three senior academics in the university (NMMU), who also are experienced professionals in the built environment disciplines. The feedback received from them was built into the instruments. For instance, the length of the questionnaires was adjusted to keep it within reasonable time for the respondents to complete. The phraseology of some of the questions was also reviewed for better clarity.
- The questionnaire and the interview guide were given to the head of the NMMU unit for Statistical Support for assessment and improvement. The input from the unit was built into the instrument to make the data collected suitable for statistical analysis. The unit also provided technical support for the statistical analysis of the final report of this study.
- The questionnaires were pre-tested before embarking on the main survey with two management staff of a vocational college, two employers and two master artisans in order to assess the length of time taken to complete the questionnaire, the clarity of instructions and the general lay out. This input helped to refine the instrument.

5.6.3 The criteria governing the admissibility of data

Leedy and Ormrod (2010:91) state that any research effort should be replicable; it should be easily repeated by any other researcher at any other time under similar conditions. To ensure such precision, some standards must be set up that all data must meet so as to be admitted for the study. Certain limits should be established and certain requirements must be met. Measuring instruments provide the basis on which the entire research effort rests. A research effort employing faulty measurement tools will produce results that are not reliable for solving the identified problem under investigation (Leedy and Ormrod, 2010:91). Measuring instruments are the tools used for data collection; these could range from a microscope to spectrometer, or questionnaire, observation, and interview schedules. This necessitates the discussion of validity and reliability and how they were ensured in the process of this research.

5.6.4 Validity

Validity, according to Leedy and Ormrod (2010:91) is the degree to which an instrument measures what is intended to measure, that is, the soundness and effectiveness of the measuring instrument employed for gathering the data for a research. Four different forms of validity are identified by Leedy and Ormrod, (2010:92) and these are described as follows:

- Face validity: This is established by the judgement of the person using the instrument. The researcher could conclude that the instrument actually measures the traits under measurement. Therefore, face validity is subjective.
- Content validity: This describes the adequacy or the degree to which an instrument really measures the actual content or domain area of interest for assessment. Content validity is often an issue when assessing a person's achievement. For instance, the measurement of skills acquired from a training programme.
- Criterion validity: This refers to how well the results of one measuring instrument correlate with another, measuring similar traits or characteristics, which should be theoretically related.
- Construct validity: This describes the degree to which an instrument measure a characteristic that cannot be directly observed but assumed or known to exist based on patterns in people's behaviour. Such characteristic is a construct, for instance, xenophobia, aggression, gender prejudice.

In order to ensure the validity of the instrument for this research, the researcher carefully followed the guidelines suggested by Struwig and Stead (2010:90) in the design. The instruments were given out for pre-test with two management staff of a vocational college, two employers and two master artisans to check the adequacy in measuring what they are meant to measure. Additionally, the questionnaires and interview guide were submitted to three senior academics for peer review and their input was built into the design of the instrument. A final checking and approval of the

instrument was obtained from the promoter of this research before using them to collect data for the research.

5.6.5 Reliability

Reliability in research refers to the consistency of results obtained in the research, and it determines the replicability of the research by other researchers (Amaratunga *et al.,* 2002:29; Blaxter *et al.,* 2006:221). Reliability concerns the consistency of a measuring instrument, or the reduction of errors in the measuring process. It can also be said to mean how dependable the data are collected by using the instrument are. It is important to ensure reliability in research Yin (2009:45) argues that reliability makes it is easy for another researcher to follow the procedures described by the researcher that carried out the initial study and provided that both studies were carried out under similar conditions, both researchers should obtain same findings and conclusions. Amaratunga *et al.* (2002:29) opine that the essence of reliability is to reduce errors and biases in a research and in the opinion of Gliem and Gliem (2003:82-88) this can be determined by the means of test-retest and internal consistency. Reliability was ensured in this study by the aid of pilot study which served a type of test-retest method and also with the aid of the test of internal consistency. Internal consistency concerns correlating responses to each question with those received to other questions, or to questions within the same sub-section of the questionnaire (Ritter, 2010:1-15). After administering the questionnaire used in this study, the responses were statistically tested for internal consistency by computation of the Cronbach's alpha (α) values. Cronbach's alpha (α) is a numerical coefficient of reliability or may also be described as the index of reliability (Vacha-Haase *et al.,* 2002:562-569). Cronbach and Richard (2004:391-418) maintain that Cronbach's alpha increases as the intercorrelations among the items included in the analysis increase and alpha is appropriately used when the items measure different areas within a single construct. Cronbach's alpha is considered as an unbiased estimate of the generalizability. Eisinga *et al.* (2012:1-9) posit that Cronbach's alpha usually increase as the internal consistency among test items increase, and is thus known as internal consistency estimate of reliability of test scores. For this study, the Cronbach's alpha (α) values computed were found acceptable. That is, they were found to have values from seven (7) and above (see details under inferential statistics)

5.6.6 Research ethics

According to Mitchell and Jolley (2010:52) ethical issues in research concern the appropriateness of the behaviour of the researcher with regard to the rights of the participants or those who are affected by the research. In the conduct of this research, the researcher made clear to the respondents the purpose of the research and allowed voluntary participation with the informed consent of the respondents. Respect was accorded to the privacy of the respondents and their permission was sought before any recording was carried out. Assurances of anonymity were also

given, that no name of any organisation or persons that participated in the research will be disclosed in the research report.

5.7 DATA ANALYSIS

The procedures followed in the analysis of data for the study is presented in the following sections.

5.7.1 Data Cleaning

According to Trochim (2006:5) data cleaning simply refers to the process of checking the raw data collected from the field for errors before the analyses. Common methods employed for cleaning data include spot-checking, eye-balling and logic checks. Applying spot-checking to quantitative data involves a random selection of a number of completed questionnaires and then comparing them with the electronic version entered into the computer. In qualitative data, this is done by checking whether the words and the statements of respondents recorded with audio devices are properly transcribed and have been ascribed to the right persons. Eye-balling involves a process of checking the data for errors that may have arisen from coding by glancing through the data codes in the spreadsheet as compared with the raw data. Logic-checks entail checking the electronic version of the data for errors that might arise out of illogical entries by the respondents Trochim (2006:5). In order to avoid negative influences of errors on the results of this study, a combination of the three methods, spot-checking, eye-balling and logic checks were employed for cleaning data analysed in this study.

5.7.2 Analysis of qualitative data (Interview)

In analysing the data obtained from the interviews, the guide for qualitative data analysis provided by Creswell (2009:171-181) was followed. The steps taken in the process include the following:

- verbatim transcription of the audio interviews;
- organising and preparation of the transcripts;
- re-reading of the transcripts iteratively, and
- coding of the transcripts and developing themes from the transcripts.

Coding was carried out manually because of the volume of data involved was manageable. In larger volumes of data, computer coding could be applicable (Creswell, 2009:171-181). Colour-coding was adopted for this analysis. A proper understanding of the viewpoints of each of the interviewees was captured through the aid of iterative re-reading and coding of the transcripts. This and the interview guide helped in developing appropriate themes on the subject under investigation.

5.7.3 Analysis of quantitative data

Quantitative data analysis through statistical methods is a means of measuring and understanding variability. A variable is any unique factor that is recorded for subjects in a study and the data values observed for a variable in a research are the observations (Agresti and Franklin, 2007:11). Methods of data analysis employed for this study include both descriptive and inferential statistics. For the analysis of the data obtained in this research, Statistica (Version 10.0) application software for statistical analysis was used by the NMMU Unit for Statistical Support to generate the descriptive and inferential statistics.

5.7.3.1 Descriptive statistics

Descriptive statistics include frequencies, means and mean scores (MSs). The mean is derived by allocating values to the ratings factors of the respondents. For instance strongly disagree (1 point), disagree (2 points), neutral (3 points), agree (4 points) and strongly agree (5 points). The mean score (MS) for each factor is then computed.

5.7.3.2 Mean scores

A guide for the interpretation of the results in terms of the means scores obtained from the analyses is presented as follows:

The extent of the ranges of each step in the five-point Likert scale continuum was calculated by dividing the number of continuums, which is 4.00, by the 5 relative points. Therefore the ranges between the relative points equates to 0.80. The mean score was calculated for each factor and the value was compared to suit the relative range it fell under. The Mean Scores are denoted by (MS). The ranges relative to the mean scores are defined in the tables below:

Table 5.1: Guide for the interpretation of results (a)

Mean score range	Meaning
MS > 1.00 ≤ 1.80	Strongly Disagree (SD)
MS > 1.80 ≤ 2.60	Disagree (D)
MS > 2.60 ≤ 3.40	Unsure (U)
MS > 3.40 ≤ 4.20	Agree (A)
MS> 4.20 ≤ 5.00	Strongly Agree (SA)

Table 5.2: Guide for the interpretation of results (b)

Mean score range	Meaning
MS > 1.00 ≤ 1.80	Grossly Inadequate (GI)
MS > 1.80 ≤ 2.60	Inadequate (IN)
MS > 2.60 ≤ 3.40	Unsure (UN)
MS > 3.40 ≤ 4.20	Adequate (AD)
MS> 4.20 ≤ 5.00	Highly Adequate (HA)

5.7.3.3 Inferential statistics

Inferential analyses were employed to further analyse the data collected in this study. According to Agresti and Franklin (2007:369) empirical research usually aims to compare groups or relationships between variables; a statistical test is carried out to determine whether the observed difference / relationship between variables is statistically significant. This test of significance is usually the result of testing a null hypothesis against an alternative hypothesis with the objective of producing a *p*-value as part of the output. Given the nature of the data collected for the study, one-sample t-test and Cronbach's alpha reliability tests were employed for the inferential statistics. One-sample t-test seeks to compare the mean score of a sample to a known value, while Cronbach's reliability test determines internal consistency. This is further discussed below.

Employing one-sample t-test in the inferential analyses requires the formulation of the hypotheses. Key areas of this study were identified and hypotheses drawn from them. In testing for the hypotheses, steps were taken based on standard criteria to answer the questions about the differences between the suppositions (the hypotheses) and the actual results of the research as obtained from appropriate test statistics. This is to ensure that the conclusions or inferences drawn from the results are reliable.

It is important to clearly understand some basic terminologies involved in the process of hypothesis testing. These are discussed in the next section.

- ***Null hypothesis (H_0):*** This is a statement about a population parameter, such as the population mean, that is assumed to be true. The null hypothesis is a statement that the parameter takes a particular value, which represents no effect.
- ***Alternative hypothesis (H_1):*** This is a statement that directly opposes a null hypothesis by stating that the actual value of a population parameter, such as the mean, is less than, greater than, or not equal to the value stated in the null hypothesis. In other words, it states that the parameter falls within a certain alternative range of values, which represents an effect of some type.

- ***Level of significance:*** This refers to a basis of judgement upon which a decision rests relative to the value stated in a null hypothesis. The level of significance is normally predetermined, which is usually five percent (5%) level, which is written as 0.05. This indicates that the *p*-value is expected or assumed to be less than 0.05. The smaller the *p*-value, that is, the closer to zero, the stronger the evidence is against the null hypothesis. However, if the *p*-value is up to 0.05 and above, the evidence is in support of the null hypothesis. Statistical significance describes a decision made concerning a value stated in the null hypothesis. When a null hypothesis is rejected, a result is significant.
- ***Test statistic:*** This is the mathematical computation that allows researchers to establish the probability of obtaining sample results with the assumption that the null hypothesis is true. The value obtained from a test statistic is employed to make inferences concerning the value of population parameters stated in the null hypothesis.
- ***P - value:*** This is the probability of obtaining a sample outcome, given that the value stated in the null hypothesis is true. The *p*- value of a sample outcome is compared to the level of significance (0.05).

Typically, four steps are involved in hypothesis testing, and they are:

I. state the hypotheses;
II. set the criteria;
III. compute the test statistics, and
IV. make a decision.

Cronbach's alpha is used for combining or summing the items in Likert scales that employ individual items to measure a phenomenon. Further light is shed on the use of Cronbach's alpha in this study in the next sections.

Reliability test and Cronbach's alpha

According to Ritter (2010:4) reliability test allows the researcher to determine the extent to which a scale produces consistent results if the measurements are repeated. Reliability analysis is conducted when there are two or more questions that will be summed to determine a specific variable.

Reliability analysis is determined by examining the proportion of systematic variation in a scale, that is, if a respondent tends to rate one question highly, does the respondent also rate another question high? If all the participants are consistent in the way they respond to the various questions, the scale yields consistent results and is consequently considered to be reliable (Ritter, 2010:4).

In statistics, **Cronbach's alpha** (α) is commonly used to determine the **internal consistency**, thus estimating the reliability of the sample. Cronbach's alpha increases as the intercorrelations among the items included in the analysis increase. Alpha is appropriately used when the items measure different areas within a single construct. Cronbach's alpha is considered as an unbiased estimate of the generalizability. Consequently, Cronbach's alpha can be viewed as a measure of how well the sum score on the selected items capture the expected score in the entire domain, even if that domain is heterogeneous. The higher the alpha value, the more reliable is the instrument under testing (Gliem and Gliem, 2003:87; Eisinga *et al.,* 2012:1-9). A general rule for measuring reliability is as follows:

Table 5.3: Cronbach's alpha scale

Alpha (α)	Reliability level
0.9	Excellent
0.8	Good
0.7	Considered reliable
0.6	Questionable
< 0.6	Not reliable

Cronbach's alpha varies directly as the intercorrelations among test items, that is, the lower the Cronbach's alpha, the lower the intercorrelations. Thus, it is known as the internal consistency estimate of the reliability of the test scores. Intercorrelations among test items are maximized when all items measure the same construct. Cronbach's alpha is accepted to indirectly show the level to which a set of items measures a single uni-dimensional latent construct (Eisinga *et al*., 2012:1-9).

5.8 CONCLUSION

This chapter has presented the research design and the methodology adopted for this research. The methods of data collection and analysis used to investigate the hypotheses and to achieve the aim and the specific objectives of the study. Qualitative and quantitative methodologies were mixed through the use of questionnaire survey and semi- structured interview in order to obtain rich results for the study. Analysis of the data collected from the field and the conclusions drawn from them are presented in the next chapter (Chapter Six).

6 CHAPTER 6
DATA ANALYSIS AND PRESENTATION

6.0 INTRODUCTION

This chapter presents the analysis of the empirical survey data from the respondents on the training of artisans from both the formal (college) and the informal (traditional apprenticeship) systems of training. The respondents included artisan employers, construction professionals such as builders, civil engineers, quantity surveyors. Also included are college management and staff members, and master artisans. The chapter starts with the analyses of data from employers and professionals, then data from the college management and staff and that of the master artisans follows. The testing of Hypotheses earlier formulated in Chapter Three of this report is also presented.

6.1 POPULATION DISTRIBUTION OF QUESTIONNAIRES AND RESPONSE

Three questionnaires were used for the study, one for the vocational college management and staff, the second for master artisans and the third for the professionals. The distribution and responses to the questionnaires are presented here.

Table 6.1 shows that the highest proportion of respondents came from other staff members. This can be explained by the relatively high population of the other staff members as compared with the management staff. Other factors were the availability and the willingness of the other members of staff to participate in the study.

Table 6.1: Vocational college management and staff

Position	**No of questionnaires distributed**	**No of questionnaires received (Response)**	**Percentage Contribution to total response**
Principal	6	4	8
Vice Principal	7	2	4
Registrar	4	1	2
Other staff	48	44	86
Total	**65**	**51**	**100**

Table 6.2 shows the responses from the master artisans. Bricklaying has 27% while plumbing has the least which is 13%. The questionnaires were distributed on the basis of availability and willingness of the artisans to participate in the study; this account for different numbers given to different trades.

Table 6.2: Master artisans

Trade	No of questionnaires distributed	No of questionnaires received (Response)	Percentage contribution
Bricklaying	51	22	27
Carpentry	40	20	25
Plumbing	35	11	13
Electrical	36	15	19
Painting	38	13	16
Total	**200**	**81**	**100**

Table 6.3 indicates the responses of the professionals. Builders have 32%, they are followed by civil engineers with 26%, then the quantity surveyors which have 20%, and lastly the others with 12%. The lowest response is from construction managers (10%).

Table 6.3: Professionals

Professionals	No of questionnaires distributed	No of questionnaires received (Response)	Percentage contribution
Civil engineers	90	71	26
Quantity surveyors	98	54	20
Builders	102	88	32
Construction managers	88	29	10
Others	72	34	12
Total	**450**	**276**	**100**

6.2 DEMOGRAPHIC INFORMATION

The demographic information of the professionals is presented in the following sections.

6.2.1 Company category

Table 6.4 reveals the company category of the sample; it indicates that the sample investigated covers different categories. This suggests that the respondents that make up the survey sample are sourced from different areas of work, and make sufficient representation. The construction firm takes the lead with 49%, followed by consulting with 20%, and the least is from government departments with 15%.

Table 6.4: Company category

Category	Percentage
Construction firm	49
Consulting firm	20
Government department	15
Others	16
Total	**100**

6.2.2 Profession

Table 6.5 indicates that builders (32%) take the lead among the respondents. They are followed by civil engineers (26%), quantity surveyors (20%), and others (12%). The lowest response is from the construction managers (10%).

Table 6.5: Respondent profession

Profession	Percentage
Civil engineer	26
Quantity surveyor	20
Builder	32
Construction manager	10
Others	12
Total	**100**

6.2.3 Gender of respondents

Table 6.6 indicates that 80% of the samples were males while only 20% were females. This reveals that males are in the majority in the sample investigated.

Table 6.6: Gender of respondents

Gender	Percentage
Male	80
Female	20
Total	**100**

6.2.4 Ages of respondents

Table 6.7 provides an indication of the ages of the respondents; the results show that the respondents that are over the age of thirty five predominate in the sample investigated with 39%. This suggests that the respondents that make up the survey sample could be deemed to be matured and experienced.

Table 6.7: Age of respondents

Age Group (years)	Percentage
20 -30	29
31 – 35	32
36 – 40	16
41 – 45	20
46 – 50	2
Above 50	1
Total	**100**

6.2.5 VT Colleges

The demographic information of respondents from the VT colleges (management and staff members) is presented in the next sections.

6.2.5.1 Position of the respondents

Table 6.8 shows the position of the respondents in the colleges; it is evident from the table that the sample captures all the important segments of the college - management, administration and other areas of the college operation. The sample investigated is deemed to gives a balanced outlook of the colleges.

Table 6.8: Position of the respondents

Position	Percentage
Principal	8
Vice Principal	4
Registrar	2
Other staff	86
Total	**100**

6.2.5.2 Gender of respondents

Table 6.9 indicates that 67% of the sample were males while 33% were females. This reveals that the male gender predominates in the sample investigated.

Table 6.9: Gender of respondents

Gender	Percentage
Male	67
Female	33
Total	**100**

6.2.5.3 Ages of respondents

Table 6.10 provides an indication of the ages of the respondents; the results show that respondents that are over the age of thirty five predominate in the sample investigated.

Table 6.10: Ages of respondents

Age Group (years)	Percentage
25 – 35	28
36 – 45	49
46 – 55	23
Above 55	-
Total	**100**

6.2.6 Master artisans

The demographic information of the master artisans is presented in the following sections.

6.2.6.1 Mode of training

Table 6.11 shows that the sample investigated has 91% of artisans from the traditional apprenticeship system as against 9% from the college system.

Table 6.11: Mode of training

Mode of training	Percentage
College	9
Traditional	91
Total	**100**

6.2.6.2 Category of employment

Table 6.12 reveals that self-employment predominates among the artisans, with 88% of the sample investigated being self-employed while 12% were company employees.

Table 6.12: Category of employment

Category	Percentage
Company employee	12
Self employed	88
Government employee	-
Others	-
Total	**100**

6.2.6.3 Trade name

Figure 6.13 indicates that bricklaying takes the lead among the trades that make up the sample investigated with 27%, followed by carpentry with 25% while plumbing has the least with 13%.

Table 6.13: Trade name

Trade	Percentage
Bricklaying	27
Carpentry	25
Plumbing	13
Electrical	19
Painting	16
Total	**100**

6.2.6.4 Gender of respondents

Table 6.14 indicates that 91% of the sample investigated were males while only 7% were females.

Table 6.14: Gender of respondents

Gender	Percentage
Male	91
Female	7
Total	**100**

6.2.6.5 Age of respondents

Table 6.15 indicates the ages of the respondents; the result shows that respondents that fall within the age group of 46 – 50 years takes the lead with 27% and respondents within age group of 20 – 30 years with 11% while those above age of 50 years have 6% which is the least in the sample investigated.

Table 6.15: Age of respondents

Age Group (years)	Percentage
20 – 30	11
31 – 35	24
36 – 40	15
41 – 45	17
46 - 50	27
Above 50	6
Total	**100**

6.2.6.6 Experience of respondents

Table 6.16 gives an indication of the experience of the respondents; the results indicate that respondents that have over fifteen years of working experience among the sample investigated takes the lead with 42%. This suggests that the respondents that make up the survey sample could be deemed to have sufficient experience and as such their opinions can be considered to be reliable.

Table 6.16: Experience of respondents

Experience (years)	Percentage
1 – 5	11
6 – 10	19
11 – 15	28
16 – 20	27
Above 20	15
Total	**100**

6.3 RESPONSES FROM PROFESSIONALS AND EMPLOYERS

Responses from professionals and employers are presented in the following sections.

6.3.1 Responses from professionals and employers on VT Colleges

The following sections present the analysis of the data received from construction professionals and employers on the artisan training. The analysis covers vital areas such as government policy, recruitment strategies, regulation of the training systems, funding, teaching and learning strategies and employers' participation in training. Respondents were asked to rate the factors relating to artisan training in terms of responses to a scale of 1 (strongly disagree) to 5 (strongly agree), and a mean score (MS) ranging between 1.00 and 5.00.

Table 6.17 indicates that the respondents' perceptions on policy related factors affecting the training of artisans in the vocational technical colleges. It is can be observed that all the four policy-related factors have MS > 3.40 ≤ 4.20 indicating that the respondents agree to all the factors. Most notable among the factors are poor integration of the vocational colleges with the university system and government discriminatory rating of vocational certificates which ranked 1st and 2nd respectively among the policy related factors impacting artisan training in the colleges.

From this result, the respondents can be deemed to agree that policy related factors of poor integration of the colleges with the university system and the discriminatory rating of vocational certificates mostly impact on the training of artisans in the colleges.

Table 6.17: Policy related factors affecting the training of artisans in the VT colleges

Factor	……..Response %.....						
	SD	D	N	A	SA	MS	Rank
Poor integration of vocational technical education with the university system	3.31	4.41	7.35	41.54	43.38	4.17	1
Government discriminatory rating of vocational certificates.	2.93	5.49	9.52	42.49	39.56	4.10	2
Insufficient budgetary allocation for the vocational education subsector.	9.16	7.33	6.59	40.66	36.26	3.88	3
Inadequate government policy on the creation of enough vocational technical colleges for artisan training	11.72	9.16	8.06	37.36	33.70	3.72	4

Table 6.18 indicates the respondents' perceptions relating to the factors affecting the attraction of trainees to the VT colleges. In general, it can be observed that the respondents largely agreed to the identified factors with all the MS > 3.40 ≤ 4.20. Noteworthy among the factors are poor awareness creation to attract new entrants, and a poor societal image attached to VT colleges which ranked 1st and 2nd and with MS of 4.14 and 4.11 respectively.

From this result, the respondents can be deemed to perceive poor awareness creation to attract new entrants to the colleges, and a poor societal image attached to VT colleges as the factors affecting recruitment the most.

Table 6.18: Attraction of trainees to the VT colleges

Factor	……Response %.....						
	SD	D	N	A	SA	MS	Rank
Poor awareness creation / media campaign to attract new entrants	1.10	5.51	6.99	50.74	35.66	4.14	1
A poor societal image attached to vocational and technical colleges.	1.46	8.03	10.22	39.05	41.24	4.11	2
Difficulty of career progression for vocational graduates	2.55	11.68	10.95	37.23	37.59	3.96	3
Insufficient scholarships for attracting potential artisans	2.92	8.76	10.58	47.81	29.93	3.93	4
The learning environment in the colleges are not attractive enough	3.30	10.62	10.62	44.32	31.14	3.89	5

Table 6.19 indicates the respondents' perceptions on factors relating to government regulation of the VT colleges as it affects the training of artisans for construction; it can be observed that all the factors have MS > 3.40 ≤ 4.20. Most notably, the legislation / regulatory framework establishing National Board for Technical Education (NBTE) should have been reformed long ago; and periodic curriculum review is not done as regularly as expected which are ranked 1st and 2nd by the respondents respectively.

According to this result, the respondents can be deemed to agree that regulatory framework establishing the NBTE which is long overdue for reform and periodic curriculum reviews are not carried out regularly as expected have most impact on the artisan training in the colleges.

Table 6.19: Government regulation of the VT colleges

Factor	……Response %.....						
	SD	D	N	A	SA	MS	Rank
The legislation / regulatory framework establishing NBTE is long overdue for reform	1.46	5.47	10.58	47.08	35.40	4.09	1
Periodic curriculum review is not done as regularly as expected (e.g. every 5years).	2.91	9.45	10.55	47.27	29.82	3.92	2
The National Board for Technical Education (NBTE), the regulatory body, focuses on the polytechnics at the expense of the technical colleges.	2.18	10.91	12.00	47.64	27.27	3.87	3
Insufficient attention is given to the accreditation of programmes	5.45	8.36	11.64	43.64	30.91	3.86	4
There is a weak regulatory framework (Acts) for vocational technical education	2.93	10.26	12.45	48.72	25.64	3.84	5

Table 6.20 indicates the respondents' perceptions on funding of the vocational education subsector. It can be seen that all the factors have mean scores MS > 3.40 ≤ 4.20 and MS> 4.20 ≤ 5.00, which indicates that the respondents generally agree that the factors identified affecting the funding of vocational and technical education subsector are valid. Most notably, the factor of corrupt practice among government officials negatively affects the funds that finally get to the colleges. This is ranked 1st with an MS value of 4.42. This substantiates the impact of corrupt practices among government and political office holders in the country which has been a source of concern.

Table 6.20: Funding of the vocational technical education subsector

Statement	……..…Response %.....						
	SD	D	N	A	SA	M S	Rank
Corrupt practices among government officials negatively affect the funds that finally get to the colleges	1.47	1.10	5.88	37.13	54.41	4.42	1
Bureaucratic bottlenecks hamper access to allocated funds	1.46	2.92	10.95	47.08	37.59	4.16	2
Budgetary allocation to vocational technical education is inadequate	1.82	6.93	7.30	44.53	39.42	4.13	3
Little attention is paid by the Government to vocational technical education in terms of funding.	2.19	5.11	7.66	49.64	35.40	4.11	4

Table 6.21 indicates the respondent's perceptions on impact of inadequate funding on VT colleges. It can be observed that all the factors have the mean scores within the range MS > 3.40 ≤ 4.20 and MS> 4.20 ≤ 5.00; noteworthy among them are the factors relating to inadequate training facilities / equipment and inadequate physical infrastructure in most colleges which ranked 1st and 2nd with MS values of 4.47 and 4.38 respectively. This reveals that the respondents strongly agree that funding most impacts on training facilities and physical infrastructure in the colleges.

It can be seen also from the table that the respondents agreed that funding impacts on staff development and training; the number of vocational instructors appointed; and that salaries and welfare packages of vocational teachers in the VT colleges leave much to be desired. The three factors have MS values of 4.36, 4.19 and 4.04 respectively. This corroborates the earlier finding that funding for the VT colleges is inadequate.

Table 6.21: Impact of inadequate funding on the VT education subsector

Factor	……..…Response %.....						
	SD	D	N	A	SA	MS	Rank
Training facilities / equipment in most technical colleges are inadequate	0.38	0.72	2.93	43.96	52.01	4.47	1
Physical infrastructure in most technical colleges is poor.	1.45	2.18	4.00	41,45	50.91	4.38	2
Staff development and training in the technical colleges are poor	0.73	2.55	4.01	45.62	47.08	4.36	3
There are insufficient number of vocational teachers and instructors	0.73	4.73	9.82	44.36	40.36	4.19	4
Salaries and welfare packages of vocational teachers are inadequate	1.09	6.18	13.45	45.82	33.45	4.04	5

Table 6.22 presents the perceptions of respondents on the factors affecting the competence of graduates produced from the VT colleges. From the table, it can be seen that inadequate physical

infrastructure in the VT colleges; out-dated training and construction technologies have MS> 4.20 ≤ 5.00 while the other factors have MS > 3.40 ≤ 4.20. This shows that the respondents strongly agree / agree with the factors impacting the competence of artisans from the VT colleges. Noteworthy among the factors are inadequate physical infrastructure; and out-dated training / construction technologies and methods which ranked 1st and 2nd with MS values of 4.29 and 4.27 respectively.

From this result, the respondents can be deemed to agree that inadequate physical infrastructure and out-dated training / construction technologies and methods are the factors that impact mostly on the competence of the artisans trained from the VT colleges.

Table 6.22: Factors affecting the competence of artisans produced from the VT colleges

Factor	……Response %.....						
	SD	D	N	A	SA	MS	Rank
Inadequate physical infrastructure in the vocational colleges	0.37	2.56	6.96	47.62	42.49	4.29	1
Training is not up to date with latest construction technologies and methods	1.47	2.56	4.76	49.82	41.39	4.27	2
Inadequate / obsolete training facilities and equipment	1.09	4.74	7.66	48.18	38.32	4.18	3
Inadequate exposure to practicals during training at the college.	1.82	6.93	6.93	43.43	42.49	4.15	4
Insufficient number of qualified teachers in technical colleges	4.41	8.82	9.19	47.79	29.78	3.90	5

6.3.2 Responses from professionals and employers on traditional apprenticeship

Table 6.23 indicates the respondents' perceptions on the factors relating to policy impacting on the traditional apprenticeship training (TAT) system. It can be observed in general that the respondents somewhat agreed / strongly agreed to the identified factors in Table 6.23 as the entire mean scores fall within the range MS > 3.40 ≤ 4.20 and MS> 4.20 ≤ 5.00. Notable among the factors are- the absence of a clear-cut policy on the establishment of artisan training centres as it is for schools and universities; and the inadequacy of government policy on youth development and skills acquisition. The two factors ranked 1st and 2nd and with MS values of 4.25 and 4.22 respectively.

From this result, the respondents can be deemed to perceive the absence of clear-cut policy on the establishment of artisan training centres; and the inadequacy of government policy on youth development and skills acquisition, as policy factors impacting the TAT system the most.

Table 6.23: Policy factors impacting the TAT system

Factor	……Response %.....						
	SD	D	N	A	SA	MS	Rank
There is no clear-cut policy on the establishment of artisan training centres as it is for schools and universities.	1.83	5.86	6.59	40.29	45.42	4.25	1
Government policy on youth development and skills acquisition is inadequate.	0.09	3.64	6.55	52.73	36.00	4.22	2
Government policy on budgetary allocation to (informal education) traditional apprenticeship training is poor.	1.45	4.00	8.73	50.18	35.64	4.19	3
Government policy provisions for the operation of traditional apprenticeship training system are poor.	0.73	6.55	11.27	43.27	38.18	4.12	4

Table 6.24 indicates the respondents' perceptions on recruitment factors affecting the (TAT) system. It is noteworthy that the respondents strongly agreed / agreed to the factors shown in Table 6.24 as affecting the recruitment of new trainees into the TAT system of training. This is evident from the first four factors which have MS> 4.20 ≤ 5.00 values and the last on the table which concerns the unattractive disposition of master artisans having MS> 3.40 ≤ 4.20. The three top ranked among the factors are poor societal image of the TAT system; a lack of training incentives to attract potential artisans to enrol in training and poor awareness creation and attraction of trainees to TAT. These three factors have MS values of 4.29 and 4.28 and 4.23 respectively.

From this result, the respondents can be deemed to perceive that the poor societal image of the TAT system; a lack of training incentives to attract potential artisans to enrol in training; and poor awareness creation to attract trainees to the TAT are the recruitment factors most impacting on the TAT system.

Table 6.24: Recruitment factors impacting the TAT system

Factor	……Response %.....						
	SD	D	N	A	SA	MS	Rank
The societal image of the traditional apprenticeship training system is poor	1.46	4.74	6.20	38.69	48.91	4.29	1
Training incentives to attract potential artisans to enrol in the apprenticeship training is lacking.	1.09	4.00	7.64	39.27	48.00	4.28	2
Awareness creation and attraction of trainees to traditional apprenticeship training are poor	1.82	2.91	6.18	49.09	40.00	4.23	3
Government recognition of traditional apprenticeship training system is poor	1.46	3.28	6.57	50.36	38.32	4.21	4
The disposition of master-artisan to apprentices is not attractive enough	1.82	4.74	7.30	56.20	29.93	4.08	5

Table 6.25 indicates the respondents' perceptions on the factors relating to government regulation impacting on the TAT system. It can be observed in general that the respondents agreed to the identified factors in table 6.25 as all the mean scores are within the range MS > 3.40 ≤ 4.20 and MS> 4.20 ≤ 5.00. Notable among the factors are appropriate government agency to monitor the TAT system is weak; and government does not assess master artisans' competencies before they are involved in training. These two factors ranked 1st and 2nd with MS values of 4.28 and 4.23 respectively.

From this result, the respondents can be deemed to perceive weak government monitoring agency; and non-assessment of master artisans' competencies before they are involved in training by government as the factors relating to government regulation impacting most on the TAT system.

Table 6.25: Effect of government regulation on the TAT system

Statement	……Response %.....						
	SD	D	N	A	SA	MS	Rank
Appropriate Government agency to monitor traditional apprenticeship training is weak	1.10	1.47	6.25	51.10	40.07	4.28	1
Government does not assess master artisans' competencies before their involvement in training provision	1.47	3.68	7.35	45.59	41.91	4.23	2
Government coordination of traditional apprenticeship training is poor	1.85	3.69	5.54	48.71	40.22	4.22	3
Length of training and certification are left in the hands of individual master artisans.	3.31	6.25	7.35	36.76	46.32	4.17	4
Government regulation of traditional apprenticeship training system is poor.	1.83	3.30	10.26	53.48	31.14	4.16	5
Trainees' competencies are not evaluated on a prescribed uniform standard before certification.	2.56	2.86	7.33	41.03	43.22	4.15	6
A unified formal curriculum for training under the traditional apprenticeship training is not provided by government	2.58	5.54	9.963	43.91	38.01	4.09	7

Table 6.26 indicates the respondents' perceptions on the statements relating to funding of the TAT system. From the Table, the respondents agreed to the statements as all MS > 4.20 ≤ 5.00. The two highest ranked 1st and 2nd among the statements relating to funding and provision of scholarships for apprentices as a motivation to enrol in training is lacking; and budgetary allocation of fund to (informal education) TAT system is inadequate these two having MS of 4.26 and 4.25 respectively.

From this result, the respondents can be deemed to perceive that the provision of scholarships for apprentices as a motivation to enrol in training is lacking; budgetary allocation of funds to (informal education) TAT system is inadequate as the funding related factors impacting the TAT system the most.

Table 6.26: Funding of the TAT system

Statement	……Response %.....						
	SD	D	N	A	SA	MS	Rank
Provision of training sponsorship for apprentices as a motivation to enrol in training is lacking	2.20	2.56	4.76	47.99	42.49	4.26	1
Budgetary allocation of fund to (informal education) traditional apprenticeship training is inadequate	1.83	2.56	9.89	40.29	45.4	4.25	2
Government allocation of funding for traditional apprenticeship training (as a part of education system) is poor	1.47	2.21	6.62	52.57	37.13	4.22	3

Table 6.27 indicates the respondents' perceptions on the factors impacting the adequacy of the training in the TAT system. It can be observed that all the factors have MS > 2.60 ≤ 3.40. From this result, the respondents can be deemed to perceive the factors to be neither inadequate nor adequate.

Table 6.27: The adequacy of the TAT programme

Parameter	……Response %.....						
	GI	IN	UN	AD	HA	MS	Rank
Competencies of the trainers (the master artisans)	4.04	25.00	22.43	34.56	13.97	3.29	1
Content of the training	4.76	23.81	24.54	34.80	12.09	3.26	2
Duration of the training	5.13	22.34	26.37	36.63	9.52	3.23	3
Products of the training (the graduates)	4.09	31.23	21.56	29.74	13.38	3.17	4
Assessment procedures of trainees	8.55	31.23	22.58	2278	14.87	3.04	5

Table 6.28 indicates the respondents' perceptions on the adequacy of teaching and learning strategy under the TAT system. It is noteworthy that blending of theoretical instructions with practicals with MS > 1.80 ≤ 2.60 is ranked the lowest. The mode of delivery and teaching methods; and regular review and update of teaching methods and content have MS > 2.60 ≤ 3.40 under the TAT system.

From this result, the respondents can be deemed to perceive blending of theoretical instructions with practicals as inadequate. However, the respondent can be deemed to be unsure about the adequacy of mode of delivery and teaching methods; and regular review and update of teaching methods and contents under the TAT system.

Table 6.28: Teaching and learning strategy under the TAT programme

Parameter	……..……Response %.....						
	GI	IN	UN	AD	HA	M S	Rank
The mode of delivery and teaching methods	8.49	39.11	15.13	26.57	10.70	2.92	1
Regular review and update of teaching methods and contents	10.33	37.64	19.56	21.40	11.07	2.85	2
Blending of theoretical instructions with practicals	15.56	31.85	16.67	25.19	10.24	2.54	3

Table 6.29 indicates the respondents' perceptions on the adequacy of factors relating to the regulation of the TAT system. It can be observed that technical support; trainers' accreditation and monitoring strategies under the TAT system have MS > 2.60 ≤ 3.40.

From this result, the respondents can be deemed to be unsure about the adequacy of technical support; in addition to the trainers' accreditation and monitoring strategies under the TAT system of training artisans.

Table 6.29: Regulation of the TAT programme

Parameter	……Response %.....						
	GI	IN	UN	AD	HA	MS	Rank
Technical support	12.92	35.06	18.82	23.99	9.23	2.82	1
Trainers accreditation	8.67	37.47	22.14	24.35	6.27	2.81	2
Monitoring strategies	10.70	39.48	19.56	21.77	4.49	2.78	3

Table 6.30 indicates the respondents' perceptions on the factors affecting the participation of the employers in artisan training. It can be observed in general that the respondents generally agreed on the identified factors in Table 6.30 as all the MS > 3.40 ≤ 4.20. Notable among the factors are inadequate budgetary provision for the training and retraining of artisans; inadequate government policy relating to employers' participation in training. These ranked 1st and 2nd with MS of 4.05 and 4.02 respectively.

From this result the respondents can be deemed to perceive inadequate budgetary provision for the training and retraining of artisans; and inadequate government policy relating to employers participation in training as the factors relating to employers participation in training, impacting mostly on artisan training.

Table 6.30: Factors affecting the participation of employers in the artisan training Programme

Factor	……Response %.....						
	SD	D	N	A	SA	MS	Rank
Inadequate budgetary provision for training and retraining of Artisans	2.56	5.86	9.52	47.99	34.08	4.05	1
Inadequate government policy relating to employers participation in training	2.20	5.49	10.99	50.92	30.40	4.02	2
Absence of an appropriate agency to coordinate artisan training.	2.21	7.35	7.72	55.88	26.84	3.98	3
Insufficient number of artisan training centres for short term and refresher courses.	1.47	8.79	13.19	45.42	31.14	3.96	4
Poor motivation from government to encourage employers to participate in artisan training.	1.47	10.26	8.79	56.04	23.44	3.90	5
Non willingness of the employers	3,28	10.22	17.15	41.61	27.74	3.80	6

Table 6.31 indicates the respondents' perceptions on the factors affecting the morale of artisans. It can be observed in general that the respondents agreed to the identified factors in table 6.31 as all the MS > 3.40 ≤ 4.20. Noteworthy among the factors are government rates vocational qualifications as being poor; artisan job security is poor; and artisan remuneration is poor. These ranked 1st, 2nd and 3rd with MS values of 4.01, 4.00 and 3.99 respectively.

From this result, the respondents can be deemed to perceive that government poor rating of vocational qualifications; poor artisan job security; and poor artisan remuneration as the factors that most impact the morale of artisans.

Table 6.31: Factors affecting the morale of artisans from the two systems

Factor	……Response %.....						
	SD	D	N	A	SA	MS	Rank
Government rates vocational qualifications as poor	6.27	9.59	11.81	47.60	24.72	4.01	1
Artisans' job security is poor	4.76	8.42	10.26	43,22	33.33	4.00	2
Artisans' remuneration is poor	2.46	6.23	16.48	38.46	36.26	3.99	3
Employment policies for construction workers are inadequate	2.95	2.96	5.90	57.20	23.99	3.92	4
The image of artisans in the society is poor	2.95	9.25	9.21	43.17	35.42	3.89	5
There is poor career progression path for artisans	4.40	4.76	5.49	56.41	28.94	3.75	6

Table 6.32 indicates the respondent's perceptions on the proposed strategies for improving the TAT system. It is noteworthy that all the strategies have MS> 4.20 ≤ 5.00 and an overall mean score (OMS) of 4.36 for all the proposed strategies as shown in table 6.32 which indicate that the respondents strongly agree with the proposed strategies for improving the traditional apprenticeship system of training artisans. Most notable among the proposed strategies are the ones with the MS values of 4.36 and above, noting here that the OMS value is 4.36. From this result, the respondents can be deemed to agree with all of the proposed strategies.

Table 6.32: Strategies for improving the traditional apprenticeship system

Proposed Strategies	……Response %.....						
	SA	D	N	A	SA	M S	OMS
Establish the department of skills development in each Local Government to mobilise and sensitise youth	0.00	2.21	4.43	42.44	50.92	4.42	
Create Skills Acquisition Fund (SAF) to provide training scholarships.	0.00	0.37	5.17	46.86	47.60	4.42	
Put in place an effective monitoring organ to ensure unified standard and quality	0.74	0.37	4.43	45.39	49.08	4.42	
Encourage public private partnership in training provision	0.00	1.85	3.32	47.23	47.60	4.41	
Provide incentives to attract young people to skill acquisition	0.00	1.48	4.80	47.23	46.49	4.39	
Establish skills development centres in each major cities	0.74	1.11	5.17	45.76	47.23	4.38	**4.36**
Government direct involvement on skill acquisition programmes	1.11	1.85	5.19	42.22	49.63	4.37	
Re-orientate the youth through the media on dignity of labour	0.37	1.10	5.15	48.53	44.85	4.36	
Give better recognition to informal education (apprenticeship training)	0.00	1.48	6.27	50.55	41.70	4.32	
Employers should partner with government to establish artisan villages	0.37	1.85	6.67	47.78	43.33	4.32	
Accredit trainers before engaging them	0.37	0.74	6.67	50.74	41.48	4.32	
Reforms in the youth development policy to give priority to skills development	0.74	1.47	9.93	46.63	38.24	4.23	

Table 6.33 indicates the respondents' perceptions on proposed strategies for improving employers' participation in training. It is noteworthy that all the strategies have all the mean scores within the range MS > 3.40 ≤ 4.20 and MS> 4.20 ≤ 5.00 and an overall mean score (OMS) of 4.26 for all the proposed strategies as shown in Table 6.33 which indicates that the respondents strongly agree / agree with the proposed strategies for improving the participation of employers in training. Most notable among the proposed strategies are the ones with the MS values of 4.26 and above, noting here that the OMS value is 4.26.

From this result the respondents can be deemed to agree with most of the proposed strategies - standardising the remunerations of artisans; providing incentives to motivate employers to participate more in training; creating more artisan training centres to accommodate more employers' sponsored trainees; and establishing investment in people initiative to mobilise employers for training to improve the participation of employers.

Table 6.33: Strategies for improving the participation of employers in the artisan training

Proposed Strategy	……Response %.....						
	SD	D	N	A	SA	M S	OMS
Standardise remunerations of artisans	0.74	1.48	4.81	51.48	41.48	4.31	
Provide incentives to motivate employers to participate more in training	0.37	3.30	5.19	48.89	41.85	4.28	
Create more artisan training centres to accommodate more employers' sponsored trainees	1.11	1.85	7.78	48.89	40.37	4.26	**4.26**
Establish Investment in people initiative to mobilise employers for training	0.75	1.12	5.60	55.97	36.57	4.26	
Establish a dedicated agency for training of artisans for the industry	0.74	2.59	6.67	56.67	33.33	4.19	

Table 6.34 indicates the respondents' perceptions on proposed strategies for improving the VT college training system. It is noteworthy that all the strategies have all the mean scores within the range MS > 3.40 ≤ 4.20 and MS> 4.20 ≤ 5.00; and an overall mean score (OMS) of 4.33 for all the proposed strategies as shown in Table 6.34 which indicates that the respondents strongly agreed / agreed with the proposed strategies for improving the VT college system of training artisans. Most notable among the proposed strategies are the ones with the MS values of 4.36 and above, noting here that OMS value is 4.33.

From this result the respondents can be deemed to agree with the proposed strategies of - Government should provide adequate funding for the technical colleges; government should provide adequate training facilities for the colleges; Schools should engage the services of career counsellors to sensitise high school students towards construction careers; Government should create more vocational technical colleges; provide labour market information, opportunities, wage data to students via the internet, leaflets and workshops; employers and government should sponsor media campaigns to attract trainees to construction trades; and reform the policy provisions establishing NBTE as the most recommended strategies for improving the VT college system of training artisans.

Table 6.34: Strategies for improving the college system of training

Proposed Strategy	……..…Response %.....						
	SD	D	N	A	SA	MS	OMS
Government should provide adequate funding for the technical colleges	0.37	0.10	4.04	43.38	51.10	4.44	
Provide adequate training facilities for the colleges	0.37	0.37	4.04	45.22	50.00	4.44	
Schools should engage the services of career counsellors to sensitise high school students towards construction careers	1.48	2.58	8.86	45.02	42.07	4.40	
Government should create more vocational technical colleges	1.48	0.74	3.69	45.02	49.08	4.39	
Provide labour market information, opportunities, wage data to students via the internet, leaflets and workshops	0.74	0.74	4.83	46.89	46.85	4.38	
Employers and government should sponsor media campaigns to attract trainees to construction trades.	0.00	1.85	4.81	49.26	44.07	4.36	**4.33**
Reform the policy provisions establishing NBTE.	0.37	1.11	7.01	48.71	42.80	4.34	
Employers and Government should provide scholarships to attract new entrants.	0.00	0.74	5.54	46.49	47.23	4.32	
Industry leaders should engage in school tour annually to mobilise youth to enlist for construction occupations.	1.48	2.58	8.85	45.03	42.07	4.32	
Employers and other industry stakeholders should Sponsor summer construction camps for high school students.	0.74	1.11	7.38	51.29	39.48	4.28	
Education policy reforms to give recognition to vocational qualifications	0.74	0.37	6.62	56.25	36.03	4.26	
Construction academies and clubs should be established in high schools.	1.39	2.66	8.86	45.02	42.07	4.42	
Integration of vocational technical colleges into the university system	1.11	7.75	3.69	48.71	38.75	4.16	

6.4 RESPONSES FROM THE COLLEGE MANAGEMENT AND STAFF MEMBERS

6.4.1 Introduction

The following sections present the analyses of data from vocational technical college management and staff members on the (VT) college system of training artisans. The analysis covers strategic areas of the college operation. The areas covered included recruitment and admission strategy; staffing; teaching and learning strategy; student assessment policy and procedures; physical infrastructure; training facilities and library resources; regulatory mechanism; government policy and level of funding; administrative services; and proposed strategies for improving training in the colleges.

The respondents were asked to rate the option that best describes the level of adequacy of the following factors that impact on VT colleges. Table 6.35 indicates the respondents' perceptions on the adequacy of the factors relating to recruitment and admission strategy impacting on training in the VT colleges. In general, it can be observed that the respondents perceived the identified factors in Table 6.35 as being inadequate with all the MS > 1.80 ≤ 2.60. Notable among the factors is marketing of programmes though the media, which ranked 4th and the least among the factors with the MS values of 2.02.

From this result, the respondents can be deemed to perceive the lack of marketing of programmes through the media as the recruitment / admission related factor that negatively impacts most on artisan training in the colleges. Other factors such as the widening of access to admit more candidates; strategies for attracting new students; and government image of the technical colleges are also perceived as inadequate and negatively impact on the training of artisans in the VT colleges.

Table 6.35: Recruitment and admission strategy

Factor	……Response %.....						
	GI	IN	UN	AD	HA	MS	Rank
Government image of the technical colleges	12.00	58.00	10.00	12.00	8.00	2.46	1
Strategies for attracting new students	19.61	47.06	5.88	23.53	3.92	2.45	2
Widening of access to admit more candidates	13.73	54.90	9.80	15.69	5.88	2.44	3
Marketing of programmes through the media	25.49	54.90	11.76	7.84	0.00	2.02	4

Table 6.36 indicates the respondents' perceptions on the adequacy of factors relating to staffing impacting on the training of artisans in the VT colleges. It can be observed that the respondents perceived employment policy and conditions of service as being inadequate with the MS > 1.80 ≤ 2.60 and ranked lowest (6^{th}). All the other factors have MS > 2.60 ≤ 3.40 which indicates that the respondents are unsure about the adequacy of these factors.

From this result, the respondents can be deemed to perceive the employment policy and conditions of service as the factors that negatively impacts on the artisan training the most in the colleges. However, the respondent can be deemed to be unsure about the adequacy of teaching experience of staff members; qualifications of staff members; number of administrative, teaching and support staff members and procedures of staff selection, appointment and induction in the VT colleges.

Table 6.36: Staffing in the VT colleges

Factor	……Response %.....						
	GI	IN	UN	AD	HA	M S	Rank
Teaching experience of staff members	25.49	54.90	11.76	7.76	0.00	3.12	1
The qualifications of staff members	13.73	54.90	9.80	15.69	5.88	3.10	2
The number of administrative and supporting staff	19.61	47.06	5.88	23.53	3.92	3.02	3
The number of teaching staff	29.17	52.08	16.67	2.08	0.00	2.92	4
Procedure of selection, appointment and induction	8.33	4.17	2.08	85.42	0.00	2.78	5
The employment policy and condition of service	65.31	34.69	0.00	0.00	0.00	2.47	6

Table 6.37 indicates the respondents' perceptions on the adequacy of the factors relating to teaching and learning strategy impacting training in the VT colleges. It can be observed that the respondents perceived the level of practicals conducted for teaching students; and monitoring strategies to ensure compliance as inadequate with MS > 1.80 ≤ 2.60 and were ranked 4^{th} and 3^{rd} among the factors respectively. It can also be observed that the respondents are unsure about the

adequacy of the mode of delivery and teaching methods; and regular review and updating of teaching methods with MS > 2.60 ≤ 3.40.

From this result, the respondents can be deemed to perceive the level of practicals conducted for teaching students; and monitoring strategies to ensure compliance as the factors relating to teaching and learning mostly inadequate and negatively impacting on the training in the VT colleges.

Table 6.37: Teaching and learning strategy

Factor	……Response %.....						
	GI	IN	UN	AD	HA	MS	Rank
Regular review and update of teaching methods	17.65	59.22	7.84	23.53	11.76	2.73	1
The mode of delivery and teaching methods	7.84	49.02	11.76	25.49	5.88	2.71	2
Monitoring strategies to ensure compliance	11.76	49.02	11.76	23.53	3.92	2.59	3
The level of practicals conducted for teaching students	15.69	52.94	7.84	17.65	5.88	2.45	4

Table 6.38 indicates the respondents' perceptions on the adequacy of the factors relating to student assessment policy and procedures in the VT colleges. It can be observed that the respondents perceived the identified factors relating student assessment policy and procedures in Table 6.38 as being adequate with all the MS > 3.40 ≤ 4.20.

From this result, the respondents can be deemed to perceive reliability of student assessment and monitoring of student progress as the most adequate factors with regards to student assessment policy and procedure in the VT college system. They are ranked 1st and 2nd with MS values of 3.61 and 3.59 respectively among other factors.

Table 6.38: Student assessment policy and procedures

Factor	……Response %.....						
	GI	IN	UN	AD	HA	MS	Rank
Reliability of student assessment	0.00	7.84	27.45	60.78	3.92	3.61	1
Monitoring of student progress	0.00	7.80	25,49	66.67	0.00	3.59	2
Security of student records	5.88	5.88	21.57	58.82	7.04	3.57	3
Internal and external moderation	1.96	11.76	21.57	64.71	0.00	3.49	4
Internal assessment of students	1.96	15.69	23.53	54.90	3.92	3.43	5

Table 6.39 shows the respondents' perceptions on the adequacy of the factors relating to physical infrastructure, training facilities and library resources affecting training in the VT colleges. It can be observed that the respondents perceived all the factors as being inadequate / grossly inadequate with all the mean scores falling within MS > 1.00 ≤ 1.80 and MS > 1.80 ≤ 2.60. It is noteworthy that

the maintenance of library facilities; books and other resources in the library and workshop equipment for practicals are ranked lowest - 8th, 7th and 6th with MS values of 1.75, 1.84 and 1.87 respectively.

From this result, the respondents can be deemed to perceive, maintenance of library facilities; books and other resources in the library; and workshop equipment for practicals as the factor relating to physical infrastructure, training facilities and library resources as most inadequate factors that negatively impact on the artisan training the in the VT colleges.

Table 6.39: Physical infrastructure, training facilities and library resources

Factor	……..……Response %.....						
	GI	IN	UN	AD	HA	MS	Rank
The condition of the building	31.37	47.06	1.96	15.96	3.2	2.14	1
The number of buildings for offices, workshops, classes and hostels	35.29	47.06	0.00	13.73	3.92	2.04	2
IT infrastructure for training	50.98	23.53	3.92	15.69	5.88	2.02	3
Maintenance of workshop facilities	41.18	39.22	3.92	11.76	3.92	1.98	4
The size and scope of library	37.25	45.10	9.80	7.84	0.00	1.88	5
Workshop equipment for practicals	41.18	43.14	3.92	9.80	1.96	1.87	6
Books and other resources in the library	37.25	47.06	9.80	5.88	0.00	1.84	7
Maintenance of library facilities	47.06	37.25	9.80	5.88	0.00	1.75	8

Table 6.40 indicates the respondents' perceptions on the adequacy of the factors relating to the regulatory mechanism impacting on training in the VT colleges. The National Board for Technical Education (NBTE) is the regulatory body for the VT colleges. It can be observed from the table that the respondents rate NBTE operations as being inadequate with all the MS > 1.80 ≤ 2.60. Notable among the factors is the frequency of visits for programme accreditation, which ranked 3rd and the last among the factors assessed with MS value of 2.37.

From this result, the respondents can be deemed to perceive the frequency of visits for programme accreditation as the most inadequate factor relating to regulation that most impact on the training of artisans in the VT colleges. The level of attention received from NBTE; and the technical support received from NBTE are also inadequate and negatively impacting on the training in the VT colleges too.

Table 6.40: Regulatory mechanism: the NBTE as the regulatory body.

Factor	……Response %.....						
	GI	IN	UN	AD	HA	MS	Rank
Technical support received from NBTE	9.80	39.22	33.33	17.65	0.00	2.59	1
Level of attention received from NBTE	11.76	49.02	15.69	21.57	1.96	2.53	2
Frequency of visit for programme accreditation	17.65	47.06	19.61	11.76	3.92	2.37	3

Table 6.41 indicates the respondents' perceptions on the adequacy of the factors relating to government policy and the funding of training in the VT colleges. In general, it can be observed that the respondents perceived the identified factors in Table 6.41 as inadequate with all the MS > 1.80 ≤ 2.60. Notable among the factors are grants for infrastructure development; level of funding received from government for running the colleges; and government policy on the rating of VT college certificates which ranked lowest, 5th, 4th and 3rd among the factors with the MS of 1.92, 1.98 and 2.24 respectively.

From this result, the respondents can be deemed to perceive grants for infrastructure development; level of funding received from government for running the colleges; and government policy on the rating of VT college certificates as the most inadequate factors relating to government policy and funding and negatively impacting on the training offered in the VT colleges.

Table 6.41: Government policy and level of funding

Factor	……Response %.....						
	GI	IN	UN	AD	HA	MS	Rank
Government policy on technical and vocational education	17.65	56.86	5.88	17.65	1.96	2.27	1
Policy on career progression with technical college certificates	27.45	47.06	1.96	19.61	3.92	2.25	2
Government policy on the rating of technical college certificates	25.49	50.98	1.96	17.65	3.92	2.24	3
Level of funding received from government for running the colleges	33.33	49.02	5.88	9.80	1.96	1.98	4
Grants for infrastructure development	35.29	49.02	5.88	7.84	1.96	1.92	5

Table 6.42 indicates the respondents' perceptions on the adequacy of the factors relating to administrative services in the VT colleges. It can be observed that the respondents are unsure about the adequacy of the identified factors in Table 6.42 with all the MS > 2.60 ≤ 3.40.

From this result, the respondents can be deemed to perceive factors relating to administrative services in the VT colleges as neither inadequate nor adequate.

Table 6.42: Administrative services

Factor	……Response %.....						
	GI	IN	UN	AD	HA	MS	Rank
Identification of non-active and at-risk students	1.96	15.69	31.37	45.10	5.88	3.37	1
Ensuring the integrity of the certification	0.00	19.61	29.41	47.06	3.92	3.35	2
Provision of information for students	1.96	17.65	31.37	47.06	1.96	3.29	3
Dealing with the needs of a diverse student population	0.00	23.53	33.33	37.25	5.88	3.25	4

Table 6.43 indicates the respondents' perceptions on the proposed strategies for improving the VT college system of training. It is noteworthy that most of the strategies have MS> 4.20 ≤ 5.00 and an overall mean score (OMS) of 4.33 for all the proposed strategies as shown in Table 6.43 which indicate that the respondents strongly agree with the proposed strategies for improving the VT college system of training artisans. Most notable among the proposed strategies are the ones with the MS values of 4.33 and above, noting here that OMS value is 4.33.

From this result the respondents can be deemed to agree with the following proposed strategies of – a dedicated regulatory body should be set up for vocational technical colleges; provision of adequate infrastructure and training facilities for the technical colleges; improved salaries and welfare packages for vocational teachers to attract the most talented human resources; policy reform for a better rating of vocational technical certificates; better recognition be given to vocational technical qualification to boost the image in society; government should integrate vocational technical education with the university system for easy study progression; and government should embark on an aggressive media campaigns to market vocational colleges. These are the most recommended strategies for improving the VT college system for training artisans.

Table 6.43: Strategies for improving the VT College system of training

Proposed Strategy	…..……Response %.....						
	SD	D	N	A	SA	M S	OMS
A dedicated regulatory body should be set up for vocational technical colleges.	1.96	1.96	1.96	35.29	58.82	4.47	
Provision of adequate infrastructure and training facilities for the technical colleges	0.00	3.92	1.96	41.18	52.94	4.43	
Improved salaries and welfare packages for vocational teachers to attract the most talented human resources	0.00	7.84	1.96	31.37	58.82	4.41	
Policy reform for a better rating of vocational technical certificates	1.96	3.92	0.00	39.22	54.90	4.41	
Better recognition be given to vocational technical qualification to boost the image in society	1.86	2.06	5.88	37.25	52.94	4.37	
Government should integrate vocational technical education with the university system for easy study progression.	3.92	1.96	1.96	37.25	54.90	4.37	**4.33**
Government should embark on aggressive media campaigns to market vocational colleges	5.88	3.92	0.00	31.37	58.82	4.33	
Reform the education policy to give priority to vocational and technical education	1.96	3.92	5.88	39.22	49.02	4.29	
Training and retraining of vocational and technical teachers	1.96	3.92	3.92	47.10	43.10	4.27	
Provide adequate funding for the vocational and technical colleges	3.92	5.88	1.96	43.14	45.10	4.20	
Provision of scholarships and other incentive to attract the youths to technical colleges	3.92	7.84	0.00	45.10	43.14	4.16	

6.5 RESPONSES FROM THE MASTER ARTISANS

Table 6.44 indicates the respondents' perceptions on the adequacy of the factors relating the recruitment of apprentices to artisan training. In general, it can be observed that the respondents perceived the identified factors in Table 6.44 as being inadequate as all the MS > 1.80 ≤ 2.60.

From this result, the respondents can be deemed to perceive the level of recognition and promotion of the training programmes; marketing of the training programmes; and strategies for attracting new apprentices as inadequate and negatively impacting on the attraction of new entrants to enrol in artisans training.

Table 6.44: Recruitment of new entrants to training

Factor	……..…….Response %.....						
	GI	A D	U N	AD	HA	MS	Rank
Strategies for attracting new apprentices	39.51	30.86	20.99	8.64	0.00	1.99	1
Marketing of the training programmes	43.21	34.57	16.05	6.17	0.00	1.85	2
Level of recognition and promotion of the training programmes	43.21	34.57	16.05	6.17	0.00	1.85	3

Table 6.45 indicates the respondents' perceptions on the adequacy of factors relating to learning strategy impacting on the artisan training. In general, it can be observed that the respondents perceived the identified factors in Table 6.45 as inadequate with all the MS > 1.80 ≤ 2.60. Notable among the factors are the blending of theoretical knowledge with practicals; regular review and updating of teaching methods; which ranked 5th and 4th among the factors with the MS values of 1.98 and 2.07 respectively.

From this result, the respondents can be deemed to perceive the blending of theoretical knowledge with practicals; regular review and update of teaching methods as inadequate and the factors relating to learning strategy that impact artisan training the most.

Table 6.45: Learning strategy

Factor	…….Response % ……..						
	GI	A D	U N	AD	HA	MS	Rank
Monitoring strategies to ensure compliance	23.46	43.21	27.16	6.17	0.00	2.16	1
The mode of delivery and teaching methods	23.46	48.15	19.75	8.64	0.00	2.14	2
Assessment of trainees before certification	34,57	30.86	22.22	12.35	0.00	2.12	3
Regular review and update of teaching methods	25.93	49.38	16.05	8.64	0.00	2.07	4
Blending of theoretical knowledge with practicals	35.80	37.04	20.99	6.17	0.00	1.98	5

Table 6.46 indicates the respondents' perceptions on the adequacy of the factors relating to policy framework and funding and how they impact on the artisan training. It can be observed that the respondents rate the factor relating to policy and funding as being inadequate as seen from Table 6.46 with all the MS > 1.80 ≤ 2.60. Notable and least ranked among the factors are training scholarships and level of funding of the training programmes which ranked 4th and 3rd and with MS values of 1.93 and 2.07 respectively.

From this result, the respondents can be deemed to perceive training scholarships and level of funding of the training programmes, as inadequate and the factors relating to policy and funding which negatively impact on the artisan training the most.

Table 6.46: Policy framework and funding of the training

Factor	……..…….Response %.....						
	GI	IN	UN	AD	HA	MS	Rank
Government recognition and attention on informal education	33.33	40.91	12.45	12.25	1.23	2.07	1
Government policy on training	37.04	34.57	18.52	8.64	1.23	2.02	2
Level of funding of the training programmes.	35.80	39.51	14.81	8.64	1.23	2.00	3
Training scholarships	41.98	34.57	13.58	8.64	1.23	1.93	4

Table 6.47 indicates the respondents' perceptions on the adequacy of the factors relating to government regulation of the artisan training. It can be observed from the table that the respondents rate government regulation of artisan training as being inadequate with all the MS > 1.80 ≤ 2.60. Most notable among the factors is, the training centres and programme accreditation, which is ranked least (3rd) among the factors, with MS value of 1.89.

According to this result, the respondents can be deemed to perceive the training centres and programme accreditation as the factors relating to government regulation which negatively impacts on the artisan training the most.

Table 6.47: Government regulation of artisan training

Factor	……..…….Response %.....						
	GI	IN	UN	AD	HA	M S	Rank
Level of regulation and coordination	27.16	46.91	14.81	11.11	0.00	2.10	1
Technical support	27.16	49.38	13.58	9.88	0.00	2.06	2
Training centres and programme accreditation	35.80	46.91	9.88	7.41	0.00	1.89	3

Table 6.48 indicates the respondents' perceptions on the proposed strategies for improving the artisan training. It is noteworthy that all the proposed strategies have all the MS > 3.40 ≤ 4.20 and an overall mean score (OMS) of 3.92 for all the proposed strategies as shown in Table 6.48 which indicate that the respondents generally agreed with the proposed strategies for improving the artisan training. Most notable among the proposed strategies are the ones with the MS values of 3.92 and above, noting here that the OMS value is 3.92.

From this result the respondents can be deemed to agree with the following proposed strategies – setting up of a Skills Acquisition Fund (SAF) for adequate and sustained funding of vocational training; set up skills centres in each major city to complement master artisans' efforts; partnership

among employers to establish artisan training centres; establishing a unified assessment and certification system for the artisan training programmes; providing incentives to attract young people to skill acquisition; government to establish an agency to regulate and standardize traditional apprenticeship training; Making policy provisions to facilitate public private partnership for skill development; and Industry stakeholders should provide scholarships to support training. These are the most recommended strategies for improving the artisan training.

Table 6.48: Proposed strategies for improving the training

Proposed Strategy	……Response %.....						
	SD	D	N	A	SA	MS	OMS
Set up Skills Acquisition Fund (SAF) for adequate and sustained funding of vocational training.	0.00	6.17	9.88	46.91	37.04	4.15	
Set up skills centres in each major city to compliment master artisans' efforts.	0.00	6.17	12.35	45.68	35.80	4.11	
Partnership among employers to establish artisan training centres	0.00	9.88	9.88	43.21	37.04	4.07	
Establish a unified assessment and certification system for the traditional apprenticeship training programmes.	0.00	9.88	9.88	44.44	35.80	4.06	
Provide incentives to attract young people to skill acquisition.	0.00	7.41	8.64	56.79	27.16	4.04	
Government to establish an agency to regulate and standardize traditional apprenticeship training.	0.00	6.17	9.88	59.26	24.69	4.02	
Make policy provisions to facilitate Public private partnership for skill development	0.00	6.17	16.05	51.85	25.93	3.98	**3.92**
Industry stakeholders should provide scholarships to support training	0.00	8.64	12.35	54.32	24.69	3.95	
Give better recognition to informal education system (apprenticeship) through appropriate policy provisions as a means of economic empowerment	3.70	7.41	9.88	53.09	25.93	3.90	
Formulation of a robust youth policy that will give priority to skills acquisition	0.00	6.17	22.22	49.38	22.22	3.88	
Government direct involvement in skill acquisition programmes	0.00	8.64	23.46	43.21	24.69	3.84	
A regular monitoring strategy should be in place for the training to ensure standard.	10.00	7.50	8.75	46.25	27.50	3.74	
Create skills support department in the Local Governments Areas to promote skills acquisition.	12.35	6.17	11.11	45.68	24.69	3.64	
Master artisans should be accredited before their involvement in training.	12.35	7.50	11.11	44.44	24.69	3.62	

6.6 ANALYSIS AND PRESENTATION OF INTERVIEWS

As indicated in section 5.6.1.2, interviews were conducted with the Directors of education ministries in the states included in the study. The interviews highlight the perceptions of the respondents on the issues that concern vocational education and training in their states. The analysis of the remarks, comments and perceptions of the directors is presented in the following sections.

6.6.1 Poor societal perception of artisans

The analysis showed that society perceives artisans poorly and rate them lower compared with the people working in an office. The responses of the interviewees also pointed out that those who enrol as apprentices are seen as coming from economically disadvantaged backgrounds and lacking in financial resources or intellectual capacity to go along the general education route. For instance, concerning the poor societal perception of artisans, such comments as these were made:

> *"….There is a wrong notion among our people generally that those people who are not good are the ones that should go to technical colleges; you see if a child is not doing well in school, he would be told to go to technical college." [Education Ministry Director]*

Further on poor societal perception of artisans, one of the interviewees gave this comment on the way forward:

> *"….I think the matter is majorly in the hands of the federal government, I mean our lawmakers, to remove the bad tag that has been placed on vocational education and its certificates; unless they give the same recognition to vocational education like general education the story will remain the same." [Education Ministry Director]*

6.6.2 Funding

In terms of funding, the analysis revealed that although vocational education is expensive, however, it confirmed that the financial allocations to it from the annual budgets both from the federal and state levels of government were insufficient to effective deliver quality vocational training. This finding is consistent with the World Bank (2004) position on expenditure on education in Nigeria as part of government total spending which it described to be low compared with what obtains in most developing nations. The following comment was made on the issue of funding by one of the interviewees:

> *"….I may say that the government is trying in a way to finance education because the money is not enough to generally meet all the needs; everybody knows that. I only think that we have not given education the right priority in this country." [Education Ministry Director]*

6.6.3 Vocational teachers

Findings indicate that the vocational teachers are not adequately remunerated and as a result, they are not passionate about the work. Some are engaged in other businesses to augment their income. This finding is in agreement with the assertion of Abassah (2011:57-63) who observed that the motivation level of vocational teachers is low and they are poorly remunerated and remain underdeveloped as there are no provisions for in-service training and capacity building programmes for them. One interviewee commented as follows:

> *"….Some years ago, the federal government attempted to offer a special salary package for the vocational teachers as a way of motivation to attract best hands. It is disturbing to say that such proposal never got implemented till date." [Education Ministry Director]*

6.6.4 Youth unemployment

Regarding youth unemployment, the analysis indicates that the poor performance of vocational education and training is one of the major factors responsible for youth unemployment in the country. Vocational training impacts the necessary skills needed to function in the world of work to the trainees. This comment was made by one of the interviewees:

> *…..A graduate of the technical college is capable of earning a living with the skills acquired in the college. However, the trend among our youth today is that of apathy to skills acquisition and a desire for quick riches. This makes them take to commercial motorcycling operation, popularly called okada" [Education Ministry Director]*

6.6.5 Parental influence

Concerning parental influence, the analysis confirmed that most parents counsel their children against enrolling in vocational colleges, given the discrimination against the qualifications and the graduates. As reported in the literature (Dike 2011:3) that there is an undue emphasis placed on paper qualifications from the university system in Nigeria with poor consideration for skills.

> *…..Anyway, I cannot blame the parents because the kind of humiliating treatment given to vocational certificate holders today in this country is very annoying" [Education Ministry Director]*

6.6.6 Corruption and poor political leadership

Concerning corrupt practices and poor political leadership, the analysis confirmed that there are corrupt practices in the system and the challenge of poor political leadership in the country is also

a matter of concern. These have negatively impacted on vocational education as has been previously reported in the literature (Dike, 2011:4). For instance, the appointment of inappropriate individuals in political offices like ministers would mean a lot of stagnancy for that ministry. One interviewee commented as follows:

> *"….I call this putting square pegs in round holes, we have seen this done in the this country many times in the past where persons with art background appointed as the minister of education, the concerns of the technical education will not be understood by such political appointees" [Education Ministry Director]*

Furthermore, analysis indicated that there is endemic corruption in the society generally; and this is affecting the national development. The political system lacks checks and balances to control the autocratic tendencies in government and to hold political office holders accountable for their actions.

6.6.7 Integration with the university system

The analysis revealed that many vocational qualification holders find it difficult to climb the career ladder because most universities would not accept such qualifications as requirement for admission. This often leads to frustration and unfulfilled ambitions. Adults with such bitter experiences have often vowed that they would never allow their children or anyone close to them to choose the vocational pathway. The analysis further showed that the dichotomy between the general education and the vocational education / training in the country has a major negative impact on the general deterioration of vocational education and the training subsector.

It is believed that the solution to this is the appropriate policy reforms that would integrate the university system with the vocational education and training system. The interviewees advocated public re-orientation on equal importance of the general and vocational education and ease of access to continue education in the university for vocational graduates. An interviewee gave this comment:

> *"….There should be a kind of public awareness to sensitise the general public on the shift of government perspective to accord the same recognition to vocational certificates as general education. I believe that more trainees would enrol in vocational training if this integration could be carried out" [Education Ministry Director]*

6.6.8 Summary of the interview analysis

In the pursuit of the achievement of the research aim of investigating the artisan training system for house construction in South Western Nigeria, this qualitative inquiry was undertaken to complement the quantitative inquiry. This would help also to obtain robust and balanced data for the study. The findings of the interview have further strengthened the evidence of the poor performance of the artisan training system as reported in the literature. The various factors impacting on the artisan training such as poor integration with the university, poor society perception, inadequate funding and corrupt practices have been further established through the interviews.

6.7 TESTING OF THE RESEARCH HYPOTHESES

6.7.1 Introduction

This section presents the inferential statistics of the results obtained from further analysis of the descriptive statistics presented earlier in this chapter. In testing for the hypotheses, steps were taken based on standard criteria to answer the questions about the differences between the assumed statements or suppositions (the hypotheses) and the actual results of the research as obtained from the appropriate test statistics. This is to ensure that the conclusions or inferences drawn from the results are reliable.

6.7.2 The research hypotheses

Hypothesis 1: Government policy framework for the training of construction artisans in the colleges is inadequate.

Hypothesis 2: Government policy framework for the training of construction artisans in the traditional apprenticeship system is inadequate.

Hypothesis 3: The funding mechanism for the vocational education sub-sector is poor.

Hypothesis 4: The recruitment strategies for attracting new entrants into the artisan training in the colleges are ineffective.

Hypothesis 5: The coordination and regulation of the traditional apprenticeship system of artisan training is poor.

Hypothesis 6: The National Qualification Framework under which the vocational college system of training operates is faulty and rigid.

6.7.2.1 Hypothesis 1: Government policy framework for the training of construction artisans in the colleges is inadequate

Stating the null hypothesis and the alternate hypothesis:

- **H_0** = Government policy framework for the training of construction artisans in the colleges is adequate

- **H_1** = Government policy framework for the training of construction artisans in the colleges is inadequate

Decision rule: Reject null hypothesis if p is < 0.05

Question 1

Question one asked respondents to rate policy related factors affecting the training of artisans in the vocational colleges in terms of responses to a scale of 1 (strongly disagree) to 5 (strongly agree), and a mean score (MS) ranging between 1.00 and 5.00.

Cronbach's Alpha (α) for Question 1 = 0.71 - Reliable

The Cronbach's alpha for the items in Questions 1 is 0.71, indicating that they have good internal consistency and thus, the single mean obtained for the questions is reliable. Cronbach's alpha is used to sum the mean scores of different items into one when the items measure different areas within a single construct.

Table 6.49: Test of means against reference constant (value) related to Hypothesis 1

Question	Mean	Std Dv	N	RC	p-value
Question 1_ave	3.97	0.84	273	3	0.0000

Table 6.49 presents the inferential statistics relating to the above stated hypothesis, based on the statistics; it can be assumed that for Hypothesis 1:

- In terms of Q1, the mean is significantly greater than the reference constant and the p-value is statistically significant at 0.05 significant level.Hence H_0 can be deemed rejected, while H_1 can be deemed accepted, and p-value is statistically significant at 0.05 significant level. Hence, H_0 can be deemed rejected, while H_1 can be deemed accepted.

Conclusion: Since the p-value indicates that the data provide sufficient evidence to reject the null hypothesis in favour of the alternative hypothesis. It can be argued that indeed, government policy framework for the training of construction artisans in the colleges is inadequate.

6.7.2.2 Hypothesis 2: Government policy framework for the training of construction artisans in the traditional apprenticeship system is inadequate.

Stating the null hypothesis and the alternate hypothesis:

- **H_0** = Government policy framework for the training of construction artisans in the traditional apprenticeship system is adequate

- **H_1** = Government policy framework for the training of construction artisans in the traditional apprenticeship system is inadequate

Decision rule: Reject null hypothesis if p is < 0.05

Question 7

Question seven asked respondents to rate policy factors affecting the training of artisans in the traditional apprenticeship system in terms of responses to a scale of 1 (strongly disagree) to 5 (strongly agree), and a mean score (MS) ranging between 1.00 and 5.00.

Cronbach's Alpha (α) for Question 7 = 0.75 - Reliable

The Cronbach's alpha for the items in Questions 7 is 0.75, indicating that they have good internal consistency and thus, the single mean obtained for the question is reliable. Cronbach's alpha is used to sum the mean scores of different items into one when the items measure different areas within a single construct.

Table 6.50: Test of means against reference constant (value) related to Hypothesis 2

Question	Mean	Std Dv	N	RC	p-value
Question 7_ave	4.17	0.66	275	3	0.0000

Table 6.50 presents the inferential statistics relating to the above stated hypothesis, based on the statistics; it can be assumed that for Hypothesis 2:

- In terms of Q7, the mean is significantly greater than the reference constant and p-value is statistically significant at 0.05 significant level.Hence H_0 can be deemed rejected, while H_1 can be deemed accepted, and p-value is statistically significant at 0.05 significant level. Hence, H_0 can be deemed rejected, while H_1 can be deemed accepted.

Conclusion: Since the p-value indicates that the data provide sufficient evidence to reject the null hypothesis in favour of the alternative hypothesis. It can be argued that indeed, government policy framework for the training of construction artisans in the traditional apprenticeship system is inadequate.

6.7.2.3 Hypothesis 3: The funding mechanism for the vocational education sub-sector is poor.

Stating the null hypothesis and the alternate hypothesis:

- $\mathbf{H_0}$ = The funding mechanism for the vocational education sub-sector is good.

- $\mathbf{H_1}$ = The funding mechanism for the vocational education sub-sector is poor.

Decision rule: Reject null hypothesis if p is < 0.05

Question 4

Question four asked respondents to rate funding related factors affecting the vocational education subsector in terms of responses to a scale of 1 (strongly disagree) to 5 (strongly agree), and a mean score (MS) ranging between 1.00 and 5.00.

Cronbach's Alpha (α) for Question 4 = 0.68 - Reliable

The Cronbach's alpha for the items in Questions 4 is 0.68. This indicates that they have good internal consistency and thus, the single mean obtained from the question is reliable.

Table 6.51: Test of means against reference constant (value) relating to Hypothesis 3

Question	Mean	Std Dv	N	RC	p-value
Question 4_ave	4.2	0.62	274	3	0.0000

Table 6.51 presents the inferential statistics relating to the above stated hypothesis. Therefore, based on the statistics, it can be assumed that for hypothesis 3:

- In terms of Q4, the mean is significantly greater than the reference constant; the p-value is significant at 0.05 significant level.Hence H_0 can be deemed rejected, while H_1 can be deemed accepted.

Conclusion: Since p-value indicates that the data provide sufficient evidence to reject the null hypothesis in favour of the alternative hypothesis. It can be argued that indeed, the funding mechanism for the vocational education sub-sector is poor.

6.7.2.4 Hypothesis 4: The recruitment strategies for attracting new entrants into the artisan training in the colleges are ineffective.

Stating the null hypothesis and the alternate hypothesis:

- **H_0** = The recruitment strategies for attracting new entrants into the artisan training in the colleges are effective.

- **H_1** = The recruitment strategies for attracting new entrants into the artisan training in the colleges are ineffective.

Decision rule: Reject null hypothesis if p is < 0.05

Question 2

Question two asked respondents to rate recruitment strategies for attracting potential artisans into training in the vocational colleges in terms of responses to a scale of 1 (strongly disagree) to 5 (strongly agree), and a mean score (MS) ranging between 1.00 and 5.00.

Cronbach's Alpha (α) for Question 2 = 0.71 - Reliable

The Cronbach's alpha for the items in Questions 2 is 0.71, indicating that they have good internal consistency and thus, the single mean obtained for the question is reliable.

Table 6.52: Test of means against reference constant (value) relating to Hypothesis 4

Question	Mean	Std Dv	N	RC	p-value
Question 2_ave	4.00	0.69	274	3	0.0000

Table 6.52 presents inferential statistics relative to the above stated hypothesis.

Therefore, based on the statistics, it can be assumed that for Hypothesis 4:

- In terms of Q2, the mean is significantly greater than the reference constant; the p-value is significant at 0.05 significant level. Hence H_0 can be deemed rejected, while H_1 can be deemed accepted.

Conclusion*:* Since p-values indicate that the data provide sufficient evidence to reject the null hypothesis in favour of the alternative hypothesis. It can be argued that indeed, the recruitment strategies for attracting new entrants into the artisan training in the colleges are ineffective.

6.7.2.5 Hypothesis 5: The coordination and regulation of the traditional apprenticeship system of artisan training is poor

Stating the null hypothesis and the alternate hypothesis:

- **H_0** = The coordination and regulation of the traditional apprenticeship system of artisan training is good

- **H_1** = The coordination and regulation of the traditional apprenticeship system of artisan training is poor

Decision rule: Reject the null hypothesis if p is < 0.05

Question 9

Question nine asked respondents to rate government coordinating and regulatory activities affecting the training of artisans in the traditional apprenticeship system in terms of responses to a scale of 1 (strongly disagree) to 5 (strongly agree), and a mean score (MS) ranging between 1.00 and 5.00.

Cronbach's Alpha (α) for Question 9 = 0.84 - Reliable

The Cronbach's alpha for the items in Question 9 is 0.84. This indicates that they have good internal consistency and thus, the single mean obtained for the question is reliable.

Table 6.53: Test of means against reference constant (value) relating to Hypothesis 5

Question	Mean	Std Dv	N	RC	p-value
Question 9_ave	4.17	0.65	273	3	0.0000

Table 6.53 presents inferential statistics relative to the above stated Hypothesis 5

Therefore, based on the statistics, it can be assumed that for hypothesis :

- In terms of Q9, the mean is significantly greater than the reference constant and p -value is significant at 0.05 significant level.Hence H_0 can be deemed rejected, while H_1 can be deemed accepted.

Conclusion: Since the p-values indicate that the data provide sufficient evidence to reject the null hypothesis in favour of the alternative hypothesis. It can be argued that indeed, the coordination and regulation of the traditional apprenticeship system of artisan training is poor

6.7.2.6 Hypothesis 6: The National Qualification Framework under which the vocational college system of training operates is faulty.

Stating the null hypothesis and the alternate hypothesis:

- **H_0** = The National Qualification Framework under which the vocational college system of training operates is faultless and flexible.

- **H_1** = The National Qualification Framework under which the vocational college system of training operates is faulty and rigid.

Decision rule: Reject null hypothesis if p is < 0.05

Question 3

Question three asked the respondents to rate factors related to the National Qualification Framework impacting on the training of artisans in the vocational colleges in terms of responses to a scale of 1 (strongly disagree) to 5 (strongly agree), and a mean score (MS) ranging between 1.00 and 5.00.

Cronbach's Alpha (α) for Question 3 = 0.74 - Reliable

The Cronbach's alpha for the items in Questions 3 is 0.74, indicating that they have good internal consistency and thus, the single mean obtained for the questions is reliable. Cronbach's alpha is used to sum the mean scores of different items into one when the items measure different areas within a single construct.

Table 6.54: Test of means against reference constant (value) related to Hypothesis 6

Question	Mean	Std Dv	N	RC	p-value
Question 3_ave	3.92	0.71	273	3	0.0000

Table 6.54 presents the inferential statistics relating to the above stated hypothesis, based on the statistics; it can be assumed that for Hypothesis 6:

- In terms of Q3, the mean is significantly greater than the reference constant; P-value is statistically significant at 0.05 significant level.Hence H_0 can be deemed rejected, while H_1 can be deemed accepted, and

Conclusion: Since p-value indicates that the data provide sufficient evidence to reject the null hypothesis in favour of the alternative hypothesis. It can be argued that indeed, the National Qualification Framework under which the vocational college system of training operates is faulty and rigid.

6.8 RESEARCH FINDINGS

The findings from the study are summarised and discussed under the following sections.

6.8.1 Introduction

This research focuses on the training of artisans for house building projects in South Western Nigeria. The research is born out of practical concern in the industry, given the growing housing deficit in Nigeria and the inadequate supply of artisans for house construction purposes. Sanni and Alabi (2008:6) assert that there have been persistent neglect of the artisan training by government in Nigeria and this has resulted in poor performances of both the college and the traditional apprenticeship systems of training artisans. Agbola (2005:20) argues that this development has consequently created a gap between demand and supply of artisans. The situation has been exacerbated by the poor investment of employers in artisan training (Dainty *et al.,* 2004:280). Sourcing the needed skilled workmen for construction works has become increasingly difficult. Consequently, migrant artisans have been attracted recently from neighbouring nations like Togo and Benin Republic (Nworah, 2008:3) to fill the gap created by the shortage in local supply of artisans. There is therefore a critical need to address the training of artisan for construction processes.

The research investigated the above described problem employing the pragmatic philosophical assumptions and mixed methods research strategy for collecting and analysing its data. Specifically, questionnaire survey, a quantitative method and semi-structured interview, a qualitative method were utilised to collect the data for this research. The key research findings are presented in the next sections.

6.8.2 Policy issues

The findings indicate that the respondents agreed that vocational colleges are not properly integrated with the university system for career progression, and this makes vocational training path a dead end. This situation discourages potential artisans from enlisting for training in the vocational colleges. This finding substantiates the earlier assertion of Aturu (2011:3) who posited that education policies are unfavourable to the vocational segment, making no proper provision for its integration into the National Qualification Framework (NQF). This finding also lends credence to the position maintained by Dike (2008:5-7) that there is a protracted skills shortage in the Nigerian construction industry and a general growing concern on youth unemployment. This development is attributed to inadequacies in education and training policies. The finding therefore suggests that there is an urgent need for policy interventions in the areas of education and employment. These

findings also suggest the need for an objective engagement of the key stakeholders within the sectors for appropriate reforms of key policies.

6.8.3 Recruitment

The results of the investigation indicate that respondents perceive that recruitment effort for attracting new entrants into the artisan training is poor. A number of recruitment practices have been identified in literature (Chan and Dainty, 2007:375-386; Chan and Moehler, 2007:409-418; Morgan *et al.,* 2008:238-252) as alternative strategies for marketing training in construction to young people. These include the establishment of construction academies in high schools to activate their interest in construction; annual school tours by industry leaders to mobilise young people to enlist in construction occupations; sponsorship of construction summer camps and scholarships provision for prospective artisans. It is pertinent to note that findings indicate that there is a poor marketing drive for the training programmes through the media, there is also a lack of training incentives like scholarships to encourage new intake. This finding establishes the view point of Aturu (2011:3-8) that there is practically little or no intervention funding in form scholarships for prospective artisan trainees in the construction trades.

It is also noteworthy that such recruitment approaches as construction academies and annual school tours by industry leaders are yet to be explored. In addition, given the poor public perception of artisans and the government discriminatory treatment of the vocational sub-sector, there is therefore poor motivation for the VET teachers and other stakeholders to be actively involved in the mobilisation and recruitment efforts. This substantiates the African Union (2007:23) assertion that artisan training is left for the rural poor and the economically disadvantaged in Nigeria. These findings suggest that there are gaps to be plugged in the area of recruitment drive in order to effectively resolve the artisan training challenges in Nigeria.

6.8.4 Regulation

The findings from the study indicate that the NBTE as the regulatory agency is weak and negligent in its duties towards the vocational colleges. Accreditation and standard maintenance activities of this agency are only focused on the polytechnics while the vocational and technical colleges have almost been left to run on their own. The findings further strengthen the submission of Dike (2006:2) that the regulatory body for VET in Nigeria, the NBTE, is weak and failing in its responsibilities. The respondents suggested that the immediate reforms of the policy provisions establishing the NBTE is of necessity in order to reposition it to actively handle the regulation of the artisan training.

The findings relating to the traditional apprenticeship training system indicate that there is no specific government agency assigned to coordinate and regulate the informal artisan training. Thus, individual master artisans dictate the contents, period, assessment procedures and certification process after the training. These findings validate the opinions of Usiwoma and Mgbor (2005:328) and Eneh (2010:49-50) on the traditional apprenticeship training system.

The results from the investigation suggest the need for the establishment of an agency that would coordinate the traditional apprenticeship training. This would also help to unify standards and accredit master artisans before their involvement in training.

6.8.5 Funding

The findings regarding funding of artisan training indicate that funding of the training is poor, vocational teachers are poorly remunerated, and scholarships and inadequate for the colleges. This substantiates Aturu's (2011:3) assertion that the annual budgetary allocation to education in Nigeria has always been less than 11% against the 26% prescribed by UNESCO. In the case of traditional apprenticeship system, government is not regulating it and as such is not involved in the funding in any way.

It is pertinent to note that the findings also reveal that bureaucratic bottlenecks created by the structure of government hinder access to funding allocated to vocational training. This takes the funding problem to another level. Firstly, the allocated fund is far below the prescribed percentage; secondly, the sharing formula is unfavourable to the vocational sub-sector; and thirdly, there are bottlenecks constituting obstacles to the colleges for accessing the allocated fund. The crux of the funding problem for the vocational colleges is the factor of the corrupt practices among government officials who make it difficult for the authorities of the colleges to access their allocated funds. In terms of approaches to addressing the issue of funding, the results indicate that deliberate attention should be paid to boosting financial allocation to vocational training and monitoring the disbursement. This issue should be taken seriously in order to ensure that the allocated funding reaches the intended destination.

6.8.6 Physical infrastructure and training facilities

Results from the investigation indicate that the facilities for training in the vocational colleges are grossly inadequate. The buildings are insufficient; library resources are sparse and the workshops are not adequately equipped to deliver quality training required for competent artisans. These findings validate the argument of Ekunke (2008:31-36) that many of the existing structures in the colleges have dilapidated structures. In addressing the issue of infrastructure and training facilities, findings indicate that infrastructure and training facilities should be given appropriate attention in terms of funding as they are very critical in the training process.

6.8.7 Staffing

Findings reveal that that employment policy and conditions of service for the members of staff in the vocational colleges are poor. This confirms the submission of Abassah (2011:57-63) who noted that the motivation level of VET teachers is low due to poor remunerations and inadequate conditions of service. The teachers' capacities remain largely remain underdeveloped as there are no provisions for in-service training and capacity building programmes. However, it is noteworthy that findings indicate that the respondents were unsure about the adequacy of the qualifications, experiences and procedure of selection of staff members in the VT colleges.

6.9 CONCLUSION

This chapter has presented the analysis of the empirical survey data from the respondents on the training of artisans from both the formal (college) and the informal (traditional apprenticeship) systems of artisan training. The chapter has also presented the interview analysis, the tests of the hypotheses formulated in the study and a summary of the research findings. The next chapter, Chapter Seven articulates the strategies for resolving the artisan training challenges and proposes a model of artisan training as an enabler of the strategies.

CHAPTER 7
DEVELOPING STRATEGIES AND AN ARTISAN TRAINING MODEL

7.0 INTRODUCTION

This chapter articulates the strategies for improving the artisan training system for the house construction sector in South Western Nigeria. It also proposes an artisan training model as an enabler of the strategies. It begins with the identification of the key strategic areas, followed by the overall strategic vision, and then the specific roles of stakeholders in the implementation plan. It concludes with the proposed artisan training model and the discussion of its components.

7.1 THE STRATEGIC VISION

The overall goal of the strategies is to reposition the artisan training system to an attractive and sustainable learning pathway with high relevance to the construction labour market needs and a suitable option for career progression.

7.1.1 The current position

The current position of the artisan training system can be summarised under the following points:

- Inadequate government policy framework on artisan training.
- Poor public image of artisans.
- Poor integration of vocational training with the general education.
- Weak recruitment efforts.
- Uncoordinated and unregulated training.
- Poor quality / standard of training.
- Poor funding from stakeholders.
- Weak employers' participation in training.

7.1.2 Artisan training best practices and results of the investigation

The development of research instruments for this study was based on improvement measures and artisan training best practices across the world identified from the reviewed literature. A best practice is a technique or approach that has consistently shown successful results. It could also mean a strategy or technique that has shown through experience to deliver desired results (Measham *et al.,* 2007:262-267). Clues were taken from the UK, the USA, Germany, New Zealand, Malaysia, and South Africa.

Global best practices according to the reviewed literature and improvement measures obtained from the results of the study suggest:

- The operation of a flexible National Qualification Framework (NQF) that integrates vocational education and training into the university system. The NQF should be based on the recognition of learning outcomes from vocational pathway and give room for career prospects and lifelong learning.
- Policy intervention to accord a good image to artisans in society by giving better recognition to vocational qualifications and the promoting artisan training as a tool for economic empowerment. This would remove the poor public perception of vocational track as fit only for the less academically endowed.
- Artisan training should be made attractive through the provision of scholarships and other incentives for trainees by effective synergies between governments, employers training providers and the parents.
- A mechanism for recruitment and mobilisation of trainees from high schools and other sources to enroll in construction trades should be established. The mechanism could be in form of construction clubs, construction summer schools, media campaigns and websites advertisements.
- The policy framework for the regulation of artisan training system should be given periodic and continuous review.
- An effective and sustainable capacity building strategy for VET instructors / trainers must be established to continuously retrain, refresh and update the artisan instructors / trainers for relevance to the industry.
- Periodic and continuous reforms of funding mechanism for the artisan training system should be carried out to ensure that adequate and sustainable financial provision is made to cater for physical infrastructure, training facilities, library resources and training scholarships.
- Employers should be given incentives of tax relief and other means to encourage their participation in artisan training.
- A public institution that is dedicated to promoting and fostering public-private partnership in artisan training delivery should be established.
- The orientation of youth should be changed through media campaigns from the current philosophy of indifference to skills acquisition and respect for the dignity of labour.
- A functional regulatory agency for the proper coordination, standardisation and control of the traditional apprenticeship system should be established and backed up by appropriate policies.
- A skills support department should be set up in the Local Government Areas to promote skills acquisition among the youth at the grassroots level.

- Effective anti-corruption policies and measures should be established to check the excesses of political office holders on the misappropriation of public funds meant for education and training.

7.1.3 Key strategic issues

The overall concern of the strategies is to transform the artisan training system into an attractive and sustainable learning pathway with high relevance to labour market needs and a suitable alternative for career progression. This would be achieved by driving greater synergies among stakeholders through a strong focus on outcomes. The stakeholders would be required to review priorities, re-assess key roles, reform key policies reallocate resources and strengthen collaboration across traditional boundaries to pursue common goals. The key strategic areas in improving the artisan training system include:

- Improving the image of the artisans;
- Integration of VET with the general education;
- Coordination and regulation of the training system;
- Recognition of VET qualifications;
- Establishment of sustainable funding mechanism for artisan training system;
- Training of the trainers / Continuous Professional Development (CPD);
- Recruitment of trainees;
- Making employability a priority in the provision of training provision, and
- Enhancing Public-Private Partnership (PPP) in artisan training provision.

7.1.4 Identification of stakeholders

Essentially, there are five key stakeholders in the artisan training system. Each stakeholder has specific roles to play. These stakeholders include:

- Government;
- Employers;
- Trainers / training providers;
- Parents / guardians, and
- Trainees.

7.1.5 Roles of stakeholders

This spells out who does what in the process of implementing the strategies. The role of each of the stakeholders in the artisan training system are identified and assigned appropriately; thus,

giving clear direction and focus for maximum performance. The stakeholders involved in artisan training system and their respective roles are highlighted below:

7.1.5.1 Roles of government

In the implementation process of the strategy, the government would have to reform policies to boost the image of the artisan in society; integrate vocational education into the general education system; establish sustainable funding mechanism for artisan training; reform the policy provisions establishing NBTE for effective training coordination and regulation; develop a new policy framework to facilitate public private partnership in artisan training; establish Construction Industry Development Board (CIDB) to drive training; increase the budgetary allocation to the vocational sub-sector of education; establish an agency to regulate and standardise traditional apprenticeship training and reorientate the youth through the media on the dignity of labour.

Other roles of government are to establish a system for the continuous development of vocational trainers; provide regular leadership and management trainings for college administrators; institute measures to checkmate corrupt practice in the system; set up the Skills Acquisition Fund (SAF) for adequate funding of vocational training; improve investment in infrastructure and training facilities in the vocational colleges; establish construction academies and clubs in high schools; provide incentives to motivate employers to participate more in training; establish Investment in people initiative to mobilise employers for training; formulate a robust youth policy that will give priority to skills acquisition; establish an agency to regulate and standardise traditional apprenticeship training; sponsor media campaigns for the re-orientation of the youth on the value of vocational skills; provide scholarships and other incentives to attract young people to training and create skills support department in the Local Governments Areas to promote skills acquisition.

7.1.5.2 Roles of employers

Assigned roles of the employers in the implementation plan are to support the funding of artisan training through contribution to Skills Acquisition Fund; provide on the job training to employees; offer training platform for industrial attachment; afford artisan trainers / instructors the opportunities to update their skills; sponsor media campaigns to attract trainees to construction trades; sponsor summer construction camps for high school students; offer scholarships to attract trainees and engage in annual school tour to mobilise youth to enlist for training.

7.1.5.3 Roles of training providers

The trainers have the duty to sensitise high school students towards construction careers; establish good linkages and collaboration with the employers and the industry; continuously update

their skill to remain current with the developments in the industry and collaborate with parents, guardians and the community.

7.1.5.4 Roles of parents and guardians

As stakeholders in the system, parents and guardians have the duty to encourage their wards to enrol in artisan training; develop a new perspective about artisan training as a tool for economic empowerment; provide home support for their children to maximise the training period; and offer patriotic and persuasive support to influencing vocational training policy reforms.

7.1.5.5 Roles of trainees

The trainees are to show commitment and dedication to learning. They are to also give adequate time to learning and the acquisition of skills in preference to any other domestic engagement.

7.2 IMPLEMENTATION PLAN

The implementation process would begin with the reform of key policies that have had negative impacts on artisan training from the past. The following sections discuss the implementation of the strategy.

7.2.1 Paradigm shift on the image of vocational education and training in society

Implementing an integrated artisan training strategy for a sustainable livelihood has to start from changing the philosophy and the rationale behind it as a second choice of educational pathway for drop-out students from the general education system; into a recognised and valid alternative educational pathway with lifelong learning and career prospects. The poor image of artisans and the dead-end syndrome which have been responsible for poor attraction of youth to vocational training stemmed from this philosophy of vocational education and training in Nigeria. Government policy reforms must give priority attention to changing this philosophy and thus, making vocational pathway attractive to the teeming youth in the populace. The right shift can be made first, through policy interventions, which call for political will and genuine intentions on the part of the political leaders to address the nation's socio-economic challenges especially, the high rate of youth unemployment and the attendant menaces in the society. With this paradigm shift in place, artisan training would become a viable education option with lifelong learning prospects and limitless career opportunities.

7.2.2 Effective collaboration between stakeholders

Building effective synergies between stakeholders in the artisan training system is very crucial to mitigating the challenges. Especially with regards to the involvement of the industry partners in the need analysis, design and delivery of training in order to avoid skills mismatch and ensure labour

market relevance. Training curricula would have to be adapted constantly to reflect changes in skills needs and advancement in technology through a close link between the training providers and the industry practitioners.

7.2.3 Integration of vocational training with the general education

Recognition of prior learning must become embedded in all parts of the education and training system through the adoption of an outcomes-based approach for vocational qualifications. A flexible NQF should be developed that provides a link between vocational education and training and higher education. Lifelong learning opportunities that hitherto have been denied to those in the vocational track should be removed through appropriate policy interventions.

7.2.4 Capacity building for artisan instructors

A policy provision for appropriate training and continuous capacity building of trainers should be formulated. These would be achieved through the establishment of a legal framework for the continuous development of skills and competencies. For instance, a trainer from the industry setting would require some form of complementing pedagogical competencies; while instructors from school based training setting would need to build practical / industrial capacity to optimise quality of training delivery. As technology keeps changing, instructors would have to be retrained constantly to keep up with development trends in the industry to assure employability of the training graduate.

7.3 THE PROPOSED MODEL FOR ARTISAN TRAINING SYSTEM IN NIGERIA

Global evidence indicates that systems improvement is actualised and sustained through integrated approach by combining specific measures and processes. One of the objectives of this study was to develop strategies that would incorporate best practices for improving the artisan training system in South Western Nigeria.

The proposed model is termed the Artisan Training Model, which is a system that identifies critical aspects of artisan training and allocates essential tasks and measures to key the stakeholders in the system in order to achieve the desired outputs and impacts. The IPO model of a general education system provides the clues for the development of the artisan training model.

7.3.1 The basis for the artisan training model

The model of a general education system provides the background and clues for the development of the artisan training model. According to Scheerens (2011:37-40) the model of a general education system captures education as a productive system whereby inputs are transformed into outputs. The model of a general education system provides the basis for understanding the artisan

training system (European Commission, 2006:14; CEDEFOP, 2008b:16-18; Onwuakpa and Anyanwu, 2009:7-9; Necesito *et al.,* 2010:192-194; Scheerens, 2011:37-40; UNESCO, 2011:8-13). This has been discussed in Chapter Two (see section 2.1.1.6). The proposed model for the artisan training system in Nigeria in this research took clues from the model of a general education system as shown in Figure 2.1 as well as further review of literature and measures obtained from empirical findings.

7.3.2 The motivation for the artisan training model

Given the Nigeria population of over 140 million and an estimated growth rate of 3.2% (NPC, 2006) consequently, Nigeria has an enormous housing deficit, estimated at 12-14 million housing units (Akeju, 2008:2). The current situation in the house construction sector reveals that there is an acute shortage of house construction artisans both quantitatively and qualitatively. The shortage is a result of the poor performance of the artisan training system. The poor performance of the artisan training system has constrained the productive capacity of the sector and exacerbated the nation's housing problem. Past policies have largely failed to address the realities of the skills crisis. The skill challenge is caused by a weak and neglected traditional apprenticeship and a poorly developed vocational college systems. Insufficient research efforts directed towards skills concerns, non-participation of employers in training, lack of recruitment strategies and a faulty and rigid National Qualification Framework have negatively impacted on the artisan training system. The current practice of outsourcing house construction artisans from neighbouring countries, for instance, Benin Republic, is unacceptable. This situation continues to exacerbate the unemployment rate in Nigeria which has moved from 12.3% in 2006 to 23.9% in 2013 (World Economic Outlook, 2013). Articulating an appropriate blueprint to mitigate the poor performance of the artisan training system in the Nigerian house construction sector is a serious challenge that necessitates critical attention and urgent responses.

The findings of this study have identified salient factors that have had a huge impact on the artisan training system in South Western Nigeria. The findings also indicated that there is room for significant improvement with respect to integration, industry participation, funding, employability, recruitment and policy interventions. The key message suggests that building synergies among key stakeholders and adopting best practices in training can achieve lasting improvement of the artisan training system. The prime goal of this study is underpinned by the need to investigate the dynamics that have seemingly impacted on the poor performance of artisan training system in the South Western Nigeria. The model is therefore introduced to accommodate the various argument and components in order to meet the objectives of the research. The Artisan Training Model is an enabler of the strategies developed in this study to mitigate the challenge of inadequate artisan training.

7.3.3 The construction of the model

A graphical logic model illustrates the pathway or roadmap by depicting the steps to be followed in order reach a specified destination or achieve the desired change. A model specifies the connection between systems inputs and activities with the systems outputs and impacts. It also harnesses stakeholders to articulate strategies and approaches that would facilitate the realisation of the stated goal for the system (Taylor-Powell and Henert, 2008:4-8). The model serves as a point of reference and a unifying language for the participants in the system. The vision or the goal of a model must be clearly stated. The goal of a model refers to the motivation for it; the problem that the model stands to address. The goal of the proposed model in this study has been clearly outlined under the motivation for the artisan training model.

The construction process follows the sound principles of logic. This suggests a reasonable arrangement of elements, and the interdependence between them in order to perform a specific task. The construction is usually done with the use of graphics or schematics (Taylor-Powell and Henert, 2008:4-8). Provision is made for the clear indication of the relationships among the components of the system. That is, the indication of how the procedures and activities in the system connect and the path that leads to the accomplishment of the goal. It also includes the measures that would help to check whether the system is meeting its set goals. In the construction process of the proposed model, clues were taken from the IPO model of a general education. However, some modifications were made in the proposed model. These modifications and the rationale behind them are discussed in the next sections.

- ***Context****:* The contextual factors in the proposed model are enclosed in dotted circles and positioned around all other elements of the system. This is done for the purpose of clarity and to show at a glance what exactly the contextual factors are and to inform the readers that they are impacting upon all the other elements of the system namely inputs, processes, outputs and impacts.
- ***Inputs****:* This assembles the resource inputs that go into the system; human, financial, material and policies. Upward and downward arrows are introduced to the proposed model to show the interconnectivity among the sub-components within the input component. Each of the sub-components cannot work in isolation but rather in collaboration with one another. The inputs component links with the processes.
- ***Processes*****:** This captures the series of value-adding activities that take place between the resource inputs that transform into results of the system in terms of outputs and impacts. In the proposed model, the processes allocate prescribed solution-oriented activities suggested from the findings of the study to stakeholders in the system. These include for instance, the government role of widening access and providing improved funding; employers' role of offering training platforms for artisans and that of training providers which include balancing

of theory with practicals in the training process. A number of other activities and measures are brought under this component in the proposed model from the results of the study for the purpose of resolving the artisan training challenges. The details are captured under the processes table (Tables 7.23 and 7.24).

- ***Product:*** In the proposed model, the product component encompasses short term results of the system, while the long term results are captured in a newly introduced separate component (impacts) discussed below. The downward arrows are introduced to link the sub-components within products component. The reason for the introduction of the downward arrows is to show the logical relationship between the sub-components as one leads to the other. For instance, the immediate results of adequate artisan training will lead to improved skills and competencies. These would in turn lead to production of competent and employable artisans from the system. With this kind of training offered by all the training providers, the result would be a greater number of capable artisans coming out of the system and becoming available to service the industry.
- ***Impact:*** This is an additional component introduced to the proposed model for the long term results of the system. The main purpose of its introduction is to clearly differentiate between the outputs component as short term results and the impacts component as long term results of the artisan training system. The long term effects of adequate training of artisans are beyond those outlined under outputs components. These have broader implications on the construction industry, the general employment outlook and the national economy at large. With more competent and employable artisans produced from the system, more citizens are empowered through skills acquisition. This would reduce unemployment and provide better income. It will also lead to increased outputs of the construction industry and ultimately aid the growth of the national economy. The downward arrows are introduced to depict the logical relationship between the sub-components within the impacts component.

7.3.4 The details of the artisan training model

The artisan training model provides an integrated approach to improving artisan training performance in Nigeria as well as assessing the current performance standard against the benchmarks or best practice criteria. Taking clues from the model of a general education system, the proposed model is based on guidelines, global best practice, standards and the findings of the study. The artisan training model seeks to maximise the goal of the strategies which is to improve the artisan training system in Nigeria through driving effective synergies among major stakeholders in the system; reforming key policies; reviewing priorities; reassessing roles; reallocating resources and building stronger collaboration across traditional boundaries to pursue common goals of an improved and sustained artisan training system.

The model requires all stakeholders to have in place a number of training improvement activities or measures within their improvement plans as outlined earlier in this chapter. The model is an enabler of the strategies as it helps to identify and prioritise roles and specific areas in need of improvement. The proposed model for improving the artisan training system in Nigeria is shown in Figure 7.2 below.

Figure 7.1: The proposed artisan training model for Nigeria

*See tables 7.1 to 7.5 below for details of the components and the context of the model.

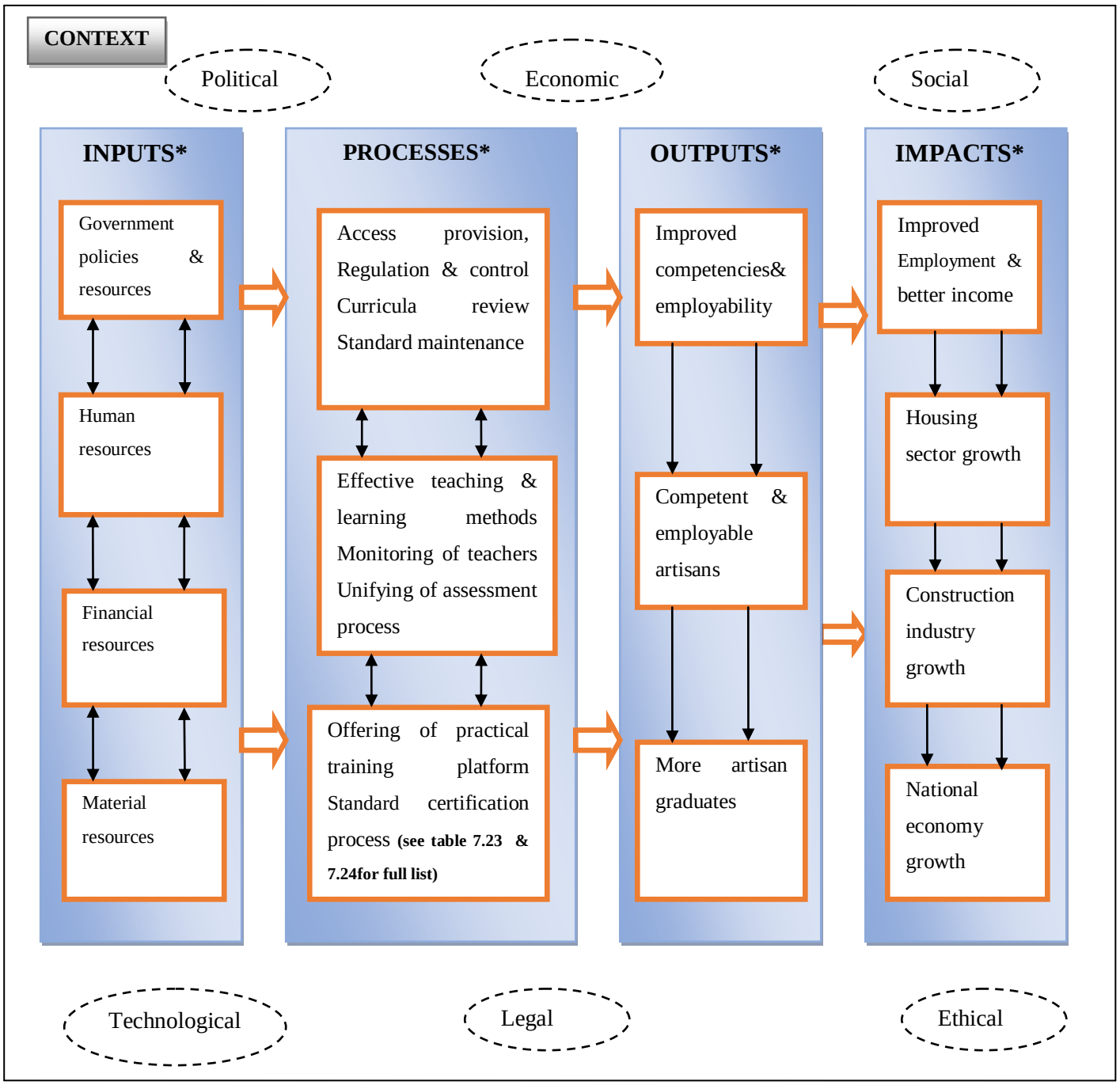


Table 7.1: Details of inputs component of the artisan training model

Role Player	Input Factors
Government	Adequate policy reforms on artisan training
	Adequate financial allocation to artisan training
	Physical infrastructure
	Training facilities and equipment
Training providers (Colleges and master artisans)	Qualified teachers / experienced master artisans
	Capable management team
	Further training of teachers
	Curricula
	Textbooks
	Conducive learning environment
Employers	Training platform for industrial exposure
Parents	Moral support
	Financial support
Trainees	Intellectual capacity
	Study time

Table 7.2: Details of process component of the artisan training model

PROCESSES	
Role Player	**Processes**
Government	Access provision for new entrants
	Effective regulation and maintenance of standards
	Regular curricula review for relevance in the industry
	Efficient monitoring
	Provision of scholarships for new entrants
	Leadership development for the college management
	Establishment of a unified assessment system
	Standardisation of certification process
	Integration of vocational training into the university system
	Reorientation of youths through the media
	Establishment of Skills Acquisition Fund (SAF) for improved funding
	Creation of skills supports department in each local government area
	Accreditation of master artisans before engaging in training
	Establishment of an organ dedicated to artisan training in construction
	Provision of incentives to boost employers participation in training
	Establishment of skills centres in each senatorial zone
	Provision of incentives to attract young people into informal training
	Facilitation of public private partnership in training provision
Training providers **Colleges& master artisans**	Employment of effective teaching and learning methods
	Effective monitoring and supervision of teachers
	Balancing of practicals with theory in the training process
	Preparation of trainees for standard assessment
	Sensitisation of high school students on construction occupations
	Establishment of effective linkages with industrial partners
	Maintenance of good collaboration with parents and the community

Table 7.3: Details of process component of the model continued

PROCESSES	
Role player	**Processes**
Employers	Offering of practical training platform for students on industrial attachment
	Provision of technical supports to upgrade vocational teachers' skills
	Provision of on-the-job training for employees
	Sponsoring of media campaigns to attract youth to training
	Provision of scholarships to attract new entrants to training
	Sponsoring of construction summer schools to attract high school students
	Contribution into skills acquisition fund
	Engagement in annual school tour to mobilise youth to enlist in training
Parents	Encouragement of youths to enrol in artisan training
	Adoption and promotion of artisan training as a tool for economic empowerment
	Provision of home support for their children to maximise the training period
	Offering of persuasive support to influencing vocational training policies
Trainees	Offering of commitment and dedication to training
	Allocation of adequate time to skills acquisition

Table 7.4: Outputs and impacts components details of the model

OUTPUTS AND IMPACTS	
Outputs	**Indicators**
	Improved knowledge skills and ability
	Improved competencies
	Improved employability
	More artisan graduates
Impacts	Increased employment in construction
	Rise in income level of artisans
	Better competitiveness in society
	House construction sector growth
	Construction industry growth
	Poverty reduction in society
	National economy growth

Table 7.5: Context details of the model

CONTEXT	
Element	**Contextual factors**
Political	Government stability
	Quality of political leadership
	Corruption level
	Bureaucracy in education administration
Economic	Unemployment rate
	Poverty level
	Competition
Social	Population growth rate
	Societal perception of artisans
	Youth attitude towards skills acquisition
	Societal attitude towards importation of artisan services
Technological	Basic infrastructure level in the nation
	Rapid technological changes
Legal	Employment laws
	Discrimination against vocational qualifications
Ethical	Ethical recruitment practices
	Maintenance of standards

7.3.5 How to apply the model

The model describes the relationship between the various components of the artisan training system based on the IPO model of a general education. This approach employs best practices identified from the study and when adopted it would be capable of transforming the current position of the artisan training system to an attractive training system with a high degree of relevance to the needs of construction labour market. The model shows how the current artisan training could be improved. The present approaches and practices of handling the artisan training must change. To achieve success in this area, the leadership at the national level must subscribe to the change process. This has to start by a way of adopting a change in the philosophy of vocational education and training. This must be followed with the creation of enabling environment.

- ***Context (Enabling environment)*:** There is a need for ethical politics and values as well as the political will in the leadership to lay appropriate emphasis on vocational education and training among the youth. As argued by Oketch (2007:220) vocational education is designed to develop the skills for entry into the world-of-work. It is therefore essential that this philosophy be fully understood and entrenched into the policies and programmes of the political leadership in Nigeria. The discrimination against vocational qualifications must stop while the basic infrastructure such as electricity and internet services need to be made available in order to facilitate the realisation of the vision.
- ***Inputs:*** This concerns the identification of the various stakeholders and the resources that they should harness for the artisan training system. These stakeholders include government, training providers, employers, parents and trainees. Building effective synergies between the stakeholders in the artisan training system is very essential to realising the desired change in the system. On the part of government there should be adequate policies reforms on artisan training, sufficient financial allocation, infrastructure provision and provision of adequate training facilities. The involvement of the industry partners in the design and delivery of training, especially in the provision of training platforms for industrial exposure is vital to avoiding skills mismatch. On the part of training providers, there should be in place qualified teachers, capable management team, experienced master artisans, balanced curricula and adequate textbooks. While the parents would have to provide moral and financial support and the trainees themselves would need to demonstrate commitment to learning and dedication of adequate time to study and skills acquisition.
- ***Processes:*** This component concerns the value-adding procedures, measures and activities of different stakeholders in the artisan training model and how the activities are inter-related to each other. This ensures that non-productive activities identified through the study are not repeated and are replaced with productive and value adding measures. For instance, regular

review of training curricula; accreditation of master artisans before engaging in training; and sponsoring of media campaigns to attract young people to training. The model provides a reference point for all the role players in the training system to ensure success.

- ***Products:*** The products component of the model concerns the identification of specific results of the artisan training system arising from the interaction between the inputs and the processes on a short-term perspective. This includes improved knowledge, skills and ability; better competencies; improved employability and more artisan graduates. The model serves as a measuring instrument to monitor the performance of the artisan training system. The list of results expected on a short-term range would serve as the performance indicators at the product stage for the system.
- ***Impact:*** The impact component captures the long-term results of the interplay between input resources, value-adding measures in the processes component and the outputs. It describes the socio-economic returns of the training as they impact on the labour market, unemployment, poverty, the construction industry and the national economy at large. The model would provide a means of measuring the performance of the artisan training system at the impact stage through the use of the indicators. The indicators under the impact component include increased employment in construction, rise in income level of construction artisans, construction industry growth, reduction in poverty and growth in the national economy.

7.4 CONCLUSION

This chapter has presented the strategies for improving the artisan training system for the house construction sector in South Western Nigeria. It has also proposed a model as an enabler of the strategies. The next chapter, Chapter Eight is the last chapter of this thesis. It presents the research summary, conclusions and recommendations.

8 CHAPTER 8
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

8.0 INTRODUCTION

This chapter provides a summary of the research and recommendations. It opens with the general overview of the research, then discusses the achievement of the research objectives and touches on the limitations of the study. It also outlines the study's contribution to knowledge and closes with suggestion of areas for further research.

8.1 RESEARCH OVERVIEW

This research is concerned with the artisan training system for house building projects in South Western Nigeria. This was motivated by the practical concern about the inadequate training of artisans in the house construction sector. The development has resulted in the acute shortage of artisans, constrained the productive capacity of the sector and exacerbated the housing problem of the nation. Nigeria has a huge population that is estimated to be over 140 million with a growth rate of 3.2%. These factors have engendered enormous housing deficit and effort to bridge the gap have been constrained by the acute shortage of artisans. Past policies have not adequately addressed the realities of the skills crisis. The skill shortage is as a result of a weak and neglected apprenticeship, and a poorly developed vocational education and training systems. To provide a solution to this challenge, the thesis explored the improvement strategies for the artisan training system as a toolkit for addressing the challenges. The thesis further demonstrated how this can be achieved by developing a conceptual graphical model based on the IPO model of a general education system. The resultant artisan training model provides an integrated approach to improving the artisan training system as well as assessing current performance standard against best practice criteria. The model also serves as an enabler towards effective synergies among key stakeholders; reforming key policies; reviewing priorities; reassessing roles; reallocating resources and building stronger collaboration across traditional boundaries in order to pursue common goal of an improved and sustainable artisan training system.

8.2 ACHIEVEMENT OF THE RESEARCH OBJECTIVES

The following sections present the summary of the key research findings linked with the objectives that were stated at the outset of the research process.

Objective 1: To examine the existing trends in artisan training for house building projects in South Western Nigeria;

Objective 2: To analyse the effects of government policies on the training of artisans for housing delivery;

Objective 3: To appraise the models of artisan training for house building projects in South Western Nigeria;

Objective 4: To identify the challenges militating against the adequate training of artisans for housing projects in South Western Nigeria, and

Objective 5: To develop strategies and a model for improving the artisan training system.

8.2.1 Objective 1

To examine the existing trends in artisan training for house building projects in South Western Nigeria;

This objective was accomplished through an in-depth review of the literature to examine the current developments relative to the training of artisans for house building projects in the study area. The review indicates that the performance of both the traditional apprenticeship and vocational college models for producing skilled artisans are inadequate. Most master artisans are ageing and have a low enrolment of apprentices to mentor. The vocational technical colleges too are currently poorly patronised lately. It was also found that there is a mistaken assumption by policy makers that skilled artisans are readily available for housing delivery in Nigeria. Consequently, little or no attention is paid to this problem in policy formulation. There is also a perceived dearth of literature on artisan training for the construction industry generally in Nigeria.

8.2.2 Objective 2

To analyse the effects of government policies on the training of artisans for housing delivery;

The objective required an in-depth examination of government policies relating to artisan training for house construction. This was carried out through a review of relevant the literature and the analysis of qualitative and quantitative data obtained from target population. The information covered education and employment policies in Nigeria with particular reference to vocational education and training, the National Qualification Framework (NQF) and vocational qualifications.

The findings indicate that the education policy framework is inadequate. It lacks the appropriate recognition of prior learning achievements and provision for lifelong learning for people in vocational learning pathways. There exists a dichotomy between the general education and the vocational education / training pathways. The implications of this make the vocational pathway to become a dead end and repulsive for young people in society. This is one of the crucial factors that negatively impact on the artisan training. It was also found that there is an awkward philosophy of

vocational education as a learning option for the less endowed, and meant primarily for the children of the economically disadvantaged. It was found that government employment policies discriminate against vocational graduates, giving preferences to general education qualifications over vocational equivalents in remunerations and appointments.

8.2.3 Objective 3

To appraise the models of artisan training for house building projects in South Western Nigeria;

This objective was achieved by reviewing the existing literature on the various artisan training models around the world and the specific practice in Nigeria. It was also achieved through the collection and analysis of quantitative and qualitative data from the target groups.

Findings indicate that two models are adopted in the study area, the college-based model and the traditional apprenticeship (informal training) model. The informal model involves an on-the-job learning approach with the master artisans as the key trainer. The master artisans offer training to the apprentice usually under an informal contractual arrangement for a period of three to four years. This model is unregulated and lacks theoretical balance with practical aspects. The apprentice pays a sum to the master artisan as the training fee. Government does not fund this training model in the study area. However, the college-based model operates the normal school style with theories in classes and practicals in workshops; three terms in a session that are sand witched with short breaks. Findings also indicate that government funding for the college-based model is poor, infrastructure provision is inadequate and training facilities are obsolete. The teachers are poorly remunerated and the employers' participation is low.

8.2.4 Objective 4

Identify the challenges militating against the adequate training of artisans for housing projects in South Western Nigeria;

This objective was achieved through an extensive review of the literature in order to identify the challenges and the analysis of qualitative and quantitative data obtained from the target population on the challenges. The findings are summarised under appropriate sub-headings in the following sections.

8.2.4.1 Regulation and coordination

Findings indicate that the artisan training system in the study area is largely uncoordinated and lacks proper government regulation and interventions. This is partly due to operational inefficiencies of the NBTE. Programme accreditations in many vocational technical colleges have been long overdue and the standard of training has fallen below the acceptable benchmark. This

might be as a result of too large scope of operation of the NBTE. The same agency is responsible for all the polytechnics, monotechnics and vocational technical colleges. Consequently, the policy framework establishing the NBTE should have been reformed long ago. Findings indicate that there is no any government agency responsible for the regulation and coordination of the traditional apprenticeship training and there is no standardised training curriculum, assessment and certification process.

8.2.4.2 Funding and infrastructure

It was found that funding for artisan training is grossly inadequate. Annual budgetary allocation for vocational education is not fair as compared with the general education. Little or nothing is provided for infrastructure and training facilities. There is limited funding for scholarships to attract trainees and other sources of funding apart from the government are virtually none existent.

8.2.4.3 Recruitment

Findings indicate that recruitment effort is weak and ineffective. Consequently, enrolment remains far below the carrying capacities of most of the vocational technical training colleges.

8.2.4.4 Employers' participation in training

It was found that there is poor participation of employers in the training of artisans. This is due to the lack of incentives from government to motivate employers. The situation is exacerbated by the absence of an appropriate public institution like the Construction Industry Development Board (CIDB) to drive the training in the construction industry and particularly encourage industry engagement in training.

8.2.4.5 Objective 5

To develop strategies and a model for improving the artisan training system.

This objective was achieved by the articulation of appropriate strategies based on improvement measures derived from the results of the investigation and artisan training best practices across the world. The strategies would serve as a toolkit for mitigating the challenges confronting the artisan training system in the study area. A conceptual graphical model, based on the IPO model of the general education system was also developed. The artisan training model offers an integrated approach to improving the artisan training system as well as assessing current performance standards against best practice criteria. The model also serves as an enabler to the strategies.

8.3 LIMITATIONS OF THE STUDY

Given the philosophy underpinning the research, the methodology adopted was the mixed-methods approach; a combination of qualitative and quantitative methods of enquiry. Questionnaire survey and semi-structured interview methods were employed to obtain data for this study. The questionnaire survey is a quantitative approach that provides a description of phenomena through trends and opinion of samples from which conclusions drawn and generalisation made (Creswell, 2009:145). The semi-structure interview is a qualitative method of data collection that allows for richer and complex understanding of people's experience that is not allowed in the questionnaire method. The combination of data from the complementary methods helps to obtain a more comprehensive and robust data. This balance in methodology of data collection helps to improve the accuracy of the research data and to draw better conclusions from the study.

Obtaining qualitative information from respondents was challenging. In order to obtain rich responses, assurances were given to the interviewees that the views that they express would be treated as anonymous and the research reports will not reveal anything connected to them. Despite such assurances not all the targeted respondents granted the interviews for the fear of the authorities they serve. Thus, it is difficult to determine the extent to which the assurances allayed the fears of those that participated in the study.

The non-availability of the databases of the target groups in the study area posed a limitation in determining the sample size. However, the researcher overcame the challenge by following appropriate guidelines provided by scholars (Gay *et al.,* 2009:133; Leedy and Ormrod, 2010:213-214) in such situations. Leedy and Ormrod (2010:213) suggest a basic rule for determining a sufficient sample from a population as "*the larger the sample, the better*". More specific guidelines were provided by Gay *et al.* (2009: 133) and Leedy and Ormrod (2010:213-214) for obtaining a sufficient and representative sample from a population while employing simple random sampling technique. The details have been outlined under the methodology (section 5.6.1.3).

The inefficient postal services and the low penetration of the internet in the study area constituted some limitations in the use of electronic and surface mails for the survey. As a result, the questionnaires were administered by hand which is more expensive. However, the researcher overcame the constraints by following the suggestion of Babbie and Mouton, (2005:260-261). In order to increase the response rate, telephone calls were made and electronic messages (SMS) were sent to remind respondents of the questionnaires.

The coverage of the study was limited to South Western Nigeria; given the nation's large population coupled with the cost and time implications. Obtaining information from other geo-political zones in the country would have yielded more data for the study. However, this was

minimised by the means of thorough review of the literature and archival data covering the whole country.

8.4 GENERAL CONCLUSION

The current training of house construction artisans has been critiqued. Arguably, this study is insufficient to fully address the artisan skills challenge in the Nigerian house construction sector. This is because of the predominant approach of defining education and training that is detached from the realities of the national and sectoral needs that exist. In particular, five pressing areas of priority should be addressed: The philosophy of vocational education and training, which informs the policies and affects the image and integration with the university system; the indifference of employers to the training; the lack of effective regulation and coordination; inadequate funding mechanisms, and the weak involvement of the private sector in the artisan training provision. To eradicate the current disconnection between training research, policy formulation and education provision, there has to be a fundamental paradigm shift from the conventional approach to viewing vocational education and training. There is a need for effective synergy between all the stakeholders; and there has to be a genuine collaborative thinking, and the adoption of an integrated approach to offering a lasting solution to the overarching training and unemployment problems in the country.

8.5 RECOMMENDATIONS

Based on the results of this study, the following recommendations are made as effective means of improving the training of artisans in South Western Nigeria.

8.5.1 Recommendations for government / policy makers

The following are the recommendations relative to government.

8.5.1.1 Leadership and policy

Governance and leadership in Nigeria have failed the citizens. Various regimes and administrations have undermined development and mismanaged the oil rich heritage of the nation. Incessant military incursions into government, the corruption and abuse of office by politicians have largely constrained the progress of the Nigerian state. Nevertheless, as a part of the global society, the leadership in Nigeria must make concerted effort to rise and take its prime position in the committee of nations. This could only be accomplished through strong political will to combat corruption headlong, especially within the political class. There has to be reforms and repositioning of governance based on the principles of transparency, accountability and the rule of law. This is an imperative for any significant progress if the national development to be achieved. There is an

urgent need, not only to reform essential policies in the ailing areas of the nation's development, such as the education sector; but more importantly, to back up such reforms with iron-clad political will to realise the implementation. This is critically essential because unimplemented policy reforms are as good as not making any policies at all.

The Nigerian government and the policy-makers should adopt a paradigm shift with respect to the philosophy of vocational education and training under which the artisan training falls. The way of seeing artisan training as meant only for the less academically endowed and a learning path for the drop-outs should be jettisoned. Artisan training should be repositioned through appropriate policy interventions and portrayed as an attractive and sustainable learning pathway with high relevance to labour market needs, and a suitable option for career progression.

It is also advocated that the leadership and the government of Nigeria should consider the option of borrowing the German model of vocational education and training. This model was instrumental for the nation's impressive record of maintaining one of the lowest unemployment rate in the world. To be succinct, the German Dual vocational education and training model should be studied and possibly replicated directly or with some modifications to suit the peculiarities of the new environment.

8.5.1.2 Regulatory framework

There should be a total reform of the regulatory framework to reposition the government's regulatory functions. The NBTE has to become effective and efficient in carrying out its statutory function of maintaining quality standards in artisan training delivery. The obsolete curricula should be reviewed and updated to current labour market needs in order to produce employable artisans. An appropriate government institution should be established to coordinate, regulate and standardise traditional apprenticeship training system. This institution would be responsible for the accreditation of master artisans before they engage in training; and would provide assessment and certification for apprentices trained under the informal system. The upgrading / merger of the existing polytechnics with the universities is advocated as carried out in other parts of the world. This would give room for the NBTE to properly manage and regulate the vocational technical colleges.

8.5.1.3 Funding mechanisms

An entirely new regime of funding is advocated, given the prime role played by education and training in the national development. As the global economy is essentially driven by knowledge, it is critical that individual nations must invest substantially in their human resource development. Nigeria still ranks among the lowest in the global ranking of human development index, (153rd out of 173 countries – UNDP, 2013). This correlates with her investment in education and training.

There is a need for the urgent departure from the old regime of meagre allocation to education to a new season of making the effort to meeting the UNESCO recommendation of 26% of the national budget. The leadership of the country must give priority to education and particularly accord the much needed importance to vocational education and training. This must be demonstrated by a way of substantial allocation to it. Other sources of funding for vocational training should be encouraged by government through appropriate policies. For instance, a Skill Acquisition Fund (SAF) should be established as an agency that receives and manages contributions towards vocational education and training. The investment of the private sector in artisan training should be actively encouraged.

Another dimension of harnessing finances to support artisan training is through corporate social responsibility (CSR). The concept of CSR is the way through which companies integrate social, economic and environmental concerns into their business operations by giving back to their local communities and society at large (UNIDO, 2013). This is done by contributing to the economic development, capacity building or improving quality of life in the form of charity, sponsorships or philanthropy. Companies should be encouraged to give back in form of their CSR to support artisan training in infrastructure provision, procurement of training facilities and offering of scholarships to trainees.

8.5.1.4 National qualifications framework

It is recommended that an integrated National Qualifications Framework (NQF) should be established through an appropriate NQF policy. The system would recognise and record all levels of learning achievements in terms of acquired skills and knowledge, thereby ensuring a unified system that encourages lifelong learning. Recognition should be accorded to general education, vocational education and training and higher education; all of these should be integrated into one system that allows a lifelong learning without any discrimination against any recognised qualification.

8.5.1.5 Private sector participation

It is recommended that government should introduce policies and incentives that would encourage increased public private partnership in the training of artisans. Global trends indicate that government alone cannot deliver all services to the populace. Virtually in all the sectors of the economy, the input of the private sector is crucially needed. This should be harnessed in artisan training delivery to ease the burden. The direct investment of the private sector in funding of private vocational colleges as it is currently with the universities in the country should be encouraged by government through appropriate policy intervention and incentives. Religious organisations, for

instance, church ministries have successfully established and managed universities in Nigeria in the recent past. There are currently more than ten of such universities owned by church ministries. Government should encourage similar investment from church ministries in the area of vocational training colleges by providing enabling environment and other incentives.

8.5.2 Recommendations for the Nigerian construction industry

The construction industry should support the funding of artisan training through the mobilisation of practitioners to actively contribute to the Skill Acquisition Fund. It should engage in intense lobbying of the policy makers to passing a bill on the Construction Industry Development Board (CIDB). This would foster training and development within the sector. Efforts should be geared towards encouraging artisan employers to provide on-the-job training for their employees, and offer training platforms for industrial attaches from the colleges.

The industry, through its leadership, should encourage the practice of offering artisan instructors the opportunities to update their skills on the new developments in the field. Industry practitioners should support the marketing of training to prospective trainees by sponsoring media campaigns, summer construction camps for high school students, and engaging in annual school tours to mobilise youth to enlist in training.

8.5.3 Recommendations for education ministries / training providers

The education ministries should support the promotion of artisan training by evolving innovative recruitment approaches relevant to their localities, sponsoring media marketing campaigns and also strengthening the collaboration with the industry to realise the dream of adequate and sustainable artisan training. The ministries should make provision for the continuous development of artisan instructors through sponsoring workshops and conferences that would keep them abreast of development in their fields. The artisan instructors should maintain a good relationship with parents and guardians of trainees and the community.

8.5.4 Recommendations relating to effective collaboration between stakeholders

Building effective synergies between stakeholders involved in the artisan training delivery is imperative to mitigating the challenge. While government is providing the regulatory functions and funding; the industry partners should offer part funding as well as providing labour market input into the design and delivery of training in order to avoid any skills mismatch and ensuring labour market relevance. A close link between the training providers and the industry practitioners should be maintained to constantly adapt training curricula to reflect changes in skill needs and the advancement in technology. Parents should offer part funding through tuition fees payment and

support the training drive by lobbying political office holders and policy makers to favour artisan skill policies in the legislative process.

8.5.5 Recommendations for research and academics

More studies should be conducted in the area of artisan training in the construction industry to shed more light on the subject. Some of these research areas are recommended at the end of this chapter.

8.6 CONTRIBUTION TO KNOWLEDGE

The key contributions to the body of knowledge in this research include:

- The study has proposed an artisan training model as an enabler of the strategies for addressing the challenge of artisan shortage in the house construction sector. The application of the model of the general education system to solving construction related problem is an impetus to construction management and economics research.
- The study has made an attempt to reduce the paucity of materials in this area of research in Nigeria. Previously, works carried out in this area of research on Nigeria were perceived to be limited. Especially, little has been done at the level of doctoral research.
- The IPO systems model is extendable to investigating multidisciplinary problems, regardless of the sources of empirical data. Its applicability is indicated in the model proposed in this study.
- The research has also provided an understanding of the barriers and challenges confronting the training of artisans for house building projects; and the link with the enormous housing deficit and youth unemployment in Nigeria.
- Housing policy makers in Nigeria have had a mistaken assumption that house building artisans are readily available (Agbola, 2005:9). Consequently, little or no attention has been paid to artisan training in policy formulation to address housing shortage. This research has provided an increased awareness of artisan training with regards to housing delivery in South Western Nigeria.

8.7 AREAS FOR FURTHER RESEARCH

The following areas of further research are recommended in order to further the research on the improvement of the artisan training system in the Nigerian construction industry:

- This study develops strategies for addressing artisan training challenges. A review of the strategies is suggested for further research; in particular, to test the feasibility and likely impact of their implementation. This would shed more light on how to further improve the training of artisans in Nigeria.

- An artisan training model was proposed in this study; which offers an integrated approach to improving the artisan training system in Nigeria. Further research is suggested on the review or expansion of the model in order to advance the improvement drive on the artisan training system.
- This study reveals that inadequate artisan training negatively impacts upon the growth of the Nigerian construction industry. However, the degree and dimension of this impact is yet to be fully established. Therefore, an in-depth study to determine the impact of inadequate artisan training on the growth of the Nigerian construction industry is suggested for further research.
- The study was limited to South Western Nigeria. In order to increase the generalisability of the findings, there is the need for further research into the application of the concepts in the study to other geo-political zones of the country.

REFERENCES

Aamodt, M.G. 2007. *Industrial and organisational psychology: an applied approach*. 5th ed. Belmont, CA: Thomson Wadsworth.

Abassah, M. 2011. Technical college teachers in Nigeria: Issues, problems and challenges. *Mediterranean Journal of Social Science.* 2(7):57-63.

Abdul-Aziz, A. R. 2001. Foreign workers and labour segmentation in Malaysian construction industry. *Construction Management and Economics*. 19:789-798.

Adeloye, L. 2008. Construction industry in Nigeria lacks trained manpower. *The Punch*. 13 July 2008. Available: www.punchng.com. [2011 April 5].

AERA, 2006. American Educational Research Association's standards for reporting on empirical social science, *Educational Researcher*. 35(6):33-40.

African Union, 2007. Strategy to revitilise technical and vocational education and training in Africa. African Union meeting of education ministers, Addis Ababa 29-31 May 2007:23-25.

Agbola, S.B. 2005. *The Housing Debacle*. Ibadan: New World Press.

Agbola, T. and Olaoye, O.O. 2008. Labour supply and manpower development strategies in the Nigerian building industry [paper]. Department of Urban and Regional Planning, University of Ibadan, 15 January.

Agresti, A. and Franklin, C. 2007. *Statistics: the art and science of learning from data*. New Jersey: Pearson Prentice Hall.

Ahadzie, W. 2009. The traditional informal apprenticeship system of West Africa as preparation for work. In: Rupert, M. & David, N.W. (ed). *International handbook of education for the changing world of work*. New York: Springer: 261-75.

Aibinu, A.A. and Francis, V. 2010. Understanding the skills shortages in the Australian Construction industry: an exploratory study of the site management team *Proceedings of RICS COBRA conference* 2-3 September, 2010, Dauphine Université, Paris. Pp. 1-24.

Aikhorin, A. 2008. Mortgage facilities: Panacea for mass housing, A paper presented at the *2nd emerging urban Africa International Conference on Housing Finance in Nigeria*. Abuja, 13-15 October 2008.

Akeju, A.A. 2007. Challenges to providing affordable housing in Nigeria. *Proceedings of the 2nd emerging urban Africa International Conference on Housing Finance in Nigeria*. Abuja, 17-19 October 2007:1-2.

Akindoyemi, A. 2005. Nigerian building craftsmen: which way forward? A paper presented at the Nigerian Institute of Building summit, Yaba College of Technology. Lagos, 7 July 2005.

Akintoye, A., Kilpatrick, A.R. and MacKenzie, S. 2000. UK construction skill shortage: response strategy and an analysis of industry perceptions. *Construction Management and Economics* 18:854-856.

Alkin, M. A. and Christie, C. A. 2004. An evaluation theory tree. In: M.C. Alkin (ed). *Evaluation roots: tracing theorist's views and influences*. Thousand Oaks, CA: Sage.

Aman, S.B. 2008. Causes of poor participation of local workers in Malaysian construction industry and strategies for improvement. An unpublished master's dissertation, Faculty of Civil Engineering, University Technology Malaysia.

Amaratunga, D., Baldry, D., Sarshar, M. and Newton, R. 2002. Quantitative and qualitative research in the built environment: application of mixed research approach. *Work Study.* 51(1):345.

Anderson, B. 2008. Dire skills gap, *Finweek*, 17 April 2008:81.

Anderson, C. 2010. Presenting and evaluating qualitative research. *American Journal of Pharmaceutical Education.* l74(8):141-150.

Armstrong, M. 2003. *Human resources management practice.* London: Kogan Page.

Atsumbe, B.N. 2005. Impact of students' industrial work experience scheme on practical skills development of mechanical students of industrial and technology. *Journal of Education Research*, 1(3):54-61.

Atsumbe, B.N. 2010. Technology education a veritable tool for poverty alleviation. A paper presented at the 1st National Conference Faculty of Science University of Abuja, 8th – 20th January 2010.

Atsumbe, B.N., Emmanuel, R., Igwe, C.O. and Atsumbe, J. A. 2012. Repositioning vocational and technical education for effective manpower production in Nigeria. *Journal of Mechanical and Civil Engineering.* 1(4): 41-43.

Aturu, B. 2011. Vocational technical education: the state and citizenry. A paper presented at the School of Vocational Education, Federal College of Education (Technical), Akoka, Lagos 27 January 2011.

Awe, E.M., Stephenson P. and Griffith, A. 2010. Impact of vocational training on skilled labour shortage within the Nigerian construction sector. Proceedings of *the 18th CIB World Building Congress,* Salford, United Kingdom 10-13 May 2010:252-266.

Babbie, E.R. 2005. *The Basics of social science research*. New Jersey: Pearson Merrill Prentice Hall.

Babbie, E. and Mouton, J. 2005. *The practice of social research: South African edition.* Cape Town: Oxford University Press.

Bedford, C. 2003. Skills shortages in New Zealand: public and private sector responses. *New Zealand Population Review*. 29(2):63-8.

Bertrand, I. and Hughes, P. 2005. *Media research methods: audiences, institutions and texts.* New York: Palgrave Macmillan.

Bereiter, C. 2002. *Education and mind in the knowledge age*. New Jersey: Erlbaum Associates.

Blaxter, L., Hughes, C. and Tight, M. 2006. *How to research.* 3rd ed. London: Open University Press.

Bureau of Labour Statistics, 2004. Labour Survey report, the United States Bureau of Labour Statistics.

Bloom, D.E. 2006. Measuring global educational progress. A paper prepared for the American Academy of Art and Science.

Budget Office the Federation, 2010. Federal Government of Nigeria Budget Offce. Available: www.budgetoffice.gov.ng [11 Oct 2011].

Bomberger, D.W. 2003. Evaluation of training in human service organizations: A qualitative case study. An unpublished doctoral thesis, Pennsylvania state university.

Boyi, J. 2008. Improving vocational education. *Daily Trust* (Lagos). 12 October.

Brewer, J. and Hunter, A. 2006. *Foundations of multi-method research: Synthesising styles.* London: Sage publications Inc.

Brinkerhoff, R.O. and Dressler, D.E. 2003. Using the success case impact evaluation method to enhance training value and impact. A paper presented at the *American Society of Training and Development International Conference and Exhibition*, San Diego, CA. 3 March 2003 [Available: http://www1.astd.org [22 March, 2013].

Brinkerhoff, R.O. 2003. *The success case method*. San Francisco: Berrett-Koehler.

Brinkerhoff, R.O. 2005. The Success Case Method: A strategic evaluation approach to increasing the value and effect of training. *Advances in Developing Human Resources*. 7(1):86-101.

Bryman, A. 2004. *Social research methods* 2nd ed. Oxford: Oxford University Press.

Bryman, A. 2006. Integrating quantitative and qualitative research: how is it done? *Qualitative Research*. 6(1):97-113.

Bryman, A. 2007. Barriers to integrating quantitative and qualitative research. *Journal of Mixed Research.* 1(1):8-22.

Bryman, L. 2009. *Social Research Method* 3rd ed. Ottawa: Oxford University Press.

Buckley, R. and Caple, J. 2005. *The theory and practice of training* 5th ed. London: Kogan Page Publishers.

Bushnell, D.S. 1990. Input, process, output: A model for evaluating training. *Training and Development Journal.* March edition:41-43.

Carrero, E. 2006. *Reforming Technical and Vocational Education and Training in the Middle East and North Africa: Experiences and Challenges.* Luxembourg: European Training Foundation.

Carroll, C. 2013. The German dual vocational training model goes to America. *Young German* 24 July. Available: http://www.young-germany. [2013, August 2].

Chan, P.W. and Dainty, A.J.R. 2007. Resolving the UK construction skills crisis: a critical perspective on the research and policy agenda. *Construction Management and Economics.* 25:375-386.

Chan, P.W. and Moehler, R. 2007. Developing a road-map to facilitate employers' role in engaging with the skills development agenda. In: D. Boyd, (ed.) Proceedings of *23rd Annual ARCOM Conference* 3-5 September 2007, Belfast, UK. pp 409-418.

Chan, P.W. and Moehler, R.C. 2008. Construction Skills Development in the UK: Transitioning between the Formal and Informal Proceedings of *the CIB W55/W65 Joint Conference* London, UK. 17 November 2008: 342-357.

Chang, Y.E., 2010. *An empirical study of Kirkpatrick's evaluation model in the hospitality industry*. An unpublished doctoral thesis International University of Florida.

Chileshe, N. and Haupt, T. C. 2009. An empirical analysis of factors impacting career decisions in South African construction industry: male and female high school students' perspectives. *Journal of Engineering, Design and Technology.* 8(2):221-239.

Central Intelligence Agency 2011. Unemployment rate South Africa. Available: www.cia.gov/rank [2012, November 12].

Construction Industry Council 2005. *The built environment research strategy* New Zealand Available from: www.nzcic.co.nz [2012 April 8].

Chartered Institute of Building 2008. *Contractor Continuous Development Program* Kuala Lumpur: Construction Industry Development Board Malaysia. Available: http://www.cidb.gov.my/v6/files/circulars2_2008.pdf [2012, March 13].

CIOB, 2009. Skills in the construction industry. Chartered Institute of Building report on third skills survey. 2009:1-24.

Clarke, L. and Winch, C. 2004. Apprenticeship and applied theoretical knowledge. *Educational Philosophy and Theory*. 36(5):509–21.

Cohen, L., Manio, L. and Morrison, K. 2009. *Research Methods in Education* London: Margaret Morbin Publishing.

Collins, K.M.T., Onwuegbuzie, A. J. and Sutton, I. L. 2006. A model incorporating the rationale and purpose for conducting mixed-methods research in special education and beyond. *Learning Disabilities: a Contemporary Journal* 4(1):67-100.

Creswell, J.W. 2003. Research design: Qualitative, quantitative, and mixed methods approaches. Thousand Oaks, CA: Sage Publications Inc.
Creswell, J. W. 2007. *Qualitative inquiry and research design* 2nd ed. Thousand Oaks, CA: Sage.

Creswell, J.W. and Clark, V.L.P. 2007. *Designing and conducting mixed methods research*. London: Sage publications.

Creswell, J.W. 2009. *Research Design: Qualitative, Quantitative and mixed method approaches.* London: Sage publications.

Creswell, J.W. and Clark, V.L.P 2009. *Designing and conducting mixed methods research.* Thousand Oaks, CA: Sage Publications Inc.

Creswell, J.W. and Clark, V.L.P. 2011. *Designing and conducting mixed methods research.* 2nd ed. Thousand Oaks, CA: Sage Publications Inc.

Cronbach, L.J. and Richard J.S. 2004. My current thoughts on coefficient of Alpha and successor procedures. *Educational and Psychological Measurement.* 64(3):391–418.

Construction Skills Certification Scheme 2003. Available: www.cscs.uk.com [2011, October 12].

Dainty, A.J.R., Root, S.D. and Ison, S.G. 2004. Bridging the skills gap: a regional driven strategy for resolving construction labour market crisis. *Engineering, Construction and Architectural Management.*11(4):275-277.

Dainty, A.R.J., Ison, S.G. and Briscoe, G. H. 2005. The construction labour market skills crisis: the perspective of small-medium-sized firms. *Construction Management and Economics.* 23:387–398

Darabi, A. 2002. Teaching Program Evaluation: Using a Systems Approach*. American Journal of Evaluation*, 23:219-228.

Davison, R.M., Martinsons, M.G. and Kock, M. 2004. Principles of canonical research. *Information Systems Journal.*14:65-86.

De Leeuw, E.D. 2005. To mix or not to mix data collection modes in surveys. *Journal of Official Statistics*. 21(2):233-55.

Denzin, N.K. and Lincoln, Y.S. 2003. Collecting and interpreting qualitative materials. Thousand Oaks, California: sage Publications.

Denzin, N.K. and Lincoln, Y.S. 2005. *The Handbook of Qualitative Research* Thousand Oaks, California: Sage Publications.

Denzin, N.K., and Lincoln, Y.S. 2008. *Collecting and Interpreting Qualitative Materials 2nd ed.*Thousand Oaks, California: Sage Publications.

Department for International Development 2007. Technical and vocational skills development - briefing.

Department of Higher Education and Training 2013. Seven steps of artisan development, South African Department of Higher Education and Training. Available: http://nadsc.dhet.gov.za/ [2013, November 5].

Dike, V.E. 2006. Youth unemployment in Nigeria: The relevance of vocational and technical education, *NESG Economic Indicators*. 2(3):25-29.

Dike, V.E. 2008. Vocational education: Missing link in Nigeria development policy. Available: http://www.gamji.com/article8000/NEWS8534.htm [2011, April 15].

Dike, V.E. 2009. Addressing youth unemployment and poverty in Nigeria: a call for action and not rhetorics. *Journal for Sustainable Development in Africa.* 11(3):129-151.

Dike, V.E. 2011. Technical and vocational education: key to Nigeria's development, Nigerian Village Square, 24 March. Available from: www.nigeriavillagesquare.com [2012, September 7].

Department of Building and Housing [DoBH], 2004. Builder Practitioner Licensing: Background information on occupations that may be covered by occupational licensing. Wellington, New Zealand. Availablet: www.dbh.govt.nz [2012, January 10].

Department of Labour 2004. America's Construction Industry: Identifying and addressing workforce challenges. Department of Labour report of findings and recommendations for high growth in the construction industry. Available from: www.doleta.gov [2013, April 23].

Department of Labour DoL, 2005. Skills in the Labour Market: New Zealand Department of Labour. Available from: www.dol.govt.nz [2012, March 13].

Downey, J. 2007. Strategic analysis tools. CIMA topic gateway series, number 34. Available from: www.cimaglobal.com/ [2012, April 8].

Draai, W.S.G. 2011.*Training of artisans in the Nelson Mandela bay metropolitan area for the construction industry*. An unpublished master's dissertation Nelson Mandela Metropolitan University, Port Elizabeth, South Africa.

Du Toit, J.L. 2010. *A typology of designs for social research in the built environment.* An unpublished doctoral thesis University of Pretoria, South Africa.

Easterby-Smith, M., Thorpe, R. and Lowe, A. 2008. *Management Research: An Introduction.* 4th ed. London: Sage publications.

Economist Intelligent Unit 2008. Economist Intelligent Unit *country report* South Africa, 4:4-5

Eisinga, R., Te Grotenhuis, M. and Pelzer, B. 2012. The reliability of a two-item scale: Pearson, Cronbach or Spearman-Brown? *International Journal of Public Health.*10(1):1-9.

Ekunke, C.U. 2008. Strategies for improving manpower production in vocational education in Nigeria. *Global Journal of Educational Research.* 7(1):31-35.

Eneh, O.C. 2010. Artisanship disconnect: declining technical apprenticeship and artisan service and the implications for Nigeria's Future. *Asian Journal of Industrial Engineering.* 2(2):37-51.

Eriksson, P. and Kovalainen, A. 2008. *Qualitative Methods in Business Research.* London: Sage Publications.

Employment and Training Administration 2004. America's Construction Industry: Identifying and Addressing Workforce Challenges. Available: http://www.doleta.gov/ [2012 September 16].

European Union 2006. A white paper on education and training: Teaching and learning towards a learning society.

European Commission 2006. Measuring the outputs and outcomes of vocational training- towards a coherent framework for indicators. European Commission Joint Research Centre, CRELL research paper 2 May 2006. Available: www.bookshop.europa.eu [2013, October 31].

European Centre for the Development of Vocational Training CEDEFOP, 2008a. Initial vocational education and training (IVET) in Europe review.

European Centre for the Development of Vocational Training CEDEFOP, 2008b. Evaluation of Eurostat education, training and skills data sources: European Centre for the Development of Vocational Training. Available:www.cedefop.europa.eu/EN/Files/5185 [31 October 2013].

European Centre for the Development of Vocational Training CEDEFOP 2010. Zooming in on 2010: Reassessing vocational education and training. Office for official publications of European communities, Luxemburg.

Euler, D. 2013. Germany's dual vocational training system: a model for other countries. A study commissioned by Bertelsmann stifftung.

Fabienne, A.B. and Jens K. (2012) Vocational education and training in the informal sector- An inter regional study: European Union project.

Farell, K.M., Kratzmann, S., McWilliam, N., Robinson, B., Saunders, S., Ticknor, J., and White, K. 2002. *Evaluation made very easy, accessible, and logical.* Atlantic Centre of Excellence for Women's Health.

Fatimilehin, G. 2010. Nigeria: How unskilled manpower cost the country N900 billion yearly, *Daily Independent* 28 February. Available from: http://allafrica.com/stories/201100310958.html [2011, April 11].

Federal Government of Nigeria. 2009. National technical working group report of vision 2020 on housing.

Fellows, R. and Liu, A. 2003. *Research methods for construction*. 2nd ed. Oxford: Blackwell Science.

Ferranti, D., Perry, G. E., Lederman, D and Malony, W. F. 2003. From Natural resources to knowledge economy: trade and job quality - Latin America and Caribbean studies, World Bank report.

Federal Government of Nigeria First National Implementation Plan for Vision [FGN-FNIP], 2010. Nigerian Vision 2020 implementation Plan.

Fletcher, K. 2005. Fletcher Building Annual Report-Fletcher Building Limited [Online] Available: www.fletcherbuilding.co.nz [2012, March 13].

Garcia, G.S.C. 2006. The mother-child nexus: knowledge and valuation of wild food plants in Wayanad, Western Ghats, India. *Journal of Ethnobiology and Ethnomedicine.* 2(39):212-221.

Gay, L.R., Mills G.E. and Airisian, P. 2009. *Educational research: Competencies for analysis and application* 9th ed. Upper Saddle River, NJ: Merill & Pearson Education.

Gliem, J.A., and Gliem, R.R. 2003. Calculating, interpreting, and reporting Cronbach's Alpha reliability coefficient for Likert-type scales. Proceedings of *21st Annual Midwest Research-to-Practice Conference on Adult, Continuing, and Community Education*, Columbus, OH, 8-10 October 2003:82-88.

Global Finance, 2012. Nigeria Country report GDP data and GDP forecast. Available: http://www.gfmag.com/ [2012, September 20].

Greene, J.C., Kreider, H. and Mayer, E. 2005. Combining qualitative and quantitative methods in social inquiry. In: B. Somekh, and C. Lewin, Ed. *Research methods in the social sciences.* London: Sage.

Guba, E.G. and Lincoln, Y.S. 2005. Paradigmatic controversies, contradictions and emerging confluences. In: N. K. Denzin & Y.S. Lincoln (ed. *The Sage handbook of qualitative research* 3rd ed. Thousand Oaks, CA: Sage.

Gupta, A.K. and Singh, R. 2009. *Research Methodology.* New Delhi: Vayu Education of India.

Habitat for Humanity, 2010a. Housing needs in Bolivia. Available: http://www.habitat.org/intl/lac/24.aspx [2011, April 12].

Habitat World, 2008. Housing need in Brazil. Available: www.habitat.org [2011, April 8].

Haigh, G. 2008. *Advanced research methods in the built environment.* Ruddock: Wiley Blackwell.

Hall, J. and Sandeland, E. 2009. Addressing South Africa's engineering skills gap *Education + Training*. 51(3):215-219.

Hansen, H.F. 2005. Choosing evaluation models*:* A discussion on evaluation design*. Evaluation*. 11:447-462.

Hassan, F., Samad, Z.A., Che, M.M., Hassan, H.F. and Isnin, Z. 2010. Training construction workforce: A case study of Malaysia. Proceeding of *18th CIB World Building Congress* 10-13 May Salford, United Kingdom. Pp. 230-241.

Housing Industry Association [HIA], 2011. Australian Housing Industry annual report 2011 edition.

Hesse-Biber, S. N. and Leavy, P. L. 2011. *The practice of Qualitative Research.* Thousand Oak, CA: Sage publications.

Hodgkinson, J. 2004. Scoping study: the current skills shortage in the New Zealand building and construction industry report. University of Canterbury School of Engineering, Canterbury.

Hox, J.J. and Boeije, H.R. 2005. Data collection: primary versus secondary. *Encyclopedia of Social Measurement*. 1:593.

ILO 2012. Upgrading informal apprenticeship: A resource guide for Africa. International Labour Organisation.

Iyamu, E.O.S. and Uwameiye, R. 2002. Training methodology used by the Nigerian indigenous apprenticeship system. *Adult Education and Development* IIZ/DVV. 59:169-80.

Jaafar, M., Ramayah, T. and Abdul-Aziz, A.R. 2007. Technology readiness among managers of construction firms. *Engineering, Construction and Architectural Management*. 5:180-191.

Jinadu, A.M. 2004. *Understanding the basic of housing: A book of study notes for students in tertiary institutions*. Minna: King James publishers.

Johnson, R.B. and Onwuegbuzie, A.J. 2004. Mixed methods research: A research paradigm whose time has come. *Educational Researcher,* 33(7):14-26.

Johnson, R.B, Onwuegbuzie, A. and Tuner, L.A. 2007. Journal of Mixed Methods Research. 1(2):112-133.

Kahan, B, and Goodstadt, M. 2005. *The IDM Manual.* 3rd ed. Toronto: Centre for Health Promotion, University of Toronto.

Keegan, S. 2008. *Redefining qualitative research within a business context.* Saarbriclem, Germany: Aktiengesellschaft & Co.KG.

Kirkpatrick, D.L. 2006. Seven keys to unlock the four levels of evaluation, *Performance Improvement*. 45(7):5-8.

Kirkpatrick, D.L. and Kirkpatrick, J.D. 2006. *Evaluating training programs: The four levels*, 3rd ed. San Franciso: Berrett-Koehler Publishers.

Kogan, I. 2008. Education systems of Central and Eastern European countries. In: M. G, Irina-Kogan, and N. Clemens (eds.) *Europe enlarged: A handbook of education, labour and welfare regimes in Central and Eastern Europe.* Bristol: The Policy Press.

Kumar, R. 2005. *Research Methodology: A Step-by-Step Guide for Beginners* 2nd ed. Singapore: Pearson Education.

Lancaster, G.A., Dodd, S. and Williamson, P.R. 2004. Design and analysis of pilot studies: recommendations for good practice. *Journal of Evaluation in Clinical Practice,* 10(2):307-312.

Leedy, P.D. and Ormrod, J.E. 2003. *Practical research, planning and design*. 7thed. New Jersey: Merrill Prentice Hall.

Leedy, P.D. and Ormrod, J.E. 2010. *Practical research: planning and design,* 9th ed. New York: Pearson Educational International.

Liong, L.P. 2005. *Proposed monitoring system for the training of Philipines National Housing Authority.* An unpublished master's dissertation submitted to the University of Twente, Netherlands.

Lobo, Y. B. and Wilkinson, S. 2008. New approaches to solving the skills shortages in the New Zealand construction industry *Engineerin. Construction and Architectural Management.* 15(1):42-53.

Love, P.E.D., Holt, G.D. and Li, H.L. 2002 Triangulation in construction management research. *Engineering Construction and Architectural Management*. 9(4):294–303.

Lyon, L.M. and Hardesty, L.H. 2005. Traditional healing in the contemporary life of the Antanosy people of Madagascar. *Ethnobotany Research and Applications.* 3:287-294.

MacKenzie, A.R., Kilpatrick, A. and Akintoye, T. 2000. UK construction skills shortage response strategies and an analysis of industry perceptions, *Construction Management and Economics*.18(7):853-862.

MacKenzie, N. and Knipe, S. 2006. Research dilemmas: Paradigms, methods and methodology *Issues In Educational Research,*16:1-14.

Maclean, R. and Wilson, D.N. Ed. 2009. *International handbook of education for the changing world of work: bridging academic and vocational learning*. Toronto: Springer.

Mahama, J. 2009. Ghana Has 60% Housing Deficit, *Ghana Business News* 8th October. Available from: http://www.ghanabusinessnews.com/ [2011, 11 April].

Malcomson, J.M., James W.M. and Barry, M. 2003. General training by firms, apprentice contracts, and public policy. *European Economic Review.* 47(2)1:97-227.

Marschan-Piekkari, R. and Welch, C. 2004. *Handbook for qualitative research methods for international business.* Sydney: Edward Elgar Publishing.

Marshall, C. and Rossman, G.R. 2006. *Designing qualitative research* 4th ed. London: sage Publications.

McGuinness, S. and Bennett, J. 2006. Examining the link between skill shortages, training composition and productivity levels in the construction industry: evidence from Northern Ireland. *International Journal of Human Resource Management* 17(2):265-179.

Measham, T.G., Kelly, G.J. and Smith, F.P. 2007. Best management practice: a case study of defining BMP for Dryland Salinity. *Geography Research*. 45(3):262-272.

Merriam-Webster Collegiate Thesaurus. 2008. New York: Fogware Publishing.

Miller, R.L. and Butler, J. 2008. Using an adversary hearing to evaluate the effectiveness of a Military program. *The Qualitative Report.* 13(1):12-25.

Mitchell, M. L. and Jolley, J. M. 2010. *Research Design Explained*. Belmont, CA: Wadsworth.

Mobolaji J. 2012. Nigeria targets 20% broadband penetration. *This Day* 17 December. Available: http://www.thisdaylive.com/ [2013 September 19].

Morgan, A., Raidén, A. and Naylor, G. 2008. Unlocking the potential to influence government skills policy: a case study of the UK construction industry. *International Journal of Training and Development,* 12 (4):238-252.

Morenikeji, W. 2006. *Research and analytical methods: For social scientists, planners and environmentalists*. Jos: Jos University Press.

Mukoro, A. 2005. The impact of the environment on Nigeria's public administration. *Journal of Human Ecology.* 17(2):3-4.

Murray and Roberts, 2009. *Annual reports 2008* Bedfordview: Murray and Roberts.

Malaysian Trade Union Council 2006. Proposals on Strategies to reduce reliance on foreign workers: The workers' erspective. Available: http://www.mtuc.org.my/reducereliance [2012, March 13].

Mulder, C. 2007. Nurture the minority who show potential and desire, *Finweek*, 8 February, pp. 60.

Musa, S. 2006. *The Nigerian Political Economy in Transition*. Friedrich Ebert Stiftung Lecture Series. 8-10

Muya, M., Price, A. D.F. and Edum-Fotwe, F.T. 2006. Overview of funding for construction craft skills training in Sub-Saharan Africa: a case study of Zambia *Construction Management and Economics* 24, pp. 197–208.

Myers, M.D. 2009. *Qualitative research in business and management.* Springer: London: Sage.

National Budget Office 2011. Federal Republic of Nigeria quarterly budget report [Online] Available from: http://www.budgetoffice.gov.ng/publications.html [Aceessed 13November 2013].

National Bureau of Statistics [NBS] 2012. Poverty profile report. Available: http://nssp.ifpri.info/2012/02/21/nigeria-poverty-profile-2010/ [2012, September 20].

The National Board for Technical Education Act No. 9 of 1993 and Act No.16 of 1985, Federal Republic of Nigeria .

Necesito, M., Santos, B.R. and Fulgar, J. I. 2010. A result-based monitoring and valuation framework to determine performance and success of ESD in TVET: The Case of the Philippines. *Proceedings of 2010 ESD in TVET conference* Manila, Philippines. 3-5 November 2010:7

Newman, A., Maruno, N., Hunt, L. and Bing, C.M. 2008. Focus on South Africa *Training*, 45(3):19.

National Housing Authority 2010. Affordable housing in Thailand: 2010 population and housing census. Available from: www.ghbhmecenter.com [2011, June 11].

National Housing Federation 2010. Government policies killing off 1,300 planned homes every day, 4 October 2010.

Nongiba, A.K. 2008. *Impact of health and safety management on safety performance of SMMEs in Ghana*. Unpublished PhD thesis Loughborough University, UK.

National Population Commission 2006. Nigeria 2006 population census.

The National Qualification [NQF] Act No. 67 of 2008. Republic of South Africa.

Nworah, U. 2008. In search of skilled artisans *The Village Square*. Available: http://www.nigeriavillagesquare.com/articles/uche-nworah [2011, April 12].

New Zealand Institute of Economic Research [NZIER], 2004. About New Zealand Institute of Economic Research. Available: www.nzier.org.nz [2012, March 13].

Office of Apprenticeship Training Employment and Labour Services 2004. Skills shortage in the American construction industry.

O'Donnel, H., Karallis, T. and Sandelands, E. 2008. Reflecting on the skills agenda: a construction industry perspective. *Education and Training.* 50(1):59-63.

OECD 2010. Learning for Jobs, OECD Reviews of Vocational Education and Training Policies, Germany. Available from: www.oecd.org/edu/ [2011, July 23].

Oharisi, J. 2007. *Fundamentals of Technical and Vocational Education.* Warri: Anpath Nigeria Enterprises.

Ojuade, J.O. 2006. Dance culture and development in Nigeria: A study of gese dance of the Yorubas. *20th World Congress on Dance Research* Athens, Greece. 25-29 October 2006:2-5.

Oketch, M.O. 2007. To vocationalise or not to vocationalise? Perspectives on current trends and issues in technical and vocational education and training (TVET) in Africa. *International Journal of Educational Development.* 27(2):220-34.

Olaoye, O.O. 2007. *An evaluation of labour supply strategies in the Nigerian building industry a case study of Ibadan.* An unpublished master's thesis, University of Ibadan.

Oluwa, K. 2012. Fixing Nigeria: Good governance as the missing link. *Business Day*, 17th September. Availablefrom: www.businessdayonline.com [2012, September 5].

Omodia, S. M. 2009. Manpower development in Nigeria: conceptual and methodological perspectives. *Journal of Social Science* 18(2):113-117.

Omoruyi, F.E.O. and Osunde, A.U. 2004. Evaluating the effectiveness of the national youth employment and vocational skill acquisition programme in Midwestern Nigeria. *Adult Education and Development* IIZ/DVV. 62:33-42.

Oni, C. S. 2006. Vocationalism in Nigerian Education. *Journal of Social Science.* 12(2):147-150.

Onwuakpa, F. I. and Anyanwu, I. E. 2009. Dimensions of monitoring and accreditation of schools for public examinations. Proceedings of *35th annual conference of International Association of Educational Assessment* Brisbane, Australia.13-18 September 2009:8-19.

Onwuegbuzie, A. J. and Leech, N. L. 2005. On becoming a pragmatic researcher: The importance of combining quantitative and qualitative research methodologies. *International Journal of Social Research Methodology.*8(5):234.

Osman-Gani, A.M. 2004. Human capital development in Singapore: An analysis of national policy perspectives. *Advances in Developing Human Resources.* 6(3):1.

Osowe, T. 2011. Addressing Multi-faceted Housing Challenges in Nigeria, *Nigerian Compass*, 1 March. Available: http://www.compassnewspaper.com/ [2011, April 13].

Owen, J. M. 2006. *Programme evaluation: forms and approaches* 3rd ed. Melbourne: Allen and Unwin.

Owston, D.R. 2008. *Models and methods for evaluation*. Toronto: York University Press.

Pansiri, J. 2005. Pragmatism: A methodological approach to researching strategic alliances in tourism. *Tourism and Hospitality Planning & Development.* 2(3):191–206.

Pathirage, C.P., Amaratunga, R.D.G and Haigh, R.P. (2008) The role of philosophical context in the development of theory: towards methodological pluralism, *The Built & Human Environment Review*, 1:3-5.

Power Holding Company of Nigeria. 2013. Power Holding Company of Nigeria recorded 24 power system failures in 2012. *The Punch* 31 January. Available: http://www.punchng.com [2013, September 24].

Preskill, H. and Catsambas, T.T. 2006. *Reframing evaluation through appreciative inquiry.* Thousand Oaks, California: Sage Publications.

Raidén, A.B. and Dainty, A.R.J. 2006. Human resource development in construction organisations: an example of a “chaordic” learning organisation? *The learning organisation*, 13(1):63-79.

Ritter, N. 2010. Understanding a widely misunderstood statistic: Cronbach's alpha. Paper presented at South Western Educational Research Association [SERA] Conference 2010, New Orleans.

Robertson, M. 2004. *Building program theory for evaluation: the process through a political Lens.* unpublished doctoral thesis University of Georgia.

Roger, M. and Zamora, P. 2011. Hiring young unskilled workers on subsidized open-ended contracts: A good integration programme? *Oxford Review of Economic Policy* 27(2):380-392.

Russ-Eft, D., Bober, M., Teja, I., Foxon, M. and Koszalka, T. 2008. *Evaluator Competencies: Standards for the Practice of Evaluation in Organizations*. San Francisco: Jon Wiley & Sons.

Salas, E. and Cannon-Bowers, J. A. 2001. The science of training: A decade of progress. *Annual Review of Psychology.* 7:471–497.

Salleh, H. and Abdul-Aziz, A.R. 2001. An Illicit Army: Illegal Foreign Labour in the Malaysian Construction Industry, *Harvard Asia Pacific Review*. 5:14-18.

Sanni, L. and Alabi F.M. 2008. Traditional apprenticeship system of labour supply for housing Production in Saki, South Western, Nigeria, *Ethiopian Journal of Environmental Studies and Management.* 1(2):22-34.

South African Qualifications Authority [SAQA] 2013. The objective of the National Qualification Framework. Available: http://www.saqa.org.za/ [2013, August 25].

Scheerens, J. 2011. Measuring educational quality by means of indicators. In: J. Scheerens, J., Luvten, H. and Van Raven, J. *E*d. *Perspectives on educational quality.* Netherlands: Springer.

Scriven, M. 2004. Zen and the art of everyday evaluation. *Journal of Multi-Disciplinary Evaluation*, 1(1):41-44.

Shakantu, W.M. 2004*. An investigation into building material and waste logistics: A case of Cape Town.* Unpublished PhD thesis Glasgow Caledonian University, Britain.

Silverman, D. 2005. *Doing Qualitative Research* 2nd ed. London: Sage.

Simeon, M. K. 2011. *Dissertation and Scholarly research: Recipe for success* 2011ed. Dissertation Success Seattle, WA. Available from: www.http//dissertationrecipes.com [2013, May 10].

Statistics South Africa [Stats SA] 2011. *Quarterly labour force survey*. Pretoria: Statistics South Africa

Stephens, M. 2012. Tackling housing market volatility in the UK. Part I: Long and short-term volatility. *International Journal of Housing Policy*.12(3):367-380.

Struwig F.W. and Stead G.B. 2010. *Planning, design and reporting research.* 6th ed. Cape Town: Pearson Education South Africa.

Stufflebeam, D.L. 2003 The CIPP model for evaluation. In: D. L. Stufflebeam, T. Tannenbaum, and G. Yukl Eds. Training and development in work organizations. *Annual Review of Psychology,* 43:399–441.

Stufflebeam, D.L. and Shinkfield, A.J. 2007. *Evaluation theory, models and applications* San Francisco, CA: John Wiley & Sons.

Sutrisna, M. 2009. Research methodology in doctoral research: Understanding the meaning of conducting qualitative research. Proceedings of the *Association of Researchers in Construction Management (ARCOM) Doctoral Workshop* Liverpool John Moores University UK.

Tashakkori, A. and Creswell, J.W. 2007a. The new era of mixed methods. *Journal of Mixed Methods Research.* 1(1):3-7.

Tashakkori, A. and Teddlie, C. 2010. Epilogue: current developments and emerging trends in integrated research methodology in Tashakkori, A. and Teddlie, C. Ed. *Sage handbook of mixed methods in Social and behavioural research*, California: Sage.

Tattara, G. and Valentini M. 2009. Can employment subsidies and greater labour market flexibility increase job opportunities for youth? Revisiting the Italian On-the-job Training Programme. *Business and Economics.* 42(3):197-212.

Tawil, S., Akkari, A. and Macedo, B. 2011. Beyond the conceptual maze: approaches to quality in education. UNESCO education research and foresight; ERF occasional papers No 2 October 2011:8-13.

Taylor-Powell, E. and Henert, E. 2008. Developing a logic model: teaching and training guide, University of Wisconsin program development and evaluation.

Teddlie, C. and Tashakkori, A. 2009. Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences. Los Angeles: Sage Publications.

Trochim, W.M.K. 2006. *Research methods knowledge base*. Cornell: Cengage publishing.

Tongco, M.D. 2008. Purposive sampling as a tool for informant selection *Ethnobotany Research and Applications.* 5:105-147.

United Nations Educational Scientific and Cultural Organisation 2004. The plurality of literacy and its implications for policies and programmes UNESCO position paper.

United Nations Educational Scientific and Cultural Organisation Global Monitor Report 2010. *Daily Champion.* Available: http://allafrica.com/stories/201001280540.html. [2011, April 11].

United Nations Educational Scientific and Cultural Organisation 2011. Approaches to quality in education. ERF occasional papers, education research and foresight paper No2, October 2011.

UN-Habitat, 2008. 2008 annual report on human settlement. Available: www.mirror.unhabutat.org [2012, May 13].

United Nations Industrial Development Organisation 2013. Corporate Social Responsibility for integration. Available: www.unido.org/csr [2013, October 13].

United Nations Development Programme 2013. 2013 Human Development reports. Available: www.hrd.undp.org/2013-report [2014, April 15]

Usiwoma, E. and Mgbor, M. 2005. The National Directorate of Employment's Open Apprenticeship Scheme in Nigeria New wine in old wineskins? *Emerald Group Publishing Limited, Education + Training.* 47(4/5):325-336.

Uwameiye, R. and Iyamu, E.O.S. 2002. Training methodology used by the Nigerian indigenous apprenticeship system. *Adult Education and Development* IIZ/DVV. 59:169-180.

Van Wyk, J.J. 2009. *Formulation of a housing management model for developing countries with specific reference to South Africa*. An unpublished doctoral thesis. Nelson Mandela Metropolitan University Port Elizabeth South Africa.

Vacha-Haase, T., Henson, R.K. and Caruso, J.C. 2002. Reliability generalization: moving toward improved understanding and use of score reliability. *Educational and Psychological Measurement*, 62(4):562-569.

Watson, J. and Sharp, G. 2007. Barriers to skills development in a local construction labour market. *Local Economy,* 22(2):123–137.

Werner, E., Núria, R., Ricarda, S. and Klaus, F.Z. 2012. A roadmap to vocational education and training systems around the world. *Discussion Paper Series*, No 7110, Institute for the Study of Labour (IZA). Available from: http://www.ftp.iza.org/dp7110 [2013, August 2].

Whittock, M. 2002. Women's experience of non-traditional employment: Is gender equality in this area a possibility? *Construction Management and Economics.* 20:449.

Wolter, S.C. 2012. Apprenticeship training can be profitable for firms and apprentices alike. European Expert Network on Economics Education- EENEE Policy brief 3/ 2012.

World Bank 2004. Middle East and North Africa Development Report, Unlocking the Employment Potential in the Middle East and North Africa. Washington DC.

World Bank 2005. Expanding opportunities and building competencies for young people: A new agenda for secondary education, Washington, DC.

World Bank 2011. Doing Business in Nigeria. World Bank publication. Available: http://www.doingbusiness.org/data/exploreeconomies/nigeria/ [2011, November 21].

World Bank 2012. Doing Business in Nigeria, World Bank publication. Available: http://www.doingbusiness.org/ [2012, September 20].

World Bank 2013. Country data. Available: www.data.worldbank.org/country/nigeria [2013, November 18].

World Economic Outlook 2013. Employment rates in countries of the world. Available: http://www.imf.org/external/pubs/ [2013, August 25].

Yin, R.K. 2009. *Case study research: Design and methods*, Thousand Oaks, CA: Sage Publications.

ANNEXURE A

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Nelson Mandela Metropolitan University
for tomorrow

Department of Quantity Surveying
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11th February 2012

Dear Sir / Madam,

RE: THE TRAINING OF ARTISANS FOR HOUSE BUILDING PROJECTS IN SOUTH WESTERN NIGERIA

I am a PhD candidate in the Department of Quantity Surveying, Faculty of Engineering, Built Environment and Information Technology, Nelson Mandela Metropolitan University, Port Elizabeth, South Africa. I am conducting a research project on "The Training of Artisans for House Building Projects in South Western Nigeria".

I am presently carrying out a survey to investigate how the training of artisans can be improved with the view of developing appropriate strategies.

Your cooperation in completing this questionnaire will be greatly appreciated. It will contribute to realising the aim of this study and will take approximately 15 minutes to complete. Please note that all information obtained from you will be treated confidentially and only used for academic purposes**.** Should you have any further query, please, do not hesitate to contact me through the telephone numbers and/or email address provided below.

Thanking you for your anticipated cooperation.

Oluwole J. Oni
PhD Candidate (Construction Economics)
Tel: +234-8035697274, +27 (0) 41 504 4134
Email: s211051039@live.nmmu.ac.za

Professor J. J. Van Wyk
Research Promoter

THE TRAINING OF ARTISANS FOR HOUSE BUILDING

PROJECTS IN SOUTH WESTERN NIGERIA

QUESTIONNAIRE FOR EMPLOYERS AND PROFESSIONALS

SECTION A: General information

Company Name: ……..

Company Category

Category	**Tick**
Construction firm	
Consulting firm	
Government department	
Others(indicate)	

Position: …….

Profession

Type	**Tick**
Architect	
Civil engineer	
Quantity Surveyor	
Builder	
Construction manager	
Others (specify)	

Gender	**Tick**
Male	
Female	

Age Group

Group	**Tick**
20-30years	
31-35years	
36-40years	
41-45years	
46-50years	
Above 50years	

Experience in years (please, tick appropriately)

Area	1-5yrs	6-10yrs	11-15yrs	16-20yrs	Above 20yrs
Consulting					
Construction industry					
Government department					
House building					
Others (specify)					

SECTION B: VOCATIONAL TECHNICAL COLLEGES (FORMAL TRAINING SYSTEM)

(1) Policy factors affecting the training of artisans in the vocational technical colleges
On a scale of 1 (Strongly Disagree) to 5 (Strongly Agree) indicate your level of agreement/disagreement with the factors affecting the training of artisans as listed in the following table

	Factor	Strongly Disagree(1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree(5)
1A	Inadequate government policy on the creation of enough vocational technical colleges for the training of artisans.					
1B	Insufficient budgetary allocation for the vocational education subsector.					
1C	Government discriminatory rating of vocational certificates.					
1D	Poor integration of vocational technical education with the university system.					

Others please, add…….....

(2) Factors affecting the attraction of trainees to the vocational and technical colleges
On a scale of 1 (Strongly Disagree) to 5 (Strongly Agree) indicate your agreement/disagreement with the following factors affecting enrolment figures in the vocational technical colleges.

	Factor	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
2A	Insufficient scholarships for attracting potential artisans					
2B	Poor awareness creation / media campaign to attract new entrants					
2C	A poor societal image attached to vocational and technical colleges.					
2D	The learning environment in the colleges are not attractive enough					
2E	Difficulty of career progression for vocational graduates.					

Others please, add ……

(3) Government Regulation of the vocational and technical colleges
On a scale of 1 (Strongly Disagree) to 5 (Strongly Agree) indicate your level of agreement / disagreement with the following statements on government regulation of vocational and technical colleges

	Statement	**Strongly Disagree(1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree(5)**
3A	There is a weak regulatory framework (Acts) for vocational technical education.					
3B	The National Board for Technical Education (NBTE), the regulatory body, focuses on the polytechnics at the expense of the technical colleges.					
3C	The legislation / regulatory framework establishing NBTE is long overdue for reform.					
3D	Insufficient attention is given to the accreditation of programmes					
3E	Periodic curriculum review is not done as regularly as expected (e.g. every 5years).					

Others please, add ……..

(4) Funding of the vocational and technical education subsector
On a scale of 1 (Strongly Disagree) to 5 (Strongly Agree) indicate your level of agreement / disagreement with the following statements on the funding of the vocational and technical education subsector.

	Statement	**Strongly Disagree(1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree(5)**
4A	Little attention is paid by the Government to vocational technical education in terms of funding.					
4B	Budgetary allocation to vocational technical education is inadequate					
4C	Beaureocratic bottlenecks hamper access to allocated funds					
4D	Corrupt practices among government officials negatively affect the funds that finally get to the colleges.					

Please, indicate other aspects of funding of the vocational and technical education.
……
……
……

(5) Impact of inadequate funding on the vocational technical education subsector
On a scale of 1 (Strongly Disagree) to 5 (Strongly Agree) indicate your level of agreement/disagreement with the following statements on the impact of inadequate funding on the vocational technical education subsector.

	Statement	**Strongly Disagree(1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree(5)**
5A	Salaries and welfare packages of vocational teachers are inadequate					
5B	Physical infrastructure in most technical colleges are poor.					
5C	There are insufficient number of vocational teachers and instructors					
5D	Training facilities / equipment in most technical colleges are inadequate					
5E	Staff development and training in the technical colleges are poor					

Please, indicate other impacts of inadequate funding on the vocational technical education.
……
……

(6) Factors affecting the quality of artisans produced from the vocational technical colleges
On a scale of 1 (Strongly Disagree) to 5 (Strongly Agree) the level of your concurrence with the following factors affecting the quality of artisans trained at the college.

	Factor	**Strongly Disagree(1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree(5)**
6A	Inadequate / obsolete training facilities and equipment					
6B	Insufficient number of qualified teachers in technical colleges					
6C	Training is not up to date with latest construction technologies and methods					
6D	Inadequate physical infrastructure in the vocational colleges					
6E	Inadequate exposure to practicals during training at the college.					

Please, add other factors affecting the training of artisans at the vocational technical colleges.
……
……..

SECTION C: TRADITIONAL APPRENTICESHIP (INFORMAL TRAINING SYSTEM)

(7) Policy factors affecting the Traditional Apprenticeship Training System
On a scale of 1 (Strongly Disagree) to 5 (Strongly Agree) indicate your level of agreement / disagreement with the under listed policy factors affecting the traditional apprenticeship training system.

	Factor	**Strongly Disagree(1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree(5)**
7A	Government policy provisions for the operation of traditional apprenticeship training system are poor.					
7B	Government policy on youth development and skills acquisition is inadequate.					
7C	Government policy on budgetary allocation to (informal education) traditional apprenticeship training is poor.					
7D	There is no clear –cut policy on the establishment of artisan training centres as it is for schools and universities.					

Others please add
……

(8) Attraction / recruitment factors affecting the Traditional Apprenticeship Training System
On a scale of 1 (Strongly Disagree) to 5 (Strongly Agree) indicate your level of agreement / disagreement with the under listed recruitment factors affecting the traditional apprenticeship training system.

	Factor	**Strongly Disagree(1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree(5)**
8A	Government recognition of traditional apprenticeship training system is poor					
8B	The societal image of the traditional apprenticeship training system is poor.					
8C	Training incentives to attract potential artisans to enroll in the apprenticeship training is lacking.					
8D	The disposition of master-artisan to apprentices is not attractive enough					
8E	Awareness creation and attraction of trainees to traditional apprenticeship training are poor					

Others please add
……

(9) Government regulation of the Traditional Apprenticeship Training System

On a scale of 1 (Strongly Disagree) to 5 (Strongly Agree) indicate your level of agreement/disagreement with the under listed Government regulation factors affecting the traditional apprenticeship training system.

	Statement	**Strongly Disagree(1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree(5)**
9A	Government regulation of traditional apprenticeship training system is poor.					
9B	Appropriate Government agency to monitor traditional apprenticeship training is weak					
9C	Government coordination of traditional apprenticeship training is poor.					
9D	A unified formal curriculum for training under the traditional apprenticeship training is not provided by government.					
9E	Length of training and certification are left in the hands of individual master artisans.					
9F	Trainees' competencies are not evaluated on a prescribed uniform standard before certification.					
9G	Government does not assess master artisans' competencies before their involvement in training provision.					

Others please add

……

(10) Funding of the Traditional Apprenticeship Training System

On a scale of 1 (Strongly Disagree) to 5 (Strongly Agree) indicate your level of agreement / disagreement with the under listed statements on funding of the traditional apprenticeship training system.

	Statement	**Strongly Disagree(1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree(5)**
10A	Government allocation of funding for traditional apprenticeship training (as a part of education system) is poor					
10B	Provision of training sponsorship for apprentices as a motivation to enroll in training is lacking					
10C	Budgetary allocation of fund to (informal education) traditional apprenticeship training is inadequate					

Others please add

……

SECTION D: THE PROGRAMME

(11) The Assessment of the Traditional Apprenticeship Training Programme.
On a scale of 1 (Grossly Inadequate) to 5 (Highly Adequate) indicate by ticking the option that best describes the adequacy of the traditional apprenticeship training programme on the following parameters.

	Parameter	**Grossly Inadequate (1)**	**Inadequate (2)**	**Unsure (3)**	**Adequate (4)**	**Highly Adequate (5)**
11A	Quality of the training offered					
11B	Duration of the training					
11C	Content of the training					
11D	Competencies of the trainers (the master artisans)					
11E	Assessment procedures of trainees					
11F	Products of the training (the graduates)					

Others please add
……..

(12) Teaching and Learning Strategy under Traditional Apprenticeship Programme
On a scale of 1 (Grossly Inadequate) to 5 (Highly Adequate) indicate by ticking the option that best describes the adequacy of the Traditional Apprenticeship Training Programme in terms of teaching and learning strategy based on the following parameters.

	Parameter	**Grossly Inadequate (1)**	**Inadequate (2)**	**Unsure (3)**	**Adequate (4)**	**Highly Adequate (5)**
12A	The mode of delivery and teaching methods					
12B	Regular review and update of teaching methods and contents					
12C	Blending of theoretical instructions with practicals					

Others please, add……

(13) Regulatory Factor Affecting the Traditional Apprenticeship programme.
On a scale of 1 (Grossly Inadequate) to 5 (Highly Adequate) indicate by ticking the option that best describes the rating of the regulation of the traditional apprenticeship training programme.

	Parameters	**Grossly Inadequate (1)**	**Inadequate (2)**	**Unsure (3)**	**Adequate (4)**	**Sufficiently Adequate (5)**
13A	Monitoring strategies					
13B	Trainers accreditation					
13C	Technical support					

SECTION E: EMPLOYERS PARTICIPATION IN TRAINING

(14) Factors affecting the participation of employers in artisan training Programme
On a scale of 1 (Strongly Disagree) to 5 (Strongly Agree) indicate the level of your agreement/disagreement with the following factors affecting the participation of employers in training.

	Factor	**Strongly Disagree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree (5)**
14A	Poor motivation from government to encourage employers to participate in artisan training.					
14B	Absence of an appropriate agency to coordinate artisan training.					
14C	Inadequate government policy relating to employers participation in training					
14D	Insufficient number of artisan training centres for short term and refresher courses.					
14E	Non willingness of the employers					
14F	Inadequate budgetary provision for training and retraining of artisans					

Others please add……

SECTION F: ARTISAN MORALE

(15) Factors affecting the morale of artisans produced from both systems
On a scale of 1 (Strongly Disagree) to 5 (Strongly Agree) indicate the level of your agreement/disagreement with the following factors affecting the morale of artisans

	Factor	**Strongly Disagree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree (5)**
15A	Employment policies for construction workers are inadequate					
15B	Employment in construction is not stable(i. e on and off nature / cyclical)					
15C	There is poor career progression path for artisans					
15D	Government rate vocational qualifications as poor.					
15E	Artisan remuneration is poor					
15F	The image of artisans in the society is poor					
15G	Artisans' job security is poor					

Other please add……

SECTION G: STRATEGIES FOR IMPROVEMENT OF ARTISAN TRAINING

(16) Strategies for improving the traditional apprenticeship training
On a scale of 1 (Strongly Disagree) to 5 (Strongly Agree) indicate your level of agreement/disagreement with the following proposed strategies for improving the traditional apprenticeship training system.

	Strategies	**Strongly Disagree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree (5)**
16A	Reforms in the youth development policy to give priority to skills development					
16B	Reorientate the youth through the media on dignity of labour					
16C	Provide incentives to attract young people to skill acquisition					
16D	Government direct involvement on skill acquisition programmes					
16E	Establish skills development centres in each major cities					
16F	Give better recognition to informal education (apprenticeship training)					
16G	Employers should partner with government to establish artisan villages					
16H	Establish the department of skills development in each Local Government to mobilise and sensitise youth.					
16I	Accredit trainers before engaging them					
16J	Create Skills Acquisition Fund (SAF) to provide training scholarships.					
16K	Put in place an effective monitoring organ to ensure unified standard and quality					
16L	Encourage public private partnership in training provision					

(17) Strategies for improving the participation of employers in artisan training
On a scale of 1 (Strongly Disagree) to 5 (Strongly Agree) the level of your concurrence with the following strategies for improving employers participation in training.

	Strategy	**Strongly Disagree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree (5)**
17A	Establish a dedicated agency for training of artisans for the industry.					
17B	Provide incentives to motivate employers to participate more in training					
17C	Standardise remunerations of artisans					
17D	Create more artisan training centres to accommodate more employers' sponsored trainees					
17E	Establish Investment in people initiative to mobilise employers for training					

(18) Strategies for improving the vocational and technical college system of training
On a scale of 1 (Strongly Disagree) to 5 (Strongly Agree) indicate by ticking the level of your agreement/disagreement with the following strategies for improving training in the colleges.

	Strategies	**Strongly Disagree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree (5)**
18A	Education policy reforms to give recognition to vocational qualifications.					
18B	Integration of vocational technical colleges into the university system					
18C	Government should provide adequate funding for the technical colleges					
18D	Provide adequate training facilities for the colleges					
18E	Government should create more vocational technical colleges					
18F	Employers and government should sponsor media campaigns to attract trainees to construction trades.					
18H	Reform the policy provisions establishing NBTE.					
18G	Employers and Government should provide scholarships to attract new entrants.					
18H	Schools should engage the services of career counsellors to sensitise high school students towards construction careers					

18I	Construction academies and clubs should be established in high schools.					
18J	Industry leaders should engage in school tour annually to mobilise youth to enlist for construction occupations.					
18K	Employers and other industry stakeholders should sponsor summer construction camps for high school students.					
18L	Provide labour market information, opportunities, wage data to students via the internet, leaflets and workshops					

(19) Apart from the above, what other strategies would you suggest for addressing artisan shortages for housing delivery……

ANNEXURE B

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11th June 2012

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You have been chosen as stakeholder and your cooperation in completing this questionnaire will be greatly appreciated. It will contribute to realising the aim of this study and will take approximately 15 minutes to complete. Please note that all information obtained from you will be treated confidentially and only used for academic purposes**.** Should you have any further query, please, do not hesitate to contact me through the telephone numbers and/or email address provided below.

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Professor J. J. Van Wyk
Research Promoter

QUESTIONNAIRE FOR THE VOCATIONAL TECHNICAL COLLEGES

Vocational and Technical Training Colleges

General information

Name of Institution…….

Address:……..

Position: Principal ( ) Vice Principal ( ) Registrar ( ) others ( ) indicate……..

Gender: Please tick Male ( ) Female ( )

Age Group: please tick 25-35years ( ) 36-45years ( ) 46-55years ( ) above 55years ( )

SECTION ONE: Enrolment Trends

Please, kindly supply the following information on the number of students who enrolled and graduated in the specified trades in your college.

ENROLLMENT NUMBERS (First Year Students Data)

Year	Bricklaying	Carpentry	Plumbing	Painting	Electrical	Total
2001						
2002						
2003						
2004						
2005						
2006						
2007						
2008						
2009						
2010						
Total						

GRADUATION TRENDS (Graduated Students Data)

Year	Bricklaying	Carpentry	Plumbing	Painting	Electrical	Total
2001						
2002						
2003						
2004						
2005						
2006						
2007						
2008						
2009						
2010						
Total						

SECTION TWO: Recruitment and Admission Strategy

On a scale of 1 (Grossly Inadequate) to 5 (Sufficiently Adequate) indicate by ticking the option that best describes the level of adequacy of the following factors that impact on vocational and technical training in your College.

	Factors	Grossly Inadequate (1)	Inadequate (2)	Unsure (3)	Adequate (4)	Highly Adequate (5)
2A	Strategies for attracting new students					
2B	Widening of access to admit more candidates					
2C	Marketing of programmes through the media					
2D	Government image of the technical colleges					

SECTION THREE: Staffing

On a scale of 1 (Grossly Inadequate) to 5 (Sufficiently Adequate) indicate by ticking the option that best describes the adequacy of the following factors that impact on vocational and technical training in your college.

	Factors	Grossly Inadequate (1)	Inadequate (2)	Unsure (3)	Adequate (4)	Highly Adequate (5)
3A	Procedure of selection, appointment and induction					
3B	The employment policy and condition of service					
3C	The number of teaching staff					
3D	The number of administrative and supporting staff					
3E	The qualifications of staff members					
3F	Teaching experience of staff members					

SECTION FOUR: Teaching and Learning Strategy

On a scale of 1 (Grossly Inadequate) to 5 (Sufficiently Adequate) indicate by ticking the option that best describes the level of adequacy of the following factors that impact on vocational and technical training in your college.

	Factors	Grossly Inadequate (1)	Inadequate (2)	Unsure (3)	Adequate (4)	Highly Adequate (5)
4A	The level of practicals conducted for teaching students					
4B	The mode of delivery and teaching methods					
4C	Monitoring strategies to ensure compliance					
4D	Regular review and update of teaching methods					

SECTION FIVE: Student Assessment Policy and Procedures

On a scale of 1 (Grossly Inadequate) to 5 (Sufficiently Adequate) indicate by ticking the option that best describes the level of adequacy of the following factors that impact on vocational and technical training in your college.

	Factors	Grossly Inadequate (1)	Inadequate (2)	Unsure (3)	Adequate (4)	Highly Adequate (5)
5A	Internal assessment of students					
5B	Reliability of student assessment					
5C	Monitoring of student progress					
5D	Internal and external moderation					
5E	Security of student records					

SECTION SIX: Physical infrastructure, training facilities and library resources

On a scale of 1 (Grossly Inadequate) to 5 (Sufficiently Adequate) indicate by ticking the option that best describes the following factors that impact on vocational and technical training in your college.

	Factors	**Grossly Inadequate (1)**	**Inadequate (2)**	**Unsure (3)**	**Adequate (4)**	**Highly Adequate (5)**
6A	The number of buildings for offices, workshops, classes and hostels					
6B	The condition of the buildings					
6C	The size and scope of library					
6D	Books and other resources in the library					
6E	Maintenance of library facilities					
6F	Workshop equipment for practicals					
6H	Maintenance of workshop facilities					
6I	IT infrastructure for training					

SECTION SEVEN: Regulatory Mechanism - National Board for Technical Education (NBTE) as the regulatory body.

On a scale of 1 (Grossly Inadequate) to 5 (Sufficiently Adequate) indicate by ticking the option that best describes the level of adequacy of the following factors that impact on vocational and technical training in your college.

	Factors	**Grossly Inadequate (1)**	**Inadequate (2)**	**Unsure (3)**	**Adequate (4)**	**Sufficiently Adequate (5)**
7A	Level of attention received from NBTE					
7B	Frequency of visit for programme accreditation					
7C	Technical support received from NBTE					

SECTION EIGHT: Government Policy and Level of Funding

On a scale of 1 (Grossly Inadequate) to 5 (Sufficiently Adequate) indicate by ticking the option that best describes the following factors that impact on vocational and technical training in your college.

	Factors	**Grossly Inadequate (1)**	**Inadequate (2)**	**Unsure (3)**	**Adequate (4)**	**Sufficiently Adequate (5)**
8A	Government policy on technical and vocational education					
8B	Government policy on the rating of technical college certificates					
8C	Policy on career progression with technical college certificates					
8D	Level of funding received from government for running the colleges					
8E	Grants for infrastructure development					

SECTION NINE: Administrative services

On a scale of 1 (Grossly Inadequate) to 5 (Sufficiently Adequate) indicate by ticking the option that best describes the level of adequacy of the following factors that impact on vocational and technical training in your college.

	Factors	**Grossly Inadequate (1)**	**Inadequate (2)**	**Unsure (3)**	**Adequate (4)**	**Sufficiently Adequate (5)**
9A	Provision of information for students					
9B	Identification of non-active and at-risk students					
9C	Dealing with the needs of a diverse student population					
9D	Ensuring the integrity of the certification.					

SECTION TEN: Strategies for improving Technical Colleges

Indicate your level of agreement/disagreement with the following strategies for the revival of vocational and technical training colleges.

	Strategies	**Strongly Disagree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree (5)**
10A	Reform the education policy to give priority to vocational and technical education					
10B	Provide adequate funding for the vocational and technical colleges					
10C	Provision of scholarships and other incentive to attract the youths to technical colleges					
10D	Training and retraining of vocational and technical teachers					
10E	Provision of adequate infrastructures and training facilities for the technical colleges					
10F	Improved salaries and welfare packages for vocational teachers to attract the most talented human resources					
10G	Better recognition be given to vocational technical qualification to boost the image in society					
10H	Government should embark on aggressive media campaigns to market vocational colleges					
10I	Policy reform for a better rating of vocational technical certificates					
10J	Government should integrate vocational technical education with the university system for easy study progression.					
10K	A dedicated regulatory body should be set up for vocational technical colleges.					

Please add other strategies for improving the vocational technical colleges

……

ANNEXURE C

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Professor J. J. Van Wyk
Research Promoter

QUESTIONNAIRE ON TRADITIONAL APPRENTICESHIP TRAINING SYSTEM (INFORMAL TRAINING)

For master Artisans from both Systems

General information

Company Name: ……..

Address: ……

Trade Union Name …… ……

Position: ……

Where were you trained	**Tick**
Technical College	
Traditional Apprenticeship	

Category	**Tick**
Company employee	
Self employed	
Government employee	
Others(indicate)	

Trade name	**Tick**
Bricklaying	
Carpentry	
Plumbing	
Electrical	
Painting	

Gender	**Tick**
Male	
Female	

Age Group	**Tick**
20-30years	
31-35years	
36-40years	
41-45years	
46-50years	
Above 50years	

Experience in years	**Tick**
1-5years	
6-10years	
11-15years	
16-20yaers	
Above 20years	

(1) Factors responsible for the perceived lukewarm attitude of young people towards skill acquisition in construction trades

On a scale of 1 (Strongly Disagree) to 5 (Strongly Agree) indicate by ticking the level of your agreement/disagreement with the following factors responsible for the perceived lukewarm attitude of young people towards skills acquisition in construction trades.

	Factors	**Strongly Disagree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree (5)**
1A	Perceived dirty nature of construction work					
1B	Perceived risky nature of construction work					
1C	Get-rich-quick syndrome among young people					
1D	General laziness among young people					
1E	Parental influence against the choice of building trades					
1F	Poor societal image of artisans					
1G	Preference for stress free / easy jobs					
1H	Perceived inadequate wages of artisans					

(2) Recruitment Strategy for Traditional Apprenticeship training programmes

On a scale of 1 (Grossly Inadequate) to 5 (Sufficiently Adequate) indicate by ticking the option that best describes the level of adequacy of the following factors that impact on the Traditional Apprenticeship programmes.

	Factors	**Grossly Inadequate (1)**	**Inadequate (2)**	**Unsure (3)**	**Adequate (4)**	**Highly Adequate (5)**
2A	Strategies for attracting new apprentices					
2C	Marketing of the apprenticeship programmes					
2D	Level of recognition and promotion of the apprenticeship programmes					

(3) Learning Strategy

On a scale of 1 (Grossly Inadequate) to 5 (Sufficiently Adequate) indicate by ticking the option that best describes the level of adequacy of the following factors that impact on the Traditional Apprenticeship programmes.

	Factors	**Grossly Inadequate (1)**	**Inadequate (2)**	**Unsure (3)**	**Adequate (4)**	**Highly Adequate (5)**
3A	Blending of theoretical knowledge with practicals					
3B	The mode of delivery and teaching methods					
3C	Monitoring strategies to ensure compliance					
3D	Regular review and update of teaching methods					
3E	Assessment of apprentices before certification					

(4) Policy Framework and Level of Funding

On a scale of 1 (Grossly Inadequate) to 5 (Sufficiently Adequate) indicate by ticking the option that best describes the following factors that impact on the Traditional Apprenticeship programmes.

	Factors	**Grossly Inadequate (1)**	**Inadequate (2)**	**Unsure (3)**	**Adequate (4)**	**Sufficiently Adequate (5)**
4A	Government policy on traditional apprenticeship training system.					
4D	Level of funding of the apprenticeship training programmes.					
4E	Training scholarships for apprentices.					
4D	Government recognition and attention on informal education					

(5) Regulatory Framework and Coordination

On a scale of 1 (Grossly Inadequate) to 5 (Sufficiently Adequate) indicate by ticking the option that best describes the level of adequacy of the following factors that impact on the Traditional Apprenticeship programmes.

	Factors	**Grossly Inadequate (1)**	**Inadequate (2)**	**Unsure (3)**	**Adequate (4)**	**Sufficiently Adequate (5)**
5A	Level of regulation and coordination					
5B	Training centres and programme accreditation					
5C	Technical support					

(6) Impact of alternative jobs in preventing potential candidates from construction skills acquisition.

On a scale of 1 (No Impact) to 5 (Very Major Impact) indicate by ticking how you rate the impact of the following alternative jobs on the performance of traditional apprenticeship training system.

	Alternative Jobs	**No Impact (1)**	**Little Impact (2)**	**Moderate Impact (3)**	**Major Impact (4)**
6A	Commercial motorcycling (Okada)				
6B	Performing art (Singing and acting)				
6C	Commercial telephone boot operation (GSM business)				
6D	Buying and selling (hawking)				
6E	Online business				

(7) Impact of bad image in preventing potential candidates from construction skills acquisition.

On a scale of 1 (No Impact) to 5 (Very Major Impact) indicate by ticking how you rate the impact of the following image factors on the performance of traditional apprenticeship training system.

	Image factor	**No Impact (1)**	**Little Impact (2)**	**Moderate Impact (3)**	**Major Impact (4)**
7A	Perceived dirty nature of construction work				
7B	Perceived risky nature of construction work				
7C	Low social status rating accorded artisans in the society.				

(8) Strategies for improving the Traditional Apprenticeship training.

On a scale of 1 (Strongly Disagree) to 5 (Strongly Agree) indicate your level of agreement/disagreement with the following proposed strategies for improving the traditional apprenticeship training.

	Strategies	**Strongly Disagree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree (5)**
8A	Formulation of a robust youth policy that will give priority to skills acquisition					
8B	Government to establish an agency to regulate and standardise traditional apprenticeship training.					
8C	Reorientate the youth through the media on dignity of labour					
8D	Provide incentives to attract young people to skill acquisition.					
8E	Government direct involvement in skill acquisition programmes					
8F	Set up skills centres in each major city to compliment master artisans' efforts.					
8G	Partnership among employers to establish artisan training centres					
8H	Create skills support department in the Local Governments Areas to promote skills acquisition.					
8I	Set up Skills Acquisition Fund (SAF) for adequate and sustained funding of vocational training.					
8J	Make policy provisions to facilitate Public private partnership for skill development					
8K	Industry stakeholders should provide scholarships to support training					
8L	Establish a unified assessment and certification system for the traditional apprenticeship training programmes.					
8M	Give better recognition to informal education system (apprenticeship) through appropriate policy provisions as a means of economic empowerment					
8N	Master artisans should be accredited before their involvement in training.					
8O	A regular monitoring strategy should be in place for the training to ensure standard.					

Please suggest other strategies for improving Traditional Apprenticeship System of training artisans

……..

ANNEXURE D

Interview with Education Ministry (Interview guide)

Title…….....

Office address.....

Phone No.....

To whom it may concern

Sir/madam

My name is Oni Oluwole Joseph, a PhD research candidate at the Nelson Mandela Metropolitan University, Port Elizabeth, South Africa. I am conducting a survey on "The Training of Artisans for House Building Projects in South Western Nigeria." There is a perceived shortage of house building artisans such as carpenters and bricklayers; this is due to inadequate supply of these skilled artisans by the vocational technical colleges and the traditional apprenticeship training system to the industry. The aim of this study is to investigate this problem with the view of articulating appropriate strategies for improving both the technical college and the apprenticeship training systems and thus the supply of artisans for the industry.

The purpose of this interview is to obtain your opinion as a stakeholder in vocational technical education and training and how the systems and training can be improved upon. The interview is estimated to last between 30 and 45 minutes. Let me assure you that the data obtained through this interview and any documentation from you will be treated confidentially and be used only for academic purposes. Also, no records kept will bear your organisation's name. I would also like to seek your permission to record the interview.

Thanking you for your anticipated cooperation.

Oluwole J. Oni
PhD Candidate (Construction Economics)
Tel: +234-8035697274, +27 (0) 41 504 4134
Email: s211051039@live.nmmu.ac.za

Professor J. J. Van Wyk
Research Promoter

INTERVIEW QUESTIONS

VOCATIONAL TECHNICAL COLLEGES

1. What is your perception pertaining the state of the vocational technical colleges in your state?

2. What do you think are the major challenges currently facing the vocational technical colleges in your state?

3. How do you see the quality of the programmes offered?

4. What is your assessment of the level of training facilities available for the programmes?

5. What is your opinion about the teaching staff members available for the programmes in the following areas?
a. their number
b. their qualifications
c. their experiences

6. What are the factors responsible for the perceived poor performance of the vocational technical colleges?

7. What do you think are the factors responsible for poor enrolment in the colleges?

8. How do you think these challenges can be addressed?

9. What is your opinion on the level of infrastructures like library, hostels, offices, classrooms and workshops?

10. What can the government do to revive the vocational technical colleges in the following areas?
a. Policy reforms and implementation
b Funding of the colleges
c. Image and recognition of the vocational certificate
d. Recruitment / enrolment
e. Physical infrastructure
f. Training facilities
g. Integration with the university system

10. What do you think the stakeholders from the industry can do to help revive the technical colleges?

11. How do you think the regulatory agency can help to improve the performance of the vocational technical colleges?

12. What role can your office play as the government department in charge of vocational technical education to improve the training quality provided by the technical colleges?

13. In what way do you think vocational technical colleges can get more funding to improve its performance apart from the budgetary allocations that is not always sufficient?

14. What suggestions do you have for improving the training provided by the vocational technical colleges in your state?

15. What in addition are you doing to improve the vocational technical colleges in your state?

16. Please make any general comments based on your perception of the issues discussed

TRADITIONAL APPRENTICESHIP TRAINING

1. What is your perception pertaining the state of the traditional apprenticeship training in your state?

2. What do you think are the major challenges currently facing the traditional apprenticeship training in your state?

3. How do you see the quality of the training programmes offered by the master artisans?

4. What is your assessment of the level of training facilities available for the training programmes under the individual master artisans?

5. What are the factors responsible for the perceived poor performance of the traditional apprenticeship training programmes?

6. What do you think are responsible for the perceived lukewarm attitude of young people towards skill acquisition?

7. How do you think these challenges can be addressed?

8. How do you assess the level of government recognition and attention given to (informal education) apprenticeship training system?

9. How do you rate the mode of delivery and teaching methods of the master artisans to apprentices?

10. Do you consider the method of assessment of apprentices usually carried out by the master artisan before certification adequate? If no, why?

11. How do you see to the present Government policy on traditional apprenticeship training system?

12. How do you think this policy framework can be improved upon?

13. What is your assessment of current level of Government funding of the apprenticeship training programmes?

14. What is your opinion about the perceived poor level of Government regulation and coordination of apprenticeship training programmes?

15. Comment on the impact of alternative jobs such as commercial motorcycling (Okada), commercial telephoning (GSM business) and hawking in preventing potential candidates from skills acquisition?

16. How can the impact of these alternative jobs on skills acquisition be addressed?

17. What are your suggestions for improving the Traditional Apprenticeship training in the following areas?
a. Policy reforms and implementation
b. Funding and training incentives
c. Regulation and coordination
d. Image and recognition
e. Training facilities

Thank you for sparing some time out of your busy schedule to make this meeting possible. I wish to also thank you for the insights I have gained from your rich experience which will help in compiling data for this research

ANNEXURE E

Language Quality Assurance Practitioners

Mrs KA Goldstone

Dr PJS Goldstone

14 Erasmus Drive
Summerstrand
Port Elizabeth
6001
South Africa

Tel/ Fax: +27 41 583 2882 Cell: +27 73 006 6559 Email: kate@pemail.co.za

pat@pemail.co.za

13 August 2014

TO WHOM IT MAY CONCERN

We hereby certify that we have language-edited the doctoral thesis of Oluwole Joseph Oni entitled: THE TRAINING OF ARTISANS FOR HOUSE BUILDING PROJECTS IN SOUTH WESTERN NIGERIA.

We are satisfied that, provided the changes we have made are effected to the text, the language is of an acceptable standard, and is fit for publication.

Kate Goldstone

BA (Rhodes)

SATI No: 1000168

UPE Language Practitioner (1975-2004)

NMMU Language Practitioner (2005)

Dr Patrick Goldstone

BSc (Stell.)

DEd (UPE)

Language Quality Assurance – Certification Statement