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OUTLOOK ON HUMAN CAPACITY BUILDING AND DEVELOPMENT:

A HANDBOOK OF RESEARCH IN HONOUR OF

PROFESSOR IBRAHIM NJODI



Edited by

Professor Jacinta A. Opara

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OUTLOOK ON HUMAN CAPACITY BUILDING AND DEVELOPMENT:

A Handbook of Research in Honour of PROFESSOR IBRAHIM NJODI

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Edited by

Professor Jacinta A. Opara

University of Maiduguri Press

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DEDICATION

To the glory of God and University of Maiduguri

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The making of a book is a serious challenge. It is a teamwork which compels acknowledgment and appreciation.I wish to extend my appreciation to all the scholars who have made submissions that made up this book.I thank the Management and Staff of University of Maiduguri their support and goodwill.The Registrar of University of Maiduguri, Mr Tijjani Bukar gave publicity to the Call for Papers that elicited high response of contributors. Dr Nwachukwu Prince Ololube, Professor S.L. Kela, Dr Nneka Okafor, Dr Vera Charles-Unadike, Dr Nkiru Kamalu, Dr Abdusalam Abdulah, Dr Nnenna Enwo-Irem, Mrs Vivian Akujobi, Ms Fyne C. Nosike, Professor Bamidele Badejo and Mrs M.A. Abdulkadir played various significant roles that made this book possible.My gratitude goes to the editorial advisory board members, reviewers and other people who provided other forms of support.I thank you all sincerely for your commitment, intense reviews and general efforts that made this book a success.

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A.A. Mbahi	232
Abayomi Abel Olawumi	829
Abdulazeez Hassan	148
Abdulkarim Haruna	164
Abdullahi S. Ringim	863
Abdulraheem O. Umar	863
Abdulsalam Abdullah	148, 490, 522
Abel Onwe Oroke	746
Achilike, Adaku Ngozi	273
Adamkolo Mohammed Ibrahim	87, 111
Adenuga Fabian Adekoya	559
Ahmad Abdullahi Ibrahim	662
Ahmad Haruna Waziri	240
Aisha Bukar	148, 537
Aisha Jimada	443
Aisha Y. Kassim	777, 838
Ajuzie, Ndubuisi Ebeniza	267
Alága, Ìyábọ̀dé Baliquis	635
Alice Merab Kagoda	100, 301
Aliyu Musa	662
Aminu Malami Sifawa	470
Amirinze, Mike	568,753
Amos Audu	67
Amusa, Samuel Adewale	821
Anthonia U. Ejifugha	578
Archibong, Gertrude A.	513
Asogwa, Chika Euphemia	589
Augustine Akpojevwa Okwoma	616
Ayodele Olufunmilayo Deborah	131
B.S. Mshelia	496
B.T. Olaosebikan	496
Bessong Fidelis Ejar	672, 769
Betty Akullu Ezati	100
C.I. Osiobe	374
C.O. Oviogbodu	153
Caroline Ndakotsu	429
Charles O. Okwuwa	848, 870
Chinyere Amalahu	343
Collins Gboyega Aribamikan	436

www.unimaid.edu.ng

Comfort Onyeneho	722
Danladi Yusuf	164
Edogbanya, Olaronke Helen	821
Ekundayo Babatunde	522,537
Emeka, Helen Oluyemisi	821
Esevosa Augustine Obiunu	390
Eunice C. Victor-Ishikaku	361
Evbie Johnson	697
F.B. Ojeniyi	602
Fadipe Ebenezer Olufemi	735
Faruk Nanoh Bello	240
Felix Ojong	672
Flora Ayodele Ihimekpen	616
Garba Suleiman	863
Garba Uthman Sadiq	545
Glory Osaretin Ofili	408
Grace A. Fayombo	170,313
Grace O. Arojojoye	454
H.N. Ajuar	249
Habiba Alkasim	443
Hajja Kaltum Ali	545
Helen Chibundu Asita	396
Hussaina Ibrahim Ringim	687
Ifeanyichukwu Michael Ababa	182
Jacinta A. Opara	1, 148, 480, 490, 508, 522, 537, 578
James Odia	885
James, Idopise O.	513
Jimada Yahaya Danladi	490
John A. Ikwe	429
John Oluyemi Egbebi	602
Jummai Alfred Onen	369
K. Teman	496
Kamar Abdulkadir	545
Kayode Ezecheal Obafemi	531
Lateefat N. G. Imam	537
Lawas Adamu	232
Lukman A. Lawal	863
Lukman Alhaji Bashir	692
M. A. Abdulkadir	148,490,522
Manju Gupta	257
Margaret N. Githae	508
Martins Otuedon Ajueyitse	616

www.unimaid.edu.ng

Mercy Aruoriwo Ojeje	351
Merry N. Ukegbu	267
Michael Esew	443
Mmejim, Innocent Chima	753
Mmom, Chinyere Prince Chinedu	568
Modupe C. Alasa	421
Mohammad Bala	537
Mohammad Habibur Rahman	415
Mohammed Ali Bizi	692
Mohammed Bashir Tijjani	87
Mohammed Bulama	164
Mohammed Gujbawu	111
Mohammed Yakubu Diyaware	545
Mshelia Buba Siga	67
Mudassir Ibrahim Gatawa	624
Nasiru Yakubu Ikunaiyem	545
Nassir Abba Aji	111
Nelly Sakyi-Hagan	222
Nicholas E. Okwodu	490
Njoku Asoluka	59, 202
Nuta, Barine Ninyorne	753
Nwobi Chigozie Ivor	545
Nwosu Chinedu	59
Obilor, Kingsley	568
Okafor Nneka Ifeoma	182
Okezie A. Ihugba	72
Oko Felix Iduma	202
Oladapo Ademola	808
Olaosebikan Benjamin Tunji	67
Ololube, Nwachukwu Prince	568,753
Olufemi T. Adigun	461
Omeh, Paul Hezekiah	182
Onotere Christiana Abiodun	651
Oresanya Tolulope	808
Osho Zaheed Adekunle	139, 382, 788, 829
Oyeleke Oluniyi	735
Patience Ufuophu Enaibe	390
Paul Yalima Mbaya	10
Pius Ogwuche Owoicho	240
Priscilla Ezema	289
Rajiv Kumar Gupta	257
Rasheedat Abdullahi Jimoh	522
Rebecca Esi Quansah	222
Rhoda Goshie Wusa	429, 443

www.unimaid.edu.ng

Robert Ogbanje Okwori	402
Ruby Hanson	222
Samuel, Oluwakemmi	589
Sarita Chaudhary	33, 192, 281
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The Teaching and Learning Research Team	545
U.A. Ahmed	337
Ukah Anyalewachi Andy	522, 537
Ukwunna Joseph	59, 202
Umar Abba	545
Umesh Chandra Pandey	33
Urhobocha Emmanuel	704
Uthman Lawal Shehu	796
Veronica O. Charles-Unadike	578
Yekini N. Asafe	808

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FOREWORD

Prof. Ibrahim Abubakar Njodi assumed office on the 3rd of June 2014 as Vice-Chancellor of the University of Maiduguri(UNIMAID), a leading Nigerian second generation public University established in 1975 often referred to as a North-East sub-regional hub of academic excellence.The five-year tenure of any administration is an account for stewardship and measure of the successes or outcome of any such an administration, bearing in mind the prevailing situation and circumstances it came into power.

This handbook of research entitled "Outlook on Human Capacity Building and Development" is a collection of several contributions of scholars from varied expertise to honour, appreciate and immortalize Prof. Ibrahim Abubakar Njodi for a distinguished stewardship at University of Maiduguri. Prof. Njodi is widely acknowledged as a leading scholar and astute administrator of proven track record.

The University of Maiduguri under the leadership of Prof. Ibrahim Abubakar Njodi, witnessed unprecedented emergence of new structures; extensive renovation and rehabilitation of dilapidated buildings; introduction of new courses and programmes; re-accreditation of almost all University programmes by the National Universities Commission and other regulating bodies; procurement of laboratory equipment as well as increased participation of the activities of the University by stakeholders in the education sector, government and its agencies, individuals and organizations among others.

Upon his assumption of office as a substantive Vice Chancellor after a keenly contested but controversial selection process, Prof. Ibrahim Abubakar Njodi was able to garner and attract the good will of not only members of the University of Maiduguri(UNIMAID) community but the country and the international community at large towards moving the University to greater heights despite the security challenges that bedeviled Borno State and the northeast sub-region in general.

A major challenge Nigerian tertiary institutions, especially, Nigerian universities, face is building a rewarding town and gown relationship, and external linkages that would be beneficial not only to the system but equally to the staff; especially for training and exposure purposes. Prof. Njodi no doubt added much value to University of Maiduguri through strong linkages he built during his tenure with organizations, institutions and individuals.He was an active, responsible, reliable,trustworthy and a highly resilient but quiet achiever.

Approaching issues of human capacity building from academic and policy perspectives provide enabling opportunity for scholars and practitioners to explore leadership and management.This handbook of research offers an exceptional compedium of contributions from diverse perspectives. It is a valuable and pertinent reference for leaders, consultants, students and the general reader.

Finally, let me congratulate Prof. Ibrahim Abubakar Njodi for a well-deserved honour in recognition of his accomplishments as Vice Chancellor, University of Maiduguri. I wish him more success in his future endeavors. I highly commend the editor,Prof. Jacinta A. Opara and the team of contributors for a work well done in publishing this very important book.

Please read on!

Prof. Akaehomen Akii Ibhadode,FAS.
Vice Chancellor
Federal University of Petroleum Resources, Effurun-Nigeria

PREFACE

Honour is given to whom it is due. I consider it a great privilege to coordinate the publication of this handbook of research in honour of Prof. Ibrahim Abubakar Njodi who has contributed greatly to the advancement of knowledge and development through leadership, accountability and high sense of responsibility."Outlook on Human Capacity Building and Development" is therefore an honour and appreciation of Prof. Njodi, a humble, dedicated and highly respectable administrator in Nigeria.

During his inaugural address to members of Senate of the University of Maiduguri(UNIMAID) on Thursday 10 July 2014, Prof. Njodi clearly spelt out the policy thrust of his administration which include among others, imbibing academic culture; normalizing the University Academic Calendar and admission process; provision of houses for staff; enhancing revenue generation and exploring options of investment in revenue generating ventures and sustenance of existing and introducing new programmes. Also included is staff training and development; maintenance of cordial industrial relations and harmony; staff and student discipline; ensuring the full accreditation of academic programmes and quality control; development of e-library and improving the existing synergy between the Governing Council and Senate among others.He kept his promises and moved the University to greater height in all ramifications of the cardinal mission of a University-Teaching, Research and Community Services.

The developments at UNIMAID are no doubt as a result of the initiatives and innovations brought in by Prof. Ibrahim A. Njodi in the course of his stewardship when he assumed office as Vice-Chancellor of the University. He cleared grounds for these lofty developments for the institution by first soliciting for the good will, support, cooperation and understanding of the immediate community; well-meaning individuals and organizations within and outside Borno State. These visits include to the Shehu of Borno, HRH Alh. (Dr) Abubakar Ibn Umar Garbai Al-Amin El-Kanemi; the Executive Governor of Borno State, His Excellency Honourable Kashim Shettima; Elders in the State; Security outfits as well as visit to the Tertiary Education Trust Fund (TETFUND); Governors of the Catchment States; Petroleum Technology Development Fund; National Universities Commission and the Federal Ministry of Education.The Vice-Chancellor and his management team also visited: Federal Environmental Road Management Agency (FERMA); National Agency for Food Drugs Administration and Control (NAFDAC); National Space Research and Development Agency (NASRDA); Galaxy Backbone an ICT outfit; Nigeria Liquefied Natural Gas (NLNG); Central Bank of Nigeria (CBN); Ecological Fund; Great Green Valley Agency; notable and prominent Alumni of the University in position of authority and other stakeholders in the education and business sectors.

It is on record that the visit to all the above mentioned Ministries, Departments, Agencies and Organizations yielded tremendous good will towards the infrastructural developments the institution witnessed. These include among others, the building, commissioning and handing over ten (10) units of two bedroom houses and a borehole to the University Community by the Borno State Government under the leadership of

Governor Kashim Shettima; construction of a student hostel by the Kano State Government for the University; granting of the sum of two billion, six hundred million naira (N2.6bn) to the University under the High Impact Special Intervention by TETFUND in tranches of four hundred million naira (N400m) for the procurement of Laboratory equipment, vehicles and generators; two hundred million naira (N200m) for the procurement of heavy duty equipment for Geology Department such as caterpillar, graders, utility vehicle and cartography equipment; five hundred million naira (N500m) for the construction of ten (10) staff houses of four bedroom duplex which serves as Professorial Quarters and One billion five hundred million (N1.5bn) for the construction of a befitting Senate building for the University.The University's Senate building is perhaps one of the best in Africa.

As Vice-Chancellor, Prof. Ibrahim Abubakar Njodi in the course of his numerous visits with his management team to the TETFUND advanced for the speedy completion of the Phase 1 of the National Economic Empowerment and Development Strategy (NEEDS) of the Federal Government to Universities in the country. Phase 1 of project include three (3) five hundred and seventy six (576) bed space each of hostels; five hundred (500) capacity Lecture Theatre and one thousand two hundred (1200) capacity e-test library. All these structures have been completed, commissioned and put to use for the advancement of Education in the University.

Furthermore, Prof Njodi was able to draw the attention of the Nigeria Liquefied Natural Gas (NLNG) to the University on the need for it to build and equip an Engineering Laboratory for the Faculty of Engineering. The NLNG did this and handed over to the University. The Central Bank of Nigeria on the other hand is undertook the construction of a Centre of Excellence in Finance and Banking for the University. Suffice to mention here that the Vice-Chancellor was able to influence a Maiduguri based International business mogul and philanthropist, Alhaji Muhammadu Indimi to construct a gigantic complex for the Centre for Distance Learning of the University and an International Conference Center. The complex, a State of the Art was estimated to cost one billion eight hundred million naira (N1.8bn). It comprises of offices, classrooms, conference hall and conveniences.

Prof. Ibrahim Njodi has also to his credit stabilized the University Academic Calendar and sanitized the admission process of the University despite the security challenges that has been bedeviling the State since when he assumed duty. With this development, students of the University of Maiduguri under his administration enjoyed long vacation from June to October of every year something hitherto not enjoyed by students of the University and many other Nigerian Universities. For example, the 2018/2019 Academic session of the University commenced on 2nd of October 2018. This development made it possible for parents/guardians and students alike to plan ahead. This is a sharp contrast from the past where there is no certainty or outright non-compliance to the academic calendar in the planning and execution of programmes and activities of the institution. The normalization of the academic calendar also made it possible for collaborating partners of the University from Europe, Asia, UK and Africa among others to key into the University programmes consistently. These include University of Hildesheim Germany, University of Cape Coast; Universiti Putra Malaysia; International University of Africa, Khartoum and Universiti Kelatan. The University of Maiduguri also has collaboration with the Nigeria Air Force.

It is noteworthy that the University of Maiduguri for some years was not able to conduct Convocation ceremonies for the award of degrees, diploma and certificates as well as prizes to its graduates due to the insurgency that engulfed the northeast sub-region since 2009. However, the University under the stewardship of Prof. Ibrahim Abubakar Njodi as Vice-Chancellor was able to conduct the 22nd-25th combined Convocation ceremony and 40th Anniversary Celebrations in April 2016 and the 23rd Combined Convocation Ceremony of the University on 28th of April 2018. During the 22nd-25th Combined Convocation Ceremony, five (5) sets of graduand were awarded their Degrees, Diploma and Certificates while some prominent personalities were also awarded the University's Honorary Doctorate Degrees. This include the Chancellor of the University, the Alaafin of Oyo, His Imperial Majesty, Oba (Dr) Lamidi Adeyemi lll; the Emir of Kano, HRH (Dr) Muhammadu Sanusi ll; Late former Head of State General Murtala Ramat Mohammed and a re-known Linguist from the University of California Los Angeles, Prof Russell Galen Schulz. During the 23rd Combined Convocation Ceremony held on 28th April 2018, two (2) sets of students for 2015/2016 and 2016/2017, were awarded their Degrees, Diploma and Certificates while three (3) distinguished Academics of the University namely Professor Abdulhamid Abubakar; Prof John Akin Akinnyi and Prof Joseph Alumnona Ijere were appointed Emeriti Professors during the ceremony.

Recall that prior to the 22nd-25th Convocation Ceremony and 40th Anniversary Celebrations, the Vice-Chancellor was able to invite to the University a former President of Federal Republic of Nigeria and an alumnus of the University, Chief Olusegun Obasanjo,GCFR to commission the New Robbing Room and Renovated Convocation Square as well as undertake a facility tour round the University with a view to appreciating the developments recorded in the University since his last visit. The historic visit paved way for other dignitaries from across the country to honour invitations extended to them for activities in not only the State, but the University in particular.

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In another related development, the backlog of original Certificates of graduates of the University for a period of ten(10) years were made ready for collection courtesy of Prof. Njodi and his team of management. The signing of these Certificates no doubt gladdened the hearts of UNIMAID graduates because institutions, organizations, government agencies and parastatals requested for original of Certificates from prospective applicants before being offered appointment or promotions for those already working.

University of Maiduguri had during the period of insurgency in the State witnessed low number of applicants seeking for admission into the University. However, with the gradual return of peace to the State, parents/guardians and perspective students now struggle to gain admission to the University due to the stable academic atmosphere prevailing in the institution. The administration of Prof. Njodi within a period of five (5) years organized several Public Lectures that brought International scholars from Europe and U.S.A. who delivered Lectures on topical issues; "Radio Astronomy" some highlights delivered by Dr. Anita Williams of the University of Manchester U.K on the 18th of January 2016; "Resilience and "Miracle" in Times of Crisis: The Case of The North East Nigeria" delivered by Dr. Marc Antoine Perouse de Montclos of French Institute of Geopolitics University of Paris 8 on the 9th

of May 2017 and "War Across States in Africa" delivered by Prof. James J. Hentz of Virginia Military Institute Department of International Studies Lexington V.A on Thursday 6th July 2017.

Revenue has remained critical to the survival and development of any institution or organization especially in this trying times when governments find it difficult to fulfill its obligations to different sectors of the society due to various competing demands in the face of dwindling resources and paucity of fund. The budgetary allocations to the Education sector by successive governments to Universities and other Tertiary institutions in the country has continuously fallen far below expectations these past years. Therefore, Universities must look inwards to find alternative means of improving both their financial and other revenue base. The Vice-Chancellor within the period of his administration was able to identify key revenue generating units in the University. He re-organized and gave them necessary incentives for successful take-off. The result from these units and outfit was very encouraging as the revenue collected by these organs led to the construction of some housing units for staff, regrading of some road networks within the University; construction of roads; rehabilitation and construction of some projects within the University.

These developments within the University by Prof. Ibrahim Abubakar Njodi did not go un-noticed in Borno State and the country at large. Students' bodies, Associations and Institutions were not left out in honoring him for the indefatigable developmental strides he brought into the University; they include, the League of African Development Students (LEADS); National Union of Borno State Students (NUBOSS) and the Arewa Students Forum. The University of Nigeria Nsukka on its part honored him for his Leadership qualities while the Institute for Research Leadership Technology Abuja inducted him as Fellow, Development Administration because of his honesty, fairness and support for the rule of law and organizational relationship.

Traditional institutions were not left out in conferring honors on the Vice-Chancellor, considering the impact he made within and outside the State towards ensuring the development of education in the north-east sub-region and Nigeria as a whole. The Shehu of Borno, Alhaji(Dr) Abubakar Ibn Umar Garbai Al-Amin El-Kanemi (CFR) conferred on him the title of "Shettima Ilmube" of Borno while the Mai Kaltungo, Alhaji (Engr) Sale Muhammed Umar (OON) on his part honored him with the title of "Dan Rimin Kaltungo".

In recognition of his outstanding and remarkable contributions to nation building through leadership and academic excellence, His Excellency, President Muhammadu Buhari honoured Prof. Ibrahim Njodi with the prestigious National Productivity Order of Merit(NPOM) award on 21st of February 2017. The University of Maiduguri community and indeed stakeholders in the education sector are proud of the modest achievements recorded in the institution by this team player, hardworking, dedicated and courageous Vice-Chancellor.With these infrastructural developments recorded, Prof Njodi is being referred to in some quarters as the "Architect" of modern infrastructural development of the University.

Given the circumstances of insurgence and in the light of Prof. Ibrahim Njodi's general contributions to human capacity building resonating with a great sense of responsibility, integrity and accountability, the African Association for Teaching and Learning(AATL) initiated and coordinated the publication of this book in his honour.

The book is a culmination of some selected papers amongst over 400 submissions by scholars and policy makers from within and outside Nigeria."Outlook on Human Capacity Building and Development" is a collection of contributions (chapters) by various scholars of multidisciplinary background. It is a handbook of research to honour a distinguished scholar in the person of Professor Ibrahim Abubakar Njodi,Vice-Chancellor (2014-2019), University of Maiduguri, a leading Nigerian university who enormously, exceptionally and eminently contributed to human capacity building in Nigeria and the global community at large especially in the context of the dynamics of town and gown.

Professor Jacinta A. Opara, PhD,DSc,FCIA,FASI,FCIP,FBQS,FIMC,CMC
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TABLE OF CONTENTS

Dedication..... iii
Acknowledgments..... iv
Editorial Advisory Board..... v
Research Handbook Team..... vi
Contributors vii
Foreword..... xi
Preface..... xii
Table of Contents..... xvii

Chapter 1
Professor Ibrahim Njodi: A Model of Human Capacity Building and Development
Jacinta A. Opara..... 1

Chapter 2
Conceptualisation of Leadership Models for National Development
Paul Yalima Mbaya..... 10

Chapter 3
Sensitizing the Disadvantaged Groups through Participatory Approaches: IGNOU's Experiences in Madhya Pradesh (India)
Umesh Chandra Pandey, Sarita Chaudhary and Shireesh Pal Singh..... 33

Chapter 4
Online Teaching Strategies for Capacity Building and National Development
Susan K. Wasike..... 46

Chapter 5
Insecurity and Nigerian school system: The Securitization option
Njoku Asoluka, Nwosu Chinedu and Ukwunna Joseph..... 59

Chapter 6
Learning Environment and Developmental Skills of the Child: The School's Provisional Needs
Olaosebikan Benjamin Tunji, Mshelia Buba Siga and Amos Audu..... 67

Chapter 7
On the Concept of Responsibility and Its Importance in Teaching and Learning
Okezie A. Ihugba..... 72

Chapter 8
Advocacy for Integration of ICT in Veterinary Pharmacology Education in Nigerian Universities
Mohammed Bashir Tijjani and Adamkolo Mohammed Ibrahim..... 87

Chapter 9
Higher Qualification but lower jobs: Experiences of women teachers in African primary schools: Lessons from Uganda
Alice Merab Kagoda and Betty Akullu Ezati..... 100

Chapter 10
Enough is Enough of this Conflict. Peace is all We Want!:Advocacy for Mediatization and Digitization of De-Bokoharamization Campaign
Adamkolo Mohammed Ibrahim, Mohammed Gujbawu and Nassir Abba Aji..... 111

www.unimaid.edu.ng

Chapter 11
Teaching School Chemistry Experiments using Indigenous Materials and Processes in Developing Countries: From Improvisation to Innovation
Ayodele Olufunmilayo Deborah..... 131
Chapter 12
Neonatal Motherly Support as the Precursor for Proficient Motor Skills Acquisition Formula for Young Children in Ibadan, Nigeria
Osho Zaheed Adekunle and A.A. Abayomi..... 139
Chapter 13
Catharsis as a Therapy: An Overview on Health and Human Development
Aisha Bukar; Abdulsalam Abdullah, Jacinta A. Opara; M. A. Abdulkadir and Abdulazeez Hassan..... 148
Chapter 14
Child Abuse and Child Labour Practices in Nigeria: Effect on the Girl Child Education
C.O. Oviogbodu..... 153
Chapter 15
Library Information Resources and Service Utilisation by Agricultural Students of Binyaminu Usman Polytechnic Hadejia, Jigawa State, Nigeria
Mohammed Bulama; Danladi Yusuf and Abdulkarim Haruna..... 164
Chapter 16
Active Learning Strategies And Student Learning Outcomes among Some University Students: Lessons From Barbados
Grace A. Fayombo..... 170
Chapter 17
Contributory Pension Scheme and Management of Retirement Benefits in a Nigerian University: An Ethical Appraisal
Ifeanyichukwu Michael Ababa, Okafor Nneka Ifeoma and Omeh, Paul Hezekiah..... 182
Chapter 18
Technologies in Facilitating Professional Growth and Capacity Building
Shireesh Pal Singh and Sarita Chaudhary..... 192
Chapter 19
Rise of Boko Haram, Dwindling National Development and the Looming Decline of Nigeria's Supranational Structure: A Critical Appraisal
Njoku Asoluka, Oko Felix Iduma and Ukwunna Joseph..... 202
Chapter 20
Microscale Science Equipment as a Conceptual and Attitudinal Changing Tool Towards Sustainable Development
Nelly Sakyi-Hagan, Rebecca Esi Quansah and Ruby Hanson..... 222
Chapter 21
Professional Development of Teachers: A Prerequisite for Quality of Teaching in Schools and National Development
A. A. Mbahi and Lawas Adamu..... 232
Chapter 22
Mass Media, Crisis Management and National Development: A Contextual Analysis
Pius Ogwuche Owoicho, Faruk Nanoh Bello and Ahmad Haruna Waziri..... 240

www.unimaid.edu.ng

Chapter 23
E-Mentoring and Capacity Building of Academic Staff: Implications for Child Development
H. N. Ajuar..... 249
Chapter 24
Neurological Perspectives of Joyful Learning in Happy Schools
Manju Gupta, Rajiv Kumar Gupta and Shireesh Pal Singh..... 257
Chapter 25
Web-Based Tools and Instructional Delivery in Selected Secondary Schools in Owerri Education Zone, Nigeria
Ajuzie, Ndubuisi Ebeniza and Merry N. Ukegbu..... 267
Chapter 26
Job Placement, Polytechnic Marketing Graduates and Nigerian Development in the 21st Century
Achilike, Adaku Ngozi..... 273
Chapter 27
Quality Concerns in Higher Education of India: Lessons for Nigeria
Shireesh Pal Singh and Sarita Chaudhary..... 281
Chapter 28
Safety Practices Required to be Adopted in Clothing Construction Laboratory in Nigerian Colleges of Education
Priscilla Ezema and Stella Ngozi Lemchi..... 289
Chapter 29
Role Models and Life Histories of Teacher Trainers as Tools for Effective Teacher Education
Alice Merab Kagoda..... 301
Chapter 30
Active Learning: Creating Excitement and Enhancing Learning in a Changing Environment
Grace A. Fayombo..... 313
Chapter 31
Biological Aspects of Child Growth and Development and their Relevance to the Classroom Teacher
U.A. Ahmed..... 337
Chapter 32
Beyond Formal Learning: Understanding Community of Practice and Collaborative Learning in Academic Library Management
Chinyere Amalahu..... 343
Chapter 33
Relevance of Classroom Activities as Strategy for School Improvement in Contemporary Nigeria
Mercy Aruoriwo Ojeje..... 351
Chapter 34
Systems Approach: Implication for Instructional Design for Quality Teacher Education in Nigeria
Eunice C. Victor-Ishikaku..... 361

www.unimaid.edu.ng

Chapter 35
Women Education in Borno State: Challenges and the Way Forward
Jummai Alfred Onen..... 369
Chapter 36
Ensuring Quality and Standard of Teacher Education for Child Development in Primary Schools in Nigeria
C. I. Osiobe..... 374
Chapter 37
Student Perception on the Impact of Cultism and Gangsterism on their Academic Performance
Osho Zaheed Adekunle..... 382
Chapter 38
Evaluation of Teachers' Attitude Towards the Use of Information and Communication Technology (ICT) in Language Teaching
Patience Ufuophu Enaibe and Esevosa Augustine Obiunu..... 390
Chapter 39
Impact of Classroom Physical Facilities in Teaching and Learning Achievement in Bayelsa State
Helen Chibundu Asita..... 396
Chapter 40
Utilization of E-Learning Technologies by Lecturers in a Nigerian Public University
Robert Ogbanje Okwori 402
Chapter 41
Teacher's Instructional Technique and Students' Achievement and Motivation in Biology in Nsit Atai Local Government Area of Akwa Ibom State
Glory Osaretin Ofili..... 408
Chapter 42
Role of ICT in Open and Distance Education
Mohammad Habibur Rahman..... 415
Chapter 43
Ruminant Animal Husbandry as an Alternative Source of Funding Agricultural Education Programmes for People with Special Needs in Nigeria
Modupe C. Alasa..... 421
Chapter 44
Mobile Communication in Nigeria:Towing the Line Between Total Acceptance and Continued Suspicion
John A.Ikwe, Caroline Ndakotsu and Rhoda Goshie Wusa..... 429
Chapter 45
Maximizing the Benefits of Utilizing ICT in the Teaching of Physical Education and Sports in a College of Education
Collins Gboyega Aribamikan..... 436

www.unimaid.edu.ng

Chapter 46
Factors Affecting Attitude of Teacher Librarians Towards Information Technology in Kaduna, Nigeria
Habiba Alkasim; Michael Esew; Rhoda W. Goshie and Aisha Jimada..... 443

Chapter 47
Positive Impact of "Mastering" Resources in the Teaching/Learning Science to Home Economics Students with Hearing Impairment
Grace O. Arojojoye..... 454

Chapter 48
Computer-Assisted Instruction and Concept Mapping on the Academic Achievement of Students with Hearing Impairment in Ecology in Ibadan, Nigeria
Olufemi T. Adigun..... 461

Chapter 49
An Investigation into the Management and Performance of Adult Literacy Programme in Sokoto Town, Nigeria
Aminu Malami Sifawa..... 470

Chapter 50
Challenges in the Implementation of Universal Basic Education Programme for Capacity Building in Nigeria
Jacinta A. Opara and Nicholas E. Okwodu 480

Chapter 51
Assessment of Power Supply as a Predictor for Patronage of Recreational Centres in Nigeria
Abdulsalam Abdullah, Jimada Yahaya Danladi, Jacinta A. Opara, Suleiman Gambo Usman and M. A. Abdulkadir 490

Chapter 52
Coaches' Leadership Styles: Implications for Athlete's Motivation and Performance
K. Teman., B. T. Olaosebikan and B. S. Mshelia..... 496

Chapter 53
Resource Development for Capacity Building in Public Health: Perspectives on Education and Promotion
Margaret N. Githae and Jacinta A. Opara..... 508

Chapter 54
Social Variables and Moral Development of Public Secondary School Adolescents in Uyo, Nigeria.
Archibong, Gertrude A., and James, Idopise O...... 513

Chapter 55
Preventive Measures of Contraceptives Use Among Women in Nigeria
M. A. Abdulkadir; Jacinta A. Opara; Rasheedat Abdullahi Jimoh; Abdulsalam Abdullah; Ukah Anyalewachi Andy and Ekundayo Babatunde..... 522

Chapter 56
Step-By-Step Deployment of Independent T-Test Using SPSS in Early Childhood Studies
Kayode Ezecheal Obafemi..... 531

www.unimaid.edu.ng

Chapter 57
Revisiting Ageism, Myths and Rights of Older Persons in a Changing Environment
Ukah Anyalewachi Andy, Mohammad Bala, Jacinta A. Opara, Aisha Bukar, Ekundayo Babatunde, and Lateefat N. G. Imam..... 537

Chapter 58
Students' Perception of Best Teaching and Examination Methods: A Survey of Pharmacy Students of a Nigerian Public University.
Garba Uthman Sadiq, Hajja Kaltum Ali, Kamar Abdulkadir, Umar Abba, Nwobi Chigozie Ivor, Mohammed Yakubu Diyaware, Nasiru Yakubu Ikunaiyem and The Teaching and Learning Research Team..... 545

Chapter 59
Violence and Economic Disadvantage: Education as a Veritable Tool in the Nigerian Economy
Adenuga Fabian Adekoya..... 559

Chapter 60
Communication as a Human Resource Management Function and Faculty Job Satisfaction in Tertiary Institutions in Nigeria
Ololube, Nwachukwu Prince; Mmom, Chinyere Prince Chinedu; Amirinze, Mike and Obilor, Kingsley..... 568

Chapter 61
Emotional Health Skills and Capacity Building Among Adolescents in Nigeria.
Anthonia U. Ejifugha; Veronica O. Charles-Unadike and Jacinta A. Opara..... 578

Chapter 62
Women's Utilization of Information and Communication Technologies in Lokoja, Nigeria.
Asogwa, Chika Euphemia and Samuel, Oluwakemmi..... 589

Chapter 63
Alternative Modes of Financing Higher Education in Nigeria: Policy and Administration Options.
F. B. Ojeniyi and John Oluyemi Egbebi..... 602

Chapter 64
Developing the Vocational Interest of the Nigerian Child for Informed Choice of Vocational Careers.
Flora Ayodele Ihimekpen; Augustine Akpojevwa Okwoma and Martins Otuedon Ajueyitse..... 616

Chapter 65
Higher Education for Sustainable Development: Challenges Facing Nigerian Universities and Ways Forward.
Mudassir Ibrahim Gatawa..... 624

Chapter 66
Women Abuse in Yorùbá Novels
Alága, Ìyábọ̀dé Baliquis..... 635

Chapter 67
Effect of Schema and Genre-Based Strategies on the Listening Skills of Students.
Onotere Christiana Abiodun..... 651

www.unimaid.edu.ng

Chapter 68
Exploring the Use of Whatsapp for Academic Purpose Among Yusuf Maitama Sule University Students
Ahmad Abdullahi Ibrahim and Aliyu Musa..... 662
Chapter 69
Rural Development in Nigeria: The Gateway to Improving Standard of Living
Bessong, Fidelis Ejar and Felix Ojong..... 672
Chapter 70
National Language Policy: A Need for an Indigenous Language as a National Language in Nigeria.
Hussaina Ibrahim Ringim..... 687
Chapter 71
Impact of Information and Communication Technology (ICT) in Teaching and Learning of Students in Selected Tertiary Institutions in Yobe State, Nigeria.
Mohammed Ali Bizi & Lukman Alhaji Bashir..... 692
Chapter 72
Between Oil Wealth, Economic Growth and Poverty Level in Nigeria: A Perplexing Paradox.
Evbie Johnson..... 697
Chapter 73
An Evaluation of the Relevance of Higher Education Through Open and Distance Learning in Nigeria: Problems and Prospects
Urhobocha Emmanuel and A. J. Erhuvwujefe..... 704
Chapter 74
The Nigerian Church: An Apparatus for Redeeming the Nation from Socio-Economic Challenges.
A. J. Erhuvwujefe 713
Chapter 75
Influence of Experience, Qualification and Gender on Teachers' Competencies in Integration of Writing Skills in Mathematics Instruction.
Comfort Onyeneho..... 722
Chapter 76
Models of Blended Learning: A Best–Fit Structure in a New Distance Education
Oyeleke Oluniyi & Fadipe Ebenezer Olufemi..... 735
Chapter 77
Virtual Classroom: Learning without Limits
Abel Onwe Oroke..... 746
Chapter 78
Application of Management by Objective for Decision-Making in Senior Secondary Schools in Nigeria.
Nuta, Barine Ninyorne; Ololube, Nwachukwu Prince;
Mmejim, Innocent Chima and Amirize, Mike..... 753
Chapter 79
Secondary Mathematics Education and Capacity Building in Nigeria
Bessong Fidelis Ejar..... 769

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56

STEP-BY-STEP DEPLOYMENT OF INDEPENDENT T-TEST USING SPSS IN EARLY CHILDHOOD STUDIES

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ABSTRACT

Conducting research is a pre-requisite to adding to the body of existing knowledge. The findings of any research can be adjudged trustworthy only if the data gathered are analysed with the appropriate statistical tool(s) because the use of wrong statistical tool(s) can mar the findings of such research. There are many parametric statistical tools which can be used to analyse data especially, when the variables involved in the study are dichotomous categorical independent variable and continuous dependent variable, hence, independent samples t-test is the most appropriate statistical tool required for such analysis. Independent samples t-test is used to compare the mean scores of two different groups of people or conditions. The analysis of independent samples t-test can be computed manually but it is prone to error(s) particularly when large sample is involved. However, the use of computer application can help to avert the potential errors of manual analysis of research data. This paper unfolds the meaning of independent samples t-test, its assumptions underlying the use of independent samples t-test and the step by step procedures for analysing data using computer application of Statistical Package for Social Science (SPSS).

Keywords: Step-by-step Deployment, Independent Samples T-test, SPSS, Early childhood Studies.

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INTRODUCTION

Independent samples t-test is one of the parametric statistical tools used for data analysis especially when the rationale is to compare the mean scores of two independent (unrelated) groups on a continuous dependent variable. However, manual analysis of data involving a large sample size could be time consuming and prone to error(s), hence, necessitating the use of computer application that can make data analysis easy, fast and accurate. The use of computer application for data analysis is a practical necessity particularly when the study involves a large sample size and there is need for accuracy and promptness. Computers are very fast and accurate as they hardly make errors. Very few errors occur and these could be attributed to program logic or errors in data rather than machine errors. Thus, no matter how complex or tedious a computation is, the computer is capable of providing the most accurate results in the fastest possible time (Akinwumiji & Osiki, 2006). Hence, this paper unfolds how to analyse research data with Independent samples t-test using Statistical Package for Social Science (SPSS).

Concept of Independent Samples T-test

An independent samples t-test (or independent t-test) is used when you are comparing the mean difference between two unrelated groups, on the same continuous, dependent variable (Adesoji, 2006; Adewale, 2008; Julie, 2010; Ogundare, 2013). For example, independent t-test could be used to test mean difference between male and female obtainable scores in mathematics achievement test. This paper shows how to carry out an independent t-test using SPSS, as well as interpret and report the results. However, before the introduction of these procedures, it is needful to understand the different assumptions that data must meet in order for an independent t-test to give a valid result.

Assumptions of Independent Samples T-test

Independent samples t-test, been a family of parametric statistics, has certain assumptions that must be met. Adesoji and Babatunde (2006) identified some of the assumptions underlying the use of independent sample t-test. The assumptions include:

- **Normality**: For each group, each dependent variable must represent a normal distribution of scores (Bamgboye, Lucas, Agbeja, Adewale, Ogunleye& Fawole, 2006). Furthermore, any linear combination of dependent variable must be normally distributed. Transformation or removal of outliers can help ensure this assumption. Violation of this assumption may lead to committing Type I error rates (Tabachnick & Fidell, 2001). Non-normal population distributions, especially, those that are thick-tailed or heavily skewed, considerably reduce the power of the test.
- **Independence of observations**: Each observation must be independent of all other observations (Kothari & Garg, 2014). The assumption here means that there is no subject relationship between the scores for one person from others. For example, if one participant's value is known on one variable (competence), then one should not be able to guess the value of that variable for any other particular participants (Nancy, Karen & George, 2005). Also, the participant in either group can influence participants in the other group. No group can influence the other group. This assumption can be met by employing random sampling techniques. Violation of this assumption may lead to an increase in Type I error rates.
- **Homogeneity of variances**: Independent samples t-test may be affected quite a lot if the variances (Standard deviation squared) of the groups to be compared are substantially different especially, if the number of participants in each group differs markedly. Each dependent variable must demonstrate similar levels of variance across each independent variable. Violation of this assumption can be conceptualised as a correlation existing between the variances and the means of dependent variable. This violation is often called 'heteroscedasticity and can be tested for using Levene's test(Cohen, 1988).

Hypothetical Example (Case)

In a study investigating the perception of Caregivers on the use of play for holistic development of children, the researcher may be interested in comparing the perception of male and female caregivers of the use of play for holistic development of children. The null hypothesis for this study will be:

- H_o: There is no significant difference in the perception of male and female Caregivers of the use of play for holistic development of children.

In the submission of Julie (2010), two variables will be needed in carrying out such analysis:

- One categorical, independent variable (Male/female)
- One Continuous, dependent variable (perception scores)

Since the researcher is interested in comparing between two independent groups (male and female Caregivers) on a continuous dependent variable, with the hope that the assumptions (Independent observation, level of measurement, randomisation, normality, homogeneity of variance) underlining the use of parametric statistical tests are met, then independent samples t-test will be the most appropriate statistical tool to be used to test the stated hypothesis.

The procedures involved in doing this are:

- Having open the SPSS application, Click on the variable view

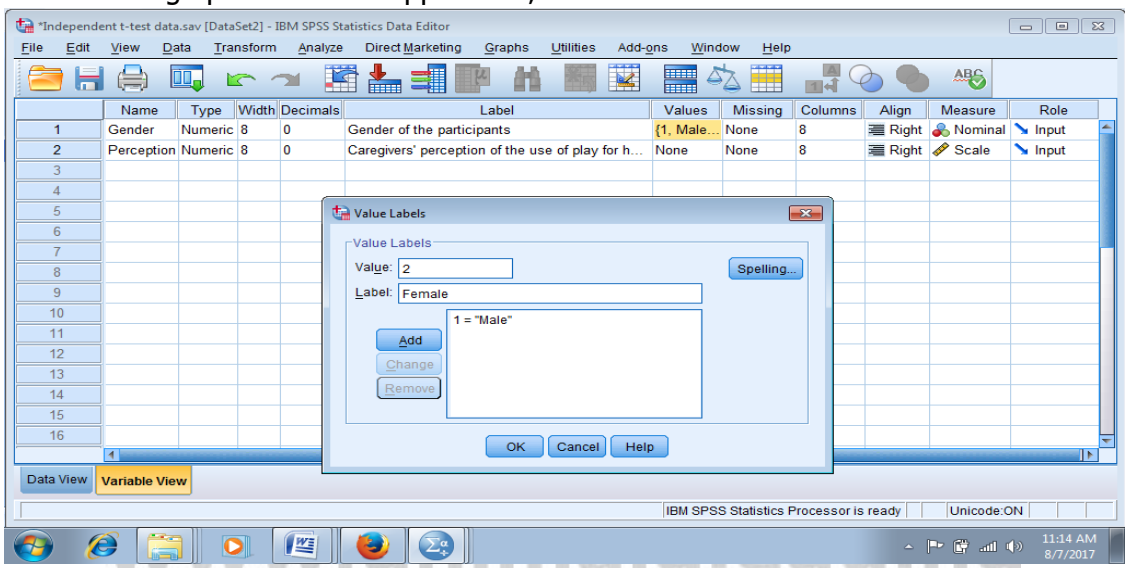


Figure 1: Variable view of SPSS

- Under name, title the first column as 'Gender' and the second column as 'perception'
- The column for label allows for full description of the name column because name column is sensitive to some character. Hence, you can fully describe the content of name column in the label column.
- After that, you can go to the 'value' column. The data view of the SPSS only deals with numeric data. Hence, you have to convert the alphabetic data to numeric data. When you click on the value column of gender, a dialogue box (value labels) will appear requesting you to convert the alphabetic data to numeric data (Male=1 and Female=2). Then click 'Ok'.
- Then go to 'Measure' and select nominal for gender and scale for perception. That completes the variable view of the SPSS as depicted by figure 1.
- Click on data view to input your data.
- Input your data and make sure there is no outlier. The data view is shown in figure 2

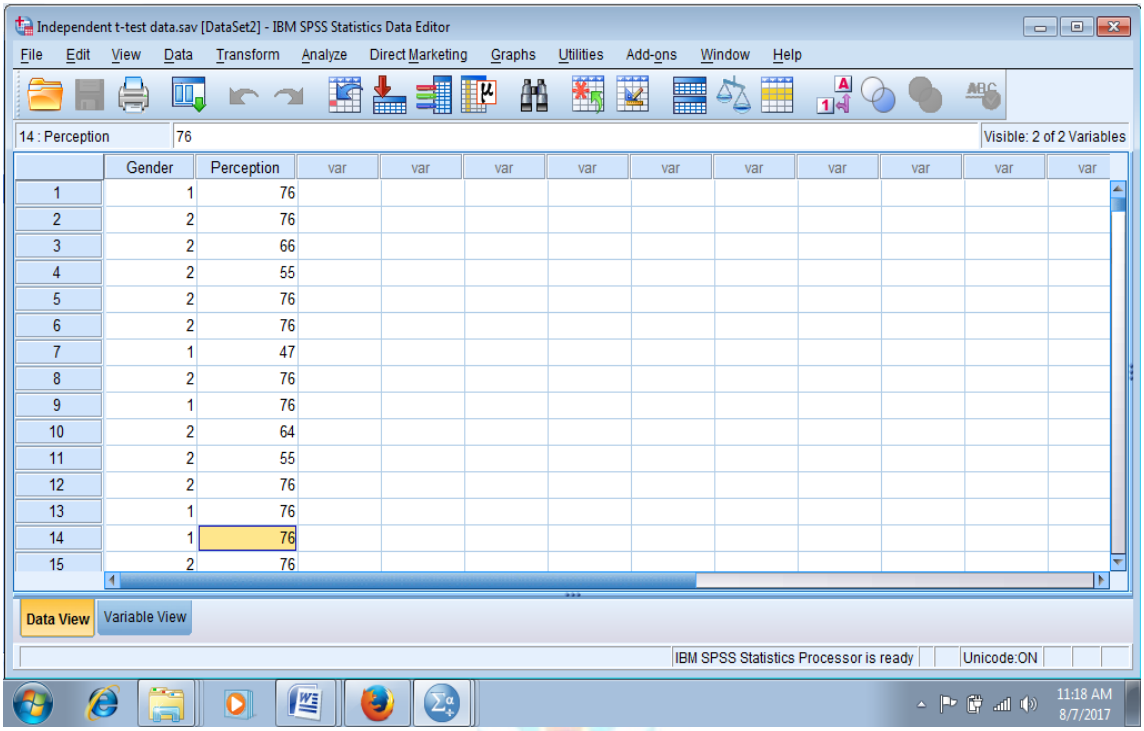


Figure 2: Data view of SPSS

- Having input your data, click on Analyse on the Menu bar.
- A dialogue box will display, then click on 'Compare mean'. Another dialogue box will pop up, click on Independent samples t-test. This is shown in Figure 3

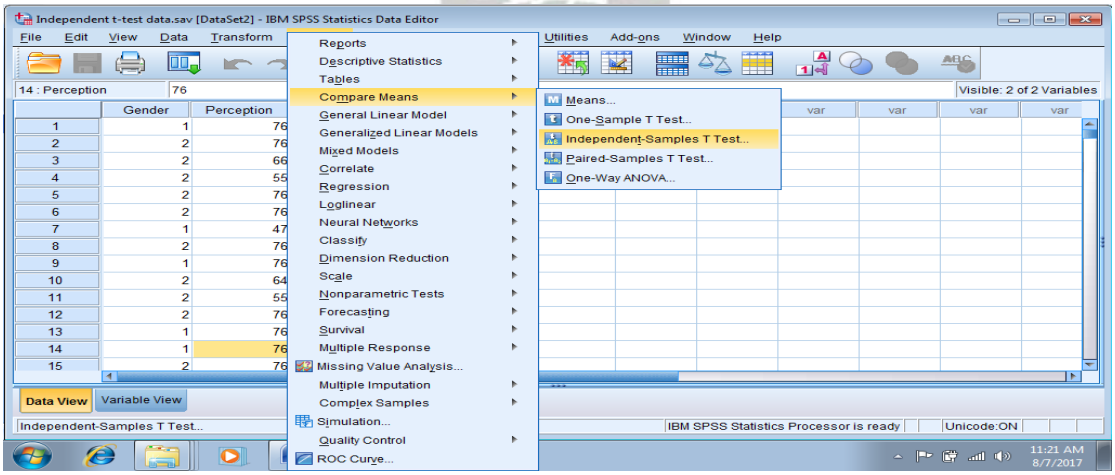


Figure 3: Location of Independent Samples t-test on SPSS

- After clicking on 'Independent sample t-test', another dialogue box will appear.

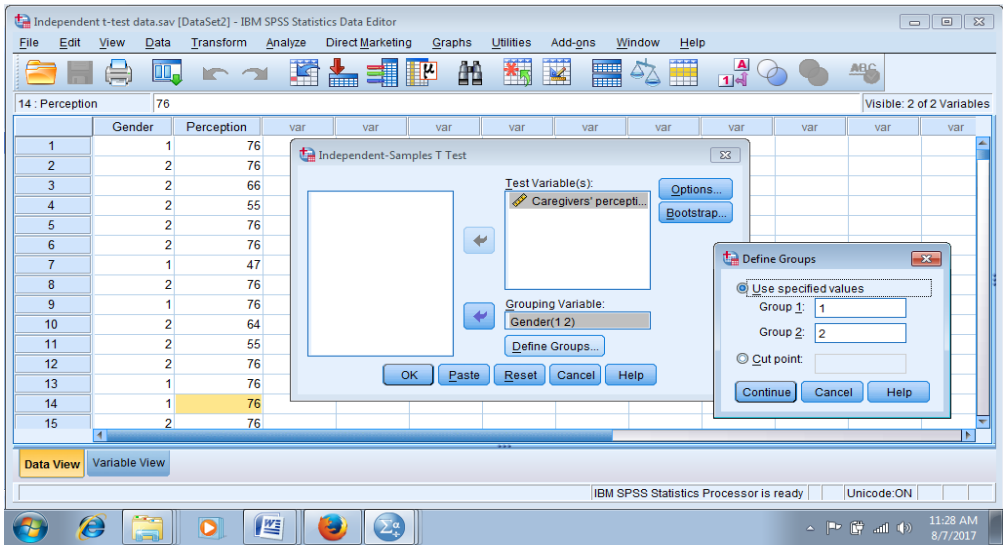


Figure 4: Definition of variables

- The contents of the box include variables' list, test variable(s), grouping variable, define groups, option, bootstrap, ok, paste, reset, cancel and help.
- Select the independent variable (gender) and click the arrow directing to the grouping variable. Two question marks will automatically appear at the front of the gender, requesting for the definition of the grouping variable.
- Click on 'define group' and a box will appear requesting value specification for the two groups.
- Input the values you use in labeling the variable in the variable view (Male=1 and Female=2). Type 1 in group 1 and type 2 in group 2, then click on 'continue'. However, if you cannot remember the codes used, right click on the variable name and then select variable information from the pop-up box that will appear. This will list the codes and labels.
- Select the dependent variable (Perception) and click the arrow directing to the test variable(s). Then click on 'OK'.This is shown in Figure 4.
- Having click on 'OK', the output of the analysis will be generated and displayed as presented in figure5

Interpretation of Analysis Output

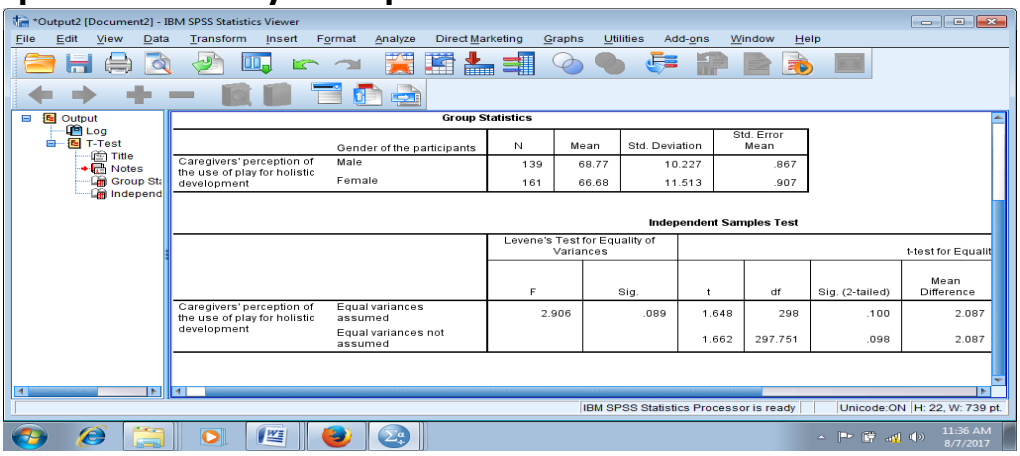


Figure 5: SPSS output

The output encompasses two tables namely: group statistics and Independent samples test. Group statistics is summarily describing the groups involved in the comparison; sample size; standard deviation and standard error mean. These will be needed in reporting your research finding. The table labeled 'Independent samples t-test', present facts from which you will determine either to reject or not to reject the already stated hypothesis. Since homogeneity of variance between groups is one of the assumptions underlining the use of independent t-test (Julie, 2010), the facts (t, df, sig {2-tailed}) against equal variances assumed are those that will be required in making your decision. It is important to note that if the sig. (2-tailed) value is less than .05, the null hypothesis will be rejected and vice-versa. In the figure 5, it is apparent that the sig. (2-tailed) value is .100 which is greater than .05. Hence, the hypothesis is not rejected but retained.

Reporting of Analysis

Hypothesis: There is no significant difference in the perception of male and female Caregivers of the use of play for holistic development of children.

Table 1: Summary of independent samples t-test Analysis showing the difference in the perception of male and female Caregivers of the use of play for holistic development of children

Variable	N	Mean	Std. Deviation	T	df	Sig.	Remark
Male	139	66.77	10.227	1.648	298	.100	Not Significant
Female	161	66.68	11.513				

Table 1 shows the difference in the perception of male and female Caregivers of the use of play for holistic development of children. There was no significant difference in the perception of male and female Caregivers of the use of play for holistic development of children ($t_{cal.}$ = 1.648; df = 298; P > 0.05). The hypothesis is therefore not rejected in the light of the result since the significant value is greater than 0.05.

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CONCLUSION

Analysis of data with independent samples t-test is easy and accurate with the use of SPSS. However, the use of the statistical test should not be abuse as there are certain assumptions which must be met before its adoption for use. It is statistically wrong to use independent samples t-test without meeting the assumptions underlying its use.

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