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**ENHANCING YOUTH INVOLVEMENT IN AGRIBUSINESS : THE ROLE OF
ATTITUDES, ICT, INNOVATION AND TRAINING IN MALAYSIA**

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**DOCTOR OF PHILOSOPHY
UNIVERSITI UTARA MALAYSIA
DECEMBER 2024**

**ENHANCING YOUTH INVOLVEMENT IN AGRIBUSINESS : THE ROLE OF
ATTITUDES, ICT, INNOVATION AND TRAINING IN MALAYSIA**

By

AHMAD PERBUANA ISMAIL



**Thesis Submitted to
Othman Yeop Abdullah Graduate School of Business,
Universiti Utara Malaysia,
In Fulfilment of the Requirement for the Degree of Doctor of Philosophy**



Kolej Perniagaan
(College of Business)
Universiti Utara Malaysia

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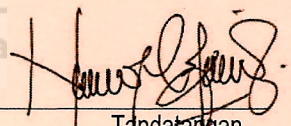
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(Title of the Thesis / Dissertation) : **Enhancing Youth Involvement in Agribusiness: The Role of Attitudes, ICT, Innovation and Training in Malaysia**

Program Pengajian
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ABSTRACT

Youth involvement in agribusiness is among the major challenges in many countries, including Malaysia. The government and agencies have developed strategic initiatives to increase youth involvement in agribusiness because it is one of the largest contributors to Malaysia's GDP and provides business opportunities, particularly for youth. However, youth participation in agribusiness activities is still low. This study aimed to investigate the relationship between attitude, information and communication technology (ICT), innovation, and knowledge in enhancing youth involvement in agribusiness in Malaysia. Additionally, it explores the moderating role of training in the relationship between attitudes, ICT, innovation, knowledge, and youth involvement in agribusiness. The research is grounded in the Technology Acceptance Model (TAM), the Theory of Planned Behaviour (TPB), and the Resource-Based View (RBV) theory to provide a theoretical foundation for examining these variables. A quantitative study surveyed 400 randomly selected Malaysian youths, and assessed their attitudes toward agriculture, ICT, knowledge, and innovation. The analysis was carried out using SPSS Version 22 and SmartPLS 3.0. The findings indicated that attitudes, ICT, and training have a positive and significant impact on youth involvement in agribusiness, while innovation and knowledge did not show significant influence. Moreover, the moderating effect of training on the relationships between attitude, ICT, and innovation is not significant. Conversely, training had a positive moderating effect on the relationship between knowledge and youth involvement in agribusiness. These findings recommended the need to promote positive perceptions and benefits of venturing into agribusiness and helping youth access ICT, such as smart farming, by introducing training programmes tailored to build the capacity of youth in modern agribusiness technology. Furthermore, through collaboration between private businesses and educational institutions, the government should regularly monitor and improve these initiatives based on feedback to ensure long-term success in engaging youth in agribusiness.

Keywords: Attitude; Information and communication technology; Training; Youth; Agribusiness

ABSTRAK

Penglibatan belia dalam perniagaan tani adalah antara cabaran utama di banyak negara, termasuk Malaysia. Kerajaan dan agensi telah membangunkan inisiatif strategik untuk meningkatkan penglibatan belia dalam perniagaan tani kerana ianya merupakan salah satu penyumbang terbesar kepada KDNK Malaysia dan menyediakan peluang perniagaan, khususnya untuk belia itu sendiri. Bagaimanapun, penyertaan belia dalam aktiviti perniagaan tani masih rendah. Kajian ini bertujuan untuk mengkaji hubungan antara sikap, teknologi maklumat dan komunikasi (ICT), inovasi, dan pengetahuan dalam meningkatkan penglibatan belia dalam perniagaan tani di Malaysia. Selain itu, ianya meneroka peranan penyederhanaan latihan dalam hubungan antara sikap, ICT, inovasi, pengetahuan, dan penglibatan belia dalam perniagaan tani. Penyelidikan ini berasaskan Model Penerimaan Teknologi (TAM), Teori Tingkah Laku Terancang (TPB), dan Teori Pandangan Berasaskan Sumber (RBV) bagi menyediakan asas teori untuk mengkaji pembolehubah-pembolehubah ini. Kajian kuantitatif meninjau 400 belia Malaysia yang dipilih secara rawak, dan menilai sikap mereka terhadap pertanian, ICT, pengetahuan, dan inovasi. Analisis dijalankan menggunakan SPSS Versi 22 dan SmartPLS 3.0. Dapatan kajian menunjukkan bahawa sikap, ICT, dan latihan mempunyai kesan positif dan signifikan terhadap penglibatan belia dalam perniagaan tani, manakala inovasi dan pengetahuan tidak menunjukkan pengaruh yang signifikan. Selain itu, kesan penyederhanaan latihan terhadap hubungan antara sikap, ICT, dan inovasi adalah tidak signifikan. Sebaliknya, latihan memberi kesan sederhana yang positif terhadap hubungan antara pengetahuan dan penglibatan belia dalam perniagaan tani. Penemuan ini mencadangkan keperluan untuk menggalakkan persepsi positif dan faedah menceburi perniagaan tani dan membantu belia mengakses ICT, seperti pertanian pintar, dengan memperkenalkan program latihan yang disesuaikan untuk membina kapasiti belia dalam teknologi perniagaan tani moden. Seterusnya, melalui kerjasama antara perniagaan swasta dan institusi pendidikan, kerajaan perlu sentiasa memantau dan menambah baik inisiatif ini berdasarkan maklum balas untuk memastikan kejayaan jangka panjang dalam usaha melibatkan belia dalam perniagaan tani.

Kata kunci: Sikap; Teknologi maklumat dan komunikasi; Latihan; Belia; Perniagaan Tani

ACKNOWLEDGEMENT

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

In the name of Allah, the Most Compassionate, the Most Merciful.

All praise is due to Allah, the Lord of all the worlds, who has bestowed His mercy, guidance, and strength to complete this thesis. May blessings and peace be upon Prophet Muhammad SAW, the seal of the prophets, who has provided exemplary guidance and inspiration for humanity's life.

I, Ahmad Perbuana bin Ismail, solemnly acknowledge and express my deepest gratitude to my Late Supervisor, Professor Madya Dr. Amlus bin Ibrahim and my esteemed supervisor, Professor Madya. Dr. Nurul Azita binti Salleh for their exceptional mentorship, wisdom, and unyielding support that has been the cornerstone of my success.

My sincere appreciation also goes to my friends who provided unwavering support and understanding during the ups and downs of this challenging process.

Most importantly, I would like to express my deepest appreciation to my late mother Puan Maimunah binti Yusoff and my late father Encik Ismail bin Mahmood and my siblings for their prayers and spiritual support throughout the journey and always give encouragement and support to accomplish this thesis.

Lastly, I would like to dedicate this PhD thesis to my beloved wife Puan Azierra binti Che Ab. Aziz and my children, whose unwavering support, understanding, and patience have been a constant source of strength for me to complete this study.

In conclusion, this thesis is not solely my achievement but a collective effort of all those who have supported and contributed to my academic and personal growth.

Thank you.

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LIST OF ABBREVIATIONS

ABBREVIATIONS	FULL DISCRIPTION
AMOS	Analysis of Moment Structures
ATTD	Attitude
AVE	Average Variance Extracted
CMV	Common Method Variance
CR	Composite Reliability
CTA	Technical Centre for Agriculture and Rural Cooperation
DAN1.0	Dasar Agromakanan Negara 1.0 (2010-2020)
DAN2.0	Dasar Agromakanan Negara 2.0 (2021-2030)
DOA	Department of Agriculture
DVS	Department of Veterinar Services
FAO	Food and Agriculture Organization
FOA	Farmers Organization Authority
GDP	Gross domestic product
ICT	Information and Communication Technology
IFAD	International Fund for Agriculture Development
ILO	International Labour Organization

INN	Innovation
INVOLV	Youth Involvement
IS	Information System
IT	Information Technology
KNOW	Knowledge
LEISA	Low-External-Input and Sustainable Agriculture Magazine
LPP	Lembaga Pertubuhan Peladang
MIJARC	Mouvement International De La Jeunesse Agricole Et Rurale Catholique
MIS	Management Information System
MOA	Ministry of Agriculture and Agri Based
NEW	New Economic Model
NYEP	National Youth and Employment Programme
OECD	Organisation for Economic Co-operation and Development
PAFNET	Pacific Agriculture and Forestry Network
PEMANDU	Performance Management and Delivery Unit
PLS	Partial Least Squares
SEM	Structural Equation Modeling

SEM	Structural Equation Modelling
SME	Small and Medium Enterprise
SMES	Small and Medium-Sized Agro-Based Enterprises
SPSS	Statistical Package of Social Sciences
TAM	Technology Acceptance Model
TPB	Theory of Planned Behavior
TRA	Theory Resources Base View
TRNG	Training
UN	United Nations
USAID	United States Agency for International Development
UTAUT	Theory of Acceptance and Use of Technology
WDR	World Development Report
YARD	Youth in Agriculture and Rural Development
YIAP	Youth in Agriculture Program

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CHAPTER ONE

INTRODUCTION

1.1 Introduction

Agriculture is the backbone of human civilization and is fundamental to poverty eradication and economic development in the 21st century. It is estimated that 75 per cent of the global population reside in rural areas and earn their livelihoods through farming and related activities. In fact, agriculture is the backbone of developing countries' economies, contributing to between 20 and 30 per cent of the GDP of countries such as Nigeria, Egypt and Kenya, Mutinda, (2023). In Malaysia, agriculture holds a significant role in the country's economy, playing the role as a food supplier, employment provider, export earner, and provider of raw materials for agro-based industries, Penang Institute, (2020). The sector can be broadly classified into two sub-sectors, namely the plantation and smallholder farming. The plantation sub-sector concentrates on large-scale production of commodities such as palm oil, rubber, and cocoa, whereas smallholder farming is a more traditional farming method primarily practiced by small-scale farmers who produce food crops such as paddy, vegetables, fruits, meats, and fish, Kamaruddin, Ali, & Saad, (2013) ; Dardak, (2023). As a third engine economy growth for Malaysia, Dardak, (2021), the agriculture sector's contributes to economic development by producing food and raw materials to non-agricultural sector, and by creating demand for goods produced in non-agricultural sector. In 2021, the agriculture sector contributed about RM99.00 billion (US\$21.30 billion) to the national Gross Domestic Product (GDP), Department of Statistics Malaysia, (2022). It represented 7.1% of the Malaysia's GDP which amounted to RM1,386.70 billion (US\$298.42 billion). Palm oil was the major contributor to the GDP

REFERENCES

- A., K., Rohila., Krishan, Yadav., B., S., Ghanghas. (2017). Role of Information and communication technology (ICT) in agriculture and extension. *Journal of Applied and Natural Science*, doi: 10.31018/JANS.V9I2.1328
- Aaker, D.A., Kumar, V., & Day, G.S. (2007). *Marketing research* (9th ed.). Wiley.
- Abas, M. A., Mohd Fuad, A. S., Md Nor, A. N., Mohd Amin, M. F., Hassin, N. H., Yusoff, A. H., ... Wee, S. T. (2020). Paddy Farmers Perceived the Socio-Economic Impacts of Climate Change: A Case Study in Pasir Mas, Kelantan. *IOP Conference Series: Earth and Environmental Science*, 549(1). <https://doi.org/10.1088/1755-1315/549/1/012075>
- Abdelwahab, M. (2019). Youth and agriculture: Key challenges and concrete solutions. Food and Agriculture Organization of the United Nations
- Abdul Aziz Abdullah & Norhlilmahin Naem Suleiman, (2013). Factors that Influence the Interest of Youths in Agricultural Entrepreneurship. *International Journal of Business and Social Sciences*.Vol. 4 (3).
- Abdullah, A. A., & Sulaiman, N. N. (2013). Factors That Influence the Interest of Youths in Agriculture Entrepreneurship. *International Journal of Business and Social Science*, 4(3), 288–302.
- Abdullah, F. A., & Samah, B. A. (2013). Factors impinging farmers' use of agriculture technology. *Asian Social Science*, 9(3), 120–124. <http://doi.org/10.5539/ass.v9n3p120>

- Abdullah, F., & Abu Samah, B. (2014). Factors influencing inclination toward agriculture entrepreneurship among students in agriculture learning institute. *Asian Social Science*, 10(2), 273–278. <https://doi.org/10.5539/ass.v10n2p273>
- Abdullah, N. (2016). Contribution of the agriculture sector to Malaysia's economic growth. *The Journal of Developing Areas*, 50(6), 301-311.
- Abdullahi, H. O., Hassan, A. A., Mahmud, M., & Ali, A. F. (2021). Determinants of ICT adoption among small scale agribusiness enterprises in somalia. *International Journal of Engineering Trends and Technology*, 69(2), 68–76. <https://doi.org/10.14445/22315381/IJETT-V69I2P210>
- Abdulsalam-Saghir P.B., Aromolaran K.A. and Seigbe S.A. (2008) Perception of Male and Female Rural Youths towards agriculture as a vocation in Obafemi-owode Local Government Area of Ogun State. Proceedings of the 17th annual conference of Nigerian Rural Sociological Association, held at National Root Crop Research Institute, Umudike, Abia State, Nigeria. 19th-22nd August, 2008 pg 49-55
- Abdulwahab, L., Dahalin, Z. M., & Galadima, M. B. (2011). Data screening and preliminary analysis of the determinants of user acceptance of telecentre. *Journal of Information Systems: New Paradigms*, 1(1), 11–23.
- Abila, P., Jagero, N., & Omwenga, J. (2017). Empowering youth through dairy entrepreneurship: The use of social cognitive theory in designing and evaluating a training program in Kenya. *Journal of Agricultural Education and Extension*, 23(5), 421-436.

Abu Samah, B., Shaffril, H. A. M., Hassan, M. S., Abu Hassan, M., & Ismail, N. (2009).

ICT Contribution in Increasing Agro-based Entrepreneurs Productivity in Malaysia. *J. Agric. Ext. Soc. Sci*, 5, 93-98

Abubakar, A., Saidin, S. Z., & Ahmi, A. (2017). Performance Management Antecedents and Public Sector Organizational Performance: Data Screening and Preliminary Analysis. *International Journal of Academic Research in Business and Social Sciences*, 7(9), 19–31. <https://doi.org/10.6007/ijarbss/v7-i9/3306>

Adebayo, K., M. Awotunde, P.A. Okuneye and U.V. Okonowo (2006), “Assessment of Secondary School Agriculture Education Programme in the Rural Areas of Imo State”, *Nigerian Journal of Rural Sociology*, 6(1&2): 13–22.

Adegboye, M.A. and Eniolorunda, P.A. (2006) Participation of Youths in self- help efforts in Jos south Local Government Area of Plateau state. Proceedings of the 40th annual conference of Agriculture Society of Nigeria (ASN), held at National Root Research Institute, umudike, Abia State, Nigeria. October 16-20, 2006; 2272-275

Adegboye, M.A.; Oyesola, O.B and Eniolorunda, P.A. (2010) Improved youths participation in agriculture as a strategy towards sustainable food security in Nigeria. Proceedings of the 44th Annual Conference of Agricultural Society of Nigeria (ASN). Held at Lagoke Akintola University of Technology (LAUTECH), Ogbomoso. October 2010. Pp 475-478

Adekunle, O.A., Adefalu, L.L., Oladipo, F.O., Adisa, R.S. and Fatoye, A.D., 2009. Constraints to youths’ involvement in agricultural production in Kwara State, Nigeria. *Journal of agricultural extension*, 13(1).

- Adelodun, O. B. (2015). Participation of youth in aquaculture. *Journal of Aquaculture Research and Development*, 6(12), 386. <http://doi.org/10.4172/2155-9546.1000386>
- Adenle AA, Manning L, Azadi H (2017) Agribusiness innovation: a pathway to sustainable economic growth in Africa. *Trends Food Sci Technol* 59:88–104. <https://doi.org/10.1016/j.tifs.2016.11.008>
- Adewale JG, Oladejo JA, Ogunniyi LT (2005). Economic Contribution of Farm Children to Agricultural Production in Nigeria: A case study of Ekiti State *J. Soc. Sci.* 10(2): 149 – 152
- Adewale, M., Ogunmodede., Mary, O., Ogunsanwo., Victor, M., Manyong. (2020). Unlocking the Potential of Agribusiness in Africa through Youth Participation: An Impact Evaluation of N-Power Agro Empowerment Program in Nigeria. *Sustainability*, doi: 10.3390/SU12145737
- Adnan, S. S., Zaman, N. B. K., & Othman, N. M. I. (2022). Factors Influencing the Adoption of Information and Communication Technology (ICT) among Oil Palm Settlers in Felda Wilayah Alor Setar, Kedah: A Survey. *IOP Conference Series: Earth and Environmental Science*, 1059(1). <https://doi.org/10.1088/1755-1315/1059/1/012012>
- Adu-Gyamfi, R., Dorward, P., & Seetharam, A. (2019). Youth, agriculture, and information communication technologies in Ghana. *Journal of Rural Studies*, 65, 139-150.

- Afande, Francis Ofunya, William Nderitu Maina, and Mathenge Paul Maina. 2015. "Youth Engagement in Agriculture in Kenya: Challenges and Prospects." *Journal of Culture, Society and Development* 7: 4–19.
- Afere, L., Adedeji, O., Baker, V., Barbou des Courieres, C., Mabonga, L., Ocansey, M., & Neate, P. (2019). Making agriculture attractive to young people, 1–8. Retrieved from www.farmentoschoolafrica.
- Afolabi M. (2012). The Use of Information and Communication Technology in Agriculture Research in Nigerian Universities. *PNLA Quarterly*, the official publication of the Pacific Northwest Library Association. Pp:1-12.
- Afolabi, B., Danladi, J., & Ilugbusi, S. (2022). Determinants of youth engagement in agribusiness: Implications for sustainable agricultural practices in southwest. *Fuoye Journal of Management, Innovation and Entrepreneurship*, 1(1), 18–43.
- Agahi, H., Moradi, K., & Afsharzade, N. (2012). Agricultural graduate students' attitudes towards sustainable agriculture: a case of Razi University, Iran. *Annals of Biological Research*, 3(8), 4007–4011.
- Agarwal, R., and J. Prasad (1999) "Are Individual Differences Germane to The Acceptance of New Information Technologies?" *Decision Sciences* 30(2), pp. 361-391.
- Agriculture and Current Research* 7 (2): 904–908. doi:10.32474/CIACR.2019.07.000256.
- Agriculture M of. Third National Agriculture Policy (1998-2010). 2010;1–20.

- Aguinis, H., Gottfredson, R. K., & Joo, H. (2013). Best-Practice Recommendations for Defining, Identifying, and Handling Outliers. *Organizational Research Methods*, 1-32. doi: 10.1177/1094428112470848.
- Agyapong, D. A., & Asare, R. (2022). Youth engagement in agriculture: Innovations and implications for sustainability. *Journal of Agricultural Sciences*, 14(3), 255-270.
- Ahaibwe, G., Mbowa, S., & Lwanga, M. M. (2013). Youth Engagement in Agriculture in Uganda : Challenges and Prospects, 7(106), 1–48. Retrieved from http://www.eprc.or.ug/pdf_files/Youth-Agriculture-Uganda-Challenges-Prospects.pdf
- Ahmad, A. A., Haimid, M. T., & Mohd Amir, H. (2020). The Effectiveness of the Government Program to Young Fishermen in Malaysia. *Fftc-Ap*, 1–8. Retrieved from <https://ap.fftc.org.tw/article/2635>
- Ahmad, A. R., Wan Yusoff, F. W., Md Noor, H., & Ramin, A. K. (2012). Preliminary study of rural entrepreneurship development program in Malaysia. *Journal of Global Entrepreneurship*, 2(1), 1–8.
- Ahmad, M., Akhtar, M. A., & Riaz, B. (2005). Factors affecting training of young farmers for the adoption of new technology. *International Journal of Agriculture and Biology*, 7(1), 107-109.

- Ahmad, N. M., Supaat, D. I., Wook, I., Tagoranao, M. S., & Rahman, N. A. A. (2018). Malaysians' Reluctance to Work in Local 3D Sectors: A Preliminary Review. *The Journal of Social Sciences Research*, (4), 220-230.
doi.org/10.32861/jssr.sp4.220.223. Retrieved from: <https://ideas.repec.org/a/arp/tjssrr/2018p220-230.html>
- Ahmad, Nizar, Yaakub., Hafizan, Mohamad, Naim., Siti, Zanariah, Ahmad, Ishak., Awang, Ideris, Awang, Daud., Muhamad, Faiz, Arshad. (2023). Youth participation in the Sago industry: A Malaysian case study. *Geografia*, doi: 10.17576/geo-2023-1901-17
- Ahmad, T. M. A. T., & Sunthralingam, C. (2009). Transformation and economic growth of the Malaysian agriculture sector. *Economic and Technology Management*, 4, 1–10.
- Ahmed, I., & Ishtiaq, S. (2021). Reliability and validity: Importance in Medical Research.. *JPMA. The Journal of the Pakistan Medical Association*, 71 10, 2401-2406 .
<https://doi.org/10.47391/JPMA.06-861>.
- Ahrari, S., Krauss, S.E., Ariffin, Z. and Meng, L.K. (2019), "“Making a Difference ... on My Own Terms”: Motivational Factors of Youth Involvement in Social Entrepreneurship in Malaysia", Dana, L.-P. and Ratten, V. (Ed.) *Societal Entrepreneurship and Competitiveness*, Emerald Publishing Limited, Leeds, pp. 227-246. <https://doi.org/10.1108/978-1-83867-471-720191015>

- Ahuja, M. and J. Thatcher (2005), "Moving beyond Intentions and toward the Theory of Trying: Effects of Work Environment and Gender on Post-Adoption Information Technology Use", *MIS Quarterly*, 29, 3, pp. 427-459.
- Aina LO. (2004). *Library and information science text for Africa*. Ibadan: Third World Information Service.
- Ajaja O.P. (2008) Students attitude towards senior secondary school Agricultural science. *International Journal of Social and Policy Issues*. 5(2) : 52-64.
- Ajibefun, I.A. (2006). Linking socio-economic and policy variables to technical efficiency of traditional Agriculture production: Empirical evidence from Nigeria. Paper presented at International Association of Agriculture Economist' Conference. Gold Coast, Australia, August 12-26.
- Ajzen, I and Fishbein, M (1980), —Understanding Attitudes and predicting Social Behaviourl, Prentice-Hall, Englewood Cliffs, NJ.
- Ajzen, I. (2011). The theory of planned behaviour: reactions and reflections. *Psychology & Health*, 26(9), 1113–1127.
- Ajzen, I., 1991. The theory of planned behavior. *Organizational behavior and human decision processes*, (50), pp.179–211.
- Ajzen, L., & Fishbein, M. (1997). Attitudes behavior relations: A theoretical analysis and review of empirical research. *Psychology Bulletin*, 84, 888-918.

- Akaninyene, O., Essien, A., & Ejeje, A. (2022). Determinants of Youths Participation in Agribusiness in Akwa Ibom State, Nigeria. *International Journal of Pure Agricultural Advances*, 6(1), 1–8. <https://doi.org/10.55284/ijpaa.v6i1.652>
- Aker, J. C. (2011). Dial "A" for Agriculture: A Review of Information and Communication Technologies for Agricultural Extension in Developing Countries. *Agricultural Economics*, 42(6), 631-647.
- Aker, J. C., & Mbiti, I. M. (2010). Mobile Phones and Economic Development in Africa. *Journal of Economic Perspectives*, 24(3), 207-232.
- Akintonde, J. O. (2012). Constraints to Adoption of Agriculture Innovations among Women Farmers in Isokan Local Government Area , Osun State Department of Agriculture Extension and Rural Development Ladoke Akintola University of Technology, 2(8), 57–61.
- Akpan, U. G. (2010). Sustainable agriculture and food security: challenges and opportunities for Nigeria. *Journal of Agricultural Extension*, 14(1), 1-13.
- Akrong, R., Mbogoh, S. G., & Irungu, P. (2020). Youth agripreneurship in the horticultural value-chain: The case of small-scale mango farmers in Southern Ghana. *African Development Review*, 32, S68-S77.
- Alao, O., Torimiro, D., & Ayinde, J. (2015). Perception of Youth Roles in Agriculture Innovation Management System among Arable Crop Farmers in Farming Communities of Osun State, Nigeria. *American Journal of Experimental Agriculture*, 5(2), 124–133. <http://doi.org/10.9734/AJEA/2015/11608>

- Ali, F., Tan, Y. M., & Thabet, O. (2020). Youth's Intention to Venture into Agriculture Sector. *Malaysian Journal of Agricultural Economics*, 29(1), 1–15.
<https://doi.org/10.36877/mjae.a0000162>
- Ali, J. Factors Affecting the Adoption of Information and Communication Technologies (ICTs) for Farming Decisions. *J. Agric. Food Inf.* 2012, 13, 78–96. [CrossRef]
- Ali, M., Man, N., Muharam, F. M., & Omar, S. Z. (2020). Factors Influencing Behavioral Intention of Farmers to Use ICTs for Agricultural Risk Management in Malaysia. *Pakistan Journal of Agricultural Research*, 33(2).
<https://doi.org/10.17582/journal.pjar/2020/33.2.295.302>
- Alliance for a Green Revolution in Africa (AGRA). (2015). *Africa Agriculture Status Report: Youth in Agriculture in Sub-Saharan Africa*. Nairobi, Kenya. Issue No. 3. 229pp.
- Allport, G.W., (1954). The Historical Background of Modern Social Psychology. In G. Lindzey, ed. *Handbook of social psychology*. Cambridge, Mass: Addison-Wesley, p. 45.
- Almanasreh, E., Moles, R., & Chen, T. F. (2019). Evaluation of methods used for estimating content validity. *Research in social and administrative pharmacy*, 15(2), 214-221.
- Almutairi, N S, Tamrin, S B B M, Guan, N Y and How, V 2020 Review of knowledge, attitude, and practice among laboratory workers towards occupational safety and health *Malaysian J. Med. Heal Sci* 16(1) 297-303

- Alrawashdeh, G. S., Lindgren, S., Reyes, M., & Pisey, S. (2022). Developing Youth's Capacities as Active Partners in Achieving Sustainable Global Food Security through Education, 28. <https://doi.org/10.3390/environsciproc2022015028>
- Alrech, P. L., & Settle, R. B. (1995). The survey research handbook. (2nd ed.). Boston: Irwin.
- Alreck, P. L., & Settle, R. B. (1995). The survey research handbook: Guidelines and strategies for conducting a survey. McGraw-Hill.
- Amaratunga, R. D. G., Baldry, D., Sarshar, M., & Newton, R. A. (2002). Quantitative and qualitative research in the built environment: application of “mixed” research approach. *Work Study*, 51(1), 17-31. doi: 10.1108/00438020210415728
- Ambad, S. N. A. (2022). Entrepreneurial Interest as an Antecedent of Entrepreneurial Event Model and Agropreneurial Intention. *International Journal of Academic Research in Business and Social Sciences*, 12(1), 173–186. <https://doi.org/10.6007/ijarbss/v12-i1/11849>
- Ambad, S. N. A., Sumin, V., Karia, A. A., Abdul Hakim, T., & Albert Gisip, I. (2021). Factors Influencing Intention to Become Agropreneur Among Youths. *Jurnal Intelek*, 16(1), 52–61. <https://doi.org/10.24191/ji.v16i1.363>
- Ameyaw, D. & Maiga E. (2015). Current Status of Youth in Agriculture in Sub-Saharan Africa in H.Tiff (ed.), *Africa Agriculture Status Report 2015: Youth in Agriculture in Sub-Saharan Africa*. Alliance for a Green Revolution in Africa(AGRA) (13-35). Nairobi Kenya Issue No. 3.

Amit, R. and Schoemaker, P. J. (1993), "Strategic assets and Organizational rent", Strategic Management Journal, 13, pp. 33-46.

Anders O. and Ber R. (2005). Factors related to observed attitude change towards learning chemistry. <http://www.ex.ac.uk/onwburge/pages/note.doc> attitude. Retrieved November 2010.

Anderson, Kirsten; Barret, J. (2018). Situation Analysis of Adolescents in Malaysia. Salt Media Group, 4(3), 57–71. Retrieved from [https://www.unicef.org/malaysia/media/1521/file/Situation Analysis of Adolescents in Malaysia.pdf](https://www.unicef.org/malaysia/media/1521/file/Situation%20Analysis%20of%20Adolescents%20in%20Malaysia.pdf)0Ahttp://marefateadyan.nashriyat.ir/node/150

Andrews, K. R. (1971), The Concept of Corporate Strategy. Homewood, IL: Irwin. 4.

Ankita, Mishra., Parwinder, Pal, Singh. (2022). Attitude, Subjective Norms, and Perceived Behavioural Control as Predictors of Entrepreneurial Intentions Among Engineering Students. Prabandhan: Indian Journal of Management, doi: 10.17010/pijom/2022/v15i5/169580

Anlló, G., Lugones, G. and Suárez, D. (2009) Manual de Bogotá: hacia un formulario mínimo común, Buenos Aires: RICYT.

Ann, Mugure, Mureithi. (2023). Sustainable Agricultural Practices among Rural Youth in Kenya: A Study of Attitudes and Behaviours. Journal of agriculture, doi: 10.53819/81018102t2165

Annosi, M. C., Ráez, R. M. O., Appio, F. P., & Del Giudice, T. (2022). An integrative review of innovations in the agricultural sector: The roles of agency, structure, and their dynamic interplay. Technological Forecasting and Social Change, 185, 257

122035.

Ansoff, I. 1965, Corporate Strategy, New York: McGraw-Hill.

Ansoms A (2008). Striving for growth, bypassing the poor? A critical review of Rwanda's rural sector policies. *Journal Modern Afr. Stud.* 46:1-32.
<http://dx.doi.org/10.1017/S0022278X07003059>

Antwi, S. K., & Hamza, K. (2015). Qualitative and Quantitative Research Paradigms in Business Research: A Philosophical Reflection. *European Journal of Business and Management*, 7(3), 217–225.

Anyidoho, N. A., Kayuni, H., Ndungu, J., Leavy, J., Sall, M., Tadele, G. and Sumberg, J., 2012. Young people and policy narratives in sub-Saharan Africa.

Aphunu, A. & Atoma, C.N. (2010). Rural youths' involvement in agriculture production in Delta Central Agriculture Zone: challenge to agriculture extension development in Delta State. Delta State Polytechnic: Department of Agriculture Extension and Management.

Applebaum, S. H., Roberts, J., & Shapiro, B. T. (2009). Cultural strategies in M&As

Arip, M., Mustapha, N., & Johari, R. (2011). Validity and reliability of research instrument; how to test the validation of a questionnaire/survey in a research. *International Journal of Education and Psychological Research (IJEPR)*, 2(2), 1-6.

Ariza, C., Rugeles, L., Saavedra, D., & Guaitero, B. (2012). Measuring Innovation in Agriculture Firms : A Methodological Approach. *Electronic Journal of Knowledge Management*, 11(3), 185–198.

- Armstrong, J. S., & Overton, T. S. (1977). Estimating nonresponse bias in mail surveys. *Journal of Marketing Research*, 14(3), 396-402.
- Armstrong, M. (2008). *Human Resource Management practice* (10th ed.), London: Kogan Page. Asiabaka,
- Arokoyo T, Auta SJ (1992). How to Reach and work with Rural Youth. Proceedings of National Workshop on Extension Strategies for Reaching Rural Youth. National Agricultural Extension and Research Liaison Services, Ahmadu Bello University Zaria. July 20-24, pp 1- 10
- Arokoyo, T. (2005). ICTs application in agriculture extension service delivery. In S.F. Adedoyin (Ed.), *Agriculture extension in Nigeria* (pp. 32–40). Ilorin, Nigeria: Agriculture Extension Society of Nigeria.
- Arshad, M., Javed, S., & Ramzan, M. (2014). Analysis of mediating effect of customer satisfaction in service quality and customer loyalty relationship: A SEM approach towards Malaysian Islamic banking. *Journal of Islamic Marketing*, 5(2), 243-259.
- Arvind, G., Athira, V.G., Haripriya, H., Rani, R.A., & Aravind, S. (2017). Automated irrigation with advanced seed germination and pest control. 2017 IEEE Technological Innovations in ICT for Agriculture and Rural Development (TIAR), 64-67.
- Asenso, O. (2008). Agriculture undergraduate preference for Agriculture discipline in Federal University of Technology, Owerri Nigeria. *Global Approaches to Extension practice*, 1:18 – 23.

- Asenso-Okyere K, Davis K, Aredo D (2008). Advancing agriculture in developing countries through knowledge and innovation. Synopsis of an International Conference. Paper prepared for International Food Policy Research Institute.
- Asenso-Okyere, K., & Mekonnen, D. A. (2012). The Importance of ICTs in the Provision of Information for Improving Agricultural Productivity and Rural Incomes in Africa. United Nations Development Programme. Available at: <http://www.africa.undp.org/content/dam/rba/docs/Working%20Papers/ICT-Productivity.pdf>
- Ayanda, I. F., Yusuf, O. J. & Salawu, O. L. (2013). Farm Practical Training Programme For Agriculture Students: A Case Study Of Pioneer Students, Kwara State University, Malete, Nigeria. *Journal Of Sustainable Development In Africa*, 15(8), 25-41
- Ayinde, A.-L., 1□, L., Norazizan, S., Rashid, S. A., Samah, A. A., & Abdullah, H. (2015). Examining the extent of youth participation in agricultural training program in Malete Youth Farm Kwara State. *IOSR Journal Of Humanities And Social Science*, 20(4), 65–71. <https://doi.org/10.9790/0837-20456571>
- Ayodele, O. O., Aboaba, K. O., Oladeji, S. O., & Tolorunju, E. T. (2021). Factors affecting productivity and intensity of market participation of leafy vegetable growers. *International Journal of Vegetable Science*, 27(1), 96–101. <https://doi.org/10.1080/19315260.2020.1718820>
- Azman, A., D'Silva, J. L., Samah, B. A., & Shaffril, H. A. M. (2012). Comparative Study on Sustainable Agriculture Knowledge among Malaysian Contract Farmers

Azmariana Azman , Jeffrey Lawrence D ' Silva , Bahaman Abu Samah , Norsida Man and Hayrol Azril Mohamed Shaffril Laboratory of Sustainable Development and Agriculture. Journal, American Sciences, Applied Publications, Science, 9(5), 673–677.

Azman, A., D'Silva, J. L., Samah, B. A., Man, N., & Shaffril, H. A. M. (2013). Relationship between attitude, knowledge, and support towards the acceptance of sustainable agriculture among contract farmers in Malaysia. *Asian Social Science*, 9(2), 99–105. <http://doi.org/10.5539/ass.v9n2p99>

Azman, N. F., Ishak, N. N., Ismail, N., & Osman, N. (2013). The determinants of agricultural knowledge: A case study of Malaysia. *Journal of Agricultural and Food Information*, 14(1), 47-63.

Azra, M. A., Khan, M. M., & Ferdousi, M. (2021). Prospects of Electronic Survey Distribution in Business and Social Research. *Global Journal of Management and Business Research*, 21(2), 1-9.

Azra, M. N., Kasan, N. A., Othman, R., Noor, G. A. G. R., Mazelan, S., Jamari, Z. Bin, ... Ikhwanuddin, M. (2021). Impact of COVID-19 on aquaculture sector in Malaysia: Findings from the first national survey. *Aquaculture Reports*, 19. <https://doi.org/10.1016/j.aqrep.2020.100568>

Azra, M. N., Kasan, N. A., Othman, R., Noor, G. A. G. R., Mazelan, S., Jamari, Z. Bin, ... Ikhwanuddin, M. (2021). Impact of COVID-19 on aquaculture sector in Malaysia: Findings from the first national survey. *Aquaculture Reports*, 19. <https://doi.org/10.1016/j.aqrep.2020.100568>

- B., N., Jha., Anup, Kumar., Shweta, Kumari., Neetu, Kumari. (2023). ICT application for promotion of integrated farming system. ORYZA-An International Journal on Rice, doi: 10.35709/ory.2023.60.0.6
- Baah, C. (2014). ASSESSMENT OF THE YOUTH IN AGRICULTURE PROGRAMME IN EJURA-SEKYEDUMASE DISTRICT By. School of Graduate Studies, 8–10.
- Babbie, E. R. (1990). Survey research methods (2nd ed.). Belmont, CA: Wadsworth.
- Badara, M. S and Saidin, S. Z. (2014). Internal audit effectiveness: Data screening and preliminary analysis. Asian Social Science, 10(10), 76-85
- Bagozzi, R. P. & Phillips, L. W. (1982). Representing and Testing Organizational Theories: A Holistic Construal. Administrative Science Quarterly, 27(3): 459-489.
- Bagozzi, R. P. (2007). The legacy of the technology acceptance model and a proposal for a paradigm shift. Journal of the Association for Information Systems, 8(4), pp. 244-254
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. Journal of the Academy of Marketing Science, 16(1), 74–94.
- Bagus Setiawan, D., Tarik Ibrahim, J., & Ocvanny Amir, N. (2022). Agriecobis (Journal of Agricultural Socioeconomics and Business) Youth Perception on Agricultural Sector (Case Study in Watukenongo, Pungging, Mojokerto), 5(1), 22–34. Retrieved from <http://ejournal.umm.ac.id/index.php/agriecobis>
- Bahaman, A.S., D.S. Jeffrey , M.S. Hayrol Azril and U. Jegak, (2009). A Review of Contract Farming and Factors that Impinge Youths Acceptance of Contract

Farming. Eur. J. Soc. Sci., 11: 328-338.

Bailey, T., Berg, P., & Sandy, C. (2000). The effect of high-performance work practices on employee earnings in the steel, apparel, and medical electronics and imaging industries. *Industrial and Labor Relations Review*, 54(2), 525-543.

BAIN, R. P., RAI, D. P., & NAYAK, S. (2017). Role of Information and Communication Technology (Ict) in Agriculture for Rural Development. *Flora and Fauna*, 23(1), 3–8. <https://doi.org/10.33451/floraf fauna.v23i1pp03-08>

Bakar, T. H. S. T. A., Hajar, R. S., Abdullah, F. A., Liew, J. Y., Nor, M. M., Norhafizah, M. Z., & Rosli, F. (2022). Youth Intention on Agricultural Entrepreneurship. *IOP Conference Series: Earth and Environmental Science*, 1102(1). <https://doi.org/10.1088/1755-1315/1102/1/012022>

Baker, W. E. (2000). *Achieving success through social capital: Tapping the hidden resources in your personal and business networks*. Jossey-Bass.

Bakri, N., & Mohamed, R., (2008). Keunggulan Budaya Teknologi Dalam Memacu Kemajuan Bangsa. *Jurnal Kemanusiaan* bil.11.

Baliyan, S. P., & Nenty, H. J. (2015). Factors underlying attitude towards agriculture as a predictors of willingness to enrol in the subject by secondary school students in Botswana. *Journal of Educational and Social Research*, 5(1), 377-386

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.

- Bank Negara Malaysia. (2015). Economic and financial developments in Malaysia in the first quarter of 2015. Quarterly Bulletin. Retrieved Jun 20, 2016, from http://www.bnm.gov.my/files/publication/qb/2015/Q1/1Q2015_fullbook_en.pdf
- Bank Negara Malaysia. (2019). The Impact of Digital Financial Services on Youth Farmers in Malaysia. Central Bank of Malaysia Report. Available at: <http://www.bnm.gov.my/>
- Barney, J. B. (1986), "Strategic factor markets: Expectations, luck, and business strategy", *Management Science*, 32(10), pp. 1231-1242.
- Barney, J. B. (1986). Organizational Culture: Can it be a Source of Sustained Competitive Advantage? *Academy of Management Review*, 11:3, 656-665
- Barney, J. B. (1991), "Firm resources and sustained competitive advantage", *Journal of Management*, 17(1), pp. 99-121.
- Barney, J. B. (2001). Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view. *Journal of Management*, 27(6), 643-650
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, 51(6), 1173-1182.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, 51(6), 1173-1182.

- Baron, R.A. & Byrne, D., (1984). Social psychology understanding human interaction, Boston: Allyn & Bacon.10.
- Barratt, Caroline, Martin Mbonye, and Janet Seeley. 2012. "Between Town and Country: Shifting Identity and Migrant Youth in Uganda." *The Journal of Modern African Studies* 50 (2): 201–223. doi:10.1017/S0022278X1200002X
- Bartlett, J., Kotrik, J., Higgins, C. (2001), Organizational research: Determining appropriate sample size in survey research. *Journal of Information Technology, Learning, and Performance*, 9(1). Available from: <http://www.osra.org/itlpj/bartlettkotrilkhiggins.pdf>
- Baruah.B.K. (2009). Agribusiness Management, its meaning, nature and scope, types Of management tasks and responsibilities. *Agriculture*. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/cbdv.200490137/abstract>
- Basnet, J. (2015). Peluang Masa Depan : Mendorong Para Pemuda Kembali Tertarik kepada Pertanian. *Agriterria*, 7(1), 15–25.
- Basso, B., & Antle, J. (2020). Digital agriculture to design sustainable agricultural systems. *Nature Sustainability*, 3(4), 254-256.
- Bayes, A., von Braun, J. and Akhter, R., (1999), Village Pay Phones and Poverty Reduction: Insights from a Grameen Bank initiative in Bangladesh, ZEF Discussion Papers on Development Policy No. 8, Centre for Development Research, Bonn
- Beard, J. and Sumner, M. (2004), 'Seeking strategic advantage in the post-net era: viewing ERP systems from the resources-based perspective', *Journal of Strategic*

Information Systems, vol. 13, pp. 129-150.

Beaudry, A., and Pinsonneault, A. (2005). "Understanding User Responses to Information Technology: A coping Model of User Adaptation," MIS Quarterly (29:3), pp. 493-524.

Becker, B. E., M.A. Huselid, and D. Ulrich. (2001). The HR Scorecard: Linking People, Strategy, and Performance. Harvard Business School Press, Boston: MA.

Becker, G.S., 1993. Nobel lecture: The economic way of looking at behavior. J. Polit. Econ. 385–409.

Bélanger, F., & Carter, L. (2008). Extending the Understanding of Computer Anxiety: The Influence of Perceived Learning and Support. Information & Management, 45(2), 120-129.

Bem, D.J., (1970). Beliefs, Attitudes, and Human Affairs, Belmont, CA: Brooks/Cole.

Benard, R., Dulle, F. & Ngalapa, H., (2014), 'Assessment of information needs of paddy farmers in Tanzania; A case study of Kilombero District, Morogoro', Library Philosophy and Practice (e-journal), 1–34, viewed 30 January 2015, from <http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=2666&context=libphilprac>

Bennell, P. (2010). Agriculture and youth employment: challenges and prospects. Gender, Education, and Global Policy Symposium. <http://www.oxfordpolicymanagement.com/sites/default/files/GEGPS%202010%20papers/GEGPS10%20Bennell%20final%20paper.pdf>

- Bennell, P. (2010). Investing in the future, creating opportunities for young rural people. IFAD (available at http://www.youtheconomicopportunities.org/sites/default/files/uploads/resource/invest_future_IFAD.pdf).
- Bennell, P. 2007. Promoting livelihood opportunities for rural youth. IFAD Governing Council Roundtable: Generating Remunerative Livelihood Opportunities for Rural Youth. UK: Knowledge and Skills for Development.
- Bergevoet, R. H. M., Ondersteijn, C. J. M., Saatkamp, H. W., Woerkum, C. M. J., & Huirne, R. B. M. (2004). Entrepreneurial behavior of dutch dairy farmers under a milk quota system: Goals, objectives and attitudes. *Agriculture System*, 80, 1-21. <http://dx.doi.org/10.1016/j.agsy.2003.05.001>.
- Bergmann, H., Hundt, C., & Sternberg, R. (2017). What Makes Start-Ups Different? Exploring the Role of Entrepreneurial Talent, Knowledge, and Skills. *Small Business Economics*, 49(1), 189-202
- Bernet T, Ortiz O, Estrada RD, Quiroz R, Swinton SM (2001). Tailoring Agriculture Extension to Different Production Contexts: A User- Friendly Farm-Household Model to Improve Decision-Making for Participatory Research, Michigan State University, East Lansing, USA.
- Bessin, F., Barbier, J. M., & Bossuet, G. (2020). Innovation in Farming Systems: From Multifunctionality to Regenerative Agriculture. *Agricultural Systems*, 181, 102824. doi: 10.1016/j.agsy.2020.102824

- Betcherman, G., & Khan, T. (2015). Youth employment in Sub-Saharan Africa: Taking stock of the evidence and knowledge gaps.
- Bezemer, D., & Headey, D. (2008). Agriculture, Development, and Urban Bias. *World Development*, 36(8), 1342-1364.
- Bhagawan, B. S., & Ramandeep, S. (2019). Role of ICT in agriculture sector Bhusanar sector. *Journal of Pharmacognosy and Phytochemistry*, 665–669.
- Bhattacharjee, S. (2018). Youth and ICTs for Agricultural Development, (October).
- Bhattacharjee, S., & Raj, S. (2018). Youth and ICTs for Agricultural Development, (January 2013).
- Biomaterials, N. (2009). Unlocking the Potential of Unlocking the Potential of, 9431, 2016–2020.
- Blackburn, D.A. (1999). Ag science fairs: The next wave in agriculture literacy. *Journal of Extension* [On-line], 37(4), Article 4TOT1. Retrieved from <http://www.joe.org/joe/1999august/tt1.php>
- Blattman, C., & Annan, J. (2011). Reintegrating and employing high risk youth in Liberia: Lessons from a randomized evaluation of a landmine action an agricultural training program for ex-combatants
- Blau, G., & Kahn, J. L. (2011). Conducting a pilot study: Case study of a novice researcher. *Journal of Human Resources Education*, 5(1), 51-62.
- Boahene, K. (1995). Innovation adoption as socio-economic process: The case of the Ghanaian cocoa industry, Thesis Publishers, Amsterdam.

- Bohner, G. and Wanke, M., (2002). Attitudes and Attitude Change, Brighton: Psychology Press
- Boleman, C.T. & Burrell F. Jr. (2003). Agriculture science fairs: Are students truly learning from this activity? Journal of Extension [On-line], 41(3), Article 3RIB4. Retrieved from <http://www.joe.org/joe/2003june/rb4.php>
- Bollen, K. A. (1989). Structural equations with latent variables. John Wiley & Sons, Inc.
- Bollen, K. A. (2003). Instrumental variables in sociology and the social sciences. Annual Review of Sociology, 29, 577-618.
- Bonneau, V., & Copingneaux, B. (2017). Digital Transformation Monitor: Industry 4.0 in agriculture: Focus on IoT aspects. European Commission, (July), 1–6. Retrieved from https://ec.europa.eu/growth/tools-databases/dem/monitor/sites/default/files/DTM_Agriculture 4.0 IoT v1.pdf
- Bora, A. (2014). Journal of international academic research for multidisciplinary. Journal of International Academic Research for Multidisciplinary, 2(4), 234–240.
- Bora, M. (2018). Attitude and Economic Motivation of Farmers towards Farming for Doubling Farm Income, 13(3).
- Boudreau, M.-C., and Robey, D. (2005). “Enacting Integrated Information Technology: A Human Agency Perspective,” Organization Science (16:1), pp. 3-18.
- Boyacı M (1998). An Investigation on The Structural Features, Problems, and Solutions of Agriculture Information and Technology Flow System: The Case of Manisa City, (Doctoral Thesis), Ege University Natural Sciences Institute, İzmir

- Boye, M., Ghafoor, A., Wudil, A. H., Usman, M., Prus, P., Fehér, A., & Sass, R. (2024). Youth Engagement in Agribusiness: Perception, Constraints, and Skill Training Interventions in Africa: A Systematic Review. *Sustainability* (Switzerland), 16(3). <https://doi.org/10.3390/su16031096>
- Brault-Dreux, V. (2013). Response rate in survey research. In M. D. Donsbach (Ed.), *The international encyclopedia of communication* (Vol. X, pp. 4465-4467). Wiley-Blackwell.
- Breckler, S.J. and E.C. Wiggins, (1992). On Defining Attitude and Attitude Theory: Once More with Feeling. In: *Attitude Structure and Function*, Pratkanis, A.R., S.J. Breckler and A.C. Greenwald(Eds.). Erlbaum, Hillsdale, NJ., ISBN:0805803238, pp: 407-427
- Brooks, J. (2012). Youth employment and agriculture: Key challenges and concrete solutions. Technical Centre for Agricultural and Rural Cooperation (CTA).
- Brooks, K. Amy, G. Goyal, A. & Zorya, S. (2013). *Agriculture as a Sector of Opportunity for Young People in Africa* (Policy research working papers). Washington, D.C.: The World Bank
- Brown, A. D., & Brignall, S. (2007). Qualitative research and the analysis of managerial work: Interviewing theorized, applied and institutional perspectives. *Qualitative Research in Organizations and Management: An International Journal*, 2(1), 7-25.
- Brown, B. J. (2006). *Marketing research: A practical approach*. McGraw-Hill.

- Bryant, A., Raphael, C., & Rioux, K. (2010). Research methods and methodologies in education. Sage Publications.
- Bryman, A. (1992). Research methods and organization studies. Unwin Hyman.
- Bryman, A. (2008) Of Methods and Methodology, Qualitative Research in Organizations and Management, 3, 2, 159-168.
- Bryman, A. (2008). Social research methods (3rd ed.). Oxford, UK: OUP.
- Bryman, A. (2012). Social Research Methods. 4th edition. Oxford University Press.
- Bryman, A. (2016). Social research methods. Oxford University Press.
- Buhr, D. 2015. Social Innovation Policy for Industry 4.0. Tübingen, Germany: Eberhard Karls University of Tübingen.
- Bujang, A. S., & Bakar, B. H. A. (2019). Precision Agriculture in Malaysia. International Workshop on ICTs for Precision Agriculture, (August), 91–104.
- Bulmer M, Gibbs J and Hyman L (2010) Introduction. In: Bulmer M, Gibbs J and Hyman L (eds) Social Measurement Through Social Surveys: An Applied Approach. Farnham: Ashgate, pp. 1–9.
- Burnett, S. (2012). Interpretivism, the study of people and social world, and the emancipatory use of information systems. Journal of Information Technology, 27(4), 280-291.
- Byamukama, W., Businge, P. M., & Kalibwani, R. (2023). Mobile Telephony as an ICT Tool for Agricultural Information Dissemination in Developing Countries: A

Review. East African Journal of Agriculture and Biotechnology, 6(1), 35–43.

<https://doi.org/10.37284/ejab.6.1.1082>

Byrne, B. M. (2001). Structural equation modeling with AMOS: Basic concepts, applications, and programming. Psychology Press.

Byrne, B. M. (2010). Structural equation modeling with AMOS, (2nd ed.). New York: Routledge.

C., Vara, Prasad., K., Pradhan. (2023). Identification and Prioritization of Challenges in Accessing ICT Tools by Agricultural Extension Professionals in Northern Districts of West Bengal. Asian Journal of Agricultural Extension, Economics and Sociology, doi: 10.9734/ajaees/2023/v41i61930

Canlas, M.E.L. & Pardalis, M.C.R. (2009). Youth employment in the Philippines. Manila: International Labour Office, ILO Subregional Office for South-East Asia and the Pacific.

Cardon LR, Palmer LJ, Lancet (2003): Population stratification and spurious allelic association.;361:598–604.

Carolina, A., Munoz., Grahame, J, Coleman., Paul, H, Hemsworth., Angus, J.D., Campbell., Rebecca, E., Doyle. (2019). Positive attitudes, positive outcomes: The relationship between farmer attitudes, management behaviour and sheep welfare.. PLOS ONE, doi: 10.1371/JOURNAL.PONE.0220455

- Carreón, J. R., René, J. J., Niels, F., & Rob, V. H. (2011). A Knowledge Approach to Sustainable Agriculture. Retrieved from <http://www.springer.com/978-94-007-0889-1>
- Casteel, A., & Bridier, N. L. (2021). Describing Populations And Samples In Doctoral Student Research. *International Journal of Doctoral Studies*, 16(1).
- Caswell, M., Fuglie, K. O., Ingram, C., Jans, S. and Kascak, C. (2001). Adoption of Agriculture Production Practices: Lessons learned from the US Department of Agriculture Area studies project. E.R.S: USDA. Issue No. 2364.p.17.
- Cecchini M, Bedini R, Mosetti D, Marino S, Stasi S. Safety knowledge and changing behavior in agricultural workers: an assessment model applied in central Italy. *SafHealth Work*. (2018) 9:164–71. doi: 10.1016/j.shaw.2017.07.009
- Chacko, T.I., J.G.Wacker, and M.M. Asar. (1997). Technological and Human Resource Management Practices in Addressing Perceived Competitiveness in Agribusiness Firms. *Agribusiness* 13(1):93-105.
- Chakraborty, S., & Chaudhuri, S. K. (2018). Integrating diverse knowledge bases for empowering local farmers in India. *Annals of Library and Information Studies*, 65(3), 147–155.
- Chandler M. (2010;2),What is SPSS? Assoc Comput Consult Support Serv [Internet].. Available from: [https://www.uwindsor.ca/its/sites/uwindsor.ca.its/files/What is SPSS.pdf](https://www.uwindsor.ca/its/sites/uwindsor.ca.its/files/What%20is%20SPSS.pdf)

- Chandran, V. G. R., Rasiah, R., & Wad, P. (2009). Malaysian manufacturing systems of innovation and internationalization of R&D.
- Chang, S. J., Van Witteloostuijn, A., & Eden, L. (2010). From the Editors: Common method variance in international business research. *Journal of International Business Studies*, 41(2), 178–184. <https://doi.org/10.1057/jibs.2009.88>
- Charlotte Goemans (2014). Youth and agriculture: key challenges and concrete solutions. Food and Agriculture Organization of the United Nations (FAO)
- Chatfield, C., & Collins, A. J. (2013). Introduction to multivariate analysis. Springer. Chau, P.Y.K., and P.J. Hu (2002) “Examining a Model of Information Technology Acceptance by Individual Professionals: An Exploratory Study” *Journal of Management Information Systems* 18(4), pp. 191-229.
- Chaudhary, R., Janjhua, Y., Sharma, N., Sharma, D., Pathania, A., & Kumar, K. (2019). Factors Determining Rural Youth Participation in Agriculture-Based Livelihood Activities: A Case Study of Karsog in Himachal Pradesh. *International Journal of Economic Plants*, 6(2), 085–089. <https://doi.org/10.23910/ijep/2019.6.2.0302>
- Chauhan, S., & Singh, R. (2018). Perception of youth towards agriculture and their future plans. *International Journal of Agriculture, Environment and Biotechnology*, 11(2), 287-292.
- Che Nawi, N., Mamun, A. Al, Hassan, A. A., Wan Ibrahim, W. S. A. A., Mohamed, A. F., & Permarupan, P. Y. (2022). Agro-Entrepreneurial Intention among University

- Students: a study under the premises of Theory of Planned Behavior. SAGE Open, 12(1). <https://doi.org/10.1177/21582440211069144>
- Che Nawi, N., Mamun, A. Al, Hassan, A. A., Wan Ibrahim, W. S. A. A., Mohamed, A. F., & Permarupan, P. Y. (2022). Agro-Entrepreneurial Intention among University Students: a study under the premises of Theory of Planned Behavior. SAGE Open, 12(1). <https://doi.org/10.1177/21582440211069144>
- Cheah, J.-H., Sarstedt, M., Ringle, C.M., Ramayah, T. and Ting, H. (2018), “Convergent validity assessment of formatively measured constructs in PLS-SEM: on using single-item versus multiitem measures in redundancy analyses”, International Journal of Contemporary Hospitality Management, Vol. 30, pp. 3192-3210.
- Chen, A. N., & Hirschheim, R. (2004). A paradigmatic and methodological examination of information systems research from 1991 to 2001. Information systems journal, 14(3), 197-235.
- Chin, Wynne W. (1998). Commentary: Issues and opinion on structural equation modeling: JSTOR
- Chinsinga, B. & Chasukwa, M. (2012). Youth, Agriculture and Land Grabs in Malawi. IDS Bulletin, 43(6): 67-77.
- Chou, C.-P., & Bentler, P. M. (1995). Estimates and tests in structural equation modeling. Thousand Oaks: Sage Publications
- Chuang, J. H., Wang, J. H., & Liang, C. (2020). Implementation of internet of things depends on intention: Young farmers' willingness to accept innovative

technology. *International Food and Agribusiness Management Review*, 23(2), 253–266. <https://doi.org/10.22434/IFAMR2019.0121>

Chuang, J. H., Wang, J. H., & Liang, C. (2020). Implementation of internet of things depends on intention: Young farmers' willingness to accept innovative technology. *International Food and Agribusiness Management Review*, 23(2), 253–266. <https://doi.org/10.22434/IFAMR2019.0121>

Chun Won, N., Yen Wan, C., & Yazam Sharif, M. (2017). International Review of Management and Marketing Effect of Leadership Styles, Social Capital, and Social Entrepreneurship on Organizational Effectiveness of Social Welfare Organization in Malaysia: Data Screening and Preliminary Analysis. *International Review of Management and Marketing*, 7(2), 117–122. Retrieved from <http://www.econjournals.com>

Chun Won, N., Yen Wan, C., & Yazam Sharif, M. (2017). International Review of Management and Marketing Effect of Leadership Styles, Social Capital, and Social Entrepreneurship on Organizational Effectiveness of Social Welfare Organization in Malaysia: Data Screening and Preliminary Analysis. *International Review of Management and Marketing*, 7(2), 117–122. Retrieved from <http://www.econjournals.com>

Churchill, G.A.Jr., Iacobucci, D. (2004), *Marketing Research - Methodological Foundations*. 9th ed. Mason, OH: Thomson.

- Chuttur, M. (2009), Overview of the Technology Acceptance Model: Origins, Developments and Future Directions, Working Papers on Information Systems ISSN 1535-6078.
- Čisar, P., & Čisar, S. M. (2010). Skewness and kurtosis in function of selection of network traffic distribution. *Acta Polytechnica Hungarica*, 7(2), 95–106.
- Clement, J., “Most popular messaging apps,” Technical Report 2020.
- Clercq, M. De, Vats, A., & Biel, A. (2018). Agriculture 4.0: the Future of Farming Technology, (February), 30.
- Cochran, W.G. (1977). Sampling Techniques. (3rd.). In Bartlett, J.E., Kotrlik, J.W., and Higgins, C.C. (2001). “Organizational Research: Determining Appropriate sample Size in Survey Research”. *Information Technology, Learning, and Performance Journal*, 19(1), pp 43-50 (Spring).
- Coffner, D. and J. Kolodinsky, (1997). Can you teach an old dog new tricks? An evaluation of extension training in sustainable agriculture. *J. Sustain. Agric.* 10: 5-20. DOI: 10.1300/J064v10n04_03
- Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2nd ed). Hillsdale, NJ: Erlbaum.
- Cohen, J., & Cohen, P. (1983). Applied multiple regression/correlation analysis for the behavioral sciences (2nd ed.). Hillsdale NJ: Erlbaum.
- Coldevin, G. (2003) Participatory communication: Key to rural learning systems, Food and Agriculture Organization, Rome.

- Colin, B, (2012). Agriculture in Malaysia's economic and social transformation. Economic reforms, Malaysia.
- Commonwealth Secretariat. (1998). Commonwealth youth programme strategic plan: 1998-2003. Commonwealth Secretariat.
- Consentino, F., Vindigni, G., Spina, D., Monaco, C., & Peri, I. (2023). Agricultural Career through the Lens of Young People. *Sustainability (Switzerland)*, 15(14). <https://doi.org/10.3390/su151411148>
- control," in IEEE Technological Innovations in ICT for Agriculture and Rural Development (TIAR), 2017.
- Cooper, D. R. & Schindler, P. S. (2008). Business Research Methods (9th Edn) New York: McGraw Hill.
- Cooper, D. R., & Schindler, P. S. (2006). Business research methods (9th ed.). Boston, MA: McGraw-Hill/Irwin.
- Cooper, D.R., Schindler, P.S., & Sun, J. (1991). Business research methods (5th ed.). Richard D. Irwin, Inc
- Cooper, R.B. and Zmud, R.W. (1990). Information Technology Implementation Research: a Technological Diffusion Approach, *Management Science*, 36 (2), 123-139.
- Council. (2014). Contribution to the 2014 United Nations Economic and Social Council (ECOSOC) Integration Segment. Retrieved from <https://www.un.org/en/ecosoc/integration/pdf/foodandagricultureorganization.pdf>
- Creswell JW, (1998). A data collection circle. In: Qualitative inquiry and research design.

Sage publication, Inc. United Kingdom.

Creswell, J. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. California: Sage.

Creswell, J. (2008). *Educational research: Planning, conducting and evaluating quantitative and qualitative research* (3rd ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

Creswell, J. W. (1994). *Research design: Qualitative and quantitative approaches*. Thousand Oaks, CA: SAGE Publications

Creswell, J. W. (2009). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. (3rd Ed.). Thousand Okas, CA: Sage.

Creswell, J.W. (2012). *Educational research, planning, conducting and evaluating quantitative and qualitative research* (4th ed.). Upper Saddle River, NJ: Pearson Educational Resources, Inc.

CROASDALE, P., (1974), Control charts for a double-sampling scheme based on average production run lengths. *International Journal of Production Research*, 12, 585-592.

Curran, P. J., West, S. G., & Finch, G. F. (1996). The robustness of test statistics to nonnormality and specification error in confirmatory factor analysis. *Psychological Methods*, 1, 16 –29.

Curran, P. J., West, S. G., & Finch, J. F. (1996). The robustness of test statistics to nonnormality and specification error in confirmatory factor analysis. *Psychological methods*, 1(1), 16

- Curry, J. (2005). Rural resources and local livelihoods in Africa. New York: Palgrave Macmillan.
- D., Uttej. (2022). Youth in Agriculture : Problems and Suggestions. Indian Research Journal of Extension Education, doi: 10.54986/irjee/2022/dec_spl/247-250
- D'Silva, J. A., Samah, B. A., Uli, J., & Shaffril, H. A. M. (2011), Towards developing a framework on acceptance of sustainable agriculture among contract farming entrepreneurs. African Journal of Business Management, 5(20), 8110-8116
- D'Silva, J. L., Azman, A., Samah, B. A., & Shaffril, H. A. M. (2013). Factors influencing acceptance of contract farming among youth. Pertanika Journal of Social Science and Humanities, 21(July), 1–10.
- D'Silva, J. L., Dahalan, D., Zaremohzzabieh, Z., Ismail, I. A., & Abd. Lateef, S. E. K. @. (2020). Socio-Demographic Differences on Youth Behavioural Intention to Engage in Agriculture. International Journal of Academic Research in Business and Social Sciences, 10(15). <https://doi.org/10.6007/ijarbss/v10-i15/8249>
- Dahalan, D., Lawrence, J., Zaremohzzabieh, Z., & Krauss, S. (2020). The Attitude and Perceived Behavior Control Among Agriculture Students in Malaysia Towards The Agriculture Sector. Journal of Crit, 7(13), 2908–2915.
- Dardak RA. (2015), Transformation of Agriculture Sector in Malaysia Through Agriculture Policy. FFTC Agric Policy Database [Internet].;237:2–5. Available from: http://ap.fftcc.agnet.org/files/ap_policy/386/386_1.pdf
- Dardak, R. A. (2021). Overview of Agricultural Trade in Malaysia. FFTC Journal of Agricultural Policy, 1(1), 60–68. <https://doi.org/10.56669/qqtr1622>

- Dardak, R. A. (2022). Overview of the Agriculture Sector during the 11 th Malaysian Development Plan (2016-2020). FFTC Agricultural Policy Platform, 1–10.
- Dardak, R. A. (2023). Transformation of Rural Community in Malaysia through Development Programs , and Modern Technology, 1–10.
- Dardak, R., Nik, R., & Haimid, T. (2020). Youth and Agro technopreneurship ecosystem in Malaysia. FFTC Agricultural Policy, (2014), 1–9. Retrieved from <https://ap.fftc.org.tw/article/2580>
- Data Analysis. Pearson Prentice Hall. (Vol. 6). Pearson Prentice Hall
- Daum, Thomas, and Regina Birner. 2017. “The Neglected Governance Challenges of Agricultural Mechanisation in Africa – Insights from Ghana.” Food Security 9 (5): 959–979. doi:10.1007/s12571-017-0716-9.
- Davis, F.D. (1986) “Technology Acceptance Model for Empirically Testing New End-user Information Systems Theory and Results” Unpublished Doctoral Dissertation, MIT.
- Davis, F.D. (1989) “Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology” MIS Quarterly 13(3), pp. 319-340.
- Davis, F.D. (1993) “User Acceptance of Information Technology System Characteristics, User Perceptions and Behavioral Impacts” International Journal of Man-Machine Studies 38(3), pp. 475-487.
- Davis, F.D., R.P. Bagozzi, and P.R. Warshaw (1989) “User Acceptance of Computer Technology: A Comparison of Two Theoretical Models” Management Science

35(8), pp.982-1003.

Davis, F.D., R.P. Bagozzi, and P.R. Warshaw (1992) “Extrinsic and Intrinsic Motivation to Use Computers in the Workplace” *Journal of Applied Social Psychology* 22(14), pp.1111-1132

Davis, J. H. (1956). From agriculture to agribusiness. *Harvard Business Review*, 34, 107–115.

Davis, J. H., & Goldberg, R. A. (1957). A concept of agribusiness. Boston: Division of Research, Graduate School of Business Administration, Harvard University.

Dayat, D., Anwarudin, O., & Makhmudi, M. (2020). Regeneration Of Farmers Through Rural Youth Participation In Chili Agribusiness, 9(03), 1201–1206.

Deepak, Shah. (2022). Role of Information and Communication Technology in Agricultural Development of India. Review of Market Integration, doi: 10.1177/09749292221119286

Deichmann, U., Goyal, A., & Mishra, D. (2016), Will Digital Technologies Transform Agriculture in Developing Countries?, *Agricultural Economics*, 47(S1), 21-33.

Demostenys, David, da, Silva., Demostenys, David, da, Silva. (2023). Establishing and Managing Successful Agricultural Education Programs at Universities and Secondary Technical Schools in the Arab Countries. *Advances in educational technologies and instructional design book series*, doi: 10.4018/978-1-6684-4050-6.ch002

- Department of Statistic Malaysia. (2022). Prime Minister'S Department Department of Statistics Malaysia Selected Agricultural Indicators, Malaysia, 2022, (October).
- Deraman, A.B.and Shamsul Bahar ,A.K . (2000). "Bringing the Farming Community into Internet Age: A Case Study", Journal of Informing Science 4, pp. 207-214.
- Detre, J. D., Gundrson, M. A., Peake, W. O., & Dooley, F. J. (2011). Academic perspectives on agribusiness: an international survey. International Food and Agribusiness Management Review, 14(5), 141-165.
- DeVellis, R. F. (2005). Scale development: Theory and applications (2nd ed.). Sage Publications.
- Dewsbury, G. (2019). Use of information and communication technology in nursing services. British Journal of Community Nursing, 24(12), 604–607.
<https://doi.org/10.12968/bjcn.2019.24.12.604>
- Dillman, D. A. (2007). Mail and Internet Surveys: The Tailored Design Method. Wiley.
- Dillon, A., and M.G. Morris (1996) "User Acceptance of Information Technology Theories and Models" Annual Review of Information Science and Technology 31, pp. 3-32.
- Dillon, A.And Morris, C. (2001).User Acceptance of Information Technology. In W. Karwowski (ed). Encyclopedia of Human Factors and Ergonomics. London: Taylor and Francis.
- Dionysious, Kiambi. (2018). The use of Information Communication and Technology in advancement of African agriculture. African Journal of Agricultural Research, doi:

- Divis, J. L. (1989). Conceptual analysis and measurement of consumer satisfaction and dissatisfaction: the halo effect. *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, 2, 44-50.
- Djatkika, G. H. (2021). Agriculture Policy For Agriculture Development Facing The Era Of Industrial Revolution 4.0 In The Agriculture Sector. *Turkish Journal of Computer and Mathematics Education*, 12(11), 4305–4310.
- Dodge, Y. (2003). *The concise encyclopedia of statistics*. Springer.
- Dorairaj, D., & Govender, N. T. (2023). Rice and paddy industry in Malaysia: governance and policies, research trends, technology adoption and resilience. *Frontiers in Sustainable Food Systems*, 7(June), 1–22.
<https://doi.org/10.3389/fsufs.2023.1093605>
- Doty, D. H., & Glick, W. H. 1998. Common methods bias: Does common methods variance really bias results? *Organizational Research Methods*, 1(4): 374–406.
- D'Silva, J. L., Mohamad Shaffril, H. A., Uli, J., & Abu Samah, B. (2009). Youth involvement in agribusiness: The Malaysian perspective. *Journal of Agricultural Science*, 1(2), 52-61. <https://doi.org/10.5539/jas.v1n2p52>
- Dutton, H. W. 2014. Putting Things to Work: Social and Policy Challenges for the Internet of Things. *Info*, 16(3): 1–21. <https://doi.org/10.1108/info-09-2013-0047>
- Eagly, A.H. & Chaiken, S., (1993). *The psychology of attitudes*, Fort Worth, TX: Harcourt Brace Jovanovich.

- Eagly, A.H. & Chaiken, S., (1998). Attitude structure and function. 21.
- Edgcomb, E.L., 2002. What makes for effective microenterprise training? J. Microfinance/ESR Rev. 4 (1), 99–114.
- Edu, E., & Nwofe, C. (2016). Technical Training Skills Needs of Youth for Sustainable Job Security in Paddy Production in Ebonyi State , Nigeria, 7(35), 98–102.
- Egorov, E. E., Lebedeva, T. E., Prokhorova, M. P., Shobonova, L. Y., & Bulganina, S. V. (2019). Youth Entrepreneurship: Motivational Aspects and Economic Effects. IOP Conference Series: Earth and Environmental Science, 272(3).
<https://doi.org/10.1088/1755-1315/272/3/032129>
- Eissler, S., & Brennan, M. (2015). Review of Research and Practice for Youth Engagement in Agricultural Education and Training Systems, (December). Retrieved from
<https://agrilinks.org/sites/default/files/resource/files/EisslerBrennanYouth-EngagementFINAL.pdf>
- Ekong EE (2003). An Introduction to Rural Sociology. Dove educational Publishers, Uyo, Nigeria.
- Elvira, Iskandar. (2023). The study of millennial farmers behavior in agricultural production. IOP conference series, doi: 10.1088/1755-1315/1183/1/012112
- Elvira, Iskandar. (2023). The study of millennial farmers behavior in agricultural production. IOP conference series, doi: 10.1088/1755-1315/1183/1/012112

- Ephrem, A. N., Martin, P., Nguetzet, D., Murimbika, M., Bamba, Z., & Manyong, V. (2021). Perceived Social Norms and Agripreneurial Intention among Youths in Eastern DRC, 1–21.
- Eremie S (2002). Youth; a strong Hold for sustainable Agriculture Extension Delivery and Development. Proceedings of the 8th Annual National Conference of Agriculture Extension Society of Nigeria held at Benin City, September 17th – 19th.
- Etela, I., & Onoja, A. O. (2017). Incentivizing e-agriculture and agribusiness incubators for youth employment in Nigeria. . Nigerian Agricultural Policy Research Journal., 42-54
- Etim, N. A., & Udoh, E. J. (2018). Willingness of Youths to Participate in Agricultural Activities : Implication for Poverty Reduction, 6(1), 1–5.
- Etim, N.-A., & Thompson, D. (2020). Application of Probit Analysis in the Decision of Youths to Participate in Vegetable Production. Journal La Bisecoman, 1(5), 1–7.
<https://doi.org/10.37899/journallabisecoman.v1i5.234>
- Etling AW, Barbuto JE (2002). Globalizing colleges of agriculture. Proceedings of the 18th Annual Conference, Association for International Agriculture and Extension
- Ezeh, P. C. (2019). Journal of Business Management & Accounts Studies Determinants Of Nigerian Youths ' Choice Of Career In Agriculture : A Case Of Zamfara State
 Key Words Determinants Of Nigerian Youths ' Choice Of Career In Agriculture :
 A Case Of Zamfara State, (January).

- Ezeh, P. C. (2019). Journal of Business Management & Accounts Studies Determinants Of Nigerian Youths ' Choice Of Career In Agriculture : A Case Of Zamfara State
Key Words Determinants Of Nigerian Youths ' Choice Of Career In Agriculture :
A Case Of Zamfara State, (January).
- Ezhar, T., Rahim, M.S, Zainal, A.M, Amin, M.A, Mohamed Rezal, H. and Zamre Y. (2008). "Are Malay Small-Scale Agro-Entrepreneurs Ready to Face Future Challenges? An Analysis of Attitudes Towards Work Values", *Pertanika Journal of Social Science and Humanities* 16, pp. 31-44
- F. Ningsih, and S. Sjaf, (2015). Faktor-faktor yang Menentukan Keterlibatan Pemuda Pedesaan Pada Kegiatan Pertanian Berkelanjutan, *Jurnal Penyuluhan*, vol. 11, no. 1, pp.: 23-37.
- FAC (Food, Agriculture, and Natural Resources Policy Analysis Network). (2011). The Future of Agriculture: Young People's Vision and Priorities. Retrieved from <https://www.future-agricultures.org/wp-content/uploads/2017/08/YP-Policy-Brief>.
- Fakhrul, Anwar, Zainol., Chua, Kim, Aik. (2021). Food Value Chain, Sustainable Intensification and Food Security in Malaysia. doi: 10.37231/JMTP.2021.2.2.97
- FAO (2009) The state of food and agriculture: Livestock in the balance. Food and agricultural organization of the United Nations Rome 2009 for Youth Rome: ILO.
- FAO (2011). State of Food and Agriculture Women in agriculture: Closing the gender

- FAO (2014). Youth and agriculture: Key challenges and concrete solutions Farmers F, Aspirations EY, Agriculture A. Future Farmers ? Exploring Agriculture. Policy. 2010;(June).
- FAO (2014): African Youth in Agribusiness and Rural Development; Regional Conference for Africa. Tunis,Tunisia. 24th -28th March 2014.
- FAO (2019). Youth in agriculture: A review of current initiatives and policies. Food and Agriculture Organization of the United Nations.
- FAO, (1993). The Potentials of Microcomputers in Support of Agriculture Extension Education and Training. Rome, FAO
- FAO, (2009). Training manual for agricultural management, marketing, and finance. Food and Agriculture Organization of the United Nations.
- FAO, (2009a). Education for rural people: the role of education, training and capacity development in poverty reduction and food security, D. Acker, D. & L. Gasperini. Rome.
- FAO, (2010) The State of Food Insecurity in the World: Addressing Food Insecurity in Protracted Crises. Rome, 2010. Retrieved on 14th July 2014 from <http://www.fao.org/docrep/013/i1683e/i1683e.pdf>
- FAO, (2011) The State of Food and Agriculture 2010 - 2
- FAO, (2012): Smallholders and Family Farmers. Retrieved January 2015 from <http://www.fao.publication.org>.

- FAO, IFAD, & CTA. (2014). Youth in agriculture: Challenges and opportunities. Rome.
<http://www.fao.org/3/a-i4040e>.
- FAO. (2017). Engaging youth in agriculture through ICTs. Food and Agriculture Organization of the United Nations. Retrieved from <http://www.fao.org/3/a-i7186e.pdf>
- FAO. (2020). Digital Agriculture: Opportunities and Challenges. Food and Agriculture Organization of the United Nations. Available at:
<http://www.fao.org/3/ca4887en/ca4887en.pdf>
- FAO. (2020). Youth in agribusiness within an evolving agrifood system. Food and Agriculture Organization.
- FAO. (2022). Youth and Agriculture: Key Challenges and Concrete Solutions. Food and Agriculture Organization of the United Nations.
- FAO. (2023). The State of Food and Agriculture: Revealing the True Cost. Retrieved from <https://www.fao.org/3/cc7724en/cc7724en.pdf>
- FAO'; IFAD;CTA. (2014). Youth and Agriculture. Retrieved from
http://www.fao.org/3/ai3947e.pdf?utm_source=linkedin&utm_medium=social+media&utm_campaign=faolinkedin
- Farah, A.A. and Bahaman, A.S. (2013). Factors Impinging Framers use of Agriculture Technology. Asian social science, 9, (3).
- Fatimahwati, S., & Dato, P. (2020). Empowering Youth in Agriculture Lessons for Malaysia, (June).

- Fazio, R. & Williams, C., (1986). Attitude accessibility as a moderator of attitude-perception and attitude-behavior relation: An investigation of the 1984 presidential election. *Journal of personality and social psychology*, 51, pp.505–514.
- Fazlin, Ali., Yee, May, Tan., Omer, Bin, Thabet. (2020). Youth's Intention to Venture into Agriculture Sector. doi: 10.36877/MJAE.A0000162
- Feder, G. & Slade, R. (1984). The acquisition of information and the adoption of new technology. *American Journal of Agriculture Economics*, 66 (3): 312-320
- Feighery, J., Murphy, S., & Whitten, S. (2011). Mali youth and agriculture: Perceptions and opportunities. USAID. Retrieved from https://pdf.usaid.gov/pdf_docs/PA00JGW7.pdf
- Feldhof, T. (2014). Japan Food Security Issues: A Geopolitical Challenge for Africa and East Asia? *Journal of Global Initiatives: Policy, Pedagogy, Perspective*, 9(1), 75-96.
- Fennell, S., Kaur, P., Jhunjhunwala, A., Narayanan, D., Loyola, C., Bedi, J., & Singh, Y. (2018). Examining linkages between Smart Villages and Smart Cities: Learning from rural youth accessing the internet in India. *Telecommunications Policy*, 42(10), 810–823. <https://doi.org/10.1016/j.telpol.2018.06.002>
- Festinger, L., & DeMatteo, D. (2007). Quantitative research. *Handbook of psychology*, 2, 143-164.
- Field, A. (2000). *Discovering Statistics using SPSS for Windows*. London – Thousand Oaks – New Delhi: Sage publications.

- Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4th ed.). SAGE Publications.
- Fini, R., et al., (2012). The determinants of corporate entrepreneurial intention within small and newly established firms. *Entrepreneurship Theory and Practice*, 36(2): 387-414.
- Firdaus, R. B. R., Ebekozien, A., Samsurijan, M. S., & Rosli, H. (2022). What Drives the Young Malaysian Generation to Become Horticulture Farmers? A Qualitative Approach. *Millennial Asia*, 0(0). <https://doi.org/10.1177/09763996221129900>
- Firdaus, R. B. R., Leong Tan, M., Rahmat, S. R., & Senevi Gunaratne, M. (2020). Paddy, rice and food security in Malaysia: A review of climate change impacts. *Cogent Social Sciences*, 6(1). <https://doi.org/10.1080/23311886.2020.1818373>
- Fishbein, M. & Ajzen, I. (1975). *Belief, Attitude, Intention, and Behavior: An introduction to theory and research*. J. Wiley and Sons: New York, USA.
- Fishbein, M., (1963). An investigation of the relationships between beliefs about an object and the attitude toward that object. *Human Relations*, 16, pp.233–240.24.
- Floyd, F. J., & Widaman, K. F. (1995). Factor analysis in the development and refinement of clinical assessment instruments. *Psychological Assessment*, 7(3), 286-299.
- FodayBojang (2006), *African Youth in Agriculture, Natural Resources and Rural Development. Enhancing natural resources management for food security in Africa* Volume 28, Issue 1
- Food and Agriculture Organization (2017). *Fishery and Aquaculture Country*

Profiles:Malaysia. Retrieved from [http:// www.fao.org](http://www.fao.org), 9 July 2017.

Food and Agriculture Organization (FAO). (2020). Youth in agribusiness within an evolving agrifood system.

Food and Agriculture Organization of the United Nations (FAO). (2018). The State of Food and Agriculture 2018: Innovation in family farming. Rome. Retrieved from <http://www.fao.org/3/i9544en/i9544en.pdf>

Food and Agriculture Organization of the United Nations. (2019). Youth in agriculture: Building the next generation of farmers, foresters, fishers and entrepreneurs. Retrieved from <http://www.fao.org/youth-employment/what-we-do/youth-in-agriculture/en/>

Food and Agriculture Organization. (2020). Youth in Agriculture: Key Challenges and Concrete Solutions. Retrieved from FAO.

Fornell, C. and Larcker, D.F. (1981) Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18, 39-50.

Fornell, C., & Bookstein, F. L. (1982). Two Structural Equation Models: LISREL and PLS Applied to Consumer Exit-Voice Theory. *Journal of Marketing Research*, 19(4), 440– 452.

Fornell, C., & Cha, J. (1994). Partial Least Squares (PLS), unpublished working paper. Ann Arbor: University of Michigan Business School.

Frethey-Bentham, C. (2011). Pseudo panels as an alternative study design. *Australasian*

Frick, M. J., Birkenholz, R. J., Gardner, H., & Machtmes, K. (1995). Rural and urban inner-city high school student knowledge and perception of agriculture. *J. Agric. Educ.*, 36, 1-9.

FSN Forum. 2018. Youth Employment in Agriculture as a Solid Solution to Ending Hunger and Poverty in Africa. Report of Activity. Global Forum on Food Security and Nutrition

Fu, J.-R., Farn, C.-K., & Chao, W.-P. (2006). Acceptance of Electronic Tax Filing: A Study of Taxpayer Intentions. *Information and Management*, 43, 109-126.

Fuglie, K. & Kascak, C. (2001). Adoption and diffusion of natural-resource-conserving agriculture technology. *Review of Agriculture Economics*, 23, (2): 386-403.

Fuller, T. 2012. Thai youth seek a fortune away from the farm. *New York Times Asia Pacific* 4 June 2012. Retrieved from <https://www.nytimes.com/2012/06/05/world/asia/thai-youth-seek-a-fortune-off-the-farm.html>

G. Arvind and V. Athira and H. Haripriya and R. Rani and S. Aravind, "Automated irrigation with advanced seed germination and pest

Gacar, A., Aktas, H., & Ozdogan, B. (2017). Digital agriculture practices in the context of agriculture 4.0. *Pressacademia*, 4(2), 184–191. <https://doi.org/10.17261/pressacademia.2017.448>

Ganga, Dutta, Acharya. (2023). Sustainable Transformation of Agrifood Systems: A Circular Economic and Agroecological Perspective. *SAARC Journal of*

Agriculture, doi: 10.3329/sja.v21i1.66340 gap for development.
[<http://www.fao.org/docrep/013/i2050e/i2050e.pdf>] site visited on 23/11/2012.

Garcia, M. A., & Martinez, P. R. (2019). *Evaluating Research Instruments: A Practical Approach*. Sage Publications.

Garforth, C., Khatiwada, Y. and Campbell, D. (2003). Communication research to support knowledge interventions in agriculture development: Case studies from Eritrea and Uganda, Paper presented at the Development Studies Association Conference, Glasgow, 10-12 September 2003.

Garret J.(2006).A gift from the Sam Antuonio professional coaches, Retrieved July 17, 2007, from www.Jaynegarrentt.com.

Garson, D. (2012). *Testing statistical assumptions*. USA: David Garson and Statistical Associates Publishing.

Garson, G. D. (2016). *Partial Least Squares: Regression & Structural Equation Models*

Gay, L. R., Mills, G. E., & Airasian, P. W. (2011). *Educational research: Competencies for analysis and applications*. Pearson Higher Ed.

Gefen, D. (2000) "It Is Not Enough to Be Responsive: The Role of Cooperative Intentions in MRP II Adoption" *Data Base* 31(2), pp.65-79.

Gefen, D. and D. Straub (2000), "The Relative Importance of Perceived Ease-of Use in IS Adoption: A Study of e-Commerce Adoption," *JAIS* (forthcoming), *Communications of AIS*.

Gefen, D. and Straub, D.W. (2005) "A Practical Guide to Factorial Validity Using PLS-

Graph: Tutorial and Annotated Example”, Communications of AIS, 16 (1), 91-109.

Geisser, Seymour. (1975). The predictive sample reuse method with applications. Journal of the American Statistical Association, 70(350), 320-328.

Getnet Tadele and Asrat Ayalew. (2012). “Last resort and often not an option at all”: Youth, education and farming as livelihood in Ethiopia. Retrieved November 8, 2013 From:<http://www.future-agricultures.org/> last-resort-and-often-not-an-option-at-allyouth-education-and-farming-as-livelihood-in-ethiopia

Geza, W., Ngidi, M., Ojo, T., Adetoro, A. A., Slotow, R., & Mabhaudhi, T. (2021). Youth participation in agriculture: A scoping review. Sustainability (Switzerland), 13(16), 1–15. <https://doi.org/10.3390/su13169120>

Ghaida, S., Alrawashdeh., Samantha, Anne, Lindgren., Manny, R., Reyes., Sar, Pisey. (2022). Developing Youth’s Capacities as Active Partners in Achieving Sustainable Global Food Security through Education. doi: 10.3390/environsciproc2022015028

Ghafoor, A., Badar, H., & Maqbool, A. (2017). Marketing of Agricultural Products. University of Agricultural-Faisalabad, 1(5), 114.

Gibson, K. E., Sanders, C. E., Byrd, A. R., Lamm, K. W., & Lamm, A. J. (2023). The Influence of Sustainability on Identities and Seafood Consumption: Implications for Food Systems Education for Generation Z. Foods, 12(10). <https://doi.org/10.3390/foods12101933>

Gidaroku, I., (1999). Young women’s attitude toward agriculture and women’s new work
295

in Greek Countryside: The first approach. *Rural Studies.*, 15: 147-158. DOI: 10.1012/50743-01676981000548

GIFS, Global Institute for Food Security (2015), Digital and Computational Agriculture, 2014-2015 Annual Report, <http://gifs.ca/wp-content/uploads/2015/08/GIFS-2014-15-Annual-Report-final.pdf>, Accessed: 11.02.2017.

Girard, P. (2016). Building a Country-Level Comparative Approach for Grasping the Youth Employment in sub-Saharan Africa, The French Agricultural Research Centre for International Development (CIRAD): Montpellier, France.

Girdziute, L., Besuspariene, E., Nausediene, A., Novikova, A., Leppala, J., & Jakob, M. (2019). Youth's (Un) willingness to work in agriculture sector, (1).

Godfred, F. O. (2015). The role of research instruments in data collection. *Research on Humanities and Social Sciences*, 5(1), 76-81.

Goldberg, R. A. (1974). *Agribusiness management for developing countries – Latin America*. Ballinger Publishing Company.

Goling, N. S., & Marandacan, J. M. (2023). Attitude Toward Entrepreneurship, Perceived Behavioural Control, and Entrepreneurial Intention Among Business Students. *Asian Journal of Entrepreneurship*, 4(2), 1–14. <https://doi.org/10.55057/aje.2023.4.2.1>

Gomez-Gonzalez, V. M., Gil, J. M., & Cervera, M. L. (2020). Use of Information and Communication Technologies in Agriculture: The Role of Farm Size, Farm Type, and Farmer Characteristics. *Land Use Policy*, 99, 105043.

- Gomez-Mejia, L. R., and Balkin, David B., (2002). Limitations to Neoclassical Economics for Evaluating Sustainability of Agriculture Systems: Comparing Organic and Conventional Systems. In: Journal of Sustainable Agriculture, Vol. 24, No. 2 (2004), pp. 77---91.
- Gonzalez, R., M. Vasquez-Escobar, and J. Ponsoda. (2014). The effect of the number of response alternatives on the reliability and validity of rating scales. Methodology, 10(2), 1-11.
- González-Quintero, C., & Avila-Foucat, V. S. (2019). Operationalization and measurement of social-ecological resilience: a systematic review. Sustainability, 11(21), 6073.
- Goodman, J., (2005), Linking Mobile Phone Ownership and Use to Social Capital in Rural SouthAfrica and Tanzania, Vodafone Policy Paper Series, Number 2
- Gorondutse, A. H., & Hilman, H. (2014). Effect of business social responsibility (BSR) on performance of SMEs: Data screening and preliminary analysis. Asian Social Science, 10(8), 103-115.
- Government of India. (2012). Report of the Working Group on Empowerment of Youth for the Twelfth Five Year Plan (2012-2017). Planning Commission, Government of India.
- Government of Malaysia, 1996, Seventh Malaysia Plan (1996 – 2000). Kuala Lumpur.
- Graff, G., A. Heiman, C. Yarkin and D. Zilberman (2003) “Privatization and Innovation in Agriculture Biotechnology.” Giannini Foundation of Agriculture Economics.

- Grant, R. M. (1991), "The resource-based theory of competitive advantage: Implications for strategy formulation", *California Management Review*, Spring, pp. 114-135.
- Gregg, J. A., & Irani, T. A. (2004). Use of information technology by county extension agents of the Florida Cooperative Extension Service. *Journal of Extension*, 42 (3)
- Grinnel, M. R., & Unrau, A., R., (2005) *Social Work Research and Evaluation*. New York:
- Groves, R. M. (2006). Nonresponse rates and nonresponse bias in household surveys. *Public Opinion Quarterly*, 70(5), 646-675.
- Groves, R. M., Fowler Jr, F. J., Couper, M. P., Lepkowski, J. M., Singer, E., & Tourangeau, R. (2004). *Survey methodology*. John Wiley & Sons.
- Guba, E. G., & Lincoln, Y. S. (1983). Epistemological and methodological bases of naturalistic inquiry. *Educational Communication and Technology Journal*, 31(3), 233-252.
- Guo, H.D., Jolly, R.W. and Zhu, J.H. (2007) Contract Farming in China: Perspectives of Farm Households and Agribusiness Firms. *Comparative Economic Studies* 49, 2, 285-312.
- Gupta, M., & Gupta, D., (2011) *Research Methodology*. New Dheli: Rekha Printers
- Gustafsson, A., & Johnson, M. D. (2004). Determining attribute importance in a service satisfaction model. *Journal of Service Research*, 7(2), 124–141
- Gwary, M.M., Pur, J.T and Bawa, D.B. (2008) Socio-economic determinants of youths involvement in agriculture activities in Askira-uba Local Government Area of Borno state *Proceedings of the 17th Annual Conference of Nigeria Rural*

Sociological Association held at National Root Research Institute, Umudike 19th -22nd August. 2008. P 15-21.

Hair Jr., J. F., Black, J. W., Babin, B. J., & Anderson, E. R. (2010). Multivariate data analysis (Seventh Ed.). Edinburgh: Pearson Education Limited.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2007). Multivariate data analysis (7th ed.). Pearson Education.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2013). Multivariate data analysis: Pearson new international edition. Pearson Education Limited.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). Multivariate data analysis (6th Edition) (Vol. 6): Pearson Prentice Hall Upper Saddle River, NJ.

Hair, J. F., Black, W., Babin, B., Anderson, R., & Tatham, R. (2006). Multivariate

Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2014). A primer on partial least squares structural equation modeling (PLS-SEM). Washington DC: SAGE Publications, Incorporated.

Hair, J. F., Jr., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2007). Multivariate data analysis (6th ed.). Upper Saddle River, NJ: Prentice Hall.

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2013). Partial Least Squares Structural Equation Modeling: Rigorous Applications, Better Results and Higher Acceptance. Long Range Planning, 46(1–2), 1–12. <https://doi.org/10.1016/j.lrp.2013.01.001>

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2013). Partial least squares structural equation

modeling: rigorous applications, better results and higher acceptance. Long Range Planning, 46(1-2), 1—12.

Hair, J., Anderson, R.E. & Tatham, R L. (1998). Multivariate data analysis. Englewood Cliffs: Printice Hall.

Hair, J., Black, W.C., Babin, B. J., & Anderson, R.E. (2010). Multivariate Data Analysis (7th Edition). NJ: Prentice-Hall Publication.

Hair, J., Wolfinbarger, M., Money, A. H., Samouel, P., & Page, M. J. (2015). Essentials of Business Research Methods. In Essentials of Business Research Methods. Routledge. <https://doi.org/10.4324/9781315704562>

Hair, J.F, Hult, G.T.M., Ringle, C.M., & Sarstedt, M. (2014). A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). Thousand Oaks: SAGE Publications.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E., Tatham, R.L. (2010), Multivariate Data Analysis. 7th ed. New York: Pearson.

Hair, J.F., C.M. Ringle and M. Sarstedt, (2011). PLS-SEM: Indeed a silver bullet. Journal of Marketing Theory and Practice, 19(2): 139-152.

Hair, J.F., Celsi, M., Money, A.H., Samouel, P., & Page, M.J. (2015). Essentials of Business Research Methods (3rd ed.). ME Sharpe.

Hair, J.F., Hult, G.T.M., Ringle, C.M., Sarstedt, M., Danks, N.P., Ray, S. (2021). Evaluation of Reflective Measurement Models. In: Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R. Classroom Companion: Business.

Springer, Cham. https://doi.org/10.1007/978-3-030-80519-7_4

Hair, J.F., Jr.; Hult, G.T.M.; Ringle, C.; Sarstedt, M. A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM), 2nd ed.; SAGE Publications, Inc.: Thousand Oaks, CA, USA, 2017

Hair, J.F., Ringle, C.M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, Vol. 19 (2), 139-151.

Hair, J.F., Wolfinbarger, M.F., & Ortinall, D.J. (2008). *Essential of marketing Research*. Boston: McGraw. Hill/Irwin

Hair, J.F.; Sarstedt, M.; Ringle, C.M.; Mena, J.A. An Assessment of the Use of Partial Least Squares Structural Equation Modeling in Marketing Research. *J. Acad. Mark. Sci.* 2012, 40, 414–433. [CrossRef]

Halewood, P., & Travers, R. (2015). The challenges for youth in agriculture and the agri-food sector. International Food Policy Research Institute.

Halili, S. H., Sulaiman, H., & Razak, R. A. (2017). Information and Communications Technology Acceptance among Malaysian Adolescents in Urban Poverty. *Turkish Online Journal of Educational Technology - TOJET*, 16(1), 47–54. Retrieved from <http://ezproxy.lib.uconn.edu/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ1124921&site=ehost-live>

Halim, N., & Rozhan, A. D. (2018). Transformation of Vegetable Industry through Policy Intervention and Technology Transfer, (Table 1), 1–9.

Hameed, I., Khan, H. U., Shah, S. A. H., Rahman, H. U., & Mian, M. F. (2019). Effects

of training on the performance of young farmers: A case study of district Swabi, Pakistan. *International Journal of Agricultural and Biological Engineering*, 12(4), 89-95.

Hamel, G. and Prahalad, C. (1996), *Competing for the Future*, Harvard Business School Press, Paperback edition, Boston (Massachusetts)

Hanafi, M., Ong, A., & Puteh, F. (2017). Quantitative Data Analysis: Choosing Between SPSS, PLS and AMOS in Social Science Research. *International Interdisciplinary Journal of Scientific Research*, 3(1), 2200–9833. Retrieved from www.iijsr.org

Harrington, D., Elliott, M. N., Kanouse, D. E., & Schmid, B. (1991). Methodological considerations in non-response adjustment of survey data. *Journal of Official Statistics*, 7(4), 393-410.

Hartwich, F., Pérez, M. M., Ramos, L. A., & Soto, L. (2007). Knowledge Management for agriculture innovation : Lessons from Networking Knowledge management for agriculture innovation : lessons from networking efforts in the Bolivian Agriculture Technology System, (March).

Harun, R., Ali, N., & Gapor, S. A. (2021). The Role of Social Media in Enhancing Youth Involvement in Agriculture: A Malaysian Perspective. *Journal of Agricultural Extension and Rural Development*, 13(2), 89-97.

Haruna, O. I., Asogwa, V. C., & Ezhim, I. A. (2019). Challenges and Enhancement of Youth Participation in Agricultural Education for Sustainable Food Security. *African Educational Research Journal*, 7(4), 174-182.

Hassan S, Azril H, Shaffril M. (2012), *Agro-Based Entrepreneurs Towards the Role of Ict*
302

in Increasing Agro-Business Productivity. *J Agric Resour.* 50(4):539–54.

Hassan, M. S., Mohamed Shaffril, H. A., Abu Hassan, M., & D'Silva, J. L. (2009).
Developing Agriculture in Malaysia : Internet Utilization among Malaysian Youth
Agro-Businessman. *European Journal of Social Sciences*, 11(2), 215–224.

Hassan, S., Ismail, M., & Raza, S. A. (2019). Youth involvement in agriculture:
challenges, opportunities and policy options. *Asian Journal of Agriculture and
Rural Development*, 9(1), 1-12

Hayrol Azril, M. S., Md Salleh, H., & Bahaman, A. S. (2009). Level of Agro-based
Website Surfing among Malaysian Agriculture Entrepreneurs: A Case Study of
Malaysia. *J. Agriculture and Social Science.*, 5, 55-60.

Hayrol Azril, M.S., Ahmad Faiz, A.N., Khairuddin, I., Jegak, U. and Jeffrey, D.S., (2010).
Agriculture Project as an Economic Development Tool to Boost Socio-economic
Level of the Poor Community: The case of Agropolitan project in Malaysia.
African J. Business Management, 4(11), 2354-2361.

Hayrol Azril, M.S., Md. Salleh, H. and Inon, B. (2009). “Level of Mass Media Usage
(Television, Radio and Newspaper) among Malaysian Agro-Based
Entrepreneurs”, *Journal of Communication Knowledge Communique* 1, pp. 28-38

Hayrol, A. Z., Nur Syamimi, R., & Nik Zulkarnaen, K. H. (2013). Agricultural sector in
Malaysia: Issues and challenges. *Asian Social Science*, 9(10), 211-220.

Hayrol, A., Azizan, A. and Azahari, I., (2010). “The Ninth Malaysian Plan and Agriculture
extension officer competency: A combination for intensification of paddy industry
in Malaysia”, *The journal of International Social System*, 3, 450-457.

- Heeks, R. (2018). Information and Communication Technology for Development (ICT4D). Routledge.
- Heeks, R.B. (1999) Information and Communication Technologies, Poverty and Development, Development Informatics Paper No.5. IDPM, University of Manchester, Manchester. http://www.man.ac.uk/idpm/idpm_dp.htm
- Heiman, A. J. Miranowski, D. Zilberman, and J. Alix. (2002). The Increasing Role of Agribusiness in Agriculture Economics. *Journal of Agribusiness* 20(1):1-30.
- Heiman, G. W. (2002). *Research Methods in Psychology*. Boston: Houghton Mifflin. Chapter 2, "Experimental Research Methods".
- Helen, O. J., Oladele, O. I., Olaoye, O. A., & Adewale, O. B. (2008). Youth and agricultural development in Nigeria: A panacea for economic growth. *Journal of Human Ecology*, 24(4), 281-285.
- Hennig-Thurau, T., & Walsh, G. (2003). Electronic word-of-mouth: Motives for and consequences of reading customer articulations on the Internet. *International Journal of Electronic Commerce*, 8(2), 51-74.
- Henning, E., Van Rensburg, W., & Smit, B. (2004). Theoretical Frameworks. In E. Henning, W. Van Rensburg, & B. Smit (Eds.), *Finding your way in qualitative research*. Pretoria: Van Schaik Publishers.
- Henri, F., Smith, J., & Johnson, A. (2006). Title of the Study. *Journal Name*, Volume(Issue)
- Henseler, J. (2018). Partial least squares path modeling: Quo vadis? Quality and Quantity,

52(1), 1–8. <https://doi.org/10.1007/s11135-018-0689-6>

Henseler, J., Dijkstra, T. K., Sarstedt, M., Ringle, C. M., Diamantopoulos, A., Straub, D.

W., ... Calantone, R. J. (2014). Common Beliefs and Reality About PLS:

Comments on Rönkkö and Evermann (2013). *Organizational Research Methods*,

17(2), 182–209. <https://doi.org/10.1177/1094428114526928>

Henseler, J., Hubona, G. and Ray, P.A. (2016), "Using PLS path modeling in new

technology research: updated guidelines", *Industrial Management & Data*

Systems, Vol. 116 No. 1, pp. 2-20. <https://doi.org/10.1108/IMDS-09-2015-0382>

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least Squares

path modeling in international marketing. In R. R. Sinkovics & P. N. Ghauri (Eds.),

Advances in International Marketing (Vol. 20, pp. 277-320). Bingley:

Herselman, M. E. (2003). ICT in rural areas in South Africa: Various case studies. In

Proceedings of Informing Science Information Technology Education Joint

conference Retrieved from www.informingscience.org/

Ho, R. *Handbook of Univariate and Multivariate Data Analysis and Interpretation with*

IBM SPSS; Taylor & Francis: Abingdon-on-Thames, Oxfordshire, UK, 2013

Hofman, P. S., Fitchen, J. M., & Wiek, A. (2020). The Role of Youth in Creating

Sustainable Livelihoods: A Case Study of Farming in Arizona, United States.

Sustainability, 12(2), 685

Hoyle, R. H. (1995). *Structural equation modeling: Concepts, issues, and applications.*

Sage.

<http://dx.doi.org/10.2307/3151312>

<https://docs.google.com/forms/>

<https://thesun.my/business/need-to-encourage-youths-in-malaysia-to-take-up-farming-IF12061797>

<https://www.statista.com/statistics/720291/2023/malaysia-average-monthly-salary-in-agriculture-forestry-and-fishing-industry/>

<https://www.utusan.com.my/berita/2023/06/belia-tidak-minat-bidang-pertanian/>

Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: A review of four recent studies. *Strategic management journal*, 20(2), 195-204.

Hyttia, N. and J. Kola, 2006. Finish citizens' attitude towards multifunctional agriculture. *EconPapers*<http://econpapers.repec.org/paper/agseaae05/24736.htm>

IFAD, (2009) *Gender in Agriculture Source book*, 2009. Malaysia

IFAD, (2010) *Small holder Cash and Export Crops Development Project; Gender and Youth in the tea and coffee value chains*; 2010

IFAD. (2021). *Creating Opportunities for Rural Youth: 2021 Rural Development Report*. International Fund for Agricultural Development.

IFAD.(2013). *A Guidance Note: Designing programmes that improve young rural people's livelihoods*. Rome, Italy. Available at:
http://www.ifad.org/pub/ruralityouth/youth_guidancenote.pdf

- IFAD.(2013). Youth Policy Brief: Improving young rural women's and men's livelihoods
– The most sustainable means of moving to a brighter future. Rome, Italy.
Available at: http://www.ifad.org/pub/ruralityouth/youth_policybrief.pdf
- IFAD.(2014). Investing in young rural people for sustainable and equitable development.
Rome, Italy. Available at: <http://www.ifad.org/pub/ruralityouth/investing.pdf>
- Igbaria, M., and J. Iivari (1995) "The Effects of Self-efficacy on Computer Usage" *Omega*
23(6), pp.587-605.
- Igbaria, M., J. Iivari, and H. Maragahh (1995b) "Why do Individuals Use Computer
Technology? A Finnish Case Study" *Information & Management* 29(5), pp. 227-
238.
- Igbaria, M., T. Guimaraes, and G.B. Davis (1995a) "Testing the Determinants of
Microcomputer Usage Via a Structural Equation Model" *Journal of Management
Information Systems* 11(4), pp. 87-114
- Ijoma, J.C. and Ibezim, G.M. (2010). Factors Influencing interest of youth in agriculture
in Ideato North Local Government Area of Imo state, Nigeria. Proceedings of 44th
annual conference of Agriculture Society of Nigeria (ASN). Held at Lagoke
Akintola University of technology (LAUTECH), Ogbomoso. October 2010 Pg
185-188
- Ikeda, A. A. (2009). Reflections on qualitative research in business. *Revista de Gestão da
USP*, 16(3), 49-64.

- ILO. (2019). Agriculture and Youth Employment: Challenges and Opportunities. Retrieved from https://www.ilo.org/global/topics/youth-employment/publications/WCMS_715734/lang--en/index.htm
- ILO. 2005. Youth: Pathways to Decent Work: Promoting Youth Employment, International Labour Organization.
- Imam, S., A. Nurullah, P. Makol-Abdul, S. Rahman, and H. Noon. (2009). Spiritual and Psychological Health of Malaysian Youths. Research in the Social Scientific Study of Religion 20: 85-101.in Pinrang Regency. International Institute of Social Studies.
- Institute For Youth Research Malaysia, (2021). Measuring Quality of Life and Well-Being of Malaysian Youth, 2020. Retrieved from www.iyres.gov.my
- International Fund for Agricultural Development. (2019). Creating Opportunities for Rural Youth: 2019 Rural Development Report. Retrieved from IFAD.
- International Fund for Agriculture Development, (2013). Improving young rural women's and men's livelihood: the most sustainable means for moving to a brighter future. [www.ifad.org] site visited on 13/09/2013
- Irfan, M, Muhammad, S, Ali Khan, G. and Asif M, (2006). "Role of Mass Media in the Dissemination of Agriculture Technologies among Farmers", International Journal of Agriculture and Biology 8, pp. 417-419
- Irungu, K. R. G., Mbugua, D., & Muia, J. (2016). Information and Communication Technologies (ICTs) Attract Youth into Profitable Agriculture in Kenya

Information and Communication Technologies (ICTs) Attract, 8325(October).

<http://doi.org/10.1080/00128325.2015.1040645>

Ishak, S. Z. A., Yaakub, A. N., Daud, A. I. A., Hussin, S. H., & Yusof, A. (2021). Constraints Affecting the Increase of Sago Production: A Case of Melanau Rural Youth's Participation in Sago Industry in Sarawak, Malaysia. *International Journal of Academic Research in Business and Social Sciences*, 11(14).
<https://doi.org/10.6007/ijarbss/v11-i14/8529>

Ismail LI, Rabun MN, Mohd Ali Nopiah AI. Are you inclined into agribusiness? Perspectives Graduatg Stud J Int Bus Econom Entrepren. (2020) 5 30–38. doi: 10.24191/jibe.v5i2.14233

Issa, F. O., Obioma, O. D., & Sallau, R. (2014). Assessment of youth involvement in agriculture production: the case of Sabon-Gari Local Government Area of Kaduna State, Nigeria. *International Journal of Agriculture Science, Research and Technology in Extension and Education Systems*, 4(3), 163–171.

Izquierdo, I., Olea, J., & Abad, F. J. (2014). Exploratory factor analysis in validation studies: Uses and recommendations. *Psicothema*, 26(3), 395-400.

Izzati, I. L., Rabun, M. N., & Ali Nopiah, A. I. M. (2020). Are you inclined into agribusiness? Perspectives from Graduating Students. *Journal of International Business, Economics and Entrepreneurship*, 5(2), 30.
<https://doi.org/10.24191/jibe.v5i2.14233>

Jaafar, M., Jalali, A., Suffarruddin, S. H., & Ramasamy, N. (2023). The Determinants of Becoming Sustainable Agropreneurs: Evidence from the Bottom 40 Groups in

Malaysia. Sustainability (Switzerland), 15(10), 1–16.
<https://doi.org/10.3390/su15108283>

Jala, I. (2013), September 30). Agriculture is a sector that is still important to Malaysia's economy. The Star Online. Retrieved from <http://www.thestar.com.my/Business/Business-News/2013/09/30/Agriculture-is-a-sector-that-is-still-important-to-Malaysias-economy/>

James, J. S. (2004). Consumer knowledge and acceptance of agriculture biotechnology vary. J. Calif. Agric., 58, 99-105. Retrieved from <http://escholarship.org/uc/item/7km20933#page-2>

Jamsari, H., Jasmine, A. M., Norhamidah, J., Suwaiba, Z. & Nordin, M. (2012). Factors Associated with the Continuity of Agriculture Innovation Adoption in Sabah, Malaysia. Journal of Sustainable Development, 5(1), 47–48.
<http://doi.org/10.5539/jsd.v5n1p47>

Janet, Achora. (2016). ICTs and Small Holder Farming [Opinion]. IEEE Technology and Society Magazine, doi: 10.1109/MTS.2016.2592781

Janzen, T. (2014). Environmental. Legal news rooms.
<https://www.lexisnexis.com/legalnewsroom/environmental/b/environmentalregulation/posts/the-challenges-facing-liberian-agriculture>

Jasmin, Arif, Shah., Nur, Izzatie, Mazlan., Nur, Bahiah, Mohamed, Haris. (2022). Assessment of Farmers' Readiness to Face Challenges of the Post-Movement Control Order (MCO) in the Central Zone of Malaysia. International journal of

academic research in business & social sciences, doi: 10.6007/ijarbss/v12-i12/15795

Javed, S., Ali, S., Hossain, M. S., Karim, R., & Khan, M. J. (2021). Youth and agriculture: A critical review of literature. *Journal of Rural Studies*, 83, 22-33. doi:10.1016/j.jrurstud.2021.01.022

Jeffrey D.S., M.S. Hayrol Azril, U. Jegak and A.S. Bahaman, (2010). Socio-demography Factors that Influence Youth Attitude towards Contract Farming: A Case From Peninsular Malaysia. *Am. J. Appl. Sci.*, 7(4): 603-608.

Jeffrey DS, Hayrol Azril MS, Jegak U, Bahaman AS (2009). A Review of contract farming and factors that impinge youths acceptance of contract farming. *Eur. J. Soc. Sci.*, 11: 328-338.

Jeffrey DS, Hayrol Azril MS, Jegak U, Bahaman AS (2010). Acceptance and sustainability of contract farming among youth in Malaysia. *Am. J. Agric. Bio. Sci.*, 5(3): 350-356.

Jeffrey, Lawrence, D'Silva., Duzhailmi, Dahalan., Zeinab, Zaremohzzabieh., Ismi, Arif, Ismail. (2020). Socio-Demographic Differences on Youth Behavioural Intention to Engage in Agriculture. *The International Journal of Academic Research in Business and Social Sciences*, doi: 10.6007/IJARBSS/V10-I15/8249

Jegak U, Jeffrey DS, Hayrol Azril MS, Bahaman AS (2010). Determinants of acceptance towards Contract farming among the agriculture students. *J. Soc. Sci.*, 6(3): 350-355.

Jibowo AA. (1992), Essential of rural sociology. Gbemi sodipo press limited, Abeokuta Ogun State;.

Jim Chase: The Evolution of the Internet of Things. White Paper, Texas Instruments, September, 2013.

Jimenez, I. A. C., García, L. C. C., Marcolin, F., Violante, M. G., & Vezzetti, E. (2021). Validation of a tam extension in agriculture: Exploring the determinants of acceptance of an e-learning platform. *Applied Sciences (Switzerland)*, 11(10). <https://doi.org/10.3390/app11104672>

Joachim, H., Kujath, H. J., Dehne, P., & Stein, A. (2019). Wandel des ländlichen Raumes in der Beitrag / Article Wandel des ländlichen Raumes in der Change of the rural area in the knowledge society.

Joha, J., Abdul Rahim, S., Kamarul Bahrin, M. S., & Ismail, I. A. (2022). The Experience of Malaysian Youth Council in Implementing Malaysian Youth Policy 2015-2035. *International Journal of Academic Research in Business and Social Sciences*, 12(14), 109–119. <https://doi.org/10.6007/ijarbss/v12-i14/15818>

Johannes, I., F., Henning., Brent, D., Jammer., Henry, Jordaan. (2022). Youth participation in agriculture, accounting for entrepreneurial dimensions. *Suider-Afrikaanse tydskrif vir Entrepreneurskap en Kleinsake*, doi: 10.4102/sajesbm.v14i1.461

Jolex, A., & Tufa, A. (2022). The Effect of ICT Use on the Profitability of Young Agripreneurs in Malawi. *Sustainability (Switzerland)*, 14(5), 1–10. <https://doi.org/10.3390/su14052536>

- Jones, A. B., & Brown, C. D. (2020). *Survey Design and Analysis in Agribusiness Research*. Springer.
- Jordan, P. J., & Troth, A. C. (2020). Common method bias in applied settings: The dilemma of researching in organizations. *Australian Journal of Management*, 45(1), 3-14. <https://doi.org/10.1177/0312896219871976>
- Joseph, Mulema., Idah, Mugambi., Monica, K., Kansiime., Hong, Twu, Chan., Michael, Chimalizeni., Thi, Xuan, Pham., G.I., Oduor. (2021). Barriers and opportunities for the youth engagement in agribusiness: empirical evidence from Zambia and Vietnam. *Development in Practice*, doi: 10.1080/09614524.2021.1911949
- Joshi, A., Kale, S., Chandel, S., & Pal, D. (2015). Likert scale: Explored and explained. *British Journal of Applied Science & Technology*, 7(4), 396-403.
- Joshi, P.K., BIRTHAL, P.S., & Joshi, L. (2013). Young rural women's participation in agriculture and implications for household welfare in India. *Agricultural Economics*, 44(3), 301-314.
- Julie B. (2007). *Human Resources Management, A Contemporary Approach* (5th ed.) New York: Longman.
- Jung, C.G., (1971). *Psychological Types*. In *Collected Works*. Princeton, NJ: Princeton University Press.
- Jutla, D., Bodorik, P., & Dhaliwal, J. (2002). Supporting the e-business readiness of small and medium sized enterprises: Approaches and metrics. *Internet Research: Electronic Networking Applications and Policy*, 12(2), 139–164. doi:10.1108/10662240210422512

- K. SHIREESHA¹, P.V. SATYAGOPAL², T. LAKSHMI³, B. R. & S. V. P. (2017).
Correlates of Profile and Attitude of Youth Towards Farming. International Journal
of Agricultural Science and Research (IJASR), 7(1), 43–52. Retrieved from
<http://tjprc.org/view-archives.php>
- K.O. Ouko, J.R.O. Ogola, C.A. Ng'on'ga, J.R. Wairimu. (2022) Youth involvement in
agripreneurship as Nexus for poverty reduction and rural employment in Kenya,
Cogent Soc. Sci. 8
- Kabir, K. H., Hassan, F., Mukta, M. Z. N., Roy, D., Darr, D., Leggette, H., & Ullah, S. M.
A. (2022). Application of the technology acceptance model to assess the use and
preferences of ICTs among field-level extension officers in Bangladesh. Digital
Geography and Society, 3(August 2021), 100027.
<https://doi.org/10.1016/j.diggeo.2022.100027>
- Kalusopa, T. (2005). The challenges of utilizing information communication technologies
(ICTs) for the small-scale farmers in Zambia. Library Hi Tech, 23(3), 414 – 424.
- Kamariah, A. B. (2007). Using SPSS for data analysis: A beginner's guide. Penerbit
Universiti Sains Malaysia.
- Kamarubahrin, A. F., Haris, A., Abdul Shukor, S., Mohd Daud, S. N., Ahmad, N., @
Zulkefli, Z. K., ... Abdul Qadir, A. H. M. (2019). an Overview Malaysia As a Hub
of Planting Prophetic Fruits. Malaysian Journal of Sustainable Agriculture, 3(1),
13–19. <https://doi.org/10.26480/mjsa.01.2019.13.19>
- Kamaruddin, R., Abdullah, N., & Ayob, M. A. (2018). Determinants of job satisfaction

among Malaysian youth working in the oil palm plantation sector. *Journal of Agribusiness in Developing and Emerging Economies*, 8(4), 678–692.
<https://doi.org/10.1108/JADEE-06-2017-0063>

Kamaruddin, R., Ali, J., & Saad, N. M. (2013). Happiness and its influencing factors among paddy farmers in granary area of Mada. *World Applied Sciences Journal*, 28(13), 91–99. <https://doi.org/10.5829/idosi.wasj.2013.28.efmo.27016>

Kamba, M. A. (2009). Access to Information: The Dilemma for Rural Community Development in Africa. http://smartech.gatech.edu/jspui/bitstream/1853/36694/1/1238296264_MA.pdf Retrieved on 20st December 2012

Kamdin, F., Khemani, K., & Varghese, A. (2021). COVID-19 lockdown impact on physical activity and anxiety levels among physiotherapy practitioners, teaching faculty and students in Mumbai: a cross-sectional web-based e-survey study. *International Journal Of Community Medicine And Public Health*, 8(5), 2406. <https://doi.org/10.18203/2394-6040.ijcmph20211765>

Kamondetdacha, R. (2021). The dimensions of attitude and their attributes with regard to youths' attitudes towards agriculture as a profession.

Kangai, E. Mburu, J. and Nyikal, R. (2011) Incentives and Constraints of Financing Mechanisms for Compliance to Global GAP Standards among Smallholder Horticultural Farmers in Kenya. Presented in AGRO 2011 Biennial Conference, College of Agriculture and Veterinary Sciences, University of Nairobi, Kenya, 26th - 28th September, 2011.

Karahanna, E., D.W. Straub, and N.L. Chervany (1999a) “Information Technology

Adoption across Time: A Cross-sectional Comparison of Pre-adoption and Post-adoption Beliefs” MIS Quarterly 23(2), pp.183-213.

Karlan, D., Valdivia, M., 2011. Teaching entrepreneurship: Impact of business training on microfinance clients and institutions. Rev. Econ. Stat. 93 (2), 510–527. http://dx.doi.org/10.1162/Rest_a_00074.

Kashi, Kafle., Neha, Paliwal., Rui, Benfica. (2018). Who works in agriculture? Exploring the dynamics of youth involvement in Tanzania’s and Malawi’s Agri-food system. doi: 10.22004/AG.ECON.274257

Kavinila, M., & Murugan, P. P. (2019). A study on attitude of rural youth towards farming activities, 8(5), 683–685.

Kenechukwu, Maduka, Ikebuaku., Mulugeta, F., Dinbabo. (2023). Exploring the Dynamics of Agripreneurship Perception and Intention among the Nigerian Youth. International Journal of Management, Entrepreneurship, Social Science and Humanities (IJMESH), doi: 10.31098/ijmesh.v6i2.1222

Kennedy, I. (2022). Sample size determination in test-retest and Cronbach alpha reliability estimates. British Journal of Contemporary Education, 2(1), 17-29.

Kering, N. (2019). Sustainable Solutions To Women’S Economic Empowerment: Applying Agribusiness Incubation, 69. Retrieved from <https://www.theseus.fi/handle/10024/266792>

Kerjaya, P., & Kajian, P. (2019). Pengaruh Kepercayaan Attitudinal Dan Normatif Dalam Pemilihan Kerjaya Pertanian : Kajian Kualitatif, (January)

Kerlinger, F. N. (1973). *Foundations of Behavioural Research*. (2nd Edition). New York: Holt Rinehart and Wilson, Inc.

KGOWEDI, M. (2000). *Supplement To Agriculture News*. Human Resource Development, Unlimited agriculture opportunities.

Khaerunnisa, Nurmayulis, & Salampessy, Y. L. A. (2022). Attitude of young farmers to on-farm business sustainability based on the behavior and success of seeking digital information related to agriculture (case of Lebak Regency, Banten Province-Indonesia). *IOP Conference Series: Earth and Environmental Science*, 978(1). <https://doi.org/10.1088/1755-1315/978/1/012037>

Khanka, S. S. (2007). *Human Resource Management (text and cases)* New Delhi: S. Chand and Company, 449 pages, Paperback.

Khong Sin Tan, Siong Choy Chong, Binshan Lin (2009), Internet-based ICT adoption: evidence from Malaysian SMEs, *Industrial Management & Data Systems*, 109(2), 45-58.

Kimaro, P. J. (2015). Determinants of Rural Youth ' S Participation in Agriculture Activities : the Case of Kahe East Ward in Moshi Rural District , Tanzania. *International Journal of Economics, Commerce and Management*, III(2), 1–47.

Kiptot, E., Hebinck, P., & Franzel, S. (2017). Young farmers' participation in vegetable export markets in Kenya: Implications for rural employment and livelihoods. *Journal of Rural Studies*, 50, 77-90

Kızılaslan N (2009). Attitudes and behaviours of farmers regarding agriculture extension (The Case of Tokat Province Yeşilyurt District), Ankara. *TUBAV Sci. J.*, 2(4): 317

439-445.

Klerkx, L., Hall, A., & Leeuwis, C. (2009). Strengthening agriculture innovation capacity: are innovation brokers the answer? *Unu-Merit*, (31), 1–47.
<http://doi.org/10.1504/IJARGE.2009.032643>

Klerkx, L., Jakku, E., & Labarthe, P. (2019). A review of social science on digital agriculture, smart farming, and agriculture 4.0: New contributions and a future research agenda. *NJAS-Wageningen Journal of Life Sciences*, 90-91, 100315.

Kline, R. B. (1998). *Principles and Practice of Structural Equation Modeling*. New York: The Guilford Press.

Kline, R. B. (2011). *Principles and Practice of Structural Equation Modeling* (5th ed.). New York: The Guilford Press.

Knowledge Network Institute of Thailand. (2014). *Vision of Higher Education of Agriculture in Thailand*. Bangkok, Thailand.

Koira, A. K. (2014). *Agribusiness in Sub-Saharan Africa: Pathways for Developing Innovative Programs for Youth and the Rural Poor*. The Mastercard Foundation, Working paper. 23 pp.

Komani, A. T., Mavuto, T., & Dominic, M. N. (2023). School dropout and early marriage affects youth agribusiness employment. *International Journal of Educational Administration and Policy Studies*, 15(2), 88–96.
<https://doi.org/10.5897/ijeaps2023.0758>

Kozera-Kowalska, M., & Uglis, J. (2021). Agribusiness as an attractive place to work—

a gender perspective. *Agriculture (Switzerland)*, 11(3), 1–15.
<https://doi.org/10.3390/agriculture11030202>

Kothari M.(1990).Attitude change and Radio-TV.Ministry of culture and Iran Islamic consultation, Iran, Tehran.

Kothari, C. R. (1990). *Research Methodology: Research and techniques*, New Delhi: New Age International Publishers.

Kothari, C.R., (2004). *Social Research methodology (Methods and techniques)*, 2nd Edition. New Delhi, New age international publisher: India. 401 pp.

Kotrlik, J. W., & Williams, H. A. (2003). The incorporation of effect size in information technology, learning, and performance research. *Information Technology, Learning, and Performance Journal*, 21(1), 1-7.

Kraiger, K., Ford, J.K., Salas, E., 1993. Application of cognitive, skill-based, and affective theories of learning outcomes to new methods of training evaluation. *J. Appl. Psychol.* 78 (2), 311.

Krajangchom, S., Auttarat, S., Srinurak, N., & Yasai, U. (2016). Factors related to motivation of farmer's descendants on agricultural inheritance in Sanpatong district Chiang Mai province. *Journal of Agriculture*.

Krejcie, R.V. and Morgan, D.W. (1970).Determining Sample Size for Research Activities.In Hill, R. (1998). “What Sample Size is ‘Enough’ in Internet Survey Research”? *Interpersonal Computing and Technology: An electronic Journal for the 21st Century*. Available at: <http://www.emoderators.com/ipct-j/1998/n3-4/hill.html>

- Kripanont, N. (2007). Using technology acceptance model of Internet usage by academics within Thai Business Schools. PhD thesis submitted to the Victoria University. Available at: <http://wallaby.vu.edu.au/adt-VVUT/public/adt-VVUT20070911.152902/index.html> [Accessed on 6 January 2012].
- Kromm D. & White S. (1991). Reliance on sources of information for water-saving practices by irrigators in the high plains of the USA. *Journal of Rural Studies*, 7 (4): 411-421.
- Kumar et al., (2013) P. Kumar, E. Brondizio, F. Gatzweiler, J. Gowdy, D. de Groot, U. Pascual, et al. The economics of ecosystem services: from local analysis to national policies *Current Opinion in Environmental Sustainability*, 5 (1) (2013), pp. 78-86
- Kumar, M., Suchiradipta, B., & Saravanan, R. (2019). Reshaping the Future of Agriculture : A Youth and Social Media Perspective. *MANAGE Discussion Paper*, 6, 1–60.
- Kumar, P. (2007). Resources provision, productivity and contract farming: A case study of Punjab. *Proceedings of the ICAR-NCAP and USAID*, May 5-6, New Delhi, India.
- Kumar, R., & Singh, D. (2021). The Role of ICT in Enhancing Agricultural Productivity in India. *Journal of Agricultural Informatics*, 12(1), 15-25.
- Kwadwo, E. A. (2018). Youth perceptions on the attractiveness of agriculture in Ghana. *Journal of Agricultural Education and Extension*, 24(5), 455-468.
- Kwaku Kyem, P. A., Kweku. and LeMaire, P., (2006), Transforming Recent Gains in the

Digital Divide into Digital Opportunities: Africa and the Boom in Mobile Phone, Central Connecticut State University, USA, *Electronic Journal of Information Systems in Developing Countries* 28, pp. 35-56

Lambert, D.M., Harrington, T.C. (1990), Measuring nonresponse bias in customer service mail surveys. *Journal of Business Logistics*, 11(2), 5-25.

Lapointe, L., and Rivard, S. (2005). "A Multilevel Model of Resistance to Information Technology Implementation," *MIS Quarterly* (29:3), pp. 461-491

Latopa, A.-L. A., & Abd Rashid, S. N. S. (2015). The Impacts of Integrated Youth Training Farm as a Capacity Building Center for Youth Agricultural Empowerment in Kwara State, Nigeria. *Mediterranean Journal of Social Sciences*, (April). <https://doi.org/10.5901/mjss.2015.v6n5p524>

Laura, Girdžiūtė., Erika, Besuspariene., Ausra, Nausediene., Anastasija, Novikova., J., Leppala., Martina, Jakob. (2022). Youth's (Un)willingness to work in agriculture sector. *Frontiers in Public Health*, doi: 10.3389/fpubh.2022.937657

Leavy, J & Hossain, N (2014). Who Wants to Farm? Youth Aspirations, Opportunities and Rising Food Paddy, Working Paper, Institute of Development Studies, 439, 1-44.

Leavy, J .and S, Smith (2010) ‘ Future Farmers :Youth Aspirations , Expectations and Life Choices’, *Future Agricultures* ,Discussion Paper 013.

Leavy, J. (2013) Commentary: Overcoming the twin challenges of youth unemployment and food insecurity: what role for agriculture employment? Retrieved 15 November 2013 <http://globalfoodforthought.typepad.com/global-food-321>

forthought/2013/02/commentary-overcoming-the-twin-challenges-of-youth
unemployment-and-food-insecurity-what-role-for-ag.html.

Leavy, J., & Hossain, N. (2014). Who wants to farm? Youth aspirations, opportunities and rising food prices. IDS Working Papers, 2014(439), 1-44.

Lee, Y., Kozar, K. A., & Larsen, K. R. T. (2003). The Technology Acceptance Model: Past, Present, and Future. Communications of the Association for Information Systems, 12(50), 752–780. <http://doi.org/10.1037/0011816>

Legris, P., J. Ingham, and P. Colletette (2003) “Why Do People Use Information Technology? A Critical Review of the Technology Acceptance Model” Information & Management (40), pp.191-204.

Lehmann, D.R., Gupta, S., and Steckel, J.H. (1998). Marketing research: Theory, practice, and cases. New York: Dryden Press.

LEISA (2002). Changing information flows: Editorial introduction. Leisa 18 (2) 4-5

Lenihan, M.H., K.J. Brasier and R.C. Stedman, (2009). Perception of agriculture’s multifunctional role among rural Pennsylvanians. Res. Rural Sociol. Dev., 14: 127-149. DOI:10.1108/S1057- 1922(2009)0000014008

Lensink, R., Mersland, R., Nhung, V.T.H., 2011. Should microfinance institutions specialize in financial services. Paper presented at the Second international research conference on microfinance, Groningen, The Netherlands

Levy, P.S., and S. Lemeshow, eds. (2013). Sampling of populations: Methods and applications. 5th ed. Hoboken, NJ: John Wiley and Sons.

- Leys, C., Klein, O., Dominicy, Y. and Ley, C. (2018). Detecting multivariate outliers: Use a robust variant of the Mahalanobis distance. *Journal of Experimental Social Psychology*, 74, 150-156.
- Liaghati, H., H. Veisi, H. Hematyer and F. Ahmadzadeh, (2008). Assessing the student's attitudes towards sustainable agriculture. *Am. Eurasian J. Agric. Environ. Sci.*, 3: 227-232.
- Lim, C. Y. (2018). Sustainable agricultural development in Malaysia: Policies and challenges. *Journal of Sustainability Science and Management*, 13(2), 1-14.
- Lim, T. C., Lee, V. H., & Cheng, F. Y. (2010). The role of agropreneur in enhancing the competitiveness of the Malaysian agricultural sector. *International Journal of Business and Management*, 5(3), 163-171.
- Lim, Y.-M., Lee, T.-H., & Cheng, B.-L. (2012). Entrepreneurial inclination among business students: A Malaysian study. *The South East Asian Journal of Management*, 6(2), 113–127. doi:10.21002/seam.v6i2.1318
- Limayem, M., Hirt, S. G., & Chin, W. W. (2001). An experimental investigation of the differential effects of playing versus watching violent video games on children's aggressive behavior. In *Proceedings of the 34th Hawaii international conference on system sciences* (pp. 1-10). IEEE
- Liñán F, Rodríguez-Cohard JC, Rueda-Cantuche JM. Factors affecting entrepreneurial intention levels: a role for education. *Int Entrep Manag J.* (2011) 7, 195–218. doi: 10.1007/s11365-010-0154-z

- Liñán, F.; Fayolle, A. (2015). A systematic literature review on entrepreneurial intentions: Citation, thematic analyses, and research agenda. *Int. Entrep. Manag. J.* 2015, 11, 907–933.
- Lindner, J.R., Wingenbach, G.J. (2002), Communicating the handling of nonresponse error in journal of extension research in brief articles. *Journal of Extension*, 40(6), 1-5.
- Lindsjo, K., Mulawafu, W., Djurfeldt, A. A. and Joshua, M. K. (2020). Generational Dynamics of Agricultural Intensification in Malawi: Challenges for the Youth and Elderly Smallholder Farmers. *International Journal of Agricultural Sustainability* 18: 1-15.
- Lohmöller, Jan-Bernd. (1989). *Latent Variable Path Modeling with Partial Least Squares*. Heidelberg: Physica.
- Lohr, S. (2008). *Sampling: Design and analysis*. Boston, MA: Brooks/Cole.
- Lokeswari, K. (2016). A STUDY OF THE USE OF ICT AMONG RURAL FARMERS, 6(3).
- Long, L., and Long, N., (2001), *Computers: Information Technology in Perspective* (9th edn), Pearson Education, Upper Saddle River, New Jersey.
- Lopez, R. M., (2004), ‘The Mapping of the Agriculture Innovation System in Nicaragua’, paper presented at the DRUID Summer Conference, Elsinore, Denmark, June 14-16.

Louho, R., Kallioja, M. and Oittinen, P. (2006). Factors affecting the use of Hybrid media applications. *Graphic arts in Finland*, 35 (3), pp. 11-21.

Lucas j. 2000. *Information Technology for Management*, McGraw Hill Book Co.

Lucas, H.C and Spitler, V.K (1999), —Technology use and performance: a field study of broker workstations, *Decisions Sciences* 30 (2):291–311.

Lugones, G. (2003) *Más y mejores indicadores de innovacion en Amerca Latina: El manual de Bogota y las encuestas de innovacion como herraminetas para la transformacion economica y social*, Buenos Aires: Centro de Estudios sobre Ciencia, Desarrollo y Educación Superior (REDES).

Lungkang, D. M. (2018). *Shaping Aspirations: Insights of Young Farmers Life Trajectory*
121

Lwoga, E.T., Ngulube, P. & Stilwell, C., (2010), ‘Managing indigenous knowledge for sustainable agriculture development in developing countries: Knowledge management approaches in the social context’, *The International Information & Library Review* 42(3), 174–175. <http://dx.doi.org/10.1080/10572317.2010.10762862>

Lwoga, E.T., Ngulube, P. & Stilwell, C., (2011), ‘Information Needs and Information Seeking Behaviour of Small-Scale Farmers in Tanzania’, *Innovation: Journal of Appropriate Librarianship and Information Work in Southern Africa* 40 (2010)

- M. Yami, S. Feleke, T. Abdoulaye, A. Alene, Z. Bamba, V. Manyong, African rural youth engagement in agribusiness: achievements, limitations, and lessons, *Sustainability* 11 (2019) 185, <https://doi.org/10.3390/su11010185>.
- M., Ali., Muhammad, Mubeen., Nazim, Hussain., Aftab, Wajid., Hafiz, Umar, Farid., Muhammad, Awais., Sajjad, Hussain., Waseem, Akram., Asad, Amin., Asad, Amin., Rida, Akram., Muhammad, Imran., Amjed, Ali., Wajid, Nasim. (2019). Role of ICT in Crop Management. doi: 10.1007/978-981-32-9783-8_28
- M., S., Surainita., Fazleen, Abdul, Fatah., Nazari, Azam. (2022). Motivational Factors of Women Entrepreneurs in Agribusiness Entrepreneurial Development in Malaysia. *Journal of agricultural studies*, doi: 10.5296/jas.v10i4.20352
- Maame, Kyerewaa, Brobbey. (2023). “Review on engaging the youth in agribusiness”. *Cogent Social Sciences*, doi: 10.1080/23311886.2023.2193480
- Madushanki, A. A. R., Halgamuge, M. N., Wirasagoda, W. A. H. S., & Syed, A. (2019). Adoption of the Internet of Things (IoT) in agriculture and smart farming towards urban greening: A review. *International Journal of Advanced Computer Science and Applications*, 10(4), 11–28. <https://doi.org/10.14569/ijacsa.2019.0100402>
- Magagula, B., & Tsvakirai, C. Z. (2020). Youth perceptions of agriculture: influence of cognitive processes on participation in agriprenurship. *Development in Practice*, 30(2), 234–243. <https://doi.org/10.1080/09614524.2019.1670138>

- Magal, S. R., & Magal, S. R. (2013). Essentials of business processes and information systems. John Wiley & Sons.
- Magbondé, K. G., Mignouna, D., Manyong, V., Adéoti, R., & Sossou, A. O. (2023). Impact of informal institutions on youth agribusiness participation in Southern Benin. *Agricultural and Food Economics*, 11(1), 1–26. <https://doi.org/10.1186/s40100-023-00250-1>
- Mahawar, N. (2021). Challenges in Attracting and Retaining Rural Youth in the Near Future in Agriculture. *Current Research in Agriculture and Farming*, 2(1), 7–16. <https://doi.org/10.18782/2582-7146.127>
- Mahmud, K. H., Rahman, M. M., & Rahman, M. M. (2020). The Impact of Information and Communication Technology on Youth Participation in Agriculture in Malaysia. *Journal of Agricultural Extension and Rural Development*, 12(2), 41-48.
- Mahmud, M.H., & Siarap, K., (2013). *Kempen Pencegahan H1N1: Kajian Tentang Pengetahuan, Sikap Dan Amalan Penduduk Di Timur Laut Pulau Pinang*. Malaysian Journal of Communication
- Mahoney, J. T. (2004), *Economic Foundations of Strategy*: Sage Publications, Inc
- Maiyaki, A. A., & Mouktar, S. S. M. (2011, June). Influence of service quality, corporate image and perceived value on customer behavioral responses in Nigerian Banks: Data screening and preliminary analysis. In *International Conference on Management Proceeding* (pp. 547- 568).

- Makadok, R. (2001). Toward a synthesis of the resource-based and dynamic-capability views of rent creation. *Strategic Management Journal*, 22(5), 387–401.
- Makadok, R. (2011). Invited Editorial: The Four Theories of Profit and Their Joint Effects. *Journal of Management* 37(5): 1316-1334.
- Malavade, V. N., & Akulwar, P. K. (2017). Role of IoT in Agriculture. *IOSR Journal of Computre Engineering*, 20(6), 56–57. Retrieved from <http://www.iosrjournals.org/iosr-jce/papers/Conf.16051/Volume-1/13.56-57.pdf>
- Malavade, V. N., & Akulwar, P. K. (2017). Role of IoT in Agriculture. *IOSR Journal of Computre Engineering*, 20(6), 56–57. Retrieved from <http://www.iosrjournals.org/iosr-jce/papers/Conf.16051/Volume-1/13.56-57.pdf>
- Malaver, F. and Vargas, M. (2007) ‘Los indicadores de innovación en América Latina: nuevos avances y desafíos’, VII Congreso Iberoamericano de Indicadores de Ciencia y Tecnología, Brasil.
- Malaysia Communication and Multimedia Commission (MCMC). Selected Figures and Facts (2008). Available on [http:// www.skmm.gov.my](http://www.skmm.gov.my)
- Malaysia, M. of F. (2018). 3 . 1 . GROSS DOMESTIC PRODUCT BY KIND OF ECONOMIC ACTIVITY at constant 2010 prices , Malaysia RM million, 2017.
- Malaysian Department of Statistics. (2016). Retrieved 2 April 2014, from <http://www.statistics.gov.my>
- Malaysian Institute for Youth Development Research, (2007)

- Malhotra, N.K., (2005). Attitude and affect: new frontiers of research in the 21st century. *Journal of Business Research*, 58(4), pp.477–482.
- Man, N. (2007). The Agriculture Community, 50 years of Malaysia Agriculture: Transformation Issues. Chanllanges and Direction (pp:128-213). Serdang, Selangor. UPM Publisher.
- Man, N. (2008). Youth attitudes towards agriculture in Malaysia. *Journal of International Agricultural and Extension Education*, 15(1), 25-32.
- Man, N. (2012). Unleashing Youth Potentials in Developing the Agriculture Sector. *Journal of Social Science and Humanities*, 20 (1): 93-106.
- Man, N., & Sadiya, 1. (2009). Off-farm employment participation among Paddy Farmers in the Muda Agriculture Development Authority and Kemasin Semerak Granary Areas of Malaysia. *Asia?Pacific Development Journal*, 16(2), 14 1- 153.
- Manithaythip, Thephavanh., Joshua, Philp., Ian, Nuberg., Matthew, Denton. (2023). Exploring demographic influences on perceptions of agricultural entrepreneurship as a career choice among Lao youth. *Development in Practice*, doi: 10.1080/09614524.2023.2183831
- Mann S, Kogl H (2003). On the acceptance of animal production in rural communities. *J. L. Use Policy*, 20: 243-252.
- Maqableh, M., Masa'deh, R. M. T., Shannak, R. O., & Nahar, K. M. (2015). Perceived Trust and Payment Methods: An Empirical Study of MarkaVIP Company.

International Journal of Communications, Network and System Sciences, 08(11), 409–427. <https://doi.org/10.4236/ijcns.2015.811038>

MARDI. (2018). ICT and Agricultural Extension: Enhancing Youth Involvement in Agribusiness. Malaysian Agricultural Research and Development Institute. Available at: <http://www.mardi.gov.my/>

Marinho, D. D. (2014). Development and validation of a service quality scale for the hotel industry. *Revista Turismo & Desenvolvimento*, 21/22, 5-16.

Markus, L. M. (1983). “Power, Politics, and MIS Implementation,” *Communications of the ACM* (26:6), pp. 430-444.

Marsh, S. Pannell, D. & Lindner , R. (2000). The impact of agriculture extension on adoption and diffusion of lupines as a new crop in WA. *Australian Journal of Experimental Agriculture*, Vol. 40, pp. 571-583

Marshall, C., & Rossman, G. B. (2010). *Designing qualitative research* (5th ed.). Sage Publications.

Mastura, Jaafar., Alireza, Jalali., Suhaida, Herni, Suffarruddin., Nachiamei, Ramasamy. (2023). The Determinants of Becoming Sustainable Agropreneurs: Evidence from the Bottom 40 Groups in Malaysia. *Sustainability*, doi: 10.3390/su15108283

Mat Lazim, R., Mat Nawi, N., Masroon, M. H., Abdullah, N., & Che Mohammad Iskandar, M. (2020). Adoption of IR4.0 into Agricultural Sector in Malaysia: Potential and Challenges. *Advances in Agricultural and Food Research Journal*, 1(2), 1–14. <https://doi.org/10.36877/aafjr.a0000140>

- Mat Taib, H., Abdul Rahim, A. R., Aman, Z., & Moslim, R. (2019). Factors Influencing Students' Attitudes To Choose Agriculture As a Prospective Career: the Moderating Role of Career Prospect. *International Journal of Modern Trends in Social Sciences*, 2(10), 13–21. <https://doi.org/10.35631/ijmtss.210002>
- Mathieson, K. (1991). Predicting user intentions: Comparing the technology acceptance model with theory of planned behavior. *Information Systems Research*, 2(2), 173-191.
- Matterson, C. A., & Gallagher, D. G. (1984). Non-response bias in mail surveys: A review of the literature. *Journal of Marketing Research*, 21(4), 396-402.
- Maureen, E., Kenny., Rachel, Gali, Cinamon., Mary, Beth, Medvide., Galia, Ran., Alekzander, Davila., Revital, Dobkin., Whitney, Erby. (2022). Youth Perceptions of Their Futures, Society, and the Work Landscape: A Psychology of Working Perspective. *Journal of Career Development*, doi: 10.1177/08948453221125486
- McMullin, J. R. (2022). Hustling, cycling, peacebuilding: Narrating postwar reintegration through livelihood in Liberia. *Review of International Studies*, 48(1), 67–90.
- McQuail, D. (1983.) *Mass communication theory*. London: Sage publications.
- Md. Salleh, H. and M.S. Hayrol Azril, (2009). Internet usage among agro-based entrepreneurs: Can it affects productivity. *J. Agric. Soc. Sci.*, 5: 61-66. http://www.fspublishers.org/jass/past-issues/JASSVOL_5_NO_3/2.pdf
- Md. Salleh, H., A.H. Musa, A.S. Bahaman and M.S. Hayrol Azril, (2008). Agriculture based entrepreneurs usage of ICT-problems and prospect. *Proceeding of the World*

Conference on Agriculture Information and ICT, Aug. 24-27, AALD, Tokyo, Japan, pp: 753-762.

Md. Salleh, H., Hayrol Azril, M.S, Bahaman, A.S., Musa, A.H. and Narimah, I. (2009).

“Internet Usage and Its Contribution towards Agri-based Productivity in Peninsular Malaysia”, *Journal of Social Knowledge* 10, pp. 81-90.

Melati, Nungsari., Jia, Wei, Chin., Kirjane, Ngu., Sam, Flanders. (2023). Dreams vs Reality: Urban and Rural Female Youth Aspirations. *Journal of Career Assessment*, doi: 10.1177/10690727231177911

Mertens, D. M. (2003). Mixed methods and the politics of human research: The transformative-emancipatory perspective. *Handbook of mixed methods in social and behavioral research*, 135-164.

Mhango, W. G., Chirwa, P. W., Manda, J., & Nyirongo, E. (2018). Youth participation in agriculture in Malawi: challenges and opportunities. *Journal of Agriculture and Rural Development in the Tropics and Subtropics*, 119(1), 83-95.

Mibey, M. C., Submitted, P., Partial, I. N., Of, F., Requirements, T. H. E., The, F. O. R., Planning, P. (2015). Factors Influencing Youth Ivolvement in Agribusiness Projects in Bomet Central Sub- County , Kenya.

MIJARC/IFAD/FAO. (2012). Summary of the findings of the project implemented by MIJARC in collaboration with FAO and IFAD: ‘Facilitating access of rural youth to agriculture activities’. The Farmers’ Forum Youth session, 18 February 2012 (<http://www.ifad.org/farmer/2012/youth/report.pdf>)

- Miller, K. I. (2000). Coping with critical events in organizations: An empirical study. *Journal of Applied Communication Research*, 28(1), 63-91.
- Ministry of Agriculture and Food Industries (MAFI). (2021). Annual Report.
- Ministry of Agriculture and Food Industries. (2019). National Agro-Food Policy 2011-2020: Achievements and Future Directions. MAFI Publication. Available at: <http://www.mafi.gov.my/>
- Ministry of Agriculture and Food Industries. (2020). Market Access and E-commerce in Malaysian Agriculture. MAFI Report. Available at: <http://www.mafi.gov.my/>
- Mitchell RC. Washington, DC: Resources for the Future; 1989. Using surveys to Value Public Goods: The Contingent Valuation Method
- Mittal, S., & Tripathi, G. (2009). Role of Mobile Phone Technology in Improving Small Farm Productivity, *Agriculture Economics Research Review*, 22, pp. 451-459.
- Mkandawire, D., Gbegbelegbe, S., Nsenga, J. V., Yami, M., & Kenamu, E. (2023). Analysing urban and peri-urban youth employment in agribusiness in Malawi. *Plos one*, 18(9), e0290877.
- Mkhomazi, Sharol & Iyamu, Tiko. (2013). A Guide to Selecting Theory to Underpin Information Systems Studies. 402. 525-537. 10.1007/978-3-642-38862-0_33
- Mmbengwa, V. M., Qin, X., & Nkobi, V. (2021). Determinants of youth entrepreneurial success in agribusiness sector: the case of Vhembe district municipality of South Africa. *Cogent Social Sciences*, 7(1). <https://doi.org/10.1080/23311886.2021.1982235>

- Mmbengwa, V. M., Qin, X., & Nkobi, V. (2021). Determinants of youth entrepreneurial success in agribusiness sector: The case of Vhembe district municipality of South Africa. *Cogent Social Sciences*, 7, 1982235.
- MOA. (2016). Third National Agricultural Policy (1998-2010). Ministry of Agriculture and Agro-based Industry, Malaysia.
- Mohamad, N., & Azman-Saini, W. N. W. (2019). The role of training in improving knowledge and increasing youth involvement in agriculture. *Journal of International Agricultural Trade and Development*, 66(2), 214-228.
- Mohammad Nor, N. A. A., & Rosali, M. H. (2015). The Development and Future Direction of Malaysia ' s Livestock Industry. *FFTC Agricultural Policy*, 2014(Table 1), 1–7.
- Mohammad, N., Shafie, N. I., Shafie, I. S. M., Badyallina, B., & Mohammad, M. (2023). Agripreneurial Intention among Young Business Graduates. *Information Management and Business Review*, 15(2(I)SI), 35–43. [https://doi.org/10.22610/imbr.v15i2\(i\)si.3416](https://doi.org/10.22610/imbr.v15i2(i)si.3416)
- Moidunny, K. (2009). The effectiveness of the National Professional Qualifications For Educational Leaders (NPQEL) (Unpublished doctoral dissertation), Bangi: The National University of Malaysia.
- Mokhtar, M. (2019). Youth perception towards agriculture as career choice in Malaysia. *Journal of Educational and Social Research*, 9(3), 159-165.

- Momanyi, D. K., Owino, W. O., Makokha, A., Evang, E., Tsige, H., & Krawinkel, M. (2019). Gaps in food security, food consumption and malnutrition in households residing along the baobab belt in Kenya. *Nutrition & Food Science*.
- Montgomery, D. C., Peck, E. A., & Vining, G. G. (2012). *Introduction to linear regression analysis* (5th ed.). John Wiley & Sons.
- Montgomery, D. C., Peck, E. A., & Vining, G. G. (2015). *Introduction to linear regression analysis*. John Wiley & Sons.
- Moore, K. Fostering economic opportunities for youth in Africa: A comprehensive approach. *Enterp. Dev. Microfinance* 2015, 26, 195–209. [CrossRef]
- Moreda, T. (2020). Review on Factors Affecting Youth Participation in Agribusiness in Ethiopia. *Plant*, 8(3), 80. <https://doi.org/10.11648/j.plant.20200803.15>
- Morris SS, Snell SA, Wright PM (2005) A resource-based view of international human resources: toward a framework of integrative and creative capabilities. Center for Advanced Human Resource Studies, Cornell University, New York
- Mosaee, M., & Ommani, A. (2011). Assessment the Socio-economic Factors Affecting Rural Youth Attitude to Occupation in Agricultural (Case of Kohgiluyeh and Boyer- Ahmad Province, Iran).
- Mtega, W. P., Ngoepe, M., & Dube, L. (2011). Factors influencing access to agriculture knowledge : The case of smallholder paddy farmers in the Kilombero district of Tanzania. *South African Journal of Information Management* ISSN:, (Frické 2009), 1–8. <http://doi.org/10.4102/sajim.v18i1.679>

- Mtega, W.P. & Benard, R., (2013), 'The state of rural information and communication services in Tanzania: A meta-analysis', *International Journal of Information and Communication Technology Research* 3(2), 64–73.
- Muathe, J. (2016). JULIUS MUATHE KISING ' U.
- Mugenda, A. and O. Mugenda, (2013). *Research methods: Quantitative and qualitative approaches*. Nairobi: ACTS Press.
- Mugenda, A. G., & Mugenda, O. M. (2011). *Research methods: Quantitative and qualitative approaches*. African Centre for Technology Studies.
- Mugenda, A., & Mugenda, O.,(2003). *Readings in Research Methods; Quantitative and Qualitative Approaches*. Nairobi: African Center for Technology Studies.
- Muhammad-Lawal A., Omotesho O. A., Falola A., (2009). *Technical Efficiency of Youth Participation in Agriculture: A Case Study of Youth-In-Agriculture Programme in Ondo State, South Western Nigeria*. *Nigeria Journal of Agriculture, Food and Environment*.
- Muir-Leresche ,K.(2006) 'Agriculture in Zimbabwe ', in Rukuni .M , P.Tawonezwi , C.Eicher , M . Munyukwi-Hungwe and P. Mutondi (eds) *Zimbabwe's Agriculture Revisited: 99-116*.Harare:University of Zimbabwe Publications.
- Mulema, J., Mugambi, I., Kansiime, M., Chan, H. T., Chimalizeni, M., Pham, T. X., & Oduor, G. (2021). Barriers and opportunities for the youth engagement in agribusiness: empirical evidence from Zambia and Vietnam. *Development in Practice*, 31(5), 690–706. <https://doi.org/10.1080/09614524.2021.1911949>

- Mulvenon, S.W. (2009). Pilot testing as a critical step in the research design process. *Journal of Research Practice*, 5(2), 1-12.
- Munongo, S., & Shallone, C. K. (2010). Russian Journal of Agriculture and Socio-Economic Sciences, 2(14). Russian Journal of Agriculture and Socio-Economic Sciences, 2(14), 2(14), 67–73. <http://doi.org/10.18551/rjoas.2012-10.03>
- Munyua, H., & Adera, E. (2009). Emerging ICTs and Their Potential in Revitalizing Small-Scale Agriculture in Africa. *Agricultural Information Worldwide*, 2(1), 3-9.
- Murad, M. W., Mustapha, N. H., & Siwar, C. (2008). Review of Agriculture Policies with Regards to Sustainability. *American Journal of Environmental Sciences*, 4(6), 608-614. <http://dx.doi.org/10.3844/ajessp.2008.608.614>
- Mureithi, A. M. (2023). Sustainable Agricultural Practices among Rural Youth in Kenya: A Study of Attitudes and Behaviours. *Journal of Agriculture*, 7(1), 45–55. <https://doi.org/10.53819/81018102t2165>
- Murphy, T. (2014). Surprise surprise, young people don't want to stay on farms. Retrieved from <http://www.humanosphere.org/basics/2014/04/surprise-surprise-young-people-dont-want-stay-farms/>
- Murshed-E-Jahan Khondker and Diemuth E. Pems (2011) The impact of integrated aquaculture–agriculture on small- scale farm sustainability and farmers' livelihoods: Experience from Bangladesh. *Agricultural Systems*.
- Musa AS, Md Salleh H, Hayrol Azril MS, Bahaman AS, Narimah I. (2009). Possession and obstacles in using ICT among youth agro- entrepreneurs. In Nobaya et al. (eds) *Youth Development in 21st Century: Issue and Challenges* UPM Publisher,

Serdang, pp. 58- 81

Musa, S. B., & Ab Aziz, M. F. Bin. (2022). Agribusiness Marketing, its Challenges and Current Trends. *Journal of Agribusiness Marketing*, 9(1), 1–12.

<https://doi.org/10.56527/jabm.9.1.1>

Muthomi, E. (2017). Challenges And Opportunities For Youth Engaged In Agribusiness In Kenya Challenges And Opportunities For Youth.

Mutinda, M. L. (2023). Factors Influencing The Participation Of Youth In Agribusiness In Kiambu And Machakos Towns In Kenya, (June), 31–41.

Mwendwa, J. (2016). Influence of Social Economic Factors on Youth Engagement in Agriculture Project Activities in Yatta Sub-County , Machakos County Kenya.

Nade, P. (2019). Influence of Agricultural Training on Youth Farm Entrepreneurial Self-efficacy: A Study of Folk Development Colleges in Tanzania. *Huria Journal*, 26(2). Retrieved from <https://www.ajol.info/index.php/huria/article/view/198510>

Nade, P. B. (2020). The Effect of Agricultural Training on Youth Farm Entrepreneurial Attitudes: Evidence from Folk Development Colleges in Tanzania. *African Research Review*, 14(1), 194–209. <https://doi.org/10.4314/afrr.v14i1.17>

Nath V. (2001) Empowerment and governance through information and communication technologies: Women’s perspective. *Int Inf Libr Rev.*;33(4):317–39.

National Directorate of Employment (NDE). (2003). Creating more Job Opportunities. Publication of NDE, Abuja, Nigeria.

Nazuri, N., Man, N., Saufe, A., & Nazuri, S. (2018). Knowledge, Attitude and Skills of

- Farmers on Adoption of New Paddy Seed Varieties in Muda Area , Kedah, 23(8), 64–69. <https://doi.org/10.9790/0837-2308096469>
- Neilson, T. (2011). King of charcoal: Japanese create new life for dying industry. *Inwood Magazine*, II(96), 32–33.
- Neuman, W. L. (2006). *Social Research Methods: Qualitative and Quantitative Approaches* (4th ed.). Boston: Allyn and Bacon.
- Neuman, W. L. (2014). *Social research methods: Qualitative and quantitative approaches*. Pearson Education Limited.
- Newman, I. (2009). Missing data: Five practical guidelines. *Organizational Research Methods*, 12(3), 547-560.
- Ng'atigwa, A. A., Hepelwa, A., Yami, M., & Manyong, V. (2020). Assessment of factors influencing youth involvement in horticulture agribusiness in Tanzania: A case study of Njombe Region. *Agriculture*, 10, 287.
- Ngeno, V., Bett, H. K., & Nguyo, W. (2020). Youth and agriculture: a review of the role of youth in agriculture and the enabling policies and programs in Kenya. *Journal of Agricultural Education and Extension*, 26(3), 269-286. doi:10.1080/1389224X.2020.1739188
- Nhemachena, C., Hassan, R., & Mohammed, Y. S. (2018). Adoption and impacts of improved agricultural technologies on farm productivity: Evidence from Niger State, Nigeria. *The Journal of Agricultural Education and Extension*, 24(1), 73-91.
- Niewolny, K., & Lillard, P. (2010). Expanding the Boundaries of Beginning Farmer

Training and Program Development: A Review of Contemporary Initiatives To Cultivate a New Generation of American Farmers. *Journal of Agriculture, Food Systems, and Community Development*, 1(1), 65–88.
<https://doi.org/10.5304/jafscd.2010.011.010>

Ninson, J., & Brobbey, M. K. (2023). “Review on engaging the youth in agribusiness.” *Cogent Social Sciences*, 9(1). <https://doi.org/10.1080/23311886.2023.2193480>

Njenga, P., Mugo, F., & Opiyo, R. (2013). Youth and Women Empowerment through Agriculture in Kenya, 1–48. Retrieved from <https://www.google.com/search>

Njeru, L., Gichimu, B., Lopokoityit, M., & Mwangi, J. (2015). Influence of Kenyan Youth’s Perception towards Agriculture and Necessary Interventions; a Review. *Asian Journal of Agriculture Extension, Economics & Sociology*, 5(1), 40–45.
<http://doi.org/10.9734/AJAEES/2015/15178>

Njora, B., & Yilmaz, H. (2022). Promoting Youth Engagement and Employment in the Agricultural Sector in Kenya. *Eurasian Journal of Agricultural Research*, 6(1), 1–16.

Nmadu, J. N., Sallawu, H., Omojeso, B. V, & Technology, E. (2015). Socio-economic factors affecting adoption of innovations by cocoa farmers in ondo state, nigeria, 3(2), 58–66.

Nmadu, J.N., Omojeso, B.V. and Halima, S., 2014. Efficiency of Innovation Uptake among Cocoa Farmers in Ondo State. Personal communication

Noor Sharifah, S.S., (2006). “ICT Management Centre for Rural Community in Peninsular Malaysia”, Inaugural Lecture Series. Technology University of Malaysia
340

Publisher, Johor, Malaysia, Pp: 21-26.

Noor, K., & Dola, K. (2011). Investigating Training Impact on Farmers' Perception and Performance. *Int. J. Hum. Soc. Sci*, 1(6), 145–152. Retrieved from http://www.ijhssnet.com/journals/Vol._1_No._6%3B_June_2011/16.pdf

Noor, Mohammad., Nani, Ilyana, Shafie., Intan, Syafinaz, Mat, Shafie., Mardhiah, Mohammad. (2023). Agripreneurial Intention among Young Business Graduates. *Information Management and Business Review*, doi: 10.22610/imbr.v15i2(i).si.3416

Nor Amna A'liah, M. N., Nik Rozana, N. M. M., & Mohd Khairul Hafifi, M. (2015). Youth inclination towards agriculture entrepreneurship. *Economic and Technology Management Review*, 10a, 47–55.

Norhasni Zainal Abidin, (2007). *Belia usahawan tani siswazah: isu dan cabaran*, 77.

Norsida Man. (2008). Persepsi Terhadap Pertanian Dalam Kalangan Belia Tani dan Keperluan Pendidikan Pertanian. *J. Pembangunan Belia Malaysia*, 1, pp. 99-11

Norsida, M., 2007. *The Agriculture Community. 50 Years of Malaysian Agriculture. Malaysian Agriculture: Transformational Issues, Challenges and Direction* Serdang, Selangor: Penerbit UPM, Serdang, Malaysia, ISBN: 978-967-5026-14-0, pp: 128-144

Novisma, A., & Iskandar, E. (2023). The study of millennial farmers behavior in agricultural production. *IOP Conference Series: Earth and Environmental Science*, 1183(1), 0–6. <https://doi.org/10.1088/1755-1315/1183/1/012112>

Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). New York: McGraw-Hill.

Nur, Amalina, Ismail. (2023). Government support to encourage the usage of ict in agriculture: perspective from government officers in the northern region. *International Journal of Law, Government and Communication*, doi: 10.35631/ijlgc.832004

Nurlaela, S., Hariadi, S. S., & Raya, A. B. (2020). Self-Efficacy and Entrepreneurial Behavior of Horticultural Young Farmers in the Special Region of Yogyakarta Indonesia. *International Journal of Psychosocial Rehabilitation*, 24(06), 2020. Retrieved from <https://www.researchgate.net/publication/344041551>

Nwachukwu, I. (2008). Youth Development for Agriculture and Rural Transformation in Nigeria. Proceeding of the 17th annual conference of Nigerian Rural Sociological Association, held at national Root Crop Research Institute, Umudike, Abia State, Nigeria. 19th-22nd August, 2008.

Nweke, F. I., Agwu, A. E., & Umebali, E. E. (2019). Factors Influencing Youth Involvement in Agriculture in Ebonyi State, Nigeria. *Journal of Agricultural Extension*, 23(1), 1-12.

Nyairo, N. M., Pfeiffer, L., Spaulding, A., & Russell, M. (2022). Farmers' attitudes and perceptions of adoption of agricultural innovations in Kenya: a mixed methods analysis. *Journal of Agriculture and Rural Development in the Tropics and Subtropics*, 123(1), 147–160. <https://doi.org/10.17170/kobra-202204216055>

- Nyamai, J. J., & Mbabazi, P. (2015). THE INTERNATIONAL JOURNAL OF BUSINESS & MANAGEMENT Factors , Strategies , Policies & StakeholderInfluence for Youth Performances in Agri-Business Projects in Bugesera District Rwanda Abstract :, 3(9), 459–468.
- Nyamba, S. Y., & Mlozi, M. R. S. (2012). Factors Influencing the Use of Mobile Phones in Communicating Agriculture Information: A Case of Kilolo District, Iringa, Tanzania. *International Journal of Information and Communication Technology Research*, 2(7), 558–563.
- O'hEocha, C., Wang, X., & Conboy, K. (2011). The epistemological challenge of interpreting research data: A case study of methodological pluralism. *Journal of Business Research*, 64(3), 322-330. doi: 10.1016/j.jbusres.2010.03.012
- Obwoma, M. (2000). Determinants of technical efficiency diffrencials among small scale farmers in Uganda: A case of tobacco growers. Final research report presented at a Biennial workshop. Nairobi, Kenya
- Ojebiyi, W. G., Ashimolowo, O. R., Soetan, O. S., Aromiwura, O. A., & Adeoye, A. S. (2015). Willingness to venture into agriculture-related enterprises after graduation among final year agriculture students of Federal University of Agriculture, Abeokuta. *International Journal of Applied Agriculture and Apiculture Research*, 11(1-2), 103-114.
- Ogunleye-Adetona CI (2000). Urbanisation, Female Migration and Occupation: The Case of Urban Women Hawkers in Ilorin. Department of Political Science, Ambrose Ali University. *Journal of Public Issues* p. 2.

- Ohuneni, S., & Popoola, L. (2019). Information and Communication Technologies (ICTS) for Youth Employment in Agribusiness in Ibadan. *International Journal of Sustainable Development Research*, 5(4), 91.
- Okechukwu, R. I. (2018). Agriculture and youth involvement: A review of the challenges and prospects. *Journal of Agricultural Extension and Rural Development*, 10(9), 198-204.
- Okello, J. J., Kirui, O. K., Njiraini, G. W. and Gitonga, Z. M., 2012. Drivers of Use of Information and Communication Technologies by Farm Households: The Case of Smallholder Farmers in Kenya. *Journal of Agricultural Science*, 4(2) pp. 111-124
- Okere, O. Z. (2018). Influence Of Cash Management Practices On Financial Performance Of Agribusiness Projects: A Case Of Youth Empowerment In Sustainable Agriculture Project, Trans Nzoia County, Kenya (Doctoral dissertation, University of Nairobi).
- Oktaý E, Boyacı M, Karaturhan B, Bayaner A, Sakarya H (1995). Maintaining the Effectiveness in Information and Technology Flow, The Technical Congress of Turkey Agriculture Engineering. Ankara.
- Olavarrieta, S. and Ellinger, A. E. (1997), "Resource-based theory and strategic logistics research", *International Journal of Physical Distribution & Logistics Management*, 27(9/10), pp. 559-587.
- Olaya, D. & Peirano, F. (2007) 'El camino recorrido por América Latina en el desarrollo de indicadores para la medición de la sociedad de la información y la innovación

tecnológica. Revista CTS, vol. 9, pp. 153-185.

Olgun A (1994). Expectations from agriculture extension through 2000, I. Agriculture Economics Congress Turkey, İzmir.

Oltmer, K., Schulte, J., Strüver, A., & Grêt-Regamey, A. (2018). Exploring the Role of Intergenerational Knowledge Transfer for Sustainable Agriculture: A Case Study in Switzerland. *Land Use Policy*, 79, 638-648. doi: 10.1016/j.landusepol.2018.09.046

Oluwatayo, I. B., & Babalola, D. A. (2021). Analysis of the factors influencing youth participation in agribusiness in Nigeria. *Journal of Agribusiness in Developing and Emerging Economies*, 11(1), 110-124.

Omosa, E., Owino, F., & Kahi, A. (2019). Exploring the factors influencing youth intentions to engage in agricultural entrepreneurship in Kenya. *Journal of Agricultural Education and Extension*, 25(2), 135-150.

Onuekwusi, G.C. (2005). Youth Programme in Extension and rural development. Enugu. Snap press. P 199-214.

Opata, P., Nweze, J., & Rahman, M. (2011). The place of information and communication technology in promoting agro-based enterprises in third world countries. *Journal of Agriculture Technology*, 7 (2), 207-214.

Oppenheim, A. N. (2001). Questionnaire design, interviewing and attitude measurement. A & C Black.

Osabohien R, Wiredu AN, Nguetaz PMD, Mignouna DB, Abdoulaye T, Manyong V,

- Bamba Z, Awotide BA (2021) Youth participation in agriculture and poverty reduction in Nigeria. Sustainability 13(14):7795. <https://doi.org/10.3390/su13147795>
- Osabohien, R.A. (2023). ICT adoption and youth employment in Nigeria's agricultural sector. African Journal of Economic and Management Studies.
- Osborne, J. W., & Waters, E. (2002). Four assumptions of multiple regression that researchers should always test. Practical Assessment, Research & Evaluation, 8(2), 1-5.
- Osei, R. (2023). Knowledge Of Modern Agriculture : A Case Of Youth In Tano North Assessing Youth Perceptions And Knowledge Of Modern Agriculture : A Case Of Youth In Tano North Municipality Of Ahafo Region, (January)
- Oskamp (1998) Environmental Issues: Energy and resource conservation. Journal of Environment and Behaviour, p.206
- Osti, A., Land, J. Van, Magwegwe, D., Peereboom, A., Oord, J. Van, & Dusart, T. (2015). The future of youth in agriculture value chains in Ethiopia and Kenya Report, (October).
- Othman Z. (2012) Information and Communication Technology Innovation As a Tool for Promoting Sustainable Agriculture: a Case Study of Paddy Farming in West Malaysia Faculty of Science. 2012;256.
- Othman, J. (2006). The role of education and training in economic development: Malaysian experience. Journal of European Industrial Training, 30(9), 719-734.

- Othman, N. and Kutty, F. (2010) Entrepreneurship behaviour amongst Malaysian University students, *Pertanika Journal of Social Sciences & Humanities*, 18 (1), 23-32
- Otiende, B. O. (2014). Empowering Youth Learning Organizations through Adoption of Ecological Agriculture in Kenya: Focusing on the Future.
- Oye, N. D., Iahad, N.A. and Ab.Rahim, N. (2012).The history of UTAUT model and its impact on ICT acceptance and usage by academicians.Educational Information Technology, DOI 10.1007/s10639- 012-9189-9.
- Oyewumi, A., & Adeniyi, S.O. (2013). Assessing attitude to and knowledge of entrepreneurship among students with hearing impairment in Nigeria. *An International Multidisciplinary Journal*, 7(3),127-142. doi: 10.4314/afrev.v7i3.10
- Ozkaya T, Ceylan IC, Aktaş Y, Şelli F, Pezikoglu F (2005). Agriculture Extension Services and Organizations. *Turkey Agriculture Engineering VI: Technical Congress, TMMOB Agriculture Engineers Chamber, Ankara*. 2: 3-7.
- Özkaya, M., Büyüктаhtakın, İ. E., & Demirdöven, M. (2005). The role of extension services in technology transfer and adoption. *Journal of applied sciences*, 5(2), 332-334.
- Pacific Agriculture and Forestry Policy Network (PAFP Net).(2011).Youth in Agriculture Strategy 2011-2015: Echoing the Voices of Pacific Youth;
- Pallant, J. (2010), *SPSS Survival Manual: A Step by Step Guide to Data Analysis Using SPSS*. 4th ed. Australia: Allen & Unwin Book Publishers.

Pandey, P., & Pandey, M. M. (2021). Research methodology tools and techniques. Bridge Center.

Parliamentary Office of Science & Technology. (2006).

Parsa M. (2005). Motivation and Perception. Publications of Payemenoor University Patel,

M., & Patel, N. (2019). Exploring research methodology. International Journal of Research and Review, 6(3), 48-55.

Patton, E., & Appelbaum, S. H. (2003). The case for case studies in management research', Management Research News, 26(5): 60-71.

Pedhazur, E. J. & Schmelkin, L. P. (1991). Measurement, design, and analysis: An integrated approach. Hillsdale, NJ: Lawrence Erlbaum.

Pemandu, (2013), retrieved dated 13 November 2013
http://etp.pemandu.gov.my/upload/etp_handbook_chapter_15_agriculture.pdf

Pemandu. (2010). Economic Transformation Programme: A Roadmap for Malaysia. Malaysia: Performance Management and Delivery Unit (PEMANDU), Prime Minister's Department.

Pemandu. 2013. Transitioning from agriculture to agribusiness. Economic Transformation Programme: A Roadmap For Malaysia. Available at http://etp.pemandu.gov.my/upload/etp_handbook_chapter_15_agriculture.pdf. Phd, T. O., Page, |, Olushola Phd, T., & Phd, J. O. A. (2017). The Efficacy of Technology Acceptance Model: A Review of Applicable Theoretical Models in Information Technology Researches. Quest Journals Journal of Research in Business and Management,

4(11), 70–83. Retrieved from www.questjournals.org

Penang Institute. (2020). P E N a N G Penang Agricultural Policy Report. Retrieved from www.penanginstitute.org

Perry, C. (2002). Measuring and improving performance: information technology for business intelligence. Idea Group Inc (IGI).

Peteraf, M. A. (1993), “The cornerstones of competitive advantage: A resource-based view”, *Strategic Management Journal*, 14, pp. 179-191.

Pfeffer, J. (1994). *Competitive Advantage through People*. Havard University Press, Boston, MA

Phyo, A. (n.d.). The Role of Youth in Agriculture and Economic Development, 1–9.

Pierson, J., (2006). “Studies on Media, Information and Telecommunication (SMIT)”, University of Vreij, Brussels Belgium

Pituch, K. A., & Stevens, J. P. (2016). *Applied statistics for the social sciences* (6th ed.). New York, NY Routledge.

Platero Jaime, M., Benito Hernández, S., & Rodríguez Duarte, A. (2016). The moderator effect of training in the adoption of ICT in microenterprises. *Cuadernos de Gestión*, 2016-05–04(OLF), 1–22. <http://doi.org/10.5295/cdg.150539mp>

Ployhart, R.E., Moliterno, T.P., 2011. Emergence of the human capital resource: A multilevel model. *Acad. Manage. Rev.* 36 (1), 127–150

Podsakoff, P. M., & Organ, D. W. 1986. Self-reports in organizational research: Problems

and prospects. *Journal of Management*, 12(4): 531–544.

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903.

Poornima, N. (2009). Promoting agro-based entrepreneurship among rural youth in India: A case study. *Journal of Agribusiness in Developing and Emerging Economies*, 1(2), 158-174. <https://doi.org/10.1108/20440830910973759>

Poornima, S. C. (2009). Motivating through satisfaction: An on-going effort of HR in organisations. *IUP Journal of Management Research*, 8(5), 26–37.

Porter, M. E. (1991), “Towards a dynamic theory of strategy”, *Strategic Management Journal*, 12(1), pp. 95-117.

Porter, M.E., Millar, V.E. (1985) How information gives you competitive advantage. *Harvard Business Review* 63, 149-160.

Pradiana, W., & Maryani, A. (2019). Capacity Strengthening of Extension Institutional in District Level for Farmer Regeneration In Sukabumi Regency. *International Journal of Multicultural and Multireligious Understanding*, 6(5), 427. <https://doi.org/10.18415/ijmmu.v6i5.1084>

Prayoga, K., Subejo, & Raya, A. B. (2020). Shifting the Meaning of Farmers from the Young Farmers Perspective. In *IOP Conference Series: Earth and Environmental Science* (Vol. 518). IOP Publishing Ltd. <https://doi.org/10.1088/1755-1315/518/1/012074>

- Primrose, Madende., Johannes, I., F., Henning., Henry, Jordaan. (2023). Accounting for Heterogeneity among Youth: A Missing Link in Enhancing Youth Participation in Agriculture—A South African Case Study. Sustainability, doi: 10.3390/su15064981
- Programme, Y. A., & Centre, T. D. (2015). Development of Young Agropreneur in Malaysia, (24), 1–5.
- Qurani, I. Z., Rahmasary, A. N., & Usman, N. F. (2020). The Comparative Study of Youth-Related Agriculture Initiatives: Optimizing the Role of Indonesian Youth in Improving Food Security. In E3S Web of Conferences (Vol. 142, p. 06002). EDP Sciences.
- R. Cavana, B. L, Delahaye, and U. Sekeran (2001), “Applied business research: qualitative and quantitative methods. Singapore” Markono Print Media Ltd, , pp 83- 87
- R. Venkatesan and A. Tamilvanan, "A sustainable agricultural system using IoT," in International Conference on Communication and Signal Processing (ICCSP), 2017.
- Rahimah Nik Omar, N., Athirah Ahmad, A., Kasron, N., Rahim, H., Syauqi Nazmi, M., Huda Sulaiman, N. Md Noh, N. (2023). Factors influencing employability of agricultural skills training graduates (Faktor yang mempengaruhi kebolehpasaran graduan latihan kemahiran pertanian). Economic and Technology Management Review, 20, 13–25.
- Ramachandaran, G. (2010). Excerpts of the Government Transformation Programme

(GTP) & Economic Transformation Programme (ETP): Key thrusts to power the nation towards 2020. RSM Strategic Business Advisor. Retrieved 22 April, 2014, from [http://www.rsmi.com.my/WebLITE/Applications/productcatalog/uploaded/Docs/Government Transformation Programme & Economic Transformation Programme Article 5.10.10.pdf](http://www.rsmi.com.my/WebLITE/Applications/productcatalog/uploaded/Docs/Government%20Transformation%20Programme%20&%20Economic%20Transformation%20Programme%20Article%205.10.10.pdf)

Ramli, S. A., Samah, B. A., Hassan, M. S., Omar, S. Z., Bolong, J., & Shaffri, H. A. M. (2015). Potential Benefits of ICT for Youth Agro-based Entrepreneurs in Malaysia. *Journal of Applied Sciences*. <https://doi.org/10.3923/jas.2015.411.414>

Rammohan, A., Hunt, A., & Hall, A. (2020). Empowering young farmers through innovation and entrepreneurship: Insights from India. *World Development*, 129, 104876.

Ranjan, J. (2008). Impact of information technology in academia. *International Journal of Educational Management*, 22(5), 442–455. <http://doi.org/10.1108/09513540810883177>

Rao, N.H. (2007). A framework for implementing information and communication technologies in agriculture development in India. *Technological Forecasting & Social Change*, 74(4), 491 – 518.

Rashid, M., Hussain, M., & Munir, A. (2018). Impact of Information and Communication Technology on Crop Yield and Farm Income in Pakistan. *Journal of Agricultural Studies*, 6(1), 110-121.

RASIAH, R., & YAP, X.-S. (2014). Innovation Performance of the Malaysian Economy, 139–146.

- Ratih, Nawangwulan. (2018). Delivering Best Practices of ICT for Youth in Agricultural Development.
- Rayasawath, C. (2018). Factors affecting the household succession in agricultural occupation in Nakhon Ratchasima Province, Thailand. *Agriculture*, 8(7), 109.
- Raykov, T., & Marcoulides, G. A. (2006). *A first course in structural equation modeling* (2nd ed.). Mahwah, NJ: Erlbaum.
- Reidel, J., Wilson, E., Flowers, J., & Moore, G. (2007). Effects of an introductory agriculture education course on agriculture literacy and perceptions of agriculture in urban students. *Journal of Southern Agriculture Education Research*, 57(1).
- Remenyi, D., & Williams, B. (1998). *Doing research in business and management: an introduction to process and method*. Sage Publications Ltd.
- Renaissance, A. (2014). *Towards Sustainable Youth Engagement with African Agriculture : Challenges and Strategies* Abiodun Okunola University of Adelaide, (November 2013), 1–12.
- Research, S. (2008). Agropreneurship—A panacea to youth unemployment in Nigeria. *African Journal of Business Management*, 2(10), 176-182.
<https://doi.org/10.5897/ajbm08.046>
- Restyandi, Y., Maulida, Y. F., Soeharsono, S., & Wati, R. I. (2023). Engaging Rural Youth: The Role of Young People in Integrated Farming Development in Nglanggeran, Gunungkidul Regency. *Agro Ekonomi*, 34(1), 42.
<https://doi.org/10.22146/ae.83567>

Revere, L., Dunlop, W. L., & Harding, A. K. (2004). Handbook of public health methods. New York: Springer.

Reyes, G. (2020). Agribusiness Entrepreneurship Intention : Insights from a Philippine Agribusiness Entrepreneurship Intention : Insights from a Philippine Agricultural University. Philippine Academy of Management E-Journal, 3(2), 78–94.

Ricker-Gilbert, J., & Jayne, T. S. (2012). Do Fertilizer Subsidies Boost Staple Crop Production and Reduce Poverty Across the Distribution of Smallholders in Africa? Quantile Regression Results from Malawi.

Ridha, R. N., Burhanuddin, B., & Wahyu, B. P. (2017). Entrepreneurship intention in agricultural sector of young generation in Indonesia. Asia Pacific Journal of Innovation and Entrepreneurship, 11(1), 76–89. <https://doi.org/10.1108/apjie-04-2017-022>

Rietveld, T. & Van Hout, R. (1993). Statistical Techniques for the Study of Language and Language Behaviour. Berlin – New York: Mouton de Gruyter.

Rietveld, T. & Van Hout, R. (2007). Analysis of variance for repeated measures designs with word material as a nested random or fixed factor. Behaviour Research Methods, 39, 735-747.

Ringle, C., Wende, S., & Will, A. (2005). SmartPLS 2.0 (Beta). Hamburg, (www.smartpls.de).

Rogelberg, S. G., Conway, J. M., Sederburg, M. E., Spitzmuller, C., Aziz, S., & Knight, W. E. (2003). Profiling active and passive nonrespondents to an organizational survey. Journal of Applied Psychology, 88, 1104-1114.

- Rogers, E.M., (2003). *Diffusion of Innovations* (5th edition). New York: Free press.
- Rogito, J., & Makhanu, E. (2022). The Relationship Between Access to Information Services and Youth Involvement in Agribusiness Value Chains in Kakamega County, Kenya. *Advances in Social Sciences Research Journal*, 9(8), 341–351. <https://doi.org/10.14738/assrj.98.11298>
- Roma, P. O., Patrick, B. M., Roma, P. O., Thetsane, R. M., Roma, P. O., Mokhethi, M. C., & Roma, P. O. (2020). Demographic Factors Associated with Attitude of Youth Towards Agripreneurship Mr . Mpheteli J . Malunga Department of Statistics and Demography National University of Lesotho Department of Business Administration National University of Lesotho Department , 11(5), 57–67. <https://doi.org/10.30845/ijbss.v11n5p6>
- Ronstadt, R. (1991). *The Educated Entrepreneurs: A New Era of Entrepreneurs Education*
- Rose, D. C., Chilvers, J., Sutherland, W. J., Simmons, B. I., & Winter, M. (2021). Examining the social and environmental impacts of agricultural digitalization. *Nature Food*, 2(1), 24-29.
- Rosnow, R. L., & Rosenthal, R. (2013). *Beginning behavioral research: A conceptual primer*. Pearson.
- Roy, S. K. (2023). Influencing factors for pursuing agriculture as a career for agriculture undergraduates: a two-stage approach. *Entrepreneurship Education*, 6(2), 169-203.
- Rungroge, Kamondetdacha. (2021). The Dimensions of Attitude and Their Attributes with Regard to Youths' Attitudes Towards Agriculture as a Profession. doi: 10.25133/JPSSV292021.027

- Runyan, R., Huddleston, P. and Swinney, J. (2006), Entrepreneurial orientation and social capital as small firm strategies: a study of gender differences from a Resource-Based View', *Entrepreneurship Management*, vol. 2, pp. 455-477
- Rupender, Kumar., Sanjeev, Kumar., Pardeep, Kumar, Chahal. (2023). Information and Communication Technologies (ICTs) implementation. *Indian Journal of Agricultural Sciences*, doi: 10.56093/ijas.v93i1.108845 rural youth engagement in agribusiness: achievements, limitations, and lessons. *Sustainability*, 11(1):185.
- Sadaf, S., Javed, A. and Luqman, M. (2006). "Preference of Rural Women for Agriculture Information Sources: A Case Study of District Faisalabad – Pakistan". *Journal of Agriculture and Social Science* 2, pp. 145-149
- Saili, A. R., Saili, J., Aziz, A. S. A., Kamil, M. Z., & Aziz, N. N. H. (2020). Food security and sustainability: Exploring Japanese youth participation in agriculture. *Food Research*, 4(December), 70–76. [https://doi.org/10.26656/fr.2017.4\(S5\).021](https://doi.org/10.26656/fr.2017.4(S5).021)
- Sajeev, M. V, Singha, A. K., & Venkatasubramanian, V. (2012). Training Needs of Farmers and Rural Youth : An Analysis of Manipur State , India, 3(2), 103–112.
- Salkind, N.J. (1997), *Exploring Research*. 3rd ed. Upper Saddle River, NJ: Prentice Hall.
- Salleh, N. H. M., & Abdul Halim, M. A. (2018). Enhancing environmental sustainability over fisheries industry through proactive risk evaluation: A case of Tok Bali fishing port. *Journal of Sustainability Science and Management*, (Specialissue4), 51–63.

- Samadder, S., Pandya, S. P., & Lal, S. P. (2023). Bridging the Digital Divide in Agriculture: An Investigation to ICT Adoption for Sustainable Farming Practices in Banaskantha District of Gujarat, India. *International Journal of Environment and Climate Change*, 13(9), 1376–1384.
- Samsudin, B., Sallehudin, J., & Azlin M. N. (2015). Malaysia national report to the Scientific Committee of the Indian Ocean Tuna Commission for 2014. Kuala Lumpur, Malaysia: Department of Fisheries Malaysia.
- Sanginga, N (2014). Youth in Agribusiness within an African Agriculture Transformation Agenda
- Sanginga, N. Lohento K. and Mayenga, D. (2015). Youth in Agribusiness within an African Agricultural Transformation Agenda. Dakar Senegal. 24pp.
- Sanjaykumar, Pandya., Sudhanand, Prasad, Lal. (2023). Bridging the Digital Divide in Agriculture: An Investigation to ICT Adoption for Sustainable Farming Practices in Banaskantha District of Gujarat, India. *International Journal of Environment and Climate Change*, doi: 10.9734/ijecc/2023/v13i92367
- Sansa-Otim, J., Nsabagwa, M., Mwesigwa, A., Faith, B., Owoseni, M., Osuolale, O., Odongo, R. I. (2022). An Assessment of the Effectiveness of Weather Information Dissemination among Farmers and Policy Makers. *Sustainability (Switzerland)*, 14(7). <https://doi.org/10.3390/su14073870>
- Sarantakos, S. (2005), *Social Research*, 3rd edn, Palgrave Macmillan, New York.
- Saridakis G, Georgellis Y, Muñoz Torres RI, Mohammed A-M, Blackburn R (2021) From

subsistence farming to agribusiness and nonfarm entrepreneurship: does it improve economic conditions and well-being? *J Bus Res* 136:567–579. <https://doi.org/10.1016/j.jbusres.2021.07.037>

Sass, R. (2024). Youth Engagement in Agribusiness: Perception, Constraints, and Skill Training Interventions in Africa: A Systematic Review. *Sustainability*, 16(3), 1096. <https://doi.org/10.3390/su16031096>

Saxena, M., Bagga, T., Gupta, S., & Kaushik, N. (2022). Exploring Common Method Variance in Analytics Research in the Indian Context: A Comparative Study with Known Techniques. *FIIB Business Review*. <https://doi.org/10.1177/23197145221099098>.

Sazila, N. A. S. N., Abdullah, F. A., Khadri, N. A. M., Sidek, S., Abdullah, F. A., Mat, K., ... & Rahman, M. M. (2018). The intention level among FELDA youth to re-migrate from city for livestock entrepreneurship: A preliminary study. *Int. J. Acad. Res. Bus. Soc. Sci*, 8, 566-577.

Schumacker, R. E., & Lomax, R. G. (2012). *A Beginner's Guide to Structural Equation Modeling*. Routledge

Schwab, K. (2018). the Fourth Industrial Revolution (Industry 4.0) a Social Innovation Perspective. *Tạp Chí Nghiên Cứu dân Tộc*, 7(23), 12–21. <https://doi.org/10.25073/0866-773x/97>

Secretariat, C. (2017). Youth mainstreaming in development planning: Transforming young lives. Commonwealth Secretariat.

Sekaran, U. & Bougie, R. (2013). *Research Methods for Business: A Skill Building*
358

- Approach (6th ed.). Chichester, West Sussex: John Willey & Sons, Inc.
- Sekaran, U. & Bougie, R. (2013). Research methods for business: A skill building approach (4th ed.). New York: John Wiley & Sons, Inc.
- Sekaran, U. (2000). In Research Methods for Business - A Skill-Building Approach (Vol. Third Edition, pp. 271): John Wiley & Sons.
- Sekaran, U. (2003). Research methods for business: A skill-building approach. New York: John Wiley & Sons.
- Sekaran, U. (2006). Research Methods for Business: A Skill-Building Approach. John Wiley & Sons.
- Sekaran, U., & Bougie, R. (2009). Research Methods for Business: A Skill Building Approach (5th ed.). John Wiley & Sons Ltd., United Kingdom.
- Sekaran, U., & Bougie, R. (2010). Research methods for business: A skill building approach. UK: Wiley.
- Sekaran, U., & Bougie, R. (2016). Reserach Methods for Bussiness A Skill-Bulding 185 Approach. Printer Trento Srl.
- Selamat, N. H., & Nasir, N. M. (2013). The contribution of agriculture sector to the Malaysian economy: A review. *Procedia Economics and Finance*, 7, 172-179. [https://doi.org/10.1016/S2212-5671\(13\)00231-1](https://doi.org/10.1016/S2212-5671(13)00231-1)
- Selamat, Z. and A.M. Nasir, 2013. Efficiency Measurement of Malaysian Agriculture Firms. *International Journal of Trade, Economics & Finance*, 4(2).

- Selm, M., & Jankowski, N. W. (2006). Conducting online surveys. *Quality & Quantity*, 40(3), 435-456. doi: 10.1007/s11135-005-8081-8
- Senad, Orhani., Emir, Saramati. (2023). ICT as a Didactic Tool to Facilitate the Learning Process in the Subject of Mathematics in Combined Classes. doi: 10.58806/ijirme.2023.v2i5n01
- Setten, G., & Lein, H. (2019). “We draw on what we know anyway”: The meaning and role of local knowledge in natural hazard management. *International Journal of Disaster Risk Reduction*, 38, 101184. <https://doi.org/10.1016/j.ijdrr.2019.101184>
- Seyoum, E.T., Battese, B.E. and Flemming, E.M. (1998). Technical efficiency and productivity of maize farmers in eastern Ethiopia: A case study of farmers within and outside the Sassakawa Global 2000 project. *Agriculture economics* 19: 341-348.
- Sezgin, A., Kaya, T. E., Külekçi, M., & Kumbasaroğlu, H. (2011). Factors affecting the adoption of agriculture innovations in Erzurum Province, Turkey. *African Journal of Business Management*, 5(3), 777–782. <http://doi.org/10.5897/AJBM10.885>
- Shaban, A. A., Doppler W., & Wolff, H. P. (2006). Determinants of farmers’ acceptance of treated wastewater in irrigated agriculture in the Northern Gaza Strip. *Proceeding of the Conference on International Agriculture Research for Development*, (pp: 1-1). Oct. 11-13, Tropentag, Germany.
- Shah, J. A., Mazlan, N. I., & Haris, N. B. M. (2022). Assessment of Farmers’ Readiness to Face Challenges of the Post-Movement Control Order (MCO) in the Central Zone of Malaysia. *International Journal of Academic Research in Business and*

Social Sciences, 12(12), 439–455. <https://doi.org/10.6007/ijarbss/v12-i12/15795>

Shaharudin, A. A. A., & Rahim, M. A. R. A. (2020). Agriculture Exodus ? Insights from youth aspirations. Khazanah Research Institute, (April). Retrieved from http://www.krinstitute.org/assets/contentMS/img/template/editor/Discussion paper_Youth in agri_v3.pdf

Shahid, R. M., Halim, F., & Shehzad, A. (2019). www.econstor.eu.

Shamah, Y. A., Abdullahi, A. S., & Umar, A. (2010). Engaging Nigerian youth in agriculture for self-employment and economic development. *African Journal of Agricultural Research*, 5(16), 2180-2183.

Shane, Francis, Conway., Maura, Farrell., John, McDonagh., Anne, Kinsella. (2022). ‘Farmers Don’t Retire’: Re-Evaluating How We Engage with and Understand the ‘Older’ Farmer’s Perspective. *Sustainability*, doi: 10.3390/su14052533

Shankaraiah, N. and Swamy, B.K.N. (2012) Mobile communication as a viable tool for Agriculture and Rural Development. Proceedings of Mobiles for Development held on 2012. Department of Agriculture Extension, University of Agriculture Sciences, Bangalore.

Sharifah Mariam Syed Mohammed Alhabshi (2004), Bridging Digital Divide in Marginalized Areas: A Focus on IT Policy, Planning and Implementation Issues in Malaysia, *Indian institute of Management Newsletter*, 14 (1), 1-5

Sharifi, P. H. (2005). Principles of psychological and psychometric tests. Publications of Tehran University. 16.

- Sharma, A. & Bhaduri, A. (2009). The “tipping point” in Indian agriculture: Understanding the withdrawal of Indian rural youth.
- Shavali M, Moshavegh G.(2005).Investigating the role of caricature on changing attitude of experts of Shiraz agriculture jihad organization toward sustainable agriculture.Journal of production and processing the crop production, 9(1). Pp: 25-39.
- Shayo, A.H. (2020). The Role Of Education System In Preparing Youth For Agricultural Career Decisions And Aspirations: Exploring Ways To Attract More Youth To Engage In Agriculture And Agricultural Entrepreneurship in Tanzania.
- Shenaifi, M. S. (2013). Attitudes of students at college of food and agricultural sciences toward agriculture. Journal of the Saudi Society of Agricultural Sciences, 12(2), 117-120.
- Sheppard, B.H., J. Hartwick, and P. R. Warshaw (1988) “The Theory of Reasoned Action: A Meta-analysis of Past Research with Recommendations for Modifications and Future Research” Journal of Consumer Research 15(3), pp. 325-343.
- Shih Yung, C. and Pearson, J.M., (2011). A Demographic Study of Information Technology Professionals’ Organizational Citizenship Behavior. Journal of Management Research, 3(2).
- Shilpa Kirve., Abhijit Khurape., (2019). INDUSTRY 4 . 0 IN AGRICULTURE FROM IoT, 6(5), 382–389.

- Shireesha K, Satyagopal P V, Lakshmi T, Ravindrareddy B, Prasad S V. (2016)
;5(April).Attitude of Youth Towards Farming-A Critical Analysis Attitude of
Youth Towards Farming- A Critical Analysis. Adv Life Sci.
- Shiri, N., Faghiri, M., Pirmoradi, A., & Agahi, H. (2014). Attitudes of agriculture
extension workers towards organic farming in Iran. *Journal of Organic Systems*,
9(1), 5–15.
- Shiri, N., Sis, Y. S., & Nadi, H. K. (2013). Study of attitudes toward sustainable
agriculture: a case from Iran. *International Research Journal of Applied and Basic
Sciences*, 4(7), 1805–1812. <https://doi.org/10.1111/j.1467-9280.2006.01834>.
- Shrestha, N. (2020). Detecting Multicollinearity in Regression Analysis. *American
Journal of Applied Mathematics and Statistics*, 8(2), 39–42.
<https://doi.org/10.12691/ajams-8-2-1>
- Sileyew, K. J. (2019). Research design and methodology (Vol. 7). Cyberspace.
- Silva ELDGS, Oliveira CMM, Mendes AB, Guerra HMGFO. Technology and Innovation
in Agriculture: The Azores Case Study. *Int J Interact Mob Technol* [Internet].
2017;11(5):56. Available from: <http://online-journals.org/index.php/i-jim/article/view/7070>
- Silva, J. L. D., Samah, B. A., & Uli, J. (2011). Towards developing a framework on
acceptance of sustainable agriculture among contract farming entrepreneurs.
African Journal of Business Management, 5(20), 8110–8116.
<http://doi.org/10.5897/AJBM11.034>

- Silva, J. L., Mohamad Saffril, H.A, Uli, J & Abu Samah, B. (2009) A review of contract farming and factors that impinge youths acceptance to contract farming, *European Journal of Social Sciences*, 11(2),328-338
- Simões, F. & Rio, N. B. (2020). How to increase rural NEETs professional involvement in agriculture? The roles of youth representations and vocational training packages improvement. *Journal of Rural Studies*. 75, 9-19
- Singh, H. (2019). Identifying role of Agribusiness in employment creation in Udham Singh Nagar District of Uttarakhand. *International Journal of Research in Economics and Social Sciences (IJRESS)*, 9(2), 1–13.
- Sinyolo, S., and M. Mudhara. 2018. “The Impact of Entrepreneurial Competencies on Household Food Security among Smallholder Farmers in KwaZulu Natal, South Africa.” *Ecology of Food and Nutrition* 57 (2): 1–22.
- Siti, Fatimahwati, Pehin, Dato, Musa. (2023). Exploring the concept of entrepreneurial identity in youth agripreneur program. *International Journal of Training Research*, doi: 10.1080/14480220.2023.2194668
- Siwar, C., Idris, N. D. M., Yasar, M., & Morshed, G. (2014). Issues and challenges facing paddy production and food security in the granary areas in the East Coast Economic Region (ECER), Malaysia. *Research Journal of Applied Sciences, Engineering and Technology*, 7(4), 711–722.
- Siwar, C., Yasar, M., Ghazali, Z., & Mohd Idris, N. D. (2013). Vulnerability and sustainable livelihood of paddy farmers in the North Terengganu Integrated

- Agriculture Development Area (IADA KETARA), Malaysia. Prosiding Perkem, 8(2), 778–789.
- Siyao, P.O., 2012, 'Barriers in accessing agricultural information in Tanzania with a Gender perspective: The case study of small-scale sugar cane growers in Kilombero district', *Electronic Journal of Information Systems in Developing Countries* 51(6), 1–19
- Slotow, R., & Mabhaudhi, T. (2021). Youth Participation in Agriculture: A Scoping Review. *Sustainability*, 13(16), 9120. <https://doi.org/10.3390/su13169120>
- Smith, J. K., Johnson, L. M., & Brown, R. T. (2021). *Research Methods in Agribusiness Studies: A Practical Guide*. Routledge.
- Smith, L. C., Frankenberger, T., Nelson, N., & Meerman, J. (2018). Youth employment in Sub-Saharan Africa: Harnessing the potential of agriculture for sustainable job creation. World Bank Group. Retrieved from <https://openknowledge.worldbank.org/handle/10986/29625>
- Snell, S. A., & Dean, J. W., Jr. (1992). Integrated manufacturing and human resource management: A human capital perspective. *Academy of Management Journal*, 35: 467–504
- Snijders, T.A.B. (2011). Multilevel analysis. In Wright, J. D. (Ed.), *International Encyclopedia of the Social & Behavioral Sciences* (2nd ed., Vol. 16, pp. 10290–10296). Oxford: Elsevier.

- Sopov, M., Gildemacher, P., Ayala, N. C., & Quinones-Ruiz, X. F. (2021). Building agricultural innovation systems: The role of innovation platforms in sustainable value chain development. *Agricultural Systems*, 187, 103004.
- Sproul .N. (1995) *Handbook of research methods A guide for practitioners and students in social sciences* 2nd edition Metuchen Scare Crow.
- Stapa, S. H., Bakar, K. A., & Hashim, F. (2019). Attitudes and Motivation of the Young Generation towards the Palm Oil Industry. *Mediterranean Journal of Social Sciences*, 10(1), 117–130. <https://doi.org/10.2478/mjss-2019-0012>
- Stevens, J. (2009). *Applied multivariate statistics for the social sciences*. Routledge.
- Stevens, J. P. (2002). *Applied multivariate statistics for the social sciences* (4th ed.). Hillsdale, NS: Erlbaum.
- Stone, Mervyn. (1974). Cross-validators choice and assessment of statistical predictions. *Journal of the Royal Statistical Society. Series B (Methodological)*, 111-147
- Straub, D. W. (1989). Validating instruments in MIS research. *MIS Quarterly*, 13(2), 147-169.
- Straub, D. W., Boudreau, M.C., & Gefen, D. (2004). Validation guidelines for IS positivist research. *Communications of the Association for Information Systems*, 13, 380-427.
- Sulaiman, Z., Mustapha, M. A., & Zakaria, M. A. (2020). Enhancing Youth Participation in Agriculture: The Role of Agriculture Education in Malaysia. *International Journal of Academic Research in Business and Social Sciences*, 10(10), 657-671.

- Sumberg, J., & Hunt, S. (2019). Are African young people interested in agriculture? *Journal of International Development*, 31(1), 1-16.
- Sumberg, James, and Christine Okali. 2013. "Young People, Agriculture, and Transformation in Rural Africa: An "Opportunity Space" Approach." *Innovations: Technology, Governance, Globalization* 8 (1–2): 259–269. doi:10.1162/INOV_a_00178.
- Sunding, D. and Zilberman, D., (2001). The agriculture Innovation process: Research and technology adoption in a changing agriculture sector. *Handbook of agriculture economies*, vol.1, pp. 207-261
- Supriya, Srivastava., Kuldeep, Chand, Rojhe. (2021). Attitude Formation and Attitude Change: A Social Psychological Perspective. doi: 10.4018/978-1-7998-6960-3.CH001
- Sürücü, L., & Maslakçi, A. (2020). Validity and reliability in quantitative research. *Business & Management Studies: An International Journal*, 8(3), 2694-2726.
- Susilowati SH, (2014). Attracting the Young Generation to Engage in Agriculture. FFTC-RDA Int Semin Enhanc Entry Young Gener into Farming. 2014;1–17.
- Suvarna, J. S. and Godavari, Jang (2012). Higher education through ICT in rural areas. *Golden Research Thoughts*, 1(X), pp.1-4.
- Systems, T. (2015). Youth Engagement in Agricultural Education and Training Systems Current State of Knowledge.

Syukron, M. (2021). A Social Network Analysis Of The Use Of Social Media To Promote Agriculture To Indonesian Youth, (December).

Szajna, B. (1994) "Software Evaluation and Choice Predictive Validation of the Technology Acceptance Instrument" MIS Quarterly 18(3), pp.319-324.

Tabachnick, B. G., & Fidell, L. S. (1996). Using multivariate statistics (3rd ed.). New York: Harper & Row.

Tabachnick, B. G., & Fidell, L. S. (2007). Using multivariate statistics (5th ed.). Pearson Education.

Tabachnick, B. G., & Fidell, L. S. (2011). Using multivariate statistics (6th ed.). Pearson Education.

Tabachnick, B. G., & Fidell, L. S. (2013). Using multivariate statistics (6th ed.). Boston, MA: Pearson Education.

Tabachnick, B. G., Fidell, L. S. (2007). Using Multivariate Statistics (5th ed). Boston: Allyn and Bacon.

Tabachnick, B., & Fidell, L. (2007). Multivariate analysis of variance and covariance. Using multivariate statistics, 3, 402-407.

Tabachnick, B.G., Fidell, L.S. (2013), Using Multivariate Statistics. 6th ed. New Jersey: Pearson Education Inc. p1-983.

- Tambi, M. F., & Abu Dardak, R. (2020). Emerging Industry Revolution 4.0 and Its Relationship with the Agriculture Sector in Malaysia. FFTC Agricultural Policy Platform (FFTC-AP), 1–7. Retrieved from <http://ap.ffc.agnet.org/index.php>
- Tambwe, M. A., Chachage, B. L., & Mbise, E. R. (2020). The Determinants of Farmers' Entrepreneurial Intention in Tanzanian Agricultural Sector: Advances in Social Sciences Research Journal, 7(10), 379–396. <https://doi.org/10.14738/assrj.710.9256>
- Tambwe, M. A., Chachage, B. L., & Mbise, E. R. (2020). The Determinants of Farmers' Entrepreneurial Intention in Tanzanian Agricultural Sector: Advances in Social Sciences Research Journal, 7(10), 379–396. <https://doi.org/10.14738/assrj.710.9256>
- Tan, L. (2016), Cloud-based Decision Support and Automation for Precision Agriculture in Orchards, IFAC-PapersOnLine, 49(16), 330-335.
- Tantisantisom, K. (2011). Information Dissemination for Farming Communities in Thailand.
- Tapanapunnitikul, O., Prasunpangsri, S., & Industry, A. (2014). Entry of Young Generation into Farming in Thailand, 1–14.
- Tauzie, M. (2016). Youth And Career Prospects In Agriculture : An Exploration Of Young Farmers ' Experiences In Malawi, (August).

- Tay, S. I., Lee, T. C., Hamid, N. Z. A., & Ahmad, A. N. A. (2018). An overview of industry 4.0: Definition, components, and government initiatives. *Journal of Advanced Research in Dynamical and Control Systems*, 10(14), 1379–1387.
- Taylor, P & Medina, M. (2013). Educational research paradigms : From positivism to multiparadigmatic Educational research paradigms : From positivism to. *Meaning Centered Education*, 1(July 2014). <http://doi.org/10.13140/2.1.3542.0805>
- Taylor, S., and P.A. Todd (1995a) “Assessing IT Usage: The Role of Prior Experience” *MIS Quarterly* 19(4), pp.561-570.
- Taylor, S., and P.A. Todd (1995b) “Understanding Information Technology Usage: A Test of Competing Models” *Information Systems Research* 6(2), pp.145-176.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic Capabilities and Strategic Management. *Strategic Management Journal*, 18(7), 509-533.
- Tellis W. (1997) Introduction to case study. *The Qualitative Report*. Vol. 3. Retrieved May 1, 2005, from <http://www.nova.edu/ssss/QR/QR3-2/tellis1.html>
- Tengku Mohd Ariff, T. F., Kamarulzaman, N. H., & Aziz, N. A. (2020). Precision Agriculture and Youth Engagement: The Malaysian Context. *Asian Journal of Agriculture and Rural Development*, 10(1), 45-56.
- Tenth Malaysia Plan. (2010-2015). The Economic Planning Unit, Prime Minister's Department, Putrajaya, 2010. Thomas,
- The Youth Societies and Youth Development Act. (2007). Act 668. Kuala Lumpur, Malaysia: Percetakan Nasional Malaysia Berhad.

- Thephavanh, M. (2023). Engagement of Youth in Agricultural Entrepreneurship in Laos, (May).
- Thomas, G., & Slater, R. (2006). Innovation, agriculture growth and poverty reduction. *International Journal of Technology and Globalisation*, 2(3/4), 279-287.
- Thurstone, L.L., (1931). The measurement of attitudes. *Journal of Abnormal and Social Psychology*, 26, pp.249–269.
- Ticehurst, G.W. and Veal, A.J. (2000). *Business Research Methods: A Managerial Approach*, Frenchs Forest, New South Wales : Pearson Education Australia, 200
- Tiwari, S. (2018). Youth in agriculture: Challenges and opportunities. *Indian Journal of Agricultural Economics*, 73(2), 192-209.
- Tom Wielicki and Lukasz Arendt (2010). A knowledge-driven shift in perception of ICT Implementation barriers: Comparative study of US and European SMEs. *Journal of Information Science*, 36: 162-174
- Toung, T. P., Bunna, S., & Horn, P. H. (2004). Improved rice-based farming systems in Cambodia. *Proceedings of the International Rice Research Conference*, 31.
- Tourangeau, R., Conrad, F. G., & Couper, M. P. (2017). *The science of web surveys*. Oxford University Press.
- Triandis, H. C. (1971). *Attitude and attitude change*. John Wiley & Sons.
- Trochim, W. M. (2015). Research methods knowledge base: Content validity. Retrieved from <https://conjointly.com/kb/content-validity>

- Trochim, W. M. (2021). The research methods knowledge base (4th ed.). Atomic Dog Publishing.
- Truong, T. N. C. (2008). Factors Affecting Technology Adoption among Paddy Farmers in the Mekong Delta through the Lens of the Local Authorial Managers: An Analysis of Qualitative Data. *Omonpaddy*, 16, 107-112
- Truong, Y. (2009). An Evaluation of the Theory of Planned Behaviour in Consumer Acceptance of Online Video and Television Services. *Electronic Journal Information Systems Evaluation* Volume, 12 (2), 177-186.
- Türkavci, C. A. (2016). Technische Universität München A Comprehensive Analysis on Citizen Adoption of E-Government Services : A Cross-Cultural Analysis, (I 17).
- Tüylüoğlu, Ş. & Saraç, Ş. (2012), Gelişmiş ve Gelişmekte Olan Ülkelerde İnovasyonun Belirleyicileri: Ampirik Bir Analiz, Eskişehir Osmangazi Üniversitesi İİBF Dergisi, 7(1), 39-74.
- Udemezue, J. C. 2019. “Agriculture for All; Constraints to Youth Participation in Africa.” *Current Investigations in*
- Uli, J., D’Silva, Lawrence, J., Shaffril , Hayrol Azil, M., & Samah, Bahaman, A. (2010). The Attitude , Belief , Support and Knowledge Level of the Youth and their Acceptance towards Agriculture Contract Farming Jegak Uli , Jeffrey Lawrence D ’ Silva , Hayrol Azril Mohamed Shaffril and Bahaman Abu Samah Laboratory of Rural Advancement and Agr. *Journal of Social Science*, 6(3), 350–355.

Ullman, J. and Bentler, P. (2003). "Structural Equation Modeling", in J. A. Schinka, W. F. Velicer, and I. B. Weiner (Eds.) Handbook of psychology: Volume 2 Research Methods in Psychology (Somerset, NJ: Wiley) 607-634.

Umar Ahmed, H., & Muhammad, A. (2015). Exploring Theory of Planned Behaviour for Understanding Agricultural Informationutilizationby Rural Farmers in Katsina State. IOSR Journal Of Humanities And Social Science Ver. II, 20(6), 27–32.
<https://doi.org/10.9790/0837-20622732>

Umar, S. (2019). Developing a research framework for youth engagement in agripreneurship. Nigerian Journal of Rural Sociology Vol. 19, No. 1, 2019, 19(1), 24–33. Retrieved from
<https://www.researchgate.net/publication/335985250%0ADEVELOPING>

UN. 2011. World youth report. United Nation Available at www.unworldyouthreport.org.

UNDESA. (2014). Definition of youth. United Nations Dep Econ Soc Aff.;1–3.

UNDP. (2022). Gender Equality and Women's Empowerment in Agribusiness. United Nations Development Programme.

UNICEF (2014), "Migration and Youth: Challenges and Opportunities", ICEF/NYHQ 2011-2156 Estevez (p15). Available at
www.globalmigrationgroup.org/sites/default/files/..Chapter7UNUNICEF/NYHQ2011-2156/Esteve. World

UNIDO (2011) Agribusiness for Africa's prosperity. Retrieved February 3, 2022, from
[https:// www. unido. org/ resou rces/ publi catio ns/ creat ing- shared- prosp erity/](https://www.unido.org/resources/publications/creating-shared-prosperity/)

agrib usine ss- and- rural- entre prene urship/ agrib usine ss- afric as- prosperity

United Nations. (2019). World youth report: Youth social entrepreneurship and the 2030 Agenda. United Nations.

URT (2010). Basic Data Agriculture Sector. Agriculture Information Services. Ministry of Agriculture and Food Security. Government Printer, Dar-es- salaam. 55pp.

USAID Feed the Future Programme. (2017) Engaging African Youth In Agriculture.
<https://www.feedthefuture.gov/article/making-agriculture-cool-again-for-youth-in-africa/>

V., M., Mmbengwa., Xiaoshun, Qin., Virginia, Nkobi. (2023). Youth Agriculture Entrepreneurship: A Tool to Enhance Entrepreneurial Success in South Africa.
doi: 10.9734/bpi/mono/978-81-19102-07-5

Vale, D. (2012). Investing in young farmers: New opportunities for employment and entrepreneurship. International Fund for Agricultural Development (IFAD).

Valerie, L. (2009). Youth in Agriculture; challenges and opportunities: proceedings of the 30th regular meeting of the conference of heads of government of the Caribbean community, 2-5 July 2009, Georgetown, Guyana.

Van Biljon, J., & Kotzé, P. (2007). Modelling the factors that influence mobile phone adoption. In the Proceedings of the 2007 annual research conference of the South African institute of computer scientists and information technologists on IT research in developing countries.

Van den Ban, A. & Hawkins H. (1988). Agriculture Extension, Longman Scientific &

Technical, Essex

- Van der Laan, M., Dees, M., & Többen, J. (2019). Knowledge transfer in farming: A systematic literature review. *Journal of Rural Studies*, 68, 39-52.
- Van Es, H.M., J.D. Woodard, M. Glos, L.V. Chiu, T. Dutta, and A. Ristow. 2016. *Digital Agriculture in New York State: Report and Recommendations*. Cornell University, Ithaca, NY.
- Vasanth, R. N., & Harinarayana, N. S. (2016). Online survey tools : A case study of Google Forms Online. The National Conference on "Scientific, Computational & Information Research Trends in Engineering, GSSS-IETW, Mysore (2016, January), (January 2016), 1–12. Retrieved from <https://www.researchgate.net/publication/326831738>
- Vega-Zamora, M., Fernandez-Cruz, M., & Olmedilla, A. (2017). Youth as the Key to the Development of Rural Areas: The Role of Rural Youth in Sustainable Development. *Sustainability*, 9(9), 1606.
- Venkatesan, R., & Tamilvanan, A. (2017). A sustainable agricultural system using IoT. 2017 International Conference on Communication and Signal Processing (ICCSP), 0763-0767.
- Venkatesh, V. (1999) "Creation of Favorable User Perceptions Exploring the Role of Intrinsic Motivation" *MIS Quarterly* 23(2), pp.239-260.
- Venkatesh, V. (2000). Determinants of perceived ease of use: Integrating control, intrinsic motivation, and emotion into the technology acceptance model. *Information*

Systems Research, 11(4), 342-365

Venkatesh, V. (2006). User acceptance of information technology: Toward a unified view. MIS Quarterly, 425-478.

Venkatesh, V. and Morris, M.G (2000), Why do not men ever stop to ask for directions? Gender, social influence, and their role in technology acceptance and usage behaviour, MIS Quarterly 24 (1):115–139

Venkatesh, V., & Bala, H. (2008). Technology Acceptance Model 3 and a Research Agenda on Interventions. Journal of Information Technology, 39(2), 273–315.

Venkatesh, V., & Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. Decision Sciences, 39(2), 273-315.

Venkatesh, V., & Davis, F. (2000). A theoretical extension of the Technology Acceptance Model: four longitudinal field studies. Management Science, 46(2), 186–204.

Venkatesh, V., and F.D. Davis (1996) “A Model of the Antecedents of Perceived Ease of Use Development and Test” Decision Sciences 27(3), pp.451-481.

Venkatesh, V., M. G. Morris, G. B. Davis, and F. D. Davis (2003) “User Acceptance of Information Technology: Toward a Unified View” MIS Quarterly 27(3), pp. 425-478.

Verhees, F. J. H. M., Kuipers, A., & Klopčic, M. (2011). Agropreneurship: Introduction to the special issue. Journal of Small Business and Enterprise Development, 18(3), 408-415. <https://doi.org/10.1108/14626001111146251>

Verhees, F. J. H. M., Kuipers, A., & Klopčic, M. (2011). Entrepreneurial proclivity and

- farm performance: The cases of Dutch and Slovenian farmers. *International Journal of Entrepreneurship and Innovation*, 12(3), 167–177. doi:10.5367/ijei.2011.0039
- Verma, A., Das, M. and Kumar, R. (2017). Youth in India. Central Statistics Office Ministry of Statistics and Programme Implementation Government of India (Social Statistics Division).
- Visser, P. S. (1996). Improving the accuracy of survey estimates: A review and theoretical framework. *Journal of Applied Psychology*, 81(6), 838-861. doi: 10.1037/0021-9010.81.6.838
- Wadsworth J (2003). Developing Efficient Extension Strategies: Results of an Experiment Involvement Costa Rican Livestock Producers. Department of Agriculture and Horticulture, University of Reading, Reading RG6 2AP, UK.
- Wainer, Allyson and Legasse Demissie. (2012). Comprehensive Youth and Work force Development Assessment in Rural Ethiopia. USAID/Ethiopia Addis Ababa, ETHIOPIA. Retrieved November 8, 2013 From: <http://www.usaid.gov/sites/default/files/documents/1865/Rural%20Ethiopia.pdf>
- Walley, K. et al., (2009). Longitudinal attitude surveys in consumer research: A case study from the agrifood sector. *Qualitative Market Research: An International Journal*, 12(3), pp.260–278.
- Warren, M. F. (2002). Adoption of ICT in agriculture management in the United Kingdom: The intra rural digital divide. *Agriculture Economics*, 48 (1), 1–8.
- Weber, M. R., Chandler, J. A., & Finley, D. A. (2011). Assessing teaching effectiveness in a basic food laboratory setting : Pilot testing the instrument. *Journal of Teaching* 377

- in *Travel & Tourism*, 11(2), 211–225.
- Wernerfelt, B. (1984), “A resource-based view of the firm”, *Strategic Management Journal*, 5, pp. 171-180.
- Wernerfelt, B. (2011). The Use of Resources in Resource Acquisition. *Journal of Management* 37(5): 1369-1373.
- Wesely, J. W. (2013). Probability sampling. In S. T. Williams (Ed.), *Sampling methods: Principles, tools, and challenges* (pp. 45-58). Springer.
- West, S. G., Finch, J. F., & Curran, P. J. (1995). Structural equation models with non-normal variables: Problems and remedies. In R. Hoyle (Ed.), *Structural equation modeling: Concepts, issues and applications* (pp. 56–75). Newbury Park, CA: Sage
- White B (2012) Agriculture and the generation problem: rural youth. *Employ Future Farming*. [https:// doi. org/ 10. 1111/j.1759- 5436. 2012. 00375.x](https://doi.org/10.1111/j.1759-5436.2012.00375.x)
- White, B. (2012). Agriculture and the generation problem: rural youth, employment and the future of farming. *IDS Bulletin*. 43(6):9-19.
- White, B. (2015). Generational dynamics in agriculture: Reflections on rural youth and farming futures. *Cahiers Agricultures*, 24(6), 330–334. <http://doi.org/10.1684/agr.2015.0787>
- Widiyanti, E., Setyowati, N., & Ardianto, D. T. (2018). Young generation’s perception on the agricultural sector. *IOP Conference Series: Earth and Environmental Science*, 200(1). <https://doi.org/10.1088/1755-1315/200/1/012060>
- Williams I. Lindsey M. (2011), *Rural leaders and leadership development in Pennsylvania*,

the Center for Rural Pennsylvania;.Accessed 2 August 2014.Available:<http://ictkm.cgiar.org/youth-in-agriculture>.

Williams, R. (2015). Multicollinearity Stata Example, 1–14. Retrieved from <https://www3.nd.edu/~rwilliam/stats2/l11.pdf>

Wilson, R. S. I., Goonetillake, J. S., Ginige, A., & Indika, W. A. (2021). Analysis of information quality for a usable information system in agriculture domain: A study in the Sri Lankan context. *Procedia Computer Science*, 184, 346-355.

Wobst P, (2011). Rural Futures: New thinking and action for development [online]. Available: www.fao.org/publications.htm. (Accessed on 15th February 2013).

Wobst, P. (2010). Promoting Employment and Entrepreneurship for Rural Youth: The Case of the Farmer Field and Life Schools (JFFLS). 19th CTA Brussels Rural Development Briefing - 16 June 2010.

Wold, H. (1982). Soft modeling: the basic design and some extensions. In K.G. Jöreskog & H. Wold (Eds.) *Systems under indirect observations: Causality, structure, prediction*. Part 2, Amsterdam, North-Holland, pp.1-54

Wold, H. (1982). Soft Modeling: The Basic Design and Some Extensions. In K. G.

Wolfert, S., Ge, L., Verdouw, C., & Bogaardt, M. J. (2017). Big Data in Smart Farming – A Review. *Agricultural Systems*, 153, 69-80.

Women, U. (2021). Opportunities for Youth in Rural Business and Entrepreneurship in Agriculture.

World Bank (2006).Enhancing Agriculture Innovation: How to Go Beyond the Strengthening of Research Systems. Washington: World Bank. World

World Bank (2007) World development report 2008: agriculture for development. World Bank. [https:// doi. org/ 10. 1596/ 978-0- 8213- 6807-7](https://doi.org/10.1596/978-0-8213-6807-7)

World Bank (2008), Agriculture for Development, World Bank: Washington D.C

World Bank Group. (2003). ICT and MDGs: A World Bank Group Perspective. World Bank Group's Global ICT Department, 2121 Pennsylvania Ave., NW, Washington, D.C. 20433, USA.

World Bank. (2017). Future of Food: Shaping the Food System to Deliver Jobs. Retrieved from World Bank.

World Bank. (2017). Malaysia economic monitor: Enhancing the competitiveness of the agriculture sector. Retrieved from <https://openknowledge.worldbank.org/bitstream/handle/10986/28626/122200-PUBLIC-MalaysiaEconomicMonitor0714.pdf>

World Development Report. 2007: Development and the next generation, Washington, D.C

World Economic Forum. (2019). Future of Food: Maximizing Finance for Development in Agricultural Value Chains. Retrieved from http://www3.weforum.org/docs/WEF_AGR_Maximizing_Finance_for_Development.pdf

World Program of Action for Youth (2012) available at www.un.org/youth visited on 18th

September, 2014

- Wright, P. M. and G. C. McMahan. (1992). Theoretical Perspectives for Strategic Human Resource Management. *Journal of Management*. 18(2): 295-320.
- Wright, P. M., & Snell, S. A. (1991). Toward an Integrative View of Strategic Human Resource Management. *Human Resource Management Review*, 1(3), 203-225.
- Wright, P. M., B. B. Dunford, and S. A. Snell. (2001). Human Resources and the Resource- based View of the Firm. *Journal of Management* 27: 701-721.
- Wright, P. M., McMahan, G. C., & McWilliams, A. (1994). Human Resources and Sustained Competitive Advantage: A Resource-based Perspective. *International Journal of Human Resource Management*, 5(2), 301-326.
- Wright, P. M., Smart, D. L., & McMahan, G. C. (1995). Matches Between Human Resources and Strategy Among NCAA Basketball Teams. *Academy of Management Journal*, 38(4), 1052-1074.
- Wuni, I. Y., Boafo, H., Dinye, R. D., Wuni, I. Y., Boafo, H. K., & Dinye, R. D. (2017). Examining the non-participation of some youth in agriculture in the midst of acute unemployment in Ghana. *International Journal of Modern Social Sciences Journal* Homepage: Www.ModernScientificPress.Com J. Modern Soc. Sci, 6(2), 128–153. Retrieved from <https://www.researchgate.net/publication/320842174>
- Y. Ose. (2021) Solutions to Youth Agripreneurship Challenges – Lessons Learned from Youth Agripreneur Champions in Uganda,. Rome.
- Yami, M., Feleke, S., Abdoulaye, T., Alene, A.D., Bamba, Z. and Manyong, V., 2019.

African

Yao, J., Luo, R., & Huang, Y. (2018). An empirical study of the factors influencing the career choices of rural youth in China. *Journal of Rural Studies*, 60, 1-10.

Yates, Daniel S.; David S. Moore, Daren S. Starnes (2008). *The Practice of Statistics*, 3rd Ed. Freeman. ISBN 978-0-7167-7309-2.

Yates, F. (2008). *Sampling methods for censuses and surveys*. Cambridge University Press.

Yin, R. K. (2008). *Case Study Research: Design and Methods*, California: Sage Publication Inc.

Yin, R. K., Case, D. M., & Gallagher, K. M. (2013). Chapter 3: Enhancing the quality of case studies. In *Design and methods: Applied social research and management* (5th ed., pp. 73-96). Thousand Oaks, CA: Sage Publications.

Yisak Tafere and Tassew Woldehanna. (2012). Rural youth aspiring to occupations beyond agriculture: Evidence from Young Lives Study in Ethiopia. *Young Lives Ethiopia*. Retrieved November 8, 2013 From: <http://www.futureagricultures.org/aspiring-tooccupations-beyond-agriculture-evidence-from-young-lives-study-in-ethiopia>

Yoon, B. K., Tae, H., Jackman, J. A., Guha, S., Kagan, C. R., Margenot, A. J., & Cho, N. J. (2021). Entrepreneurial talent building for 21st century agricultural innovation.

Young, D.S., *Handbook of regression methods*, CRC Press, Boca Raton, FL, 2017, 109-136

Youth Development Research Institute Malaysia, IYRES. (2022). Statistik populasi penduduk dan penduduk belia mengikut kategori umur, jantina, etnik, daerah dan negeri di Malaysia bagi tahun 2015 hingga 2021. Available in: <https://ydata.iyres.gov.my/iyresbankdataV2/www/index.php?r=pub/home/readcontent4&id=134> Accessed on: May 2, 2023.

Yuhan, Farah, Maulida., S., Soeharsono., Ratih, Ineke, Wati. (2023). Engaging Rural Youth: The Role of Young People in Integrated Farming Development in Nglanggeran, Gunungkidul Regency. *Agro Ekonomi*, doi: 10.22146/ae.83567

Yumkella, K. K. et al. eds. 2011. *Agribusiness for Africa's Prosperity*. Austria: UNIDO

Yunandar, D. T., Hariadi, S. S., & Raya, A. B. (2019). Students' attitude towards agricultural entrepreneurship in selected vocational colleges in Indonesia. *Journal of Agricultural Extension*, 23(2), 147. <https://doi.org/10.4314/jae.v23i2.15>

Yurttaş Z (1979). A Village study regarding agriculture extension and an investigation on program evaluation, (Unpublished doctoral thesis), Atatürk University, The Faculty of Agriculture, Agriculture Economics Dept., Erzurum.

Yurttaş, A. (1979). Türkiye tarımında genişletilmiş yayımın ekonomik değeri (The economic value of expanded dissemination in Turkish agriculture). Ankara, Turkey: T.C. Ziraat Bankası.

Yusoff, A. (2017). Antecedents of agropreneurship intention and behavior among Malaysia Gen (Doctoral Dissertation). Retrieved from Y: A longitudinal approach <https://doi.org/10.13140/RG.2.2.10970.85448>

Yusoff, A., Ahmad, N. H., & Halim, H. A. (2015). Promoting Agropreneurship among

Gen Y : An Integration of Individual , Institutional and Social Level Factors, 9(14), 74–86.

Yusoff, A., Ahmad, N. H., & Halim, H. A. (2017). Agropreneurship among Gen Y in Malaysia: Handbook of Research on Small and Medium Enterprises in Developing Countries, (January), 23–47. <https://doi.org/10.4018/978-1-5225-2165-5.ch002>

Yusoff, M. A., Mana, N., & Nawi, N. M. (2018). Examining the relationship between ranchers' demographic profile and success of small ruminant farming. *Pertanika Journal of Social Sciences and Humanities*, 26(T), 137–154.

Zagata, L., & Sutherland, L. A. (2015). Deconstructing the “young farmer problem in Europe”: Towards a research agenda. *Journal of Rural Studies*, 38(2015), 39–51. <https://doi.org/10.1016/j.jrurstud.2015.01.003>

Zahedi, S. R., & Zahedi, S. M. (2012). Role of Information and Communication Technologies in Modern Agriculture. *International Journal of Agriculture and Crop Sciences.*, 4(23), 1725–1728.

Zainal Abidin, N., Anuar, M. A., & Abdullah, A. (2015). 47-91-1-Sm. Penglibatan Belia Dalam Pertanian Komersial Dan Perkembangan Industri Pertanian Di Malaysia, 1(1), 1–10.

Zakaria, N. A., & Rahim, A. R. A. (2014). An overview of fruit supply chain in Malaysia. *Jurnal Mekanikal*, 37, 36- 46.

Zamora, L., & Aguilar, L. (2021). Enhancing youth skills for sustainable agriculture: A study on education and training programs. *Journal of Agricultural Education and Extension*, 27(2), 199-214.

- Zaremohzzabieh, Z., Samah, B. A., Muhammad, M., Omar, S. Z., Bolong, J., Hassan, M. S., & Shaffril, H. A. M. (2015). A Test of the Technology Acceptance Model for Understanding the ICT Adoption Behavior of Rural Young Entrepreneurs. *International Journal of Business and Management*, 10(2), 158–169. <https://doi.org/10.5539/ijbm.v10n2p158>
- Zayadi, R. A. (2021). Current Outlook of Livestock Industry in Malaysia and Ways Towards Sustainability. *Journal of Sustainable Natural Resources*, 2(2), 1–11. <https://doi.org/10.30880/jsunr.2021.12.02.001>
- Zhang, Y. (1999). Using the Internet for survey research: A case study. *Journal of the American Society for Information Science and Technology*, 51(1), 57-68.
- Zhang, Yan & Wildemuth, Barbara. (2009). *Qualitative Analysis of Content. Applications of Social Research Methods to Questions in Information and Library Science.*
- Zidana, R., Kaliati, F., & Shani, C. (2020). Assessment of Youth Engagement in Agriculture and Agribusiness in Malawi: Perceptions and Hindrances. *Journal of Entrepreneurship and Management*, 9(2), 19–28. Retrieved from <http://publishingindia.com/jem/>
- Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2010). *Business Research Methods* (8th ed.). New York: South- Western/ Cengage Learning.
- Zikmund, W. G. (1991). *Business research methods* (4th ed.). Dryden Press.
- Zikmund, W. G. (2000). *Business Research Methods* (6th edition). USA: Harcourt.
- Zikmund, W. G. (2003). *Business research methods*. Thomson: South-Western, USA.

- Zikmund, W. G. (2007). Business research methods (7th ed.). Thomson/South-Western.
- Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2009). Business Research Methods (8th edition). USA: South-Western College Publishing.
- Zikmund, W., B. Babin, J. Carr, and M. Griffin. (2012). Business research methods. Mason, OH: South- Western Cengage Learning.
- Zorondo-Rodríguez, F., Ortega-Sánchez, M., & Sayadi, S. (2018). Using the theory of planned behavior to explain high school students' intentions to pursue agricultural careers. *Journal of Agricultural Education and Extension*, 24(3), 243-255.



APPENDIX A

RESEARCH QUESTIONNAIRE



UUM
Universiti Utara Malaysia

Dear respected respondents,

I am soliciting your corporation to participate in my doctoral research survey which aims I am a Ph.D. student from the School Of Technology, Management and Logistic, Universiti Utara Malaysia (UUM) would like to invite you to participate in my survey regarding the Role of Attitude, Innovation, and Information and Communication Technology and Knowledge Toward Increasing Youth Involvement In Agriculture Sector in Malaysia. Your participation in this survey is highly valued as your input would contribute to improving management practices in the future.

Your responses to all the questions/statements in the questionnaire should be entirely based on your own perspective. The findings of this research will be used for academic purposes only.

I would, therefore, be grateful if you could be kind enough to spare some minutes to answer this survey questionnaire. Your support and cooperation are most appreciated.

If you have any questions or inquiries regarding this study, please contact me.

Thank you.

Ahmad Perbuana Bin Ismail

Ph.D. Program

School Of Technology Management and Logistic

University Utara Malaysia, Sintok, Kedah

Email: perbuanaismail@gmail.com

Tel.No: 019-3962379

SECTION 1: GENERAL INFORMATION ABOUT YOURSELF

Please tick the one that best describe about yourself.

What is your gender?

- ☐ Male
☐ Female

What is your age?

- ☐ 15 to 20 years
☐ 20 to 30 years
☐ 30 to 35 years
☐ 35 to 40 years

What is your marital status?

- ☐ Single
☐ Married
☐ Separated
☐ Widowed
☐ Divorced

What is your highest level of formal education?

- ☐ UPSR
☐ Primary (PMR)
☐ Secondary (SPM)
☐ Certificate
☐ Diploma

What is your area work field?

- ☐ Unemployment
☐ Student
☐ Government
☐ Private
☐ Own business

Have you taken any agriculture related courses/training?

- ☐ Yes
☐ No

If yes, please specify:

Who offers training to the youth in this on agriculture projects?

- ☐ NGO
- ☐ GOK
- ☐ Private sector
- ☐ Government Agency

Does anyone in your family work in an agricultural industry

- ☐ Yes
- ☐ No

If yes, please specify:

Do you own the land you farm?

- ☐ Yes
- ☐ No

If yes, please specify:

What is the size of the land available for you to carry out agricultural activities at your home

- ☐ Less than an acre
- ☐ Between 1 to 3 acres
- ☐ Between 3 to 5 acres
- ☐ More than 5 acres

I have good knowledge of the internet.

- ☐ Strongly agree
- ☐ Agree
- ☐ Neutral or no opinion
- ☐ Disagree
- ☐ Strongly disagree

How frequently do you use the internet?

- ☐ Everyday
- ☐ 3 times a week
- ☐ Once a week
- ☐ Twice a month
- ☐ Once a month

SECTION 2: ATTITUDE

Youth Attitude Toward Increasing Youth Involvement in Agriculture Sector In Malaysia

This section focuses on the attitude toward youth involvement in agriculture sector in Malaysia. Please choose the answer that best reflects of your opinion based the scale from 1 (Strongly disagree) to 5 (strongly agree).

NO	ATTITUDE	SCORE				
		(SD) 1	(D) 2	(N) 3	(A) 4	(SA) 5
1	I feel proud to be as part of profession feeding the nation					
2	I feel that it is important for youth to learn about agriculture sector					
3	I feel that involvement in the agriculture sector is enjoyable					
4	I am willing to involve in agriculture sector because i believe that the agriculture is a good source of income					
5	I am inspired to involve in agriculture sector					
6	I am willing to involve in agriculture sector because i believe that it leads to increase in standard of living among young people					
7	In my opinion, agriculture sector is a favorable profession					

SECTION 3: INNOVATION

Innovation Toward Increasing Youth Involvement in Agriculture Sector In Malaysia

This Section Focuses On The Innovation Toward Youth Involvement in Agriculture Sector In Malaysia. Please Choose The Answer That Best Reflects Of Your Opinion Based The Scale From 1 (Strongly Disagree) To 5 (Strongly Agree).

NO	AGRICULTURE INNOVATION	SCORE				
		(SD) 1	(D) 2	(N) 3	(A) 4	(SA) 5
1	I am flexible enough to allow myself to respond quickly to changes my business					
2	I am able to evolve rapidly to respond to shifts in my business					
3	I am able to recognize and understand new knowledge					
4	I am able to adapt new technology					
5	I often introduce new ways of working					
6	I am excited to try out new techniques in my business					
7	I like to be confronted with new ideas					

SECTION 4: Information and Communication Technology

Information and Communication Technology Toward Increasing Youth Involvement in Agriculture Sector In Malaysia.

This section focuses on the use of ICT in agriculture sector in Malaysia. Please choose the answer that best reflects of your opinion based the scale from 1 (Strongly disagree) to 5 (strongly agree).

NO	INFORMATION COMMUNICATION TECHNOLOGY	SCORE				
		(SD) 1	(D) 2	(N) 3	(A) 4	(SA) 5
1	I am able to use ICT at any time					
2	I can search for information related to agriculture sector through internet.					
3	I used internet to search for information related to my daily jobs					
4	I use ICT to increase my knowledge and skill related to my business					
5	I use ICT to develop my competence/ skills					
6	I am able to use ICT to handle communication with my business partners or clients					
7	I am able to use ICT for marketing purposes					

SECTION 5: Knowledge

Knowledge Toward Increasing Youth Involvement in Agriculture Sector In Malaysia

This section focuses on the use of ICT in agriculture sector in Malaysia. Please choose the answer that best reflects of your opinion based the scale from 1 (Strongly disagree) to 5 (strongly agree).

NO	KNOWLEDGE	SCORE				
		(SD) 1	(D) 2	(N) 3	(A) 4	(SA) 5
1	I am able to share information and knowledge gained from training with other youth					
2	I can coach other youth by using knowledge that i have					
3	I know about best practices in agriculture sector					
4	I am knowledgeable about the processes involved in agriculture					
5	I understand about new technology in agriculture sector					
6	I know how to eliminate the insects and diseases that affect the crops .					
7	I am able to increase agricultural production in quantity and quality through the knowledge gained from training					

SECTION 5: Training

Role of Training Toward Increasing Youth Involvement in Agriculture Sector In Malaysia

This section focuses on the Role of Training Toward Increasing Youth Involvement in Agriculture Sector In Malaysia. Please choose the answer that best reflects of your opinion based the scale from 1 (Strongly disagree) to 5 (strongly agree).

NO	TRAINING	SCORE				
		(SD) 1	(D) 2	(N) 3	(A) 4	(SA) 5
1	Training is provided for youth to enhance knowledge in agriculture sector					
2	Frequent training in agriculture sector are provided for youth by local agriculture department or government agencies					
3	Skill improvement program in agriculture are provided for youth.					
4	Best practices in agriculture are shared to youth.					
5	Government agencies educate youth to improve skills and capability					
6	Management program in agriculture are provided for youth.					
7	Agricultural training is effective practices to re-engage youth in the agricultural sector					

SECTION 6: Youth Involvement in Agriculture Sector In Malaysia

Increasing Youth Involvement in Agriculture Sector In Malaysia

This section focuses on youth involvement in agriculture sector in Malaysia. Please choose the answer that best reflects of your opinion based the scale from 1 (Strongly disagree) to 5 (strongly agree).

NO	INCREASING YOUTH INVOLVE IN AGRICULTURE SECTOR IN MALAYSIA	SCORE				
		1	2	3	4	5
1	The increased in youth involvement in the agriculture sector is due to a better understanding of youth's attitude toward agriculture					
2	The increased in youth involvement in the agriculture sector is due to some government interventions, such as support and motivation to make agriculture more attractive to young people.					
3	Youth engagement in agriculture has increased due to exposure in agriculture innovation					
4	Youth involvements in agriculture sector have been increased due to the use of appropriate ICT					
5	Effective policies implemented by the government to attract more interest by engaging and linking youth to ICT have increased youth involvement in the agriculture sector.					
6	Youth involvements in agriculture have increased due to exposure about knowledge in agriculture sector					
7	Youth involvements in agriculture sector have increased due to training particularly in value added activities such as crop production					

APPENDIX B

MEASUREMENT INSTRUMENT VALIDATION

List Experts That Validate the Research Instrument

1. **Associate Professor Dr. Amlus Bin Ibrahim**
UUM College of Business
School of Technology Management and Logistics
Universiti Utara Malaysia
06010 UUM Sintok
Kedah Darul Aman, Malaysia
2. **Associate Professor Dr. Guzman Nawanir**
School of Industry Management
Universiti Malaysia Pahang
26600 Pekan
Pahang, Malaysia
3. **Dr Juan Rizal bin Sa'ari**
School of Business Management
University Teknologi MARA (UITM)
Cawangan Melaka Kampus Bandaraya Melaka,
110 Off Jalan Hang Tuah,
75350 Melaka, MALAYSIA.

APPENDIX C

COMMON METHOD VARIANCE (CMV)

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	15.102	35.957	35.957	15.102	35.957	35.957
2	3.566	8.491	44.448			
3	3.036	7.228	51.676			
4	2.429	5.784	57.461			
5	1.911	4.549	62.009			
6	1.614	3.843	65.852			
7	1.122	2.672	68.524			
8	.921	2.194	70.718			
9	.788	1.877	72.595			
10	.756	1.801	74.395			
11	.683	1.625	76.021			
12	.645	1.537	77.557			
13	.618	1.471	79.028			
14	.584	1.390	80.418			
15	.565	1.344	81.762			
16	.491	1.168	82.930			
17	.469	1.117	84.047			
18	.447	1.065	85.112			
19	.413	.983	86.095			
20	.405	.965	87.061			

21	.396	.942	88.002			
22	.357	.851	88.853			
23	.353	.840	89.693			
24	.347	.826	90.520			
25	.341	.812	91.332			
26	.317	.755	92.087			
27	.299	.713	92.800			
28	.279	.664	93.464			
29	.276	.658	94.122			
30	.258	.615	94.737			
31	.236	.562	95.299			
32	.227	.540	95.839			
33	.216	.515	96.355			
34	.212	.505	96.859			
35	.205	.488	97.348			
36	.201	.479	97.827			
37	.184	.438	98.265			
38	.180	.429	98.694			
39	.161	.383	99.077			
40	.152	.362	99.439			
41	.142	.337	99.776			
42	.094	.224	100.000			

Extraction Method: Principal Component Analysis.

APPENDIX D
DESCRIPTIVE STATISTICS AND NORMALITY CRITERIA

Construct	Item Code	Item	Descriptive Statistics				Normality Criteria	
			Min	Max	Mean	Standard Deviation	Excess Kurtosis	Skewness
ATTD	ATTD1	1. I feel proud to be as part of profession feeding the nation	2	5	4.09	0.82	-0.87	-0.38
	ATTD2	2. I feel that it is important for youth to learn about agriculture sector	2	5	4.47	0.66	-0.06	-0.92
	ATTD3	3. I feel that involvement in the agriculture sector is enjoyable	2	5	4.24	0.78	-0.66	-0.60
	ATTD4	4. I am willing to involve in agriculture sector because i believe that the agriculture is a good source of income	2	5	4.19	0.83	-0.60	-0.63
	ATTD5	5. I am inspired to involve in agriculture sector.	1	5	3.97	0.97	-0.53	-0.57
	ATTD6	6. I am willing to involve in agriculture sector because i believe that it leads to increase in standard of living among young people	1	5	4.10	0.87	-0.21	-0.64
	ATTD7	7. In my opinion, agriculture sector is	1	5	3.91	0.97	-0.08	-0.65

Construct	Item Code	Item	Descriptive Statistics				Normality Criteria	
			Min	Max	Mean	Standard Deviation	Excess Kurtosis	Skewness
INOV		a favorable profession						
	INOV1	1. I am flexible enough to allow myself to respond quickly to changes my business	1	5	3.58	0.90	-0.34	-0.21
	INOV2	2. I am able to evolve rapidly to respond to shifts in my business	1	5	3.58	0.86	-0.27	-0.17
	INOV3	3. I am able to recognize and understand new knowledge	2	5	4.12	0.70	-0.34	-0.35
	INOV4	4. I am able to adapt new technology.	2	5	4.17	0.71	-0.48	-0.39
	INOV5	5 I often introduce new ways of working	1	5	3.77	0.86	-0.54	-0.21
	INOV6	6 I am excited to try out new techniques in my business	2	5	4.12	0.76	-0.36	-0.48
	INOV7	7. I like to be confronted with new ideas	2	5	4.23	0.72	-0.05	-0.61
ICT	ICT1	1. I am able to use ICT at any time	2	5	4.31	0.75	-0.54	-0.67
	ICT2	2. I can search for information related to agriculture sector through internet.	3	5	4.44	0.68	-0.52	-0.81

Construct	Item Code	Item	Descriptive Statistics				Normality Criteria	
			Min	Max	Mean	Standard Deviation	Excess Kurtosis	Skewness
ICT	ICT3	3. I used internet to search for information related to my daily jobs	1	5	4.33	0.79	0.08	-0.89
	ICT4	4. I use ICT to increase my knowledge and skill related to my business	1	5	4.30	0.78	0.13	-0.84
	ICT5	5. I use ICT to develop my competence/ skills	2	5	4.29	0.74	-0.24	-0.70
	ICT6	6. I am able to use ICT to handle communication with my business partners or clients	1	5	4.23	0.79	0.18	-0.77
	ICT7	7. I am able to use ICT for marketing purposes.	1	5	4.28	0.81	0.34	-0.92
	KNOW1	1. I am able to share information and knowledge gained from training with other youths	1	5	4.10	0.80	0.06	-0.63
	KNOW2	2. I can coach other youth by using knowledge that i have	1	5	3.80	0.93	-0.09	-0.49
KNOW	KNOW3	3. I know about best practices in agriculture sector	1	5	3.10	1.21	-0.90	-0.08
	KNOW4	4. I am knowledgeable about the processes	1	5	3.04	1.21	-0.98	-0.08

Construct	Item Code	Item	Descriptive Statistics				Normality Criteria	
			Min	Max	Mean	Standard Deviation	Excess Kurtosis	Skewness
KNOW		involved in agriculture						
	KNOW5	5. I understand about new technology in agriculture sector	1	5	3.10	1.21	-0.87	-0.14
	KNOW6	6. I know how to eliminate the insects and diseases that affect the crops	1	5	3.07	1.23	-0.92	-0.05
	KNOW7	7. I am able to increase agricultural production in quantity and quality through the knowledge gained from training	1	5	3.40	1.17	-0.57	-0.41
	TRNG1	1. Training is provided for youth to enhance knowledge in agriculture sector	2	5	4.24	0.78	-0.72	-0.57
	TRNG2	2. Frequent training in agriculture sector are provided for youth by local agriculture department or government agencies	2	5	4.09	0.84	-0.73	-0.47
	TRNG3	3. Skill improvement program in agriculture are provided for youth.	1	5	4.04	0.90	-0.11	-0.65

Construct	Item Code	Item	Descriptive Statistics				Normality Criteria	
			Min	Max	Mean	Standard Deviation	Excess Kurtosis	Skewness
INVOLV	TRNG4	4. Best practices in agriculture are shared to youth.	1	5	4.09	0.87	-0.10	-0.67
	TRNG5	5. Government agencies educate youth to improve skills and capability	1	5	4.10	0.84	-0.13	-0.61
	TRNG6	6. Management program in agriculture are provided for youth.	1	5	4.03	0.87	-0.18	-0.59
	TRNG7	7. Agricultural training is effective practices to re-engage youth in the agricultural sector	2	5	4.16	0.78	-0.65	-0.47
	INVOLV1	1. The increased in youth involvement in the agriculture sector is due to a better understanding of youth's attitude toward agriculture	1	5	4.19	0.74	0.85	-0.73
	INVOLV2	2. The increased in youth involvement in the agriculture sector is due to some government interventions, such as support and motivation to make agriculture more attractive to young people.	1	5	4.15	0.76	0.91	-0.74

Construct	Item Code	Item	Descriptive Statistics				Normality Criteria	
			Min	Max	Mean	Standard Deviation	Excess Kurtosis	Skewness
	INVOLV3	3. Youth engagement in agriculture has increased due to exposure in agriculture innovation	1	5	4.08	0.77	0.53	-0.63
	INVOLV4	4. Youth involvements in agriculture sector have been increased due to the use of appropriate ICT	1	5	4.13	0.79	1.71	-0.96
	INVOLV5	5. Effective policies implemented by the government to attract more interest by engaging and linking youth to ICT have increased youth involvement in the agriculture sector.	1	5	4.04	0.78	-0.16	-0.45
	INVOLV6	6. Youth involvements in agriculture have increased due to exposure about knowledge in agriculture sector	1	5	4.11	0.76	-0.15	-0.46
	INVOLV7	7. Youth involvements in agriculture sector have increased due to training particularly in value added activities	2	5	4.06	0.74	-0.46	-0.33

Construct	Item Code	Item	Descriptive Statistics				Normality Criteria	
			Min	Max	Mean	Standard Deviation	Excess Kurtosis	Skewness
		such as crop production						

