

What Is the Target Population for Agricultural Entrepreneurship in Malaysia's Agricultural Economic Sector? A Systematic Literature Review

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Abstract: The emerging trends of sustainability and globalization have driven changes in traditional agriculture dominated by aging farmers with low-tech industries. This scenario seems to have changed with new and diverse phenomena focusing on the agent who can adopt these changes. Hence, the new opportunity-based view of the entrepreneurship concept and youth as relevant agents within the new context in the agriculture sector. Numerous previous scholars have concentrated on typical entrepreneurship research; however, they have mainly neglected agricultural entrepreneurship within the agriculture sector. The study aims to investigate agricultural entrepreneurship within the target group in Malaysia through a comprehensive literature review. The articles reviewed were used from the Scopus, ScienceDirect and Google Scholar databases. We analysed 15 papers that focus on agricultural entrepreneurship research in Malaysia, which were published in Malaysia between 2014 to 2024, in order to contribute significantly to existing literature. The finding shows that the growing and promising agriculture entrepreneurship, mainly in intention and behavior, has become a crucial role among youth towards it. This study presented a descriptive finding and a thematic analysis focused on a groomed group of Youth Agropreneurs to adopt the changes into the agriculture sector. The paper concludes by setting up the agenda for future researchers in the field to address research gaps.

Keywords: *Target Population, Agricultural Entrepreneurship, Agriculture Sector, Malaysia, Systematic Review.*

1. Introduction and Background

A service-oriented industry drove Malaysia's economy, while the agriculture sector remains an important backbone as the third-ranked government economic driver. Importantly, it provides food for the Malaysian population and it is functioning to upgrade the socio-economic status of society and a stable economy (Musa & Ab. Aziz, 2022). By 2050, global food demand is anticipated to increase substantially, propelled by the growing world population. However, Malaysia's agriculture sector lags, ranking 8th out of 10 ASEAN countries in terms of GDP contribution, trailing Myanmar, Cambodia, Laos, and Vietnam (DOSM, 2021). Additionally, under the National Transformation Program, the sector has seen a growing reliance on non-citizen workers IMF, 2018), further exacerbating labor shortages Mat Lazim et al., 2020), with an aging workforce dominating the industry by 67.9% as reported by DOSM (2020). This group often lacks technological skills and knowledge (Yusoff et al., 2017). Conversely, the rate of unemployment among graduates in Malaysia stood at 3.8% in 2019 EPU, 2020), suggesting an opportunity to engage this group in the agriculture sector as youth groups remain low, with only 15% of young people involved (Mat Lazim et al., 2020; MAFI, 2021). Aligned with the recent and ongoing trend of advancements in modern agricultural technologies have the potential to transform traditional farming practices into modern, technology-driven methods. This transformation could attract young individuals to participate in agriculture by offering entrepreneurial opportunities that require knowledge, skills, and the ability to manage risks effectively.

Globalization, the environmental, economic and social changes have changed and therefore, entrepreneurship needs to be broadened into the agriculture sector to promote opportunities and to address these challenges. Agricultural entrepreneurship is necessary to improve agricultural development (Firus et al. 2020). This is a new concept of mixed agriculture and entrepreneurship known as agricultural entrepreneurship for redefining new and modern agriculture, which currently is gradually getting attention among policymakers, researchers and academicians. Agricultural entrepreneurship originated from the general concept of entrepreneurship. According to previous studies, agricultural entrepreneurship is able to promote Precision Agriculture, Artificial Intelligence, and Internet of Things (IoT), which is relevant for youth. It has become a motivator for young people to embrace innovation, enhancing the capabilities of young farmers (Adeyanju et al., 2021) and has led

to involvement in agricultural entrepreneurship (Ray et al., 2022). Significantly, Malaysian researchers highlighted Malaysian government aims to strengthen youth participation in the agriculture sector (Ambad et al., 2021), and more studies are recommended to be conducted, which involve the young generation in Malaysia towards agricultural entrepreneurship. As a result of the lack of agricultural entrepreneurship studies, mainly in the Malaysian context (Abdullah et al., 2014).

A strong new entrepreneurship concept in the agriculture sector as a means to secure food by the involvement of youth, which is guided by the National Entrepreneurship Policy NEP, 2030. 13 ministries have collaborated to support and encourage youth into entrepreneurship through entrepreneurship training and programs particularly among youth graduates and youth Agropreneur to empower the agriculture sector in Malaysia, (MOA, 2018). Significantly, Malaysia had established Youth Agropreneur Unit in 2013 under Malaysia's agricultural and Food Industries (MAFI) as significant forces aims to increase youth participation in agriculture sector by shaping newer breed of future youth Agropreneur below age of 40 which particularly in Malaysia's agriculture-based and tourism businesses, as we as in crop farming, livestock, marketing, technology and innovative concept (Kadir, 2014). On the other hand, developing agropreneurs among youth needs to create their interest, awareness and exposure about agriculture and entrepreneurship through education in schools and universities as well. Entrepreneurship may be learnt and developed (Drucker, (1985); Gorman et al., (1997); Yusoff et al., (2016), whereas entrepreneurship education can enhance the learner's intention to pursue entrepreneurship as guided under Malaysia National Higher Education Action in 9 Malaysian Plan to focus developing entrepreneurial skills among students in higher learning institutions (Mohd et al., 2012; Mohamed et al., 2011). Strong support by the government and training programs led to the growth of success of youth agropreneurs (Abdullah & Nor, 2024; Mohd et al., 2012). Therefore, 'youth' is the group population that is targeted towards agricultural entrepreneurship in Malaysia since their still young, energetic, high-tech, and entrepreneurial needs must be groomed, which cannot depend on an ageing farmer anymore.

Various entrepreneurship-related activities and initiatives, organized to promote entrepreneurship as well as to produce entrepreneurial graduates and more graduate entrepreneurs. Therefore, multiple groups of youth, such as university students, graduates and agropreneurs, have been found in agricultural entrepreneurship literature across different types of research methods, which warrants a further investigation under behavioral studies, which consists in terms of individual intention and translates into actual behavior. Behavioural intention pertains to an individual's likelihood of executing a specific behaviour, but the concrete outcome of the decision-making process is also considered through the intention is the actual execution which involving employing different group research populations accordingly. This is crucial for future researchers to take an opportunity of the ideas of agricultural entrepreneurship, perceiving from intention or actual behaviors, with identifying the best target population for agricultural entrepreneurship research in the future. The study is at an individual level, which consists of individual intention and translates into actual behavior. Significantly, this study aims to explore the relevant target population in agricultural entrepreneurship research by systematic literature review to identify the most suitable target population for entrepreneurship in the agriculture sector, as many diverse youth groups and different behavioural study contexts have been discussed by previous researchers.

2. Significance of the Study

The idea of entrepreneurship had emerged to face the challenges in the current agriculture sector. It is a new context of agricultural entrepreneurship which has been driven by globalization and it is very crucial for the future development of this sector (Fitz-Koch et al., 2017; Dias, 2018). It offers a new paradigm of entrepreneurship in agriculture, World Bank (2015); Condor, R. (2020), which is not restricted to established countries but is also new to developing countries. Entrepreneurship offers opportunities towards agricultural sustainability, which leads to an increasing number of publications over the years among researchers (Normandie, 2021; Wahyudi & Kiminami, 2021). It showed a significant growth of agriculture entrepreneurship research from the late 1990s to the early 2000s (Normandie, 2021). Nevertheless, mainstream entrepreneurship research has largely ignored the agricultural sector (Fitz-koch et al., 2017).

Specifically, the authors emphasized behavioral studies as an increasing trend in conducting individual and behavioral studies (Shariff, S. et al. 2022). According to Sayed (2023), agricultural entrepreneurship is the

creation and management of agricultural businesses through exploiting opportunities to innovate in production, marketing, distribution and managing financial and human resources efficiently. The behavioural intention of students in agriculture learning institutes was the primary focus of their specific research in agricultural entrepreneurship studies by Malaysian researchers, namely, Yusoff et al. (2016), Mohammad Nor et al. (2015), Abdullah and Naem Sulaiman (2013).

The behavioral studies involve a long-term process, which begins to form behavioral intention until it's translated into actual behavior. Due to that, two categories of behavioral studies have been conducted separately. As such, the early stage of entrepreneurship is formed, which involves conscious and predicted behavior (Krueger et al., 2000), commonly known as behavioral intention studies. Therefore, behavioral intention is under the conscious mind, which does not act immediately, and it is not sufficient to measure actual entrepreneurship (Carsrud and Barnback, 2011; Saeed et al., 2014), such as taking risk behaviorally to venture creation, which has a long-term effect. Another hand, the actual behavioral translation is about the action's individual takes, through crucial roles in shaping the outcome, which originates from the 'intention'.

'Youth' is a common group of people who are targeted in agricultural entrepreneurship behavioral studies. Youth are regarded as the most important predictors of planned behaviour. Bagozzi et al., (1989) concerning behavioural purpose, for instance, university student, graduates' general youth while the actual behavioral which closely related to the group of entrepreneurs is business owner, self-employed, sole-trader, farmer and starter with role of behavior (McClelland, (1967) and now, agropreneur is new population group is emerging of agricultural entrepreneurship literature in Malaysia. These are individual people who own and manage a business who undertake entrepreneurial behavior towards risk, and opportunity in selecting job options as a result of behavioural factors, as refer to pindado and sanchez, (2017), which under responsibility known as agripreneur, entrepreneurial farmers and agricultural entrepreneurs across different terms in the literatures (Otahe, 2017). It presents new job opportunities to take on new roles as an agropreneur for the new shape of the agriculture sector. Significantly, earlier research discovered that agricultural entrepreneurship has been fostered among youth by developing necessary skills to improve the success of youth-owned farm firms (Adeyanju et al., 2021). Agripreneurship has emerged as a catalyst for youth to adopt innovation in addressing agricultural concerns. Ray et al. (2022), to address aging farmers in Malaysia (Ahmad, 2020). As of now, the total youth population in Malaysia is estimated at 14.9 million (YRES (2022), and the government takes them as a serious concern into agricultural policy and agenda to promote a new agricultural entrepreneurship concept in Malaysia. Overall, 'Youth' is a common group population toward agricultural entrepreneurship found in the Malaysian literature, despite the individual group term diversification as the above to become which warrants to do more investigation and identification, mainly by a systematic literature review. This is because a wider definition of youth has been found in the literature, which does not have a universal definition of youth and it differs between countries, such as Indonesia considers those aged 19 to 39 to be young farmers, less than 40 years are identified as young farmers in the European Union (Hamilton et al., 2015). The United Nations defines youth as those aged 15 to 24. However, none of these studies provides a specific group of youth towards agricultural entrepreneurship behavioral studies categories.

Significantly, Systematic Literature Review (SLR) can reduce biases, fill the research gap and increase research validity. A comprehensive, structured review is well-organized and clear (Higgins et al. 2011). Some SLR had conducted under agricultural entrepreneurship studies, such as Dias et al. (2018) employed a co-word bibliometric technique utilising only Scopus Journals, identifying entrepreneurial behaviour and skills, entrepreneurial strategies, and community and entrepreneurial action as the three principal approaches in the domain of agricultural entrepreneurship. Another study by Condor et al. (2020), a systematic review on entrepreneurship in agriculture using Scopus databases to understand what entrepreneurship means in agriculture, which involved quantitative and qualitative studies. A thorough literature review provides an overview of the progression of agricultural entrepreneurship research from a youth perspective via descriptive analysis, which includes the factors determination, group of youth, research methodology and theories that were applied by prior research (Syaukat et al., 2022). Therefore, the study wants to analyze the various youth groups (categories) since these are unclear, to derive future agricultural entrepreneurship studies. The author would be closely investigating different research methodologies, objectives of study, the behavioral studies category (intention or actual behavior), which can provide clues for the differences of the target research population to employ in 10 years of Malaysian literature from 2014-2024. The study develops an SLR based

on common terms on the emergence of group youth into the new agricultural entrepreneurship context with various terms such as among students, graduates, farmers, agricultural entrepreneurs and agropreneurs. The reason the study's SLR is based on this specification, it helps the government or organization to plan strategies to bring the role of youth into the realm of agricultural entrepreneurship. In addition, it is increasing the empirical studies' contribution that focus on significant youth participation in the agriculture sector, despite agricultural challenges in Malaysia. Lastly, this recent SLR helps to describe current trends of how youth in diverse groups suit the types of agricultural behavioral studies, which provide recommendations to future researchers that warrant this recent SLR to conduct further investigation.

3. Methodology

A Systematic Review protocol is employed to obtain a comprehensive description through a systematic review, which considers the rationale, hypothesis, and methods to follow. The study, informed by the Reporting Standards for Systematic Evidence Syntheses (ROSES) by Haddaway et al. (2018), serves as a collaborative initiative that establishes a comprehensive framework for ensuring evidence synthesis reports encompass the creation of a research question, a systematic search method that includes identification, screening, eligibility evaluation, quality rating, and data extraction and analysis.

Roses

The ROSES procedure offers guidance for conducting systematic reviews utilising extensive databases of scientific literature based on specified linked phrases. The advantages of ROSES methods would be applied across all multidisciplinary, more flexible methods for quantitative, qualitative and mixed methods in contrast to PRISMA guidelines, primarily centred on the healthcare sector (Haddaway et al., 2018). This guide commenced with (1) searching, (2) screening, (3) critical quality evaluation, (4) data extraction, and (5) the production of findings, as outlined by Haddaway et al. (2018) and Lockwood et al. (2015), to ensure quality control, transparency, and mitigate bias risk. Consequently, the research question was constructed to direct the review process utilising PICO methodologies as outlined by Lookwood et al. (2015). Within this structure, 'P' symbolises the problem or population, 'I' indicates the interest, and 'Co' denotes the context. Subsequent to the three systematic screening procedures, which include identification and screening, eligibility will be explained and followed by quality appraisal of finalized articles by Hong et al. (2018), will be placed between the main author, co-author and a qualitative studies expert.

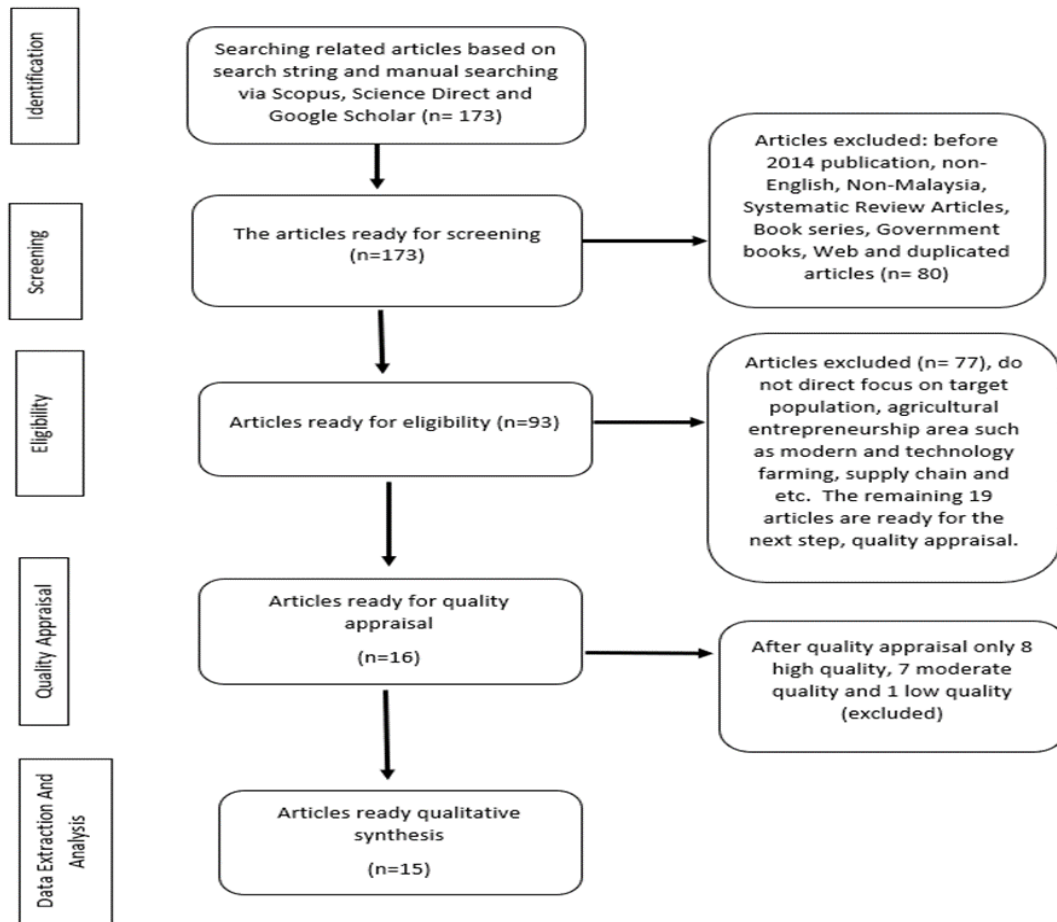
Research question formulation

Refer to the PICO concept, the main research question is guided by the current target of the youth population as (population), agricultural entrepreneurship as (interest) and behavioral studies as (context). The keywords and symbols for the search functions in the Scopus, Web of Science, and Google Scholar databases include wildcards, phrase searching, truncation, and Boolean operators. So, the research question is "What is the target group population towards Agricultural Entrepreneurship in Malaysia"? Secondly, the research question is also driven by the Sustainable Development Goals (SDG) to secure food for the increasing world population by 2050 through sustainability promotion, sustainable economic growth and productive employment are targeted to be achieved (UN, 2015). Particularly, Malaysia aims to emphasize the new concept of agricultural entrepreneurship under the Malaysia Plan, National Entrepreneurship Policy NEP (2030), which was introduced from the Ninth Malaysia Plan until Twelve. Thirdly, a growing number of agricultural entrepreneurship research has been conducted from the late 1990s until the early 2000s, in which Malaysia has a low number of publications as compared to the Netherlands country which is leading (Normandie, 2021). It is very important to review due to the lack of existing literature on the target population towards agricultural entrepreneurship in Malaysian studies.

Process of Systematic Searching

Subsequently, the three systematic review procedures employed after formulating research questions are identification, screening and eligibility, and the application of inclusion and exclusion criteria, Shaffrill et al. (2021), as presented in Figure 1.

Figure 1: Process of Systematic Searching



a. Identification

The authors used keyword searching processes through PICO methods: Youth, Agricultural Entrepreneurship and Behavioral Studies, as prompted by research questions, who is the target group of Malaysian youth for agricultural entrepreneurship? The authors constructed a search string by integrating Boolean Operators, Truncation, Wildcards, Field Codes, and phrase searching techniques Haddaway, (2018); Shaffril et al., (2024), using synonyms, related terms from previous studies were employed using search string created, keyword search, online thesaurus and dictionaries from three largest databases for 10 years back from 2014 to September 2024 (Table 1). Scopus, Web of Science and Google Scholar were utilised for literature searches to identify articles and thus for reviewing purposes on the target group of the youth population towards agricultural entrepreneurship in Malaysia. Web of Science and Scopus are the major databases, covering 49 million multi-disciplinary scientific literature of book series, open access journals, books and reports. The high impact indicator and the most exhaustive sources of publication are the reasons why both databases are selected for literature searches (Pranckute, 2021). Moreover, the weight Cite Score of Scopus and Impact Factor from Web of Science make better quality articles to refer to based on their reference metrics. Scopus is also free for access to journals and includes factor metrics (Pranckute, 2021). Additionally, the authors also consider reviewing and including articles from Google Scholar as additional sources of databases, as suggested by Haddaway et al. (2015), disputing the issues of lack of referencing and quality journals. The extensive availability of open-access papers, along with the diversity in subject areas, languages, and document kinds, reflects a low strength score as stated by Haddaway et al. (2015), Alotaibi & Johnson (2020), and Martin-Martin et al. (2018). Nonetheless, Google Scholar is incorporated as a search tool for review databases, demonstrating the importance of utilising several search methodologies (Shaffril et al., 2021; Cooper et al., 2018). The consideration of reviewing articles from different databases of Google Scholar would become more open,

diversified and the largest comprehensive database would be found in the finding diversification and perspectives (Shariff, S. et al., 2022).

Therefore, the authors combine main keywords using the search function of Boolean Operators and phrase searching and review using a manual hand-searching for the next search for three different databases. To sum up, the authors retrieved 173 potential articles in this identification stage. The main keyword search is identified using the search string as follows:

Table 1: Systematic Review Process Search String

Databases	Keyword used
Scopus	TITLE-ABS-KEY ("Agriculture" OR "Agricultural" AND "Entrepreneurship" OR "Agricultural Entrepreneurship" OR "Entrepreneurship in Agriculture" AND "Malaysia")
Web of Science	TS = (("Agriculture" OR "Agricultural") AND (" Entrepreneurship" OR "Agricultural Entrepreneurship" OR "Entrepreneurship in Agriculture") AND ("Malaysia"))
Google Scholar	Entrepreneurship Agricultural OR Entrepreneurship in Agriculture OR Agripreneurship OR Agro-preneurship AND Malaysia

b. Criteria for Inclusion and Exclusion in Screening

The second stage is the manual screening process for duplicate items and followed by inclusion and exclusion criteria. The inclusion databases encompass research articles and exclude systematic reviews, book series, books, chapters in books, and conferences that are proceeding according to a specific maturation timeline for 10 years, which indicates a sufficient period for revolutionary research (Rayet et al., 2012; Alexander, 2020). It is one possible way to have more articles related to reviews. Kraus et al. (2020) also agreed that the articles published from 2015 to 2020 are ensuring the research field is at a maturity level. The diverse results of review analysis generated across more and diverse database sources would increase the level of intensity of research production.

The greater the number of papers discovered across diverse database sources, the more favourable the review analysis outcomes and the heightened intensity of the current research output. Articles encompassing qualitative, quantitative, and mixed methodologies were chosen for examination to ensure a diverse array of perspectives. Articles that have been published in English are selected as the most common language preferences by the journal and to avoid confusion and to maintain a high index quality of social sciences articles are referred to retain the quality despite proceeding. Furthermore, the articles that were chosen provide primary data rather than secondary data. Focusing on Malaysian research due to growing trends towards agricultural entrepreneurship from the 1990s and in the early 20th century, Normandie (2021) and which was supported by Malaysia's National Policy to strengthen the new context of agricultural entrepreneurship, creates opportunities for employment for possible groups of people, which has been often discussed by Malaysian researchers. Therefore, the author's belief is that it is very important to review agricultural entrepreneurship from behavioural studies and to find the target population that can participate in agricultural entrepreneurship only in Malaysia. In total, 80 articles were excluded from the review process due to these criteria, which resulted in 93 articles continuing to the next eligibility process.

Table 2: The Criterion of Eligibility and Exclusion Articles

Criterion	Eligibility	Exclusion
Type of Literature	Journal (research articles)	Journal (systematic review), book series, book chapter, conference proceedings
Language	English	Non-English
Timeline	Between 2014 to 2024	<2014
Indexes	The Web of Science's Art and Humanities Index, Emerging Sources Citation Index, and Social Science Citation Index	Science Citation Index Expanded (Web of Science)

Countries and Malaysia
territories

Non-Malaysia

c. Eligibility

The authors evaluated all chosen articles to confirm and meet the inclusion criteria and research question. The review articles by screened and discuss abstract, title and methodology are discussed when necessary. In total, 77 items were excluded because to do not match on inclusion criteria of the agricultural entrepreneurship context in Malaysia, such as not focusing on behavioural studies and research population, which the study focuses on organization, strategy and the challenges. Sixteen papers (16) were determined to be suitable for the next stage of quality assessment.

Quality Appraisal

These 16 selected articles had been evaluated to ensure the minimal risk of bias, maintain the quality, integrity and ensure high satisfaction. Therefore, quality appraisal has been suggested by (Shaffril et al., 2020; Haddaway et al., 2018). All authors read independently of all selected articles, discuss and meet to mutual judgment. The evaluation was performed with the Mixed-Method Appraisal Tool (MMAT), measuring scale, instrument, and checklist on all selected articles to ensure articles' quality. MMAT permits the evaluation of all common methodological types of research, including qualitative, quantitative, random, non-random, and mixed methods enquiries, as delineated by Hong et al. (2018).

Firstly, authors must conduct a quality evaluation on methodology and analysis approach by examining the whole paper to guarantee consistency and answering the research topic based on the five (5) major criterion assessment questions of MMAT. The enquiries encompassed (1) the formulation of a precise and relevant research topic, data collection pertinent to the research issue, (2) sufficient data collection, (3) appropriate evaluation of results and analysis, (4) relevant sampling methodology, (5) appropriate measuring device or statistical analysis. A total of eight articles fulfilled all criteria, while five articles matched at least four criteria, two articles met at least three criteria, and one qualitative piece was eliminated because its findings do not adequately answer research questions and the study only fulfilled two criteria. The article must satisfy two components of the screening criteria: (1) answer to two sets of questions, (2) select the appropriate study category, and (3) address each criterion to confirm the article's quality by choosing from three options: 'Yes', 'No', and 'Do not know/comment'. Affirmative responses suggest the author's confidence in the article's quality to fulfil the criteria, and conversely. While 'Do not know' answer, if they were uncertain about the quality of the articles. As a result, the high (4 criteria fulfilled) and moderate quality (3 criteria fulfilled) articles were reviewed. The low quality (one or two criteria fulfilled) would not be included in the next review process. Overall, 15 articles were eligible for the next inclusion review. Specifically, authors identified 11 articles that were ranked as high, fulfilled 5 and 4 criteria, 3 articles were moderate as they fulfilled 2 criteria and 1 article was low in quality (see Appendix).

Data Extraction and Analysis

All the selected articles were reviewed using qualitative synthesis to present results on thematic analysis regardless of the articles in the form of quantitative, qualitative and mixed methods. Diversified views and perspectives produce the strength merits for quality, rigor and transparency of these articles (Hong et al., 2018). The thematic analysis approach, by interpreting and representing data from qualitative studies, is employed (Flemming et al., 2019; Nowell et al., 2017). Consequently, the authors employed inductive thematic analysis to construct a theme and subtheme that addressed the primary research objectives.

Thematic Analysis entails the identification, analysis, organisation, description, and reporting of themes derived from extracted data, hence facilitating the presentation, interpretation, and representation of extensive data sets (Nowel, 2017). The extracted data must be presented in a statement (qualitative description) that outlines the similarities, relationships, and categorised patterns about the data set (Braun & Clarke, 2019). This extracted pattern data is important to notify and thus to identify the target population that is relevant towards agricultural entrepreneurship by a Malaysian researcher, which is organized in table form (Tables 4 & 5). Authors consider reviewing from the abstract, result, discussion, conclusion and if needed they also consider other sections in articles by frequent reading. Through frequent reading, authors compile data based on similarities and relationships Kiger & Varpio, 2020) among authors to ensure groups of themes are

matched. Authors also discussed any inconsistencies in findings or ideas that associate a group of themes until mutual agreement emerged. As a result, two main (2) group themes had developed: Youth (behavioural intention) and Youth Agropreneur (actual behaviour). Each developed theme also produces a sub-theme according to the research objective and research methodology, such as behavioural intention; university students, university graduates, Gen Y, and Youth in general, while actual behavioural, graduate agropreneur, Paddy farmer, women entrepreneur in the agriculture sector and agrotourism entrepreneur who are involved in agricultural activities. Most of the articles' reviews focus on Youth as a group population towards agricultural entrepreneurship in Malaysia. The following process is continued by theme validations from one qualitative synthesis expert and an agricultural expert. In all, this expert agreed with all group themes, which represent the target population towards agricultural entrepreneurship in Malaysia. Data similarities and relationships were identified for each theme as they were presented in Table 5, as a result of the primary themes and sub-themes within the target population of agricultural entrepreneurship.

4. Research Findings

Out of 15 articles being selected for systematic review, 10 of them are quantitative research and 5 articles are qualitative studies focusing on Behavioural studies in Malaysia. Four articles were published in 2022, while two were published in 2024; the publications of 2021 have 3 research articles; the years 2020, 2016, 2015 and 2014 have an article publication of each year and 2019 have 2 article publications. In summary, the total of 9 articles had focused on Agricultural Entrepreneurship Intention, and the study identified that the target group population was employed according to the context. One article had an extended investigation from the Agricultural Entrepreneurship Intention to 6 months of longitudinal time (by two-time frame) between students in the final year and after students graduated, as shown as short-term to actual behavioural. At last, 5 articles close to actual behavioural in real agricultural entrepreneurship in Malaysia. Generally, most of the articles focus target group of youth towards agricultural entrepreneurship, but it is involving with diversifying youth such as students, final year agricultural students, business and entrepreneurship students, graduates, public university students, youth agropreneurs, young farmers, youth, paddy farmers, women entrepreneurs and agrotourism entrepreneurs. Overall, all these groups of the target population towards agricultural entrepreneurship differ according to the types of behavioural studies and research objectives.

The new spirit of 'Agri-preneurship' development has enhanced individual desire to operate their firms (Alex, 2011). As a result, agriculture requires entrepreneurship to enhance productivity and profitability, Bairwa et al., (2014), despite the growing unemployment, aging farmers, and foreign workers in the agriculture sector. Indeed, countries need individual entrepreneurs who can manage a business with the intention and thus to expanding the business with the necessary skills towards achieving the goal. Basically, behavioural studies started to form agricultural entrepreneurship intention, whereas to prepare the individual through cognitive, psychological abilities and capabilities to have a tendency towards agribusiness venture creation and thus drive actual behaviours. The differential target research population was identified by an examination of the selected papers and the various study methodologies presented in the subsequent table.

In Table 3, the definition of youth differs based on the countries. Most Malaysian scholars define youth as individuals aged between 15 and 40 years who are relevant to agricultural entrepreneurship. This is important to have a clear definition of the target population of such a group of 'Youth' to help future research in further investigation.

Table 3: Definition of Youth

Universal Definition	
United Nation	Youth who are aged 15 to 24 years, but these youth have very low entrepreneurial skills.
International Labor Organization ILO, 2020	Individuals aged 15 to 24
Malaysian literature and Malaysian institutions	

Abdullah and Sulaiman et al 2013	Youth denote young boys and girls who are dynamic and contribute to national growth.
Malaysia National Youth Development Policy 1997	Youth refers to anyone aged between 15 and 40 years.
Malaysian Youth Council, 2007	Individuals aged between 15 and 40 years
Malaysia Youth societies and Youth Development Act 2007 (YSYDA, 2007)	Individual youth who are aged between 15-40 years old
Bahaman et al., 2010	Youth denotes individuals, regardless of gender, who are in a stage of life characterised by vigour and vitality, both mentally and physically. They serve as the foundation for economic development among individuals aged 15 to 24 years.
Silva, et al. 2009	Youth encompass those aged 15 to 40 years.
Malaysia Youth Policy 2015	Individuals aged 18 to 30 are classified as youth; yet, this clause in the statute remains unamended. In Malaysia, the age limit has been raised to 40 years.
Mahmud & Othman 2020	The government still refers youth up to 45 years old who are suitable for the entrepreneurship development program at peak life-maturity and the experience phase.
Isa et al., 2018	Youth agropreneurs are 40+ included in practice way to diversify the entry age into the agriculture sector, which aligns with the government policy alignment, for instance, the rural development strategy and the entrepreneurial program participant.

Source: a combination of the Youth definition by previous studies

Refer to Table 3, the global concept of youth refers to individuals aged between 15 and 25. Conversely, the definition of youth in Malaysia encompasses a broader age range, specifically individuals aged 18 to 40, which is frequently emphasised in various government programs, policies, and incentives. Nonetheless, the latest article presents an expanded definition of youth, extending it to individuals aged up to 40, with a maximum of 45 years, which the study considers pertinent, as individuals at this stage possess a significant level of maturity in both life and professional experiences. This study identified that the target demographic for Malaysian agricultural entrepreneurship includes individuals aged 18 to 45, focusing on both behavioural intention and actual behaviour of youth. This encompasses short-term and long-term behavioural studies, which warrant further investigation to address the existing research gap.

Table 4: Articles reviewed on target population, research methods and research objectives (table continued on the next page)

No.	Authors	Target Population for Agricultural Entrepreneurship	Research Methods (QN/QL)	Research Objectives
1	Ambad et al. (2024)	Undergraduate students in public and private universities in Malaysia	QN	The impact of Holland's career theory and EEM on Agropreneurial intention

2	Gabriel, W. W. E & Irving, T. S. H (2024)	students enrolled in agricultural programs, attendees of agricultural seminars, subscribers to farming journals, participants of agricultural online communities, together with professionals deeply integrated in the field, including farmers, agropreneurs, and agronomists	QN	TBC variable drive individual Agripreneurship intentions and the perspectives of those either profoundly engaged in or actively involved in agricultural pursuits.
3	Che, N. (2022)	Final-year students of a Malaysian public university enrolled in business, entrepreneurship, and agro-preneurship programs.	QL	Factors of Agro-Entrepreneurial Intention
4	Abu Bakar et al. (2022)	Youth aged 15-40 years	QN	Youth Intention on Agricultural Entrepreneurship
5	Abdullah, F. A. & Abu Samah, B. et al. (2014)	Students in the Agriculture Learning Institute	QN	The inclination toward agricultural entrepreneurship
6	Ambad et al. (2021)	Malaysian youth aged 18 to 30 in Sabah, encompassing all public and private higher education institutions in Kota Kinabalu.	QN	Youth's intention to be involved in Agro-preneurship
7	Mohammad, N et al. (2015)	All youth (aged 15 to 40) in peninsular Malaysia, including the southern, northern, east coast, and central regions	QN	Youth's Inclination towards Agricultural Entrepreneurship
8	Waktu, S. et al., (2020)	Youth in Sabah	QN	Agro-preneurship Intention
9	Mat, T et al., (2022)	Public University students	QN	The correlation between social standing, job security, and entrepreneurial intention in agribusiness.
10	Musa et al., 2021	Higher Learning of Agricultural Institution students in Malaysia	QL	Factors affecting the Agro-preneurial intention
11	Yusoff et al. (2019)	Generation Y agriculture students from six Malaysian public higher education institutions	QN	To investigate factors that influence agro-preneurial intention and behaviours (activities)
12	Zainol et al., (2021)	Graduate Agropreneur in Melon Manis Terengganu (MMT) fertigation farming	QL	Establishing the Graduate Agropreneur Model
13	Kamaruzaman et al., (2019)	Paddy farmer	QL	Agro-Innovation – Path to Agricultural Entrepreneurship: Feasibility Study
14	Tan, Y., W. & Abdullah, A., R. (2022)	Agricultural entrepreneur/Agrotourism entrepreneurs	QL	Agritourism Entrepreneurs on The Other Side: Motivation and Challenges
15	Haimid et al., (2016)	Women entrepreneurs in the agriculture sector/women agriculture entrepreneurs	QL	Female Entrepreneurs in the Agricultural Sector: Issues and Challenges

Table 5: Table Summary of Target Population towards Agricultural Entrepreneurship

No.	Authors	Target Population towards Agricultural Entrepreneurship		
		Behavioural Intention		Actual Behavioural
		Students, universities, and agricultural students	Youth	Farmer, Agropreneur
		1	2	3
1	Ambad et al. (2024)	/		
2	Gabriel, W. W. E & Irving, T. S. H (2024)	/		
3	Che, N. (2022)	/		/
4	Abu Bakar et al. (2022)	/		
5	Abdullah, F. A. & Abu Samah, B. et al. (2014)		/	
6	Ambad et al. (2021)	/		
7	Mohammad, N et al. (2015)		/	
8	Waktu, S. et al. (2020)		/	
9	Mat, T et al. (2022)		/	
10	Musa et al. 2021	/		
11	Yusoff et al. (2019)	/		
12	Zainol et al (2021)	/		
13	Kamaruzaman et al (2019)			/
14	Tan, Y., W. & Abdullah, A., R. (2022)			/
15	Haimid et al. (2016)			/

According to Tables 4 and 5, the behavioural studies consist of two categories: agricultural entrepreneurship, behavioural intention and actual behaviour. During the review, most of the articles had conducted Agricultural entrepreneurship intention, such as Ambad et al. (2024); Gabriel & Irving (2024); Che (2022); Abu Bakar et al. (2022); Abdullah & Abu Samah et al. (2014); Ambad et al. (2021); Mohammad et al. (2015); Waktu et al. (2020); Mat et al. (2022); and Musa et al. (2021).

The first theme of the target research population is among university students, graduates, Gen Y, and Youth. The only review articles had integrated the investigation from intention to actual behaviour, namely (Yusoff et al. 2019). Hence, the specific final year agricultural students were used as the research population due to the data collection involving two different times between the last semester of students and 6 months after they graduated, in order to see the agri-preneurship intention-behaviour. However, the long-term effect of intention on actual agro-preneurial activity was limited to a period of six months, which could not convincingly demonstrate a modest causal influence. Consequently, future research should extend the longitudinal timeframe beyond six months, as suggested by Yusoff et al. (2016), to establish improved outcomes. Nevertheless, a study was conducted to understand Theory of Behavioural Control (TBC) to stimulate individual Agri-preneurship intentions and the viewpoints of those either profoundly interested in or actively engaged in agricultural endeavours, which the author believes had employed many research populations, as shown in the table.

The second theme of the target population consists of actual people who are currently involved in agricultural entrepreneurship, such as the Graduate Agropreneur of Melon Manis in Terengganu, Paddy Farmer, women agriculture entrepreneurs and agritourism entrepreneurs. As evidence of numerous studies reviewed under agricultural entrepreneurship behaviour represented by three articles, which mainly focus on getting preliminary data from qualitative methods, such as Zainol et al (2021); Kamaruzaman et al (2019); Tan &

Abdullah (2022) and Haimid et al. (2016). All these articles have investigated the motivation and the challenges in agricultural activities, the Graduate Agropreneur Model, Path to Agricultural Entrepreneurship by feasibility study, interview, observation and case study. Therefore, these reviewed articles were required to have first-hand data from real phenomena.

According to the above finding, the groups of youth agropreneurs, youth, graduates and agriculture students in higher educational institutions are becoming the target population under the entrepreneurial skills and behavioural studies, either in intention or behavioural categories, towards agricultural entrepreneurship. Research objectives are also important to consider which groups are suited to the research. Therefore, some studies have investigated in terms of the intervention of entrepreneurship education and training approaches for these groups of the population. They are still young and less likely to become agropreneurs; therefore, this intervention would help and enhance their entrepreneurial skills and behaviour in the agriculture sector.

Overall, Youth generally still stand as become main focus of researchers towards agricultural entrepreneurship studies, which is based on the research objective accordingly. Those who are can be a potential towards agricultural entrepreneurship participation, as the indicator to the 'behavioural intention' will be employ individual youth as student, graduates, Gen Y. Most of reviewed articles had used university students and none of them employ, school students and vocational students which will future research to focus on agricultural entrepreneurship behavioural intention since the vocational school has agricultural programs. On the other hand, various individuals involved in the agriculture sector n such as women, agrotourism entrepreneurs, graduates and paddy farmers, as the target population in actual behavioural studies, share similarities who are individuals who are involved in agricultural activities. Nevertheless, it still depends on the research objectives of the investigation. For instance, if the study seeks to examine the elements affecting agri-preneurship intentions, factors influencing to become an agropreneur, training towards entrepreneurial intention, characteristics of agropreneurs and perceptions that suit the target population could be students, youth, and even farmers. Another hand, most of the actual people who manage agriculture business, such as farmers, agropreneurs, and program participants, are eligible for after-training and program evaluation. Overall, the basic understanding of the target population towards agricultural entrepreneurship behaviour can refer to the above discussion.

Discussion

The labour shortage in the agricultural sector, particularly among local workers, is a longstanding issue that is anticipated to exacerbate if reliance on foreign labour continues without implementing any reforms. So, the new dimension of agricultural entrepreneurship areas can change into dynamic, flexible and adaptable, primarily referring to individuals who will respond to these changes. As evidence of reviewed studies, the growing number of agricultural entrepreneurship studies resulted in a finding for the specific individual group used as a research target population. There are two categories of the relevant target research population towards agricultural entrepreneurship areas that have been identified based on the types of research methods and research objectives.

From quantitative research is often to do hypothesis testing, identify pattern, determination of factors and market prediction using numerical data collection, measuring and analysing using statistical methods such as study about Agricultural Entrepreneurship Intention which refer to research subject among Malaysian youth (15 to 40 years) by Abu Bakar et al. (2022); factors influencing inclination toward agriculture entrepreneurship among students in agricultural learning institutes' by Abdullah & Bahaman (2014); unravelling agripreneurship activities had directed among final semester Gen-Y of agricultural students of six Malaysian Public Educational Institutions by Yusoff et al., (2019); Agro-Entrepreneurial Intention by factors determination among Agri-business students in Malaysian public university by Che et al (2022); the effect of Planned Behaviour Theory on Agro-preneurship Intention among Youth in Sabah Waktu, S. et al. (2020); Youth Inclination Towards agricultural entrepreneurship among youth who age 15 to 40 years in Peninsular Malaysia Mohamad (2015). In addition, studies who are conducted by Ambad et al. (2024) also was investigated Agro-preneurial intention by career choice theory and entrepreneurial event model among undergraduates students from public and private university; and similar authors also explored the factors influencing intention to become Agropreneur towards Youth in Sabah by Ambad et al (2021) and the last study

done about the relationship between social status and job security towards agribusiness entrepreneurial intention among university students Mat et al (2022).

Overall, most of the above studies were targeted at the research population among university students, youth or generation Y, mainly focused on agricultural entrepreneurship behavioural intention investigation. As such, the research relates to the cognitive, skills and knowledge preparedness before they actively participate in real agricultural entrepreneurship goals. On the other hand, A quantitative study encompassing various research subject populations was conducted by Gabriel & Irving (2024), including agricultural program students, attendees of agricultural seminars, subscribers to farming journals, members of agricultural online communities, and professionals deeply entrenched in the sector, such as farmers, agropreneur, and agronomists towards influencing intention and action of agricultural entrepreneurship on decoding agripreneurship to comprehend the determinants influencing entrepreneurial purpose in agriculture which involves the investigation towards the intention, perspective and action.

Conversely, a qualitative research project that seeks to understand and interpret social phenomena in depth and complexity of human behaviour, attitudes and interaction than quantifiable measurement by using methods of interviews, observation and analysis of text and visual data. Among these selected articles, according to Musa et al. (2021) were employed 20 UPM of agricultural students with a number of entrepreneurial experiences in investigate entrepreneurial intentions in the agriculture sector. Consistently, the qualitative research on the motivation and challenges of exploration in the agriculture sector among Agrotourism, Tan and Abdullah (2022); women entrepreneurs as research population by Haimid et al. (2016); a feasibility study about Agro-Innovation Path to Agricultural Entrepreneurship by Kamaruzaman et al (2019) among Paddy Farmers. Establishing a graduate Agropreneur Business Model for food security among successful graduate agropreneur Melon Manis Terengganu via field visit, observation and case studies. This recent business model on Melon Manis Terengganu fertigation farming is integrated with the current business environment to venture into high technology farming and therefore, the potential population of this agriculture sector are among new generation farmers, young, energetic and knowledgeable agropreneurs (Zainol et al. 2021). To conclude, the target research population is about individual people who are currently managing their agricultural business. Most of them are entrepreneurs across multiple concepts and areas, such as agrotourism business owners and female entrepreneurs in the agricultural industry, agricultural students with a number of entrepreneurial experiences, graduate agropreneurs, and paddy farmers. It is very important to have first-hand data information of individuals involved in agricultural activities, which can represent the preliminary study that relates to agriculture perspectives, which differ from those of individuals who are not involved in this sector, but they are still potential candidates for agriculture participation.

Generally, the target of the research population towards agricultural entrepreneurship is youth, with diverse agricultural areas. The authors' belief youth are the possible target population, as the growing trends of agricultural entrepreneurship studies have been employed and many prior studies have supported. On the other hand, the consideration of the target population also refers to the research objectives, such as the determination of factors for agricultural entrepreneurship inclination, indicators of entrepreneurial skills, and cognitive and knowledge would be investigated among youth from different versions of students, graduates, agropreneurs, farmers, women and so on. Nevertheless, if the research objectives focus on the assessment of entrepreneurial education and training towards individual cognitive and psychological performance would consider all youth which includes, including students, farmers, agropreneurs, graduates and others. Another hand, the assessment of entrepreneurial training and education on business performance would refer to the research population among real people in agricultural participation, such as farmers and agropreneurs. To sum up, most of the reviewed articles had focused on agricultural entrepreneurial inclination, which would employ the potential of the younger generation as a research population. However, more actual behavioural research that focuses on youth agropreneurs is encouraged for future research to fill in, since there is a lack of contribution in the existing literature.

Significantly, previous studies revealed that youth were a target potential population to engage in agricultural entrepreneurship that was 71 percent estimated to be interested in it (Mohammad, 2015) and become agricultural entrepreneurs to run agribusiness in the future (Abdul & Naem, 2013). According to the ILO (2020), Youth Agropreneur is relevant as the growing trends of youth into entrepreneurship as the main driver

to adopt change; to embrace innovation, Ray et al. (2022); overcome the unemployment problem, Silva et al. (2009); Bakar et al. (2022). Malaysia was on the right track towards agricultural entrepreneurship, while the Youth Agropreneur Unit was established in 2013 under (Malaysian Agricultural and Food Industry. MAFI is a significant force that aims to increase youth participation in the agriculture sector by shaping more new breed of future Agropreneur in Malaysia, which more young, energetic, high-tech, and entrepreneurial must be groomed. It was supported that the future agropreneur should be groomed within this sector, mainly among the youth, Yusoff (2017), to augment the quantity of youth agropreneurs in the future Malaysian agricultural sector (Mat et al. 2022). It was resulting in the number of Youth Agropreneur participation still low and discouraging, which currently accounts for only 15 percent in Malaysia (Johari et al., 2022; MAFI, 2021).

5. Conclusion

The target population in Malaysian studies consists of youth such as final year students, specific agricultural university students, business and entrepreneurship students, students with entrepreneurial experience, and university graduates, which almost all Malaysian agricultural entrepreneurship research had investigated from the perspectives of individual intention and inclination. However, there is a study done on the connection between individual intention and actual behaviour by using the proxy indicator of actual action and conducted using a longitudinal study. This result indicates, longitudinal studies are lacking and more future researchers are encouraged to fill the research gap. On the other hand, graduate entrepreneurs, women entrepreneurs, agrotourism entrepreneurs, and paddy farmers were also listed as the target population in agricultural entrepreneurship based on actual behaviour. Refer to reviewed Malaysia studies, most articles under qualitative study, which aim to understand the preliminary phenomena, perspective and actual environment in this agricultural sector. Another hand, these target populations can apply to factor behavioural analysis studies because it involves individual cognitive and psychological investigation. Overall, most of the target population had discussed either behavioural intention or actual behaviour, mostly among youth, which is very relevant to carry out agricultural entrepreneurship and make a change in the existing agriculture sector. The study significantly noted that the age range for youth participation might extend to 45 years, as this age represents a peak in life maturity and job experience, rather than being restricted to 40 years. This is due to many government programs, such as entrepreneurship initiatives, which can be fulfilled by this group of youngsters, leading to broader engagement and thus increasing the number of youth agropreneurs in Malaysia. This study identified that the target demographic for Malaysian agricultural entrepreneurship includes individuals aged 18 to 45, focusing on both behavioural intention and actual behaviour of youth. This encompasses short-term and long-term behavioural studies. Therefore, the future researcher is encouraged to employ youth as the research target population towards individual behavioural intention and action to conduct more longitudinal studies among emerging contexts of Youth Agropreneur in Malaysia, nowadays, to fill the research gap towards agricultural entrepreneurship in the Malaysian context.

Conversely, an increasing number of researchers are urged to investigate the target population of agropreneur, agripreneur, agribusiness entrepreneur, or agriculture entrepreneur among youth as a research target of population that focuses on agricultural entrepreneurship in the actual behavioural category. This area of study still has a minimal amount of literature compared to the behavioural intention study. Nevertheless, the growing number of research studies has found that the youth participation in agriculture indicates that youth are the main pillars of economic drives and development and they should be groomed to adopt the changes in agriculture to modern, automated mechanisms as integrated with entrepreneurship, which can create better employment opportunities for them. Therefore, the government intervention and support mainly through entrepreneurial education and training, is able to strengthen youth participation towards agricultural entrepreneurship in Malaysia, as now, Malaysia is expected to augment the population of youth agropreneurs in the future. Therefore, the authors had suggested focusing on the target population among 'youth agropreneurs' towards agricultural entrepreneurship participation. The impact of entrepreneurial education and training evaluation on individual and business performance is becoming an increasing research trend to fulfill as new contributions in the literature.

Limitations, further research and implications

This systematic review has limitations, primarily due to the lack of empirical findings. The review relies on synthesizing previous literature through a systematic process, which may not fully capture the practical way

of agricultural entrepreneurship. This limitation highlights the need for future researchers to focus specifically on identifying the right target population for agricultural entrepreneurship since many diverse Youth categories have been found in the literature with varying behaviours, intentions, and actual practices, making it essential to explore these dimensions more comprehensively. As of 2025, the inclusion of recent literature is necessary to address the current research gaps. Updating the body of work with the most recent studies will provide a more accurate and relevant understanding of the topic, ensuring that the findings are aligned with the evolving trends and challenges in the agricultural sector. The implications of this study are significant. By providing a foundation for future research, it can guide scholars in contributing to this emerging field through empirical studies that validate and expand upon the findings. Additionally, this research has practical implications for encouraging greater youth participation in the agriculture sector. Besides, practically, it helps policymakers identify effective strategies and interventions to attract younger individuals to engage in modern, technology-driven agriculture, addressing both labor shortages and the need for innovation in the sector.

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A. Appendix of The Methodological and Analysis Assessment Criteria

Research Design	Assessment criteria
Screening question (for all types)	S1: Are there clear research questions? S2: Do the collected data allow addressing the research question?
Qualitative	QA1 – Is the qualitative approach appropriate to answer the research question? QA2- Are the qualitative data collection methods adequate to address the research question? QA3- Are the findings adequately derived from the data? QA4- Is the interpretation of results sufficiently substantiated by data? QA5- Is there coherence between qualitative data source, collection, analysis and interpretation?
Quantitative randomized controlled trials	QA1- Is randomization appropriately performed? QA2- Are the groups comparable at baseline? QA3- Are there complete outcome data QA4- Are outcome assessors blinded to the intervention provided? QA5- Did the participants adhere to the assigned intervention?
Quantitative (descriptive)	QA1- Is the sampling strategy relevant to address the research question? QA2 – Is the sample representative of the target population? QA3- Are the measurements appropriate? QA4- Is the risk of nonresponse bias low? QA5 – Is the statistical analysis appropriate to answer the research question?
Quantitative (non-randomised)	QA1- Are the participants representative of the target population? QA2- Are the measurements appropriate regarding both the outcome and intervention (or exposure)? QA3- Are there complete outcome data? QA4- Are the confounders accounted for in the design and analysis? QA5- During the study period, is the intervention administered (or exposure occurs) as intended?
Mixed methods	QA1- Is there an adequate rationale for using a mixed methods design to address the research question? QA2- Are the different components of the study effectively integrated to answer the research question? QA3- Are the outputs of the integration of qualitative and quantitative components adequately interpreted? QA4- Are divergences and inconsistencies between quantitative and qualitative results adequately addressed? QA5- Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?

Sources: Hong et al. (2018)

QA = Quality Assessment; QN(RCT)= Quantitative (Randomized Control Trial); QN (D)= Quantitative descriptive; QN (NR)= Quantitative non-randomised; QL Qualitative; MX Mixed-Method; C Can't tell.

4.1. The 15 Methodological and Analysis Assessment Criteria articles Categories

Study	Research Design	S1	S2	QA1	QA2	QA3	QA4	QA5	Number of criteria fulfilled	Inclusion in the Review
Ambad et al. (2024)	QN(D)	/	/	/	/	/	/	/	7	/
Abu Bakar et al. (2022)	QN (D)	/	/	/	/	/	/	/	7	/
Musa et el. 2021	QL	/	/	/	/			/	5	/
Yusoff et al. (2019)	QN(NR)	/	/	/	/	/	/	/	7	/
Abdullah, F, & Bahaman, S 2014	QN (D)	/	/	/	/	/		/	6	/
Che, N. et al (2022)	QN (D)	/	/	/	/	/	/	/	7	/
Mohamad, N. 2015	QN (D)	/	/	/	/	/	/	/	7	/
Ambad et al (2021)	QN (D)	/	/	/	/	/		/	6	/
Waktu, S. et al. 2020	QN (NR)	/	/	/	/	/	/	/	7	/
Firus et al, 2020	QL	/		/	/				3	
Gabriel, W. W. E & Irving T S. H (2024)	QN(NR)	/	/	/	/		/	/	6	/
Zainol et al. (2021)	QL	/	/	/		/	/	/	6	/
Kamaruzaman et al (2019)	QL	/	/	/	/			/	5	/
Mat, T. et al (2022)	QN(NR)	/	/	/	/			/	5	/
Tan, Y., W. & Abdullah, A., R. (2022)	QL	/	/	/			/		4	/
Haimid et al. (2016)	QL	/	/	/			/	/	5	/