

# The Impact of University Academicians as Solution Providers: A Case Study of SDG-Oriented Community-Based Projects in Kelantan and Terengganu

Azlizan Talib<sup>1</sup>, Norhana Khaled<sup>2\*</sup>, Muhammad Rahimi Hasan<sup>3</sup>, Norfatiha Othman<sup>4</sup>, Nik Hasif<sup>5</sup>

- <sup>1</sup> School of Government, College of Law, Government and International Studies, Universiti Utara Malaysia (UUM) 06010 UUM Sintok, Kedah, MALAYSIA
- <sup>2</sup> Faculty of Law and International Relations, Universiti Sultan Zainal Abidin (UniSZA), Gong Badak Campus, 21300 Kuala Nerus, Terengganu, MALAYSIA
- <sup>3</sup> Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia (UKM) Bangi, 43600, Selangor, MALAYSIA
- <sup>4</sup> Faculty of Business, Economy and Social Development, Universiti Malaysia Terengganu (UMT) 21300 Kuala Nerus, Terengganu, MALAYSIA
- <sup>5</sup> The Institute of Malaysian and International Studies (IKMAS), Universiti Kebangsaan Malaysia (UKM) Bangi, 43600, Selangor, MALAYSIA

\*Corresponding Author: [norhanakhaled@unisza.edu.my](mailto:norhanakhaled@unisza.edu.my)  
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## Abstract

This article examines the role of university academicians as solution providers in community farming initiatives under the All-Party Parliamentary Group Malaysia on Sustainable Development Goals (APPGM-SDG). It focuses on the impact of their participation in beneficiary self-development in selected projects within the Terengganu and Kelantan constituencies in the Eastern Region. This paper adopts a fully qualitative approach, utilizing both primary and secondary sources. Primary data sources consist of in-depth interviews, focus group discussions, site visits, and document analyses extracted from the reports. Secondary sources encompass past literature relevant to the case study approach. The analysis identifies three key roles of academicians as solution providers: socioeconomic assurance, project sustainability, and the preservation of local wisdom. These roles are further enhanced through the application of the Technical and Vocational Education and Training (TVET) framework. The findings contribute to the valuable discussion on consistency in terms of academicians' performance-oriented, knowledge discretion vis-à-vis farming community, and ubiquitous local wisdom. Crucial recommendations are proposed for solution providers in academia and policy deliverables in the Eastern Region for future endeavors to minimize multidimensional poverty through the funding of social community projects.

## 1. Introduction

The Sustainable Development Goals (SDGs) consist of 17 objectives aimed at enhancing global economic, social, and environmental development (Puteh & Wan, 2023). The SDGs offer a common framework for understanding

project progress and sustainability reporting, facilitating the achievement of sustainability goals. The All-Party Parliamentary Group-SDG (APPGM-SDG) is a cross-party coalition of Malaysian parliamentarians dedicated to advancing the SDGs in Malaysia (Parliament of Malaysia, 2023; Ab Rahman et al., 2023; Salleh et al., 2023). The APPGM-SDG projects focus on providing sustainable solutions in three main areas: (i) economy, (ii) social, and (iii) environment. Economic projects aim to boost or enhance participants' income through entrepreneurial initiatives. Social projects address vital national issues and seek sustainable solutions. Environmental projects focus on conservation efforts, particularly for endangered ecosystems. The Solution Providers Project, organized by the All-Party Parliamentary Group Malaysia – Sustainable Development Goals on Civil Society Organization Alliance (APPGM-SDG), is a flagship program designed to advance the Sustainable Development Goals (SDGs) in Malaysia (Ramli & Daud, 2022). This project is of great significance as it aims to tackle various challenges and gaps in achieving the SDGs across Peninsular Malaysia, Sabah, and Sarawak. In 2022, numerous solution projects were implemented nationwide, with a total of 87 projects distributed across six zones: 15 in Sabah, 8 in Southern Malaysia, 13 in Sarawak, 18 in Central Malaysia, 23 in Northern Malaysia, and 10 in the Eastern Region, specifically in Kelantan (Ramli & Daud, 2024). These projects, aimed at addressing specific SDGs, were supported by financial assistance to benefit the community. Evaluating their impact is essential for assessing their effectiveness, informing decision-making, refining program design, and guiding relevant policies.

According to the APPGM-SDG 2021 Annual Report, the goals are to address local concerns and collaborate across party lines to ensure that no individual or family is left behind. The structuration process between the first sector (government), the second sector (private), and the third sector (civil society organization) that APPGM-SDG empowers also has created not only a trajectory but increased opportunities for university academicians to participate as solution providers. Therefore, this article attempts to argue for the university academicians' participation as solution providers in community farming in terms of influence on beneficiary self-development in the Eastern Region, mainly the Terengganu and Kelantan constituencies. Kelantan and Terengganu, located in the Eastern Region of Malaysia, are predominantly rural constituencies with a significant agricultural sector (Abas et al., 2020). Agriculture, particularly community farming, is a vital source of livelihood for the local population in these areas, and technical and vocational education and training (TVET) are needed. TVET become an essential priority in addressing socioeconomic issues and industry skills in a dynamic world trend (Sibiya, 2024). TVET is a discipline of education and training that provides capable and competent human resources with technical and vocational expertise in the job market (Salleh & Sulaiman, 2016; 2017; Salleh et al., 2023). Therefore, programs or institutions that apply TVET must establish quality and impact evaluation, followed by human resource management, financial and infrastructure, industrial partnerships, and technology adoption (Kamarulzalis, 2024).

However, despite its importance, community farming faces various challenges, such as limited access to modern farming technologies, lack of knowledge of sustainable farming practices, and inadequate support systems for farmers. These challenges hinder the growth and development of community farming, leading to lower agricultural productivity and limited economic opportunities for the beneficiaries. Therefore, the main objective of this matter is to analyze the experience of university academicians' capability to elevate social development through knowledge transfer, particularly TVET vis-a-vis the farming community in the Eastern Region. Community farming is an important aspect of agricultural development in rural areas. It provides households with food and contributes to economic well-being (Abas et al., 2020). As solution providers, experience as an educator and expert in specific fields plays a crucial role in cultivating community farming practices and stimulating beneficiary development. Differing from solution providers that come from individual government organizations (IGO) or non-government organizations (NGOs), these groups have the advantages of knowledge advancement and high trust from every layer of society. Based on that premise, academicians can empower farmers and communities through their attributes to enhance farming methods, increase productivity, and achieve sustainable development goals (Chowdhury et al., 2023). Therefore, impact evaluation on every cohort initiated by APPGM-SDG since 2020 is vitally needed. The mechanism of evaluation is required to scrutinize the workflows and solution providers' effectiveness through the granted funds. Consequently, this article focuses on university academicians who have been granted APPGM-SDG funds in the Eastern Region, namely the Kelantan and Terengganu constituencies.

## 2. Literature Review

### 2.1 Development and Equality in East Coast Peninsular Malaysia

The implementation of the APPGM-SDG program on the East Coast of Peninsular Malaysia is crucial. This region, encompassing the states of Kelantan and Terengganu, offers a unique setting marked by its specific developmental challenges and efforts to foster greater equality. These challenges can be analyzed through various lenses, including development dimensions, gender equality, economic hardships, flood-related impacts, and the entrepreneurial landscape in the area. In terms of development, states like Kelantan are often characterized by slower progress and persistent poverty. In 2019, it was noted that 7 of the 28 poorest districts in the country,

including Tumpat, Gua Musang, Jeli, Kuala Krai, Tanah Merah, Pasir Mas, and Pasir Putih, were situated in Kelantan. These districts lack essential infrastructure, such as roads and clean water supply (Abdullah, 2019).

Three years later, World Bank reports confirmed that Kelantan continued to have one of the lowest average incomes and a high poverty rate among the states (World Bank, 2022). The poverty rate is closely tied to the labor force participation rate (LFPR) and unemployment rate (UR). According to the Labor Force Survey Report 2023, Kelantan and Terengganu have the lowest LFPR in the country, at 61.4% and 60.3%, respectively. These two states have the highest unemployment rates, with Kelantan at 3.9% and Terengganu at 4.2% (Puteh & Wan, 2023). The economic struggles of Kelantan and Terengganu are evident in their declining Gross Domestic Product (GDP), which has significantly impacted key economic activities such as agriculture, mining, manufacturing, construction, and services. These challenges were further intensified by the COVID-19 pandemic, resulting in increased bankruptcies and financial losses (Zulkepli & Mohd Idris, 2022). Scholars have also explored women's empowerment through their entrepreneurial activities (Zainuddin et al., 2017; Syahirah et al., 2015; Syahirah et al., 2023). It has been observed that Malaysia's SME sector, particularly in Kelantan, sees significant involvement from women. Research indicates that businesswomen in Kelantan often focus on sustainable enterprises, such as dry food production, due to steady demand and lower costs. These entrepreneurs typically sustain their businesses through values of patience and integrity, deeply rooted in their spiritual beliefs (Puteh & Wan, 2023).

However, to enhance their income levels and business growth, women entrepreneurs require more financial support and improved entrepreneurial competencies, areas in which there has been limited provision. Finally, the most frequently cited works on the APPGM-SDG solution project in the Eastern Region by Puteh & Wan (2023) focus on the perspective of solution providers and the challenges associated with conducting impact evaluations. Those researchers noted several challenges faced by solution providers as a contribution to the study, namely the difficulty of obtaining male participants linked to the social dimension issues and the natural aspect of aboriginal communities. Hence, this article aims to enrich these views from solution providers among the academicians.

## 2.2 Academician as an Enabler for Community Development

Academic effectiveness evaluations are considered an effective mechanism for promoting growth in academia. Ismail et al. (2018) defined academician effectiveness as the aggregated effects of a complex set of in-classroom academician behaviors on students learning. Academician effectiveness is a multidimensional notion that refers to performance outcomes on specific educational goals that focus on activities in academic settings, such as schools, colleges, and universities (Munir & Aboidullah, 2018; Steinmayr et al., 2019). Therefore, fostering more significant student-teacher interaction as an essential and fundamental basis for teaching in a challenging learning environment is critical. Hence, there is a need to further interrogate this stream of thought in the academician effectiveness context. Establishing effective university-community partnerships is crucial to this endeavor, as it allows for the seamless integration of academic expertise and community-based knowledge, resulting in holistic and sustainable solutions (Gelmon et al., 2013; Buys & Bursnall, 2007; Hardaway et al., 2016). Therefore, one of the key ways in which academicians can enable community development is through community-engaged research (Dyck, 2020). The impact of academicians as solution providers in the context of technical education and training towards beneficiary development is a complex and multifaceted issue in the eastern region of Malaysia; this paper focuses mainly on the Kelantan and Terengganu constituencies. While there is a growing emphasis on skills development and lifelong learning, the role of academicians as solution providers in technical education and training cannot be overlooked. They play a critical role in curriculum development, instructional design, and assessment, ensuring the education and training are relevant, effective, and aligned with current industry needs (Maghiar & Brown, 2022).

## 3. Methodology

This paper uses a fully qualitative approach to investigate the impact of academicians as solution providers in technical and vocational education training in the Eastern Region of Malaysia; a case study approach will be employed (Skills Development/TVET, 2019). A qualitative approach allows for a deeper understanding of the subjective experiences and perspectives of academicians as well as the beneficiaries of technical education and training (Aspers & Corte, 2019). By conducting interviews, focus groups, observations, and site visits, we can gain valuable insights into the challenges faced by academicians, their strategies for addressing these challenges, and the direct impact of their efforts on the development of beneficiaries. This approach will provide a comprehensive understanding of the multifaceted roles of academicians as solution providers in technical education and training, shedding light on the complexities and nuances of their contributions to beneficiary development.

This approach will allow for an in-depth analysis of the context and factors relevant to this region. Furthermore, a combination of qualitative and simple numerical assessments completed by the impact evaluator (authors) will be utilized (Rahman et al., 2023). Qualitative methods, such as interviews, focus groups, observation, and site visits to the solution provider community project, have been conducted to gather in-depth insights from academicians, beneficiaries, and other stakeholders involved in technical education and training.

The confidentiality of informants has been ensured, and ethical considerations were followed throughout the research process. Regarding confidentiality, the profile, number of informants, and participants in focus group discussions and site visit sessions, particularly those conducted by impact evaluators, cannot be disclosed to maintain anonymity. This is important to ensure the integrity of academics and the sensitivity of the subjects. Dealing with a qualitative approach ensures the usefulness of primary and secondary sources driven by various data sources.

The primary data sources are divided into four thrusts. The first thrust is informants' interviews of selected projects granted by APPGM-SDG that were applied by academicians in the Eastern Region, including several Kelantan and Terengganu constituencies. The second thrust is derived from original project reports and documentation provided by solution providers to APPGM-SDG. The third thrust data source includes the outcomes from a focus group discussion conducted by an impact evaluator with solution providers and beneficiaries. The last thrust is an observation through a site visit on the selected project in the Eastern Region that is operationalized by academicians only. All these thrusts are measured using simple numerical assessment against six (6) domains. The first domain is Deep, which represents the sense of ownership towards the community farming project. The second is Clear, which represents the beneficiary's understanding of how to use the skills trained by the solution provider. Thirdly, Wide refers to beneficiary outreach with other stakeholders on community farming. Fourth is the High domain, which represents the system applied by beneficiaries through technical education and training in operationalization. Next, the Gender Consideration domain reflects the empowerment of women and men in community farming projects (Hasan et al., 2023). Finally, SDG Comprehension is embedded in the project (Ramli & Daud, 2024).

Secondary sources compel an abundance of desk research related to past literati works that are appropriate to the focus of the paper. This includes article journals, books, official reports by the Malaysian government, the Department of Statistics Malaysia (DOSM), and external agencies such as the World Bank, the United Nations Department of Economic and Social Affairs (UNDESA), and the SDG Report. Simple numeral assessment data from an impact evaluation process also takes into consideration the pattern of the domain that solution providers in the Eastern Region had achieved.

## 4. Result

### 4.1 Transfer of Knowledge Assurance to Beneficiary

Under the APPGM-SDG Project, the solution provider will be granted a specific amount to operationalize respective ideas to develop a social community project. In the Eastern Region, solution providers in Kelantan and Terengganu mainly focus on farming communities. The background of the project has been influenced by the geography and the existing sources abundantly on land and natural resources. The academicians with this fund from APPGM-SDG, particularly through thorough documentation and report review by impact evaluators, have played a crucial role in providing solutions and expertise to improve technical education and training for beneficiaries in the farming community. As mentioned by Beneficiary 1 in one of Kelantan constituency in a focus group discussion on Deep and Clear domains:

"...They bring their knowledge and expertise in various technical fields, such as agriculture, agribusiness, governance, and farm management, to develop curriculum and training programs that address the specific needs and challenges faced by us in our constituencies..."

(Beneficiary 1: Focus Group Discussion, 25 January 2024)

Beneficiary 2 in one of Terengganu constituencies also shares similar domains as beneficiary 1 about the impact of the solution provider in farming community projects:

"...The academicians also serve as mentors and advisors to beneficiaries, providing guidance and support throughout their education and training journey. The academicians provide them with guidance and knowledge. Through this project, we learned skills in managing humans and techniques in community farming..."

(Beneficiary 2: Focus Group Discussion, 26 January 2024)

Meanwhile, High and Wide domains also had a self-development impact on beneficiaries through the experience of academicians as solution providers. As mentioned by Beneficiary 3 in one of the Terengganu constituencies:

"...Their role goes beyond traditional classroom teaching, as they actively engage with beneficiaries in fieldwork, practical training, and research activities. This holistic approach ensures that beneficiaries gain theoretical knowledge, practical skills, and hands-on experience of management to ensure the final product will attract other stakeholders to collaborate and network with us..."

(Beneficiary 3: Focus Group Discussion, 26 January 2024) This domain above is supported by Beneficiary 2 in a Terengganu constituency:

"...We learn a lot about management, especially how to manage and market the product... we need to attend class almost every week to ensure the successful transfer of knowledge..."

(Beneficiary 2: Focus Group Discussion, 26 January 2024)

Based on focus group discussion and active involvement in technical education and training, academicians have played a significant role in shaping the development of beneficiaries in the Eastern Region in selected constituencies. The experience as an educator and vis-à-vis social community projects is distinct from the theoretical understandings and in adverse situations (Low et al., 2024). However, the role of an academician in this article is more plausible to facilitate a community involved in comprehending the concrete dimensions. Three dimensions were found: socioeconomic assurance, sustainability assurance, and local wisdom assurance for beneficiaries. These three dimensions align with the problem statements of this article to unpack the challenges of academicians as solution providers in the Eastern Region.

#### 4.2 Socioeconomic Assurance of Beneficiary

The involvement of academicians in beneficiary development in the Eastern Region significantly impacts socioeconomic assurance. Academicians provide technical education and training and contribute gradually to the development of beneficiaries' socioeconomic status and social mobility in certain constituencies in Terengganu and Kelantan. Through their expertise and guidance, academicians help beneficiaries acquire the necessary skills and knowledge to excel in their chosen fields. Solution Provider 1 in one of Kelantan constituency explained:

"...This, in turn, enhances their employability and income potential, leading to improved socioeconomic conditions for themselves and their families..."

(Solution Provider 1, Interview, 25 January 2024) Beneficiary 2, in one of Terengganu constituencies, shared that: "...Before joining this program, we had no medium to voice out our needs. After joining the program, solution providers helped us achieve better results. Previously, we were traditional farmers using traditional methods, but now things are different..."

(Beneficiary 2: Focus Group Discussion, 26 January 2024)

Through the guidance and support of academicians, beneficiaries can become equipped with the necessary skills and knowledge to effectively address the challenges they may encounter in their respective fields, thereby fostering resilience and sustainability in the Eastern Region. Through their mentorship and guidance, beneficiaries have been able to adopt modern techniques in agriculture, optimize their farm management practices, and enhance their expected productivity. As a result, beneficiaries in the Eastern Region, according to the site visit, are grateful and have experienced improvements in the domains mentioned, with the exception of Gender Consideration and SDG Comprehension dimensions, which showed shallow understanding among beneficiaries (SDG Impact Evaluation: Eastern Region Report, 2024).

#### 4.3 Sustainability Assurance of Beneficiary

The involvement of academicians as solution providers in technical education and training ensures beneficiaries' long-term sustainability and assurance. This is achieved through the transfer of knowledge, skills, and best practices, enabling beneficiaries to adapt to changing circumstances and overcome challenges in their respective fields. Furthermore, the involvement of academicians as solution providers in technical education and training promotes sustainable agriculture practices. These practices improve the productivity and profitability of farming activities and contribute to environmental conservation and resilience (SDG Impact Evaluation: Eastern Region Report, 2024). This effort is achieved through the integration of innovative and sustainable farming techniques, the promotion of efficient resource management, and the adoption of eco-friendly approaches. For example, as mentioned by Solution Provider 2 in one of the Kelantan constituencies:

"...we introduced beneficiaries to the concept of precision agriculture, which utilizes technology and data analysis to optimize farming practices and minimize resource wastage. This approach increases productivity and reduces the negative impact on the environment while creating income generation..."

(Solution Provider 2, Interview, 25 January 2024)

Furthermore, by promoting continuous education and professional development, academicians empower beneficiaries to stay updated with their field's latest advancements and innovations. Thus, training and development help organizations meet their vision, mission, and objective by equipping employees with skills and knowledge (Salleh & Sulaiman, 2017). This action enables them to improve their practices continuously and

remain competitive in the market. Additionally, the presence of academicians as solution providers fosters a culture of research and innovation among beneficiaries. As highlighted by Solution Provider 3 in one of the Terengganu constituencies:

“...We encouraged beneficiaries to explore new ideas, experiment with different approaches, and contribute to the development of farming community until it can help other local people...”  
(Solution Provider 3, Interview, 26 January 2024)

“... Usually, after we harvest, there is no more yield. Nevertheless, now we have learned to plant in two farms, leading to continuous yield and harvest, which results in better resource management...”

(Beneficiary 1: Focus Group Discussion, 26 January 2024)

#### 4.4

#### Local Wisdom Assurance of Beneficiary

Academicians also play a vital role in preserving and promoting local wisdom among the beneficiaries, even if it is the hardest part to harmonize it with the needs of the project in Kelantan and Terengganu constituencies. As explained by Beneficiary 3 in one of the Terengganu constituencies:

“...Through their engagement with the farming communities, academicians have recognized the value of traditional practices and indigenous knowledge systems. They have worked towards integrating this local wisdom with modern techniques, creating a hybrid approach that is both sustainable and culturally relevant...”

(Beneficiary 3: Focus Group Discussion, 26 January 2024)

This approach ensures the retention and appreciation of local culture and traditions as tacit knowledge (Puteh, 2018) and enhances beneficiary practices' effectiveness and efficiency. Moreover, as solution providers in technical education and training, academicians contribute to the development of beneficiaries by fostering a culture of critical thinking, problem-solving, and innovation. This environment equips beneficiaries with the necessary skills and mindsets to address challenges, adapt to changes, and find innovative solutions in their respective fields. Therefore, the collaborative efforts of academicians and beneficiaries are crucial to the emergence of innovative projects and initiatives aimed at addressing socioeconomic challenges within the farming communities. Additionally, as highlighted by the APPGM-SDG Project, a platform for solution providers has been created to translate their ideas into tangible social community projects, fostering a culture of innovation and community-driven development while preserving the inheritance of local wisdom of participants (SDG Impact Evaluation: Eastern Region Report, 2024).

## 5. Discussion

The role of academicians in technical and vocational education and training is undoubtedly essential. However, it is vital to recognize that their influence and impact are not without challenges and limitations. One of the primary challenges is the disconnect between academic knowledge and the practical needs of the beneficiaries. Academicians, often rooted in theoretical frameworks and academic research, may struggle to fully understand and address the complex and dynamic challenges faced by beneficiaries, especially in the farming community in one of Kelantan constituencies. This gap can hinder the solutions' effectiveness and impact on beneficiary development. Moreover, in the Terengganu community farming project, the reliance on academicians as the primary solution providers may create a dependence mindset among beneficiaries, potentially limiting their ability to develop self-sufficiency and innovative problem-solving skills. Instead of empowering beneficiaries to take ownership of their development, an overreliance on academicians may inadvertently foster a culture of dependency, undermining the long-term sustainability of technical education and training initiatives.

Additionally, while valuable, academicians' expertise may not always resonate with the cultural and contextual nuances of the Eastern Region's farming communities. This discrepancy could lead to solutions that are not fully aligned with the beneficiaries' beliefs, practices, and aspirations, thereby limiting the effectiveness of the interventions. Acknowledging these challenges and limitations is crucial to critically assess academicians' role as solution providers in technical and vocational education and training (TVET). While their contributions are significant, addressing these obstacles is also important to ensuring the holistic and sustainable development of beneficiaries in the Eastern Region. Consequently, there are three challenges arising from this discussion. Those challenges are intertwined and generate mutual risk towards beneficiary development, which includes socioeconomic consistency, sustainability of the community farming, and last but not least, the displacement of the omnipresent community local wisdom that is inherited through different spirits of the age.

## 6. Recommendation

### 6.1 Solution Providers Among Academics

The recommendations for enhancing the policy space are as follows: First is Socioeconomic Resilience Assurance: the value of monthly income should be enhanced commensurate with the effort and commitment given by the beneficiary. This recommendation means that the returns received by the beneficiaries must reflect their contribution to the project. This way, the beneficiaries will feel valued, more productive, and motivated to stay engaged in the project. Second is Project Management Sustainability Assurance: solution providers should consider the suitability of the assignment according to the burden and gender suitability of the beneficiary. The balance of job descriptions can attract their interest and participation in this field and generate existing income (Syahirah et al., 2015). Third is the Assurance of the Preservation of Local Wisdom Values in Projects: solution providers need to deepen their way of thinking, culture, and identity. This is important to prevent ruling out the talents that should be highlighted. Solution providers are required to filter social constructs built from perceptions, stereotypes, environments, and experiences from weak networks. To some extent, solution providers need to advocate for beneficiaries to be proactive in voicing rights and obstacles. It is to ensure there is no pressure to maintain the way of thinking and worldview of the beneficiaries.

### 6.2 APPGM-SDG Policy Deliverable

This project can profoundly impact the solution providers and the beneficiaries in terms of six (6) domains and the three (3) unintended consequences, as described in the discussion section. However, based on the impact evaluation carried out by the evaluators (authors), some projects in the Eastern Region can be independent without the assistance of APPGM-SDG. This point has been illustrated through the strength of certain academicians in raising funds and sponsorship for farming community projects other than APPGM-SDG. Prior to that point, certain mature projects in selected constituencies became less focused on the consistency will of academicians in socioeconomic assurance, sustainability of the project, and the ubiquitous of local wisdom, as mentioned in the result and discussion. Therefore, some projects (not all) operationalized by academicians in the APPGM-SDG fund are too risky regarding income generation, quality of life, and cultural identity towards beneficiaries (SDG Impact Evaluation: Eastern Region Report, 2024). If APPGM-SDG organizationally intends to continue funding the project, then the above risks and policy space should be taken into account -- especially the impact on beneficiaries. Therefore, acting in addition to APPGM-SDG is a replacement (certain critical project) for other solutions providers, not to halt it for the sake of beneficiary gradual development. APPGM-SDG also needs to detail more solution provider attributes for advocacy, conscientiousness, not being too value-oriented, and self-performance for some projects in the Eastern Region. The selection rubrics of solution providers among academia must adhere to these proposed domains. This slight adjustment in policy space in solution provider selection among academia will influence a better future for social community development in farming projects under APPGM-SDG.

## 7. Conclusion

Half of the projects in the Eastern Region, particularly in Terengganu and Kelantan, have largely achieved their objective purpose in knowledge transfer, income generation, and networking, built through academics as solution providers. Among these are state and federal agencies that use funds raised by solution providers other than APPGM-SDG based on the evaluation of six domains in the Eastern Region. However, the impact evaluation process in the Eastern Region, especially implemented by academics for specific projects (not all), can be considered for more thorough and responsible allocation. It is vital to get tangible outcomes and achieve the main purpose of the APPGM-SDG funds.

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## Author Contribution

*The authors confirm contribution to the paper as follows: **study conception and design:** Muhamad Azwan Abd Rahman; **data collection:** Azlizan Talib, Muhamad Azwan Abd Rahman, Norhana Khaled, Muhammad Rahimi Hasan, Norfatimah Othman, and Nik Hasif; **analysis and interpretation of results:** Azlizan Talib, Muhamad Azwan Abd Rahman and Norhana Khaled; **draft manuscript preparation:** Azlizan Talib, Muhamad Azwan Abd Rahman,*

Norhana Khaled, Muhammad Rahimi Hasan, Norfatimah Othman, and Nik Hasif. All authors reviewed the results and approved the final version of the manuscript.

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