

Comments on Session 1 Papers

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AEI-Huawei Conference: Digitalization and Development,
Ecosystem for Promoting Industrial Revolution 4.0 Technologies
11-12 October, 2022, Pullman Hotel, Bangsar

Summary of three papers: Afzanizam

- The first two papers complements each other:
- Afzanizam focuses on the **small-scale food sector**, while Hisham addresses **large scale farming**, including small paddy farms that are operated collectively as large farms
- Afzanizam's covers the economics of food production, focusing on food consumption leading to a dependence on food imports.
- To reduce food imports, the fertigation method can be used to increase production growth and productivity.
- The fertigation technique has been well received by farmers.
- However, the state of technology in the fertigation system needs a massive leap from largely traditional practices due to:
- High initial cost needed and the uncertainty associated with returns on investment
- Lack of regulation along the value chain (consultants, suppliers and middlemen)

Summary: Hisham

- Hisham's paper focuses on the:
 - Depth of IR4.0 technology utilization in large-scale farming;
 - Challenges of why this may be currently underwhelming;
 - What is required to elevate its proliferation and;
 - Measures that are proposed to enable enhancements
- Among the challenges raised:
 - Automation;
 - Data manipulation, including capture, storage, analytics and decision making.
 - Smart farming promotes use of quantitative data for more objective decisions, but it has its problems:
 - Data Interpretation and utilisation
 - Data availability, consistency and depth
 - Technology Infrastructure and Connectivity
 - Importance of connectivity and supportive technology infrastructure

Summary: Yeap and RR

- Yeap and RR seeks to explain the industry specific ecosystem variables that influence the diffusion of Industry 4.0 related technologies and how they can be enhanced.
- A firm-level survey of 50 E&E manufacturers in Malaysia was carried out in 2019-20 to examine the role of embedding institutions and organizations in the introduction of IR4.0 technologies.
- Empirical work is based on the systemic quad developed by Rasiah (2019), i.e., basic infrastructure, science, technology, innovation infrastructure, global integration, and network cohesion, which is also explained in great detail in the paper
- Findings show:
 - There are still significant weaknesses within the existing infrastructure, organizations, and policies.
 - Interactions between supporting organizations and firms are fairly strong.
 - More needs to be done to enhance the quality of the research and development environment in Malaysia

Summary: Yeap and RR

- Policy Suggestions:
 - Solidify access to basic infrastructure while strategizing to increase the accessibility and stability of modern digital infrastructure systems.
 - States can support high performing and emerging domestic firms that can provide related technical services for the development of such infrastructure and to other firms.
 - Governments should focus on producing more industry relevant content for public education and training institutes through collaboration with the private sector, regular syllabus review, and sufficient funding. This fosters synergistic relationships and quadru-lateral cooperation between government, industry, universities and institutes, and the labour force
 - States can learn from innovative and compatible case studies based on other countries, such as Taiwan, for human capital development and modify these structures in accordance with domestic circumstances.
 - Provide targeted financial and other policy incentives for research and development activity to deserving firms and institutions but by imposing stringent performance standards.
 - Specific existing government linked support institutions should be evaluated for their relevance before conducting private sector consultations to target specific improvements in their services

Comments: Afzanizam and Hisham

Ref: ENGAGING YOUTH IN
AGRICULTURE through
Information and Communication
Technologies USAId 2019
<https://www.usaid.gov/sites/default/files/documents/15396/Fed-the-Future-CaseStudy-Youth-Ag-ICT.pdf>

- Engaging youths in agriculture: a global problem
- A meta-analysis of efforts around the world to engage youth in agriculture through ICTs.
- Challenges hindering youth involvement in agriculture. These include:
 - Family and community pressures
 - Lack of perceived profitability
 - **Access to land**
 - Access to finance
 - Access to education, technical training, and resources

**ENGAGING
YOUTH IN
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through Information and
Communication Technologies

Comments: Continued

- Human Capital: Regulations, Standards and Certification of experts
 - What is missing in the ecosystem for the training of human capital for tech savvy agropreneurs and technopreneurs?
 - Specifically for Yeap and RR: Why are the universities (public and private) not producing more industry relevant content? Is it because there is no quadrilateral collaboration? How can Malaysia foster greater quadrilateral collaborations?
 - What sort of regulations are needed to govern the value chain of consultants, suppliers and middleman in agriculture? (Examples?)
 - Are there enough universities offering courses in IOT and data analytics for agropreneurs ([application](#) rather than just the science of it?)
 - What about TVET?
 - Are they training the skilled workers/technicians needed?
 - Are there no private TVETs seizing this opportunity?
 - Who is setting the standards for the certification of experts and courses and programs for applying IR4.0 to agriculture?

Comments: Continued

- Many incentives (see Table 3.2 in Hisham's paper):
 - What are the outcomes?
 - Who is monitoring outcomes?
- Aging farmers and need for a new generation of farmers:
- Star 20 August 2022 states that *"Its capacity development and agricultural training division director, Hussin Mahmud, said from 2016 until June this year, 8,138 Malaysians aged between 18 and 40 were involved in the Young Agropreneur Programme, where funds totalling RM166,270,301 were disbursed"*.
 - How many trained ventured into agriculture and how many have stayed?
 - Is there a database on this?
- The loophole: Availability of Foreign Labor.
 - How do we address this?

Thank you for your kind attention

