

# Developing an Integrated Innovation Ecosystem to Strengthen Islamic Economy in Indonesia

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## ABSTRACT

This research attempts to develop an integrated innovation ecosystem of Islamic economy, which focuses on vocational education and training. We integrate the vocational education and training into the supply-demand-linkage of innovation ecosystem, within the key sectors of Islamic economy. We also refer to the underlying regulation which is the President Decree No. 68 Year 2022 about Revitalization of Vocational Education and Training. The sample of observations is the relevant stakeholders in the Province of East Java, that include industry players, government, and vocational education institutions. The key sectors of Islamic economy include the industry of halal processed F&B and pharmaceuticals, halal agriculture and fishery, as well as Muslim-friendly tourism and Islamic creative economy, which are selected based on their percentage of contribution to the overall regional GDP. We use both quantitative and qualitative approach, by deriving data and information from Focus Group Discussions (FGD) and questionnaires. Whereby, qualitative approach is used by conducting in-depth discussions and interviews with relevant stakeholders. The findings of this study show the strength and weakness for each of the supply-demand-linkage model, suggesting the policy direction in order to improve the productivity factors of human resources.

**Keywords:** innovation ecosystem, supply-demand model, islamic economy.

## INTRODUCTION

### 1.1. The era of innovation

The digital age has witnessed a rapid technological advancement that has brought about diverse transformations in society. The emergence of Industry 4.0,

accompanied by its sophisticated technologies, has significantly altered the current competitive landscape. Consequently, this shift has disrupted numerous industry-specific sectors. To stay ahead in the competition and adapt to changing consumer behavior, businesses need to prioritize the urgent adoption of digitalization and automation<sup>1</sup>. The use of cutting-edge technologies, such as artificial intelligence, the internet of things, 5G connectivity, big data, augmented reality, virtual reality, application programming interfaces, cloud systems, and blockchain, is a global trend that is reshaping the current business world.<sup>2</sup>

The age of disruption has also impacted changes in demographics and socioeconomics. It is predicted that Indonesia will undergo a demographic bonus in the period between 2030 and 2040. This presents an opportunity as demographic bonuses are a source of economic growth, resulting from increased consumption, investment, productivity, and reduced dependency rates. However, while demographic bonuses have the potential for economic growth, they can also lead to a demographic disaster in the absence of quality human resources.<sup>3</sup> Technology is immensely beneficial in simplifying daily work and enhancing workers' efficiency in their respective roles. As technology advances, human labor is gradually being replaced by robots. Furthermore, various services are shifting towards digital technology, eliminating the need for human intervention.<sup>4</sup>

Digitalization is believed to be instrumental in assisting businesses in aligning their products and services with customer requirements, redefining business values, and enhancing their focus on meeting customer expectations of product quality and service standards.<sup>5</sup> The pandemic has also brought to the fore the demands for digital acceleration, driven by customer expectations for fast, efficient, safe, and remote access to financial services. The shift from cash to online transactions is a manifestation of the disruption caused by the pandemic and the resulting changes in customer behavior. The global shift triggered by COVID-19 is having a profound impact on business models, consumer behavior, and causing significant disruptions in the workforce, resulting in uncertain labor market prospects and accelerating the arrival of future jobs.<sup>6</sup> Furthermore, these

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<sup>1</sup> Sang Uk Jung and Valeria Shegai, "The Impact of Digital Marketing Innovation on Firm Performance: Mediation by Marketing Capability and Moderation by Firm Size," *Sustainability (Switzerland)* 15, no. 7 (April 1, 2023).

<sup>2</sup> Md Eshrat E. Alahi et al., "Integration of IoT-Enabled Technologies and Artificial Intelligence (AI) for Smart City Scenario: Recent Advancements and Future Trends," *Sensors* (MDPI, June 1, 2023).

<sup>3</sup> Rifqi Muhammad and Peni Nugraheni, "Sustainability of Islamic Banking Human Resources Through the Formulation of an Islamic Accounting Curriculum for Higher Education: Indonesian Perspective," *SAGE Open* 12, no. 1 (March 1, 2022).

<sup>4</sup> Araz Zirar, Syed Imran Ali, and Nazrul Islam, "Worker and Workplace Artificial Intelligence (AI) Coexistence: Emerging Themes and Research Agenda," *Technovation* 124 (June 1, 2023).

<sup>5</sup> Renu Dalal and Mesut Akdere, "Talent Development: Status Quo and Future Directions," *Industrial and Commercial Training* 50 (August 24, 2018).

<sup>6</sup> Susan Lund et al., *The Future of Work after COVID-19*, 2021, [www.mckinsey.com/mgi](http://www.mckinsey.com/mgi).

global shifts are also influencing the future of work, which is defined by emerging technologies.

Over the past decade, technological progress has led to the prospect of large-scale job transfers, skill shortages that are difficult to sustain, and increased competition between human and artificial intelligence. The significant skill shortage compounded by these disruptions necessitates organizations to give greater thought to their human resource management (HR) strategies. These strategies typically involve relying more heavily on lateral recruitment or the process of hiring experts for quickly filling jobs that require filling to bridge the human resource gap.<sup>7</sup>

The evolving global trends are transforming the future of work, which is having an impact on jobs, required skills, and work patterns in organizations.<sup>8</sup> Novel job categories will arise, partially or entirely replacing others, necessitating organizations to redefine job roles, diversify and shift towards the right job models, and adopt more agile job rotation policies to broaden employee experience and expertise. Additionally, the global trends have also influenced the changing expertise or skills in most industries, such as the importance of ICT (Information, Communication, Technology), and STEAM (Science, Technology, Engineering, Art, Mathematics) skills. Organizations must upskill and reskill to prepare for potential work disruptions and create or acquire new organizational capabilities. Furthermore, global trends are also transforming the way and location where employees work, such as leveraging flexible work patterns, collaborating with technology, democratizing learning and innovation, promoting project-based collaboration and work, and developing less hierarchical organizations.

### **Issues of talent in Islamic economy**

To keep up with the changing economy and technological conditions, it is necessary for human resources to have wider capacity and knowledge and be adaptable and agile.<sup>9</sup> The various sectors of Islamic economy face limitations in terms of human resources, both in terms of quality and quantity. One of the primary challenges in the talent management process is the shortage of dependable talent, particularly the scarcity of talent development and strategic management abilities.<sup>10</sup> Furthermore, as talents are scarce, they can be costly and challenging to replace. This is why organizations focus on enhancing talent

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<sup>7</sup> Joseph Amankwah-Amoah, "Human Capital Flows in Failing Organizations: An Integrated Conceptual Framework," *Journal of Intellectual Capital* 19, no. 4 (July 10, 2018): 732–746.

<sup>8</sup> WEF, *World Economic Forum* (Geneva, Switzerland: World Economic Forum, 2020).

<sup>9</sup> Bidayatul Akmal Mustafa Kamil, Siti Norasyikin Abd Hamid, and Shamsul Huda Abd Rani, "Framework for Managing Employee Talent in Malaysian Islamic Banks," *Journal of Business and Social Review in Emerging Economies* 2, no. 2 (December 31, 2016): 109–116.

<sup>10</sup> Mohd Ikhwan Aziz, Asyraf Afthanorhan, and Zainudin Awang, "Talent Development Model for a Career in Islamic Banking Institutions: A SEM Approach," *Cogent Business and Management* 3, no. 1 (December 31, 2016).

attraction, identification, development, engagement, and retention, which are critical for sustainable growth and progress.<sup>11</sup>

Apart from the scarcity of talent, there is a severe shortage of digital skills in the current labor market. A study by Capgemini in 2017 revealed that nearly half of the organizations surveyed did not consider digital talent a priority, leading to a wider digital talent gap. Moreover, over half of the organizations believe that this gap is hindering their digital transformation initiatives, and it has affected their competitiveness.<sup>12</sup> Indonesia ranks 53rd out of 64 countries in the world in terms of capacity and readiness for digital transformation, according to the World Digital Competitiveness report by IMD in 2021. This is lower than other Southeast Asian countries, such as Thailand (38th) and Malaysia (27th).<sup>13</sup> The shortage of digital skills and talents is a potential threat to the Islamic creative economy sector in Indonesia, affecting its ability to innovate and develop. Meeting the future workforce's needs will require companies, business leaders, and governments to fulfill specific requirements in the face of disruptive times. The National Committee for Sharia Economy and Finance (KNEKS) is committed to improving the quality and competitiveness of human resources in the Islamic economy and finance sectors, which can ultimately increase national economic growth.<sup>14</sup>

The main issue highlighted in this research is that the supply side has failed to consider the demands of users, such as the education and talent management sectors, thereby creating a gap between what is being provided and what is required. The goal of this study is to provide recommendations to policy makers, based on the research findings, to align the policies and implementation strategies of talent management with the needs of the labor market, industry, and businesses. This will help bridge the gap between the supply and demand sides and ensure that the talent management practices are more effective and responsive to the needs of the users. The expected outcome of this research is to make valuable contributions to the field of science by providing evidence-based recommendations to policy makers.

Improving competencies, especially in digital technology, is necessary to face technological advancements and the current era of disruption. Therefore, it is essential to establish linkages and connections in fulfilling these competency needs. Furthermore, the inadequate provision of technology infrastructure for talent management in the sectors of Islamic economy in Indonesia is a problem that has implications for the suboptimal management of the talent management

<sup>11</sup> Amir Hedayati Mehdiabadi and Jessica Li, "Understanding Talent Development and Implications for Human Resource Development: An Integrative Literature Review," *Human Resource Development Review* 15, no. 3 (July 4, 2016): 263–294.

<sup>12</sup> Capgemini, The Digital Talent Gap: Are Companies Doing Enough? (Capgemini Research Institut, 2017).

<sup>13</sup> IMD W, *IMD World Digital Competitiveness Ranking 2020*, 2020.

<sup>14</sup> KNEKS, *Peta Jalan Pembangunan SDM Unggul Dan Talenta Sektor Ekonomi Dan Keuangan Syariah 2022-2024: SDM Profesional, Unggul, Dan Berdaya Saing Global* (Jakarta: Komite Nasional Ekonomi dan Keuangan Syariah (KNEKS), 2021).

dashboard system. Additionally, the suboptimal performance of the sectors of Islamic economy in Indonesia is due to the lack of optimization of human resource performance, as highlighted in several studies.<sup>15</sup> Thus, the availability of future talents for the Islamic economy in Indonesia largely depends on the readiness of talent management, which is currently not prioritized.

To face the future's high and increasingly complex competition, it is necessary to have highly skilled and competitive human resources. Therefore, a talent management system model and strategy in the sectors of Islamic economy of Indonesia is crucial to improve resource efficiency and competitive advantages. An adaptive, effective, and efficient talent management system in the Islamic creative economy sector is closely related to increased work productivity, which can enhance sector performance and contribute to the national economic growth rate. This is relevant in ensuring the competitiveness and adaptability of Indonesia's Islamic economy sector to meet the changing needs of the business world amid the current era of disruption. Given this background, the sectors of Islamic economy in Indonesia faces several talent management-related problems.<sup>16</sup>

To begin with, there is a lack of dependable professionals with specialized knowledge in the field of Indonesia's Islamic economy. To address this issue, one of the approaches and tactics for advancing institutions and industries that cater to Islamic economy is the improvement of human resources. One of the essential benchmark that must be met is that the growth of individuals within the sectors of Islamic economy necessitates the availability of competent and extremely competitive personnel who adhere to both international standards and guidelines.<sup>17</sup>

Secondly, there is a discrepancy between the competencies needed by human resources and those that are currently available, particularly in relation to technological advancements. Human resources in the Islamic economy in Indonesia require competency improvement, specifically in digital technology. The preparation of talents for Indonesia's Islamic economy, which includes employees of different generations and industry backgrounds with varying experiences, is not yet fully optimized for successful digital transformation. Additionally, the integration of talent competencies from the Islamic economy

<sup>15</sup> Puteri Andika Sari, *PENGEMBANGAN EKONOMI KREATIF BERBASIS HUMAN CAPITAL*, 2013; Wa Ode, Zusnita Muizu, and Nury Effendi, *Penguatan SDM Industri Kreatif Melalui Peningkatan Kompetensi Dan Knowledge Management (Wa Ode Zusnita Muizu) PENGUATAN SDM INDUSTRI KREATIF MELALUI PENINGKATAN KOMPETENSI DAN KNOWLEDGE MANAGEMENT*, n.d.; M Riadhussyah et al., "Feminism Criticism towards 'Merariq Kodeq' Culture in West Nusa Tenggara Society" (European Alliance for Innovation n.o., 2020); Nesa Ibnu Sina and Muchamad Zaenuri, "Pengembangan Objek Pariwisata Halal Melalui Sumber Daya Manusia" 2, no. 2 (2021): 81–101.

<sup>16</sup> Muhammad and Nugraheni, "Sustainability of Islamic Banking Human Resources Through the Formulation of an Islamic Accounting Curriculum for Higher Education: Indonesian Perspective."

<sup>17</sup> KNEKS, *Peta Jalan Pembangunan SDM Unggul Dan Talenta Sektor Ekonomi Dan Keuangan Syariah 2022-2024: SDM Profesional, Unggul, Dan Berdaya Saing Global*.

and technology companies has not been effectively carried out to produce digital talents. Continuous competency improvement to meet the demands of work in various business lines, including operations, services, and controls, with a work culture that aligns with the values of Indonesia's Islamic economy, is also not fully optimized. Meanwhile, the development of digital services is urgently needed to meet the demands of consumers in Indonesia's sharia creative economy sector.

## **2. Objectives and literature review**

### **2.1. Research objectives and questions**

Based on the background and problems above, this study attempts to develop a strategy of the talent management system using the innovation model, with the aim to increase the competitive advantage of the Islamic economy in Indonesia. The findings can be used as a policy recommendation for industry players and regulators in the Islamic economy in Indonesia in managing their talents so as to produce adaptive, effective and efficient talents in this era of disruption.

This study has three main research questions as follow: (i) what the vocational management system model is to increase the competitive advantage of the Islamic Economic Sector in the disruptive era; (ii) from a regulatory perspective, what policies needed in order to develop vocations in the field of Islamic Economics in the era of disruption; and what Islamic economic ecosystem in Indonesia is to strengthen innovative economy.

In terms of the development of science and the world of research / research, this study makes a scientific contribution, especially in terms of talent management in order to increase the competitive advantage of the Islamic creative economy sector in the era of disruption. In addition, academics in universities can use the results of this study as a basis for developing educational curricula in universities in increasing links and match with industry and producing qualified and globally competitive graduates.

For the industrial world, this study contributes to stakeholders in the Islamic economy sector in Indonesia in making policies related to the vocations/ talent management system in increasing their competitive advantage in the era of disruption. In addition, in general, this study will provide systemic insights to human resource management practitioners in carrying out vocations/ talent management mechanisms in order to increase the competitive advantage of the companies where they work, especially in the Islamic economy sector.

### **2.2. Theoretical foundations**

#### **2.2.1. Value chain, innovation, and competitiveness**

As per Porter's theory, a country's competitive advantage (CA) is achieved if its companies are competitive. The competitiveness of a country's industry is determined by its ability to innovate and improve its capabilities. A company gains CA from the challenges and pressures it faces in the domestic market, from

local suppliers, and high-demand local markets. National values, cultures, economic structures, institutions, and history all contribute to success in competition. Innovation in the production process or product quality is a way for a company to become competitive<sup>18</sup>. Porter introduced the Diamond Model (DM), which includes four determinants for National Competitive Advantage (NCA): factor conditions, demand conditions, related and supporting industries, and firm strategy, structure, and rivalry. A company can maintain its competitive advantage by leveraging its ability to innovate.<sup>19</sup>

Innovation is a multi-faceted process that involves generating and implementing new ideas, turning them into products, processes or services, and making them commercially viable. Managing innovation requires proper configuration of resources and capabilities, which can be difficult due to various factors that hinder innovation, such as investing too much in training employees with limited return on investment, or having outdated skills and expertise that require renewal to adapt to the latest and increasingly complex conditions. Innovation is recognized as a new idea that is applied to initiate or improve a product, process or service, and it is acknowledged by users and the public from the success of inventions, technology implementation, and research and development. To transform these changes in value, commercialization is one way to do it. However, this transformation process is not easy and relatively complex, facing major challenges along the way, known as the Valley of Death, which must be overcome to achieve the goal of transforming inventions into innovations and successfully penetrating the market.<sup>20</sup>

When dealing with a business in its emerging stage, the main challenge is to assess the product's market response, making a differentiated approach more suitable. On the other hand, a business in its growth stage faces rapid market growth and changes, as well as increased competition from followers. At this stage, competitiveness is formed through a combination of factors such as product differentiation, time-to-market, and pricing. Finally, a business that has reached maturity will see saturation in terms of product changes and market

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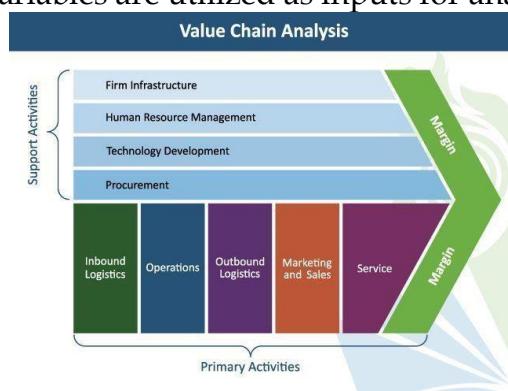
<sup>18</sup> Sugeng Santoso et al., "Increased Addes Value Msmes Through Innovation Management in Entrepreneurship," *DIKDIMAS : Jurnal Pengabdian Kepada Masyarakat* 3, no. 1 (April 30, 2024): 57-67.

<sup>19</sup> Sugeng Santoso, Selma Alfarisah, Ari Ana Fatmawati, et al., "Correlation Analysis of the Halal Certification Process and Perceptions of the Cost of Halal Certification with the Intentions of Food and Beverage SMEs Actors," *Religious: Jurnal Studi Agama-Agama dan Lintas Budaya* 5, no. 2 (August 31, 2021): 297-308.

<sup>20</sup> Sugeng Santoso et al., *PENGEMBANGAN DESA WISATA BERKONSEP KAPASITAS INOVASI DAERAH DI DESA TANJUNGJAYA, KABUPATEN PANDEGLANG, PROVINSI BANTEN Development of a Tourism Village with the Concept of Regional Innovation Capacity in Tanjungjaya Village, Pandeglang District, Banten Province, Jl. Menteng Raya No, vol. 29*, 2021; Sugeng Santoso et al., "Measuring Model of Infrastructure Provision Readiness with Sharia PPP Financing Scheme Using the IRL and TRL Concept Approach," *Journal* 11 (2022), <https://doi.org/10.54471/iqtishoduna.v11i2.1656> | 139; Sugeng Santoso et al., "The Readiness of The Measuring Model of Infrastructure Provisioning Under Sharia Public-Private Partnerships Financing Scheme," *Journal* 11 (2022), <https://doi.org/10.54471/iqtishoduna.v11i2.1656> | 139.

growth, with competition mainly focused on pricing. Therefore, competitiveness at this stage is generally formed by improving the efficiency of production costs.

Moreover, when examining the value chain of an organization or company, one suitable analytical method is Porter's Generic Value Chain Analysis. This approach allows us to look at the organization or company from a particular perspective. To increase the added value or margin, several factors must be considered, such as inbound logistics, operations, outbound logistics, marketing and sales, and service.<sup>21</sup> However, for the purposes of this discussion, we will only focus on inbound logistics (supply), operations (linkage), and outbound logistics (demand) in the value chain analysis. In order to analyze demand, linkage, and supply, supportive activities such as infrastructure, human resource management, technological advancements, and procurement can be utilized. These four variables are utilized as inputs for analyzing margins.



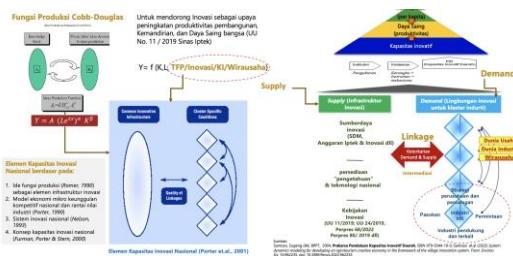
Sources: Porter, 1985 in Santoso et al., 2021.

### 2.2.2. Innovation system theory

Supply-Linkage-Demand Model (Innovation System Overview). The strategies carried out in the creative economy program are related to (1) policy, (2) supply side, (3) demand side and (4) bringing together supply side and demand side. In order to fulfill the strategy, an innovation system model was developed using a supply-linkage-demand side model (Santoso, 2021). Supply Demand analysis is very appropriate to apply. Before being able to develop this supply-demand linkage model, it is necessary to map demand, supply, constraints, and also linkages (intermediaries). This research was conducted in a participatory manner and used the Supply-Linkage-Demand Model, which is commonly used in innovation system reviews, where each element of strengthening the demand side, supply side, and linkage side has variables and policy instruments in the form of programs/activities. This policy/program/activity instrument is a recommendation (proposal) model that can be implemented<sup>22</sup>.

<sup>21</sup> Sugeng Santoso et al., *ANALYSIS OF DEVELOPMENT OF ADDED VALUE OF COOPERATIVE BUSINESS ECOSYSTEMS AL-ITTIFAQ ISLAMIC BOARDING SCHOOL, CIWIDEY, BANDUNG DISTRICT, Journal of Sharia Economics*, vol. 11, 2024.

<sup>22</sup> Sugeng Santoso, Selma Alfarisah, Ari Ana, et al., "Correlation Analysis of the Halal Certification Process and Perceptions of the Cost of Halal Certification with the Intentions of Food



### 2.2.3. The tawhid paradigm in organization policy and strategy processes in Islamic economy

Currently, the business landscape is undergoing rapid and constant changes, leading to a highly unpredictable environment. The process of globalization, swift advancements in technology, increased mobility of society, and intense competition have brought about uncertainties in the business world.<sup>23</sup> As a result, companies are compelled to compete fiercely by offering distinctive products and services. The success of modern-day enterprises hinges on the management's aptitude to keep track of and adjust to the ongoing changes in order to gain a sustainable competitive edge.

Alternatively, dynamism can also provide solutions to address changes and challenges in meeting organizational objectives. As a result, organizational management must decide whether to respond dynamically or not, which is related to their key responsibility of achieving the organization's vision, mission, and objectives. The primary management functions are planning, organizing, leading, and controlling operations<sup>24</sup>. Therefore, those involved in organizational management must possess the ability to effectively and efficiently plan and execute business activities to achieve profitable outcomes and other benefits.

According to Sarif, traditional managers rely on rational thinking and logic when managing organizations. They tend to apply a logical approach to strategy formulation, using profit maximization as the main driver. The goal is to ensure that every action taken leads to maximum profits while minimizing costs.<sup>25</sup>

In contrast, the tauhid paradigm approach, as described by Sarif, integrates the fundamental principles of Islamic teachings into organizational

and Beverage SMEs Actors," *Religious: Jurnal Studi Agama-Agama dan Lintas Budaya* 5 (August 31, 2021): 297–308.

<sup>23</sup> Matthew C. Mahutga and David A. Smith, "Globalization, the Structure of the World Economy and Economic Development," *Social Science Research* 40, no. 1 (January 1, 2011): 257-272.

<sup>24</sup> Mike Schraeder et al., *The Functions of Management as Mechanisms for Fostering Interpersonal Trust*, ADVANCES IN BUSINESS RESEARCH 2014, vol. 5, n.d., <http://journals.sfu.ca/abr>.

<sup>25</sup> Sarif SM, "Tawhidic Paradigm and Organizational Policy and Strategy Practices," *South East Asia Journal of Contemporary Business, Economics and Law* 5, no. 2 (2014): 28-35.

practices.<sup>26</sup> This approach incorporates the Islamic way of life into all activities and strives to maximize benefits in terms of deeds, for both individuals and society. The interests of individuals and society are combined as an act of worship to seek blessings from Allah Almighty. While human intellect can be utilized in formulating, implementing, and assessing organizational strategies, it is guided by the teachings of the Qur'an and Sunnah.

#### **2.2.4. The concept of maqasid al-shariah applications in organizations in Islamic economy**

To attain human well-being, Islamic teachings emphasize not only the fulfillment of material needs but also spiritual needs. One crucial spiritual aspect for achieving well-being is attaining peace and mental contentment.<sup>27</sup> Failure to meet these needs can lead to a decline in welfare and ultimately result in the decline of society and its civilization. Moreover, meeting these needs aligns with the fulfillment of human rights and has been widely discussed in Islamic literature under the term *Maqāṣid al-Shari‘ah* (the objectives of Sharia).<sup>28</sup>

To achieve certain objectives in Sharia and implement it in daily life, *Maqāṣid al-Shari‘ah* is a broad purpose. It is a system of values that can contribute positively to the application of Sharia.<sup>29</sup> Sharia is believed to aim at benefiting people and preventing corruption or other vices in all its components.<sup>30</sup> Thus, *Maqāṣid al-Shari‘ah* is meant to promote good and avoid evil, bring benefit and reject harm. It is a goal of Sharia that is derived from a profound and comprehensive understanding of Islamic law, rather than solely human reason<sup>31</sup> Therefore, *Maqāṣid al-Shari‘ah* is an essential concept in Islamic teachings, as it is a goal that Sharia sets to achieve benefits for mankind.

According to a study by Ismail, there are classical texts that discuss *Maqāṣid al-Shari‘ah*.<sup>32</sup> The study found that Al-Shatibi, also known as Shaikhul *Maqāṣid*, divided *Maqāṣid al-Shari‘ah* into two categories: 1) *Maqāṣid al-Shari‘ah* (the purpose of sharia), which includes necessities (*dharuriyyat*),

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<sup>26</sup> Suhaimi Mhd. Sarif, "The Influence of Tawhidic Paradigm on the Development of AUnified Theory of The Firm," *In: 5th Islamic Economic System Conference(iECONS)* (September 4, 2013): 1221–1232.

<sup>27</sup> Noor Liza Adnan and Wan Noor Hazlina Wan Jusoh, *A Proposed Islamic Performance Management Model (IPMM): Towards More Productive Employees with Better Quality of Work Life*, *Advances in Business Research International Journal*, vol. 7, n.d.

<sup>28</sup> Muhammad Umer Chapra, "The Islamic Vision of Development. Thoughts on Economics," *The Quarterly Journal of Islamic Economics Research Bureau* 18, no. 3 (2008): 7-38, [www.iiituk.com](http://www.iiituk.com).

<sup>29</sup> Jasser Auda, *Realizing Maqāṣid in the Shari‘ah. The Objectives of Islamic Law the Promises and Challenges of the Maqāṣid al-Shari‘ah* (London: London Lexington Books, 2018).

<sup>30</sup> Mohamad Akram Laldin, *Introduction to Shari‘ah and Islamic Jurispudence* (2nd Ed.) (Kuala Lumpur: CERT Publications Sdn. Bhd, 2008).

<sup>31</sup> Muhammad Nazir Alias, "A Review of Maslahah Mursalah and Maqasid Shariah as Methods of Determining Islamic Legal Ruling," 2020, <https://api.semanticscholar.org/CorpusID:229504861>.

<sup>32</sup> Nurizal Ismail, *Maqashid Syariah Dalam Ekonomi Islam* (Smart WR, 2014).

complements (hajiyyat), and embellishments (tahsiniyyat); and 2) Maqāṣid al-Mukallaf (the purpose of the accountable), which pertains to human behavior and actions within the realm of sharia. Therefore, since sharia is based on the benefit of individuals and communities, its laws are intended to protect benefits and enhance the development and improvement of living conditions for people on earth.

#### 2.2.4. Theory and definition of talent development

The definition of talent is a topic that is frequently debated in talent management literature. It can be challenging to define talent because it is often connected with the qualities that make a person a successful leader or high-performing individual. According to Ross (2013)<sup>33</sup>, this ambiguity leads to confusion surrounding the term. Tansley also notes that organizations may have different definitions of talent.<sup>34</sup> For example, some organizations define talent as employees with high potential for achievement. This makes it challenging to have a clear understanding of the term talent in organizations and its implications.

Nijs et al. suggest that talent refers to an inherent skill possessed by an individual that is honed and employed in a preferred or significant activity, with a focus on investing energy in that activity.<sup>35</sup> Meanwhile, Nilsson and Ellström<sup>36</sup> define talent as an individual's capability to perform a specific job, while Garavan et al. view talent as unique managerial abilities possessed by a person.<sup>37</sup>

Previous studies have identified three different approaches for defining talent. The first approach is an exclusive one where talent is defined as a group of elite employees<sup>38</sup>, who are identified as having superior skills and abilities compared to other employees. The second approach is more inclusive, defining all employees as talents<sup>39</sup>. The third approach is a hybrid one, where employees

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<sup>33</sup> Suzanne Ross, "How Definitions of Talent Suppress Talent Management," *Industrial and Commercial Training* 45 (October 2013).

<sup>34</sup> Carole Tansley, "What Do We Mean by the Term 'Talent' in Talent Management?," *Industrial and Commercial Training* 43, no. 5 (July 12, 2011): 266–274.

<sup>35</sup> Sanne Nijs et al., "A Multidisciplinary Review into the Definition, Operationalization, and Measurement of Talent," *Journal of World Business* 49, no. 2 (April 2014): 180–191.

<sup>36</sup> Thomas N. Garavan, Staffan Nilsson, and Per Erik Ellström, "Employability and Talent Management: Challenges for HRD Practices," *European Journal of Training and Development* 36, no. 1 (January 27, 2012): 26–45.

<sup>37</sup> Thomas N Garavan, Ronan Carbery, and Andrew Rock, "Mapping Talent Development: Definition, Scope and Architecture," ed. Thomas N Garavan, Ronan Carbery, and Andrew Rock, *European Journal of Training and Development* 36, no. 1 (January 1, 2012): 5–24, <https://doi.org/10.1108/03090591211192601>.

<sup>38</sup> CIPD, *Taking the Temperature of Coaching* (London: CIPD, 2009); Paul Iles, David Preece, and Xin Chuai, *TALENT MANAGEMENT AS A MANAGEMENT FASHION IN HRD: TOWARDS A RESEARCH AGENDA*, vol. 13, 2010.

<sup>39</sup> Paul Iles, "Talent Balancing: Staffing Your Company for Long-Term Success," *Human Resource Development International* 11 (April 1, 2008): 215–218; Paul Iles and David Preece, "Developing Leaders or Developing Leadership? The Academy of Chief Executives' Programmes in the North East of England," *Leadership* 2, no. 3 (2006): 317–340; Stephen Swailes, Yvonne

are segmented into multiple talent pools based on their specialties. In general, talent can be broadly defined as individuals who possess the necessary skills, intelligence, and abilities to perform at a high level in a particular profession.<sup>40</sup>

The discussion around talent development has not only focused on defining talent but also on various approaches to talent development, as highlighted by several literatures and discussed by both researchers and practitioners.<sup>41</sup>

Bhattacharyya<sup>42</sup> suggests that talent development is neither as limited as training and development nor as comprehensive as talent management.<sup>43</sup> Gagné defines talent development from an employee's point of view as a process that transforms inherent abilities into suitable and necessary skills for a particular job. Talent development is an essential component of talent management, in which leader development is facilitated through various methods, including training, coaching, mentoring, and feedback.<sup>44</sup>

Isa et al. suggest that talent development is an effective way to enhance knowledge, skills, abilities, and competencies that are directly associated with engaging and retaining talented employees.<sup>45</sup> As a result, talent development becomes a structured or unstructured learning process that aims to cultivate specific knowledge, skills, self-improvement, problem-solving abilities, and accountability<sup>46</sup>. The learning and talent development function in organizations, therefore, is designed to promote workforce skill development that aligns with the company's strategic objectives.<sup>47</sup>

## 2.2.5. Theoretical basis for talent measurement

According to previous research, talent measurement has always been included in talent management, either explicitly or implicitly. However, Nijs et al. argue that the theoretical foundations and drivers of talent measurement are

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Novakovic, and Kevin Orr, "Conceptualising Inclusive Talent Management: Potential, Possibilities and Practicalities," *Human Resource Development International* 17 (September 1, 2014).

<sup>40</sup> Gaye Karacay, "Talent Development for Industry 4.0," 2018, 123-136.

<sup>41</sup> Dalal and Akdere, "Talent Development: Status Quo and Future Directions"; Sugeng Santoso, Muhammad Jalu Wredo Aribowo, and Anggara Hayun Anujuprana, *Konsepsi Dan Telaah Implementasi Manajemen Risiko Pembangunan Nasional (MRPN) Lintas Sektor* (Jakarta: Kementerian Koordinator Bidang Kamaritiman dan Investasi, 2024).

<sup>42</sup> Dipak Bhattacharyya, "Talent Development Process of CPSEs: A Reflection on Practices and Requirements," *The Journal of Institute of Public Enterprise* 37 (January 1, 2014): 91-99.

<sup>43</sup> Garavan, Carbery, and Rock, "Mapping Talent Development: Definition, Scope and Architecture."

<sup>44</sup> Paul Evans, Vladimir Pucik, and Jean-Louis Barsoux, *The Global Challenge: Frameworks for International Human Resource Management*, 2002.

<sup>45</sup> Aerni Isa et al., "Talent Management Practices, Perceived Organizational Support and Employee Retention: Evidence From Malaysian Government-Linked Companies," *Global Business and Management Research: An International Journal* 10 (December 8, 2018): 688-696.

<sup>46</sup> D Y Dai and K Speerschneider, "Cope and Grow: A Model of Affective Curriculum for Talent Development," *Talent Development and Excellence* 4 (January 1, 2012): 181-199.

<sup>47</sup> Karen Hicks, "Construct Validation of Strategic Alignment in Learning and Talent Development," *Performance Improvement Quarterly* 28, no. 4 (January 1, 2016): 71-89.

underdeveloped, and little research systematically explains the concept.<sup>48</sup> Lee defines talent measurement broadly as the practice of using specific measurement methods to assess employees' potential competencies and their current and future contributions to the organization, in order to facilitate talent management.<sup>49</sup>

Strategic human resource theory applies resource-based theory, which suggests that companies can gain a competitive advantage by developing resources that are valuable, scarce, and difficult to replicate. This theory provides the foundation for talent measurement, which is a crucial tool for organizations to identify their unique and valuable resources. Lee suggests that the evaluation criteria used to measure talent can be classified as either explicit or implicit.<sup>50</sup> Two common criteria used to measure talent are performance and potential. Although performance measurement is a well-established concept that managers use to evaluate their employees, the measurement of potential is considered less traditional and has been a topic of discussion and debate. Aside from performance and potential, Nijs et al. suggest that there are other factors that can be evaluated, such as inherent abilities that can be gauged through psychometric tests, skills and development progressions that can be assessed through education evaluations and prior experiences, motivation through self-assessment and introspection, interests that can be examined as sources of drive, and interpersonal and intrapersonal capabilities that can be compared against the individual's own standards of excellence, perhaps by tracing personal progress over time with a focus on advancement.<sup>51</sup>

However, Huselid et al. suggests that roles can serve as a basis for talent evaluation if talent management professionals take note of it.<sup>52</sup> They propose dividing roles into ordinal levels (A, B, and C), even though there are no clear-cut standards for doing so. Meanwhile, Lepak and Snell contend that an HR architecture approach is necessary for determining talent measurement criteria, where roles are differentiated by their value and distinctiveness.<sup>53</sup> Therefore, selecting a combination of evaluation criteria not only enhances the talent evaluation landscape but also increases its effectiveness in talent management.

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<sup>48</sup> Nijs et al., "A Multidisciplinary Review into the Definition, Operationalization, and Measurement of Talent."

<sup>49</sup> Gregory J. Lee, "Talent Measurement: A Holistic Model and Routes Forward," *SA Journal of Human Resource Management* 16 (2018).

<sup>50</sup> Ibid.

<sup>51</sup> Nijs et al., "A Multidisciplinary Review into the Definition, Operationalization, and Measurement of Talent."

<sup>52</sup> Mark A Huselid, Brian E Becker, and Richard W Beatty, "The Workforce Scorecard: Managing Human Capital To Execute Strategy," 2005, <https://api.semanticscholar.org/CorpusID:166706666>.

<sup>53</sup> David P Lepak and Scott A Snell, "The Human Resource Architecture: Toward a Theory of Human Capital Allocation and Development," *Academy of Management Review* 24 (1999): 31-48, <https://api.semanticscholar.org/CorpusID:167961480>.

## 2.2.6. Strategic talent management

During the 1990s, the concept of talent management evolved with the integration of human resource management development (MSDM), which prioritizes human resource management, according to Gitonga. Furthermore, in the past decade, research has shown an interest in talent management, with the assumption that talent management practices contribute to competitive advantage.<sup>54</sup> Moreover, talent management is highly dependent on the organizational context, both internally and externally, which affects talent management strategies and the individuals involved in talent management, as suggested by Mishra and Sarkar.<sup>55</sup> According to Armstrong, talent management involves a set of procedures for nurturing, handling, and keeping employees, regardless of their demographic characteristics.<sup>56</sup> However, the majority of experts describe talent management as a strategic process of human resource management that incorporates a range of linked activities within the organization to effectively plan, recruit, develop, retain, and motivate employees in the present as well as the future, as noted by Hough et al.<sup>57</sup>

Talent management involves the process of recognizing, cultivating, engaging, retaining, and deploying skilled employees in critical business and operational positions, as outlined by Iles<sup>58</sup> and CIPD.<sup>59</sup> Additionally, Collings and Mellahi<sup>60</sup> defines talent management as an activity and procedure that systematically identifies crucial positions in the organization that contribute to sustainable competitive advantage, builds a talent pool consisting of individuals with high potential and performance, and develops their competence to occupy important positions while remaining committed to the organization. Hence, talent management necessitates the creation of human resource policies that enhance the talent pool.

## 2.2.7. Behavioral factors influencing talent management

At present, talent management has become a strategic idea for organizations as they search for ways to gain a competitive edge and achieve dynamic and dependable growth. This shift is due to a new paradigm in the industrial economy, which has transformed into a knowledge-based economy. In this scenario, skilled individuals who possess valuable knowledge and

<sup>54</sup> Randall Schuler et al., "Talent Management: A Systematic Review and Future Prospects," *European J. of International Management* 11 (January 1, 2017): 86.

<sup>55</sup> Priyanka Mishra and Shulagna Sarkar, "Talent Management in Digital Age-A Case of IndianCPSEs," *IPE Journal of Management* 8, no. 2 (2018): 45–53.

<sup>56</sup> Michael Armstrong, *A Handbook of Human Resource Management Practice*, 10th Edition (London (UK): Kogan Page, 2006).

<sup>57</sup> J Hough and J Gamble, *Crafting and Executing Strategy: Creating Sustainable High Performance in South African Businesses*, UK Higher Education Business Management (McGraw-Hill Higher Education, 2011), <https://books.google.co.id/books?id=V8eRQAAACAAJ>.

<sup>58</sup> Iles, "Talent Balancing: Staffing Your Company for Long-Term Success."

<sup>59</sup> CIPD, *Talent Management: An Overview* (London (UK): CIPD, 2008).

<sup>60</sup> David Collings and Kamel Mellahi, "Strategic Talent Management: A Review and Research Agenda," *Human Resource Management Review* 19 (December 1, 2009): 304–313.

experience have become a rare asset and are crucial for the successful implementation of organizational strategies. Furthermore, every management team in an organization aims to enhance the organization's performance, which includes improving the performance of its employees. When employees feel content and fulfilled with their work, they are more likely to perform well, resulting in better job performance and indirectly contributing to their job satisfaction<sup>61</sup>. Hence, it is crucial for organizations to identify the factors that impact employee performance and provide support to enable employees to perform their jobs effectively.

On the other hand, when organizations fail to fulfill the aspirations and desires of individuals who want to contribute to the organization's growth, it often leads to turnover and creates talent management issues<sup>62</sup>. Essentially, this involves the need for organizations to identify and develop the right talent in the right people, at the right time and in the right manner. This is essential to ensure that there is a sufficient supply of talented candidates (talent pipeline) who are prepared to fill important roles in the organization<sup>63</sup>. Therefore, organizations should investigate the behavioral factors that impact talent management and take strategic steps towards creating a dynamic, flexible, and goal-oriented organization by adopting an integrated and comprehensive approach.

Alternatively, organizational behavior practitioners and researchers have shown interest in identifying behavior patterns that can enhance an organization's competitive advantage. Consequently, management scientists have developed multiple models based on the assumptions and behaviors of the people studied, emphasizing the importance of behavioral factors in the organization. These factors include human elements and relationships that shape specific norms of behavior, informal communication, and patterns that constitute the core of the organization. According to Shahi et al.<sup>64</sup>, they conducted a literature review spanning from 2009 to 2019 and categorized the factors that affect talent management based on behavioral approaches. These factors are presented in table 1 and include: 1) factors related to employment, 2) factors related to the organization itself, 3) factors related to individuals, 4) interactive communication factors, 5) career path management factors, 6) employee coaching for success, 7) leadership and managerial factors, 8) cultural and atmospheric factors of the organization, and 9) organizational factors.

## 2.2.8. Vocational education sector within innovation model

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<sup>61</sup> Tulusmi et al., *Job Satisfaction and Achievement of Maqasid Al-Sharia: A Case Study in Takaful Keluarga Yogyakarta*, 2021.

<sup>62</sup> Ewelina Wilska, "DETERMINANTS OF EFFECTIVE TALENT MANAGEMENT," *Journal of Positive Management* 5, no. 4 (February 5, 2015): 77.

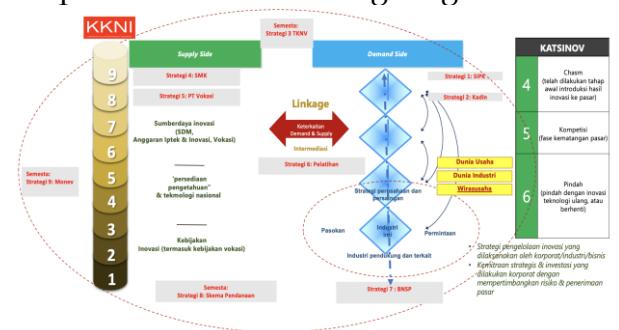
<sup>63</sup> Cindy Wang-Cowham, "Developing Talent with an Integrated Knowledge-Sharing Mechanism: An Exploratory Investigation from the Chinese Human Resource Managers' Perspective," *Human Resource Development International* 14 (September 1, 2011): 391–407.

<sup>64</sup> Tahereh Shahi et al., "Behavioral Factors Affecting Talent Management: Meta-Synthesis Technique," *Iranian Journal of Management Studies* 13 (December 17, 2020): 117.

In the vocational education sector, in 2020 the development of vocational secondary education and vocational tertiary education at the middle and higher levels has been unified under one roof, namely the Directorate General of Vocational Education (DIKSI).

A directorate tasked with increasing industry involvement, namely the Directorate of World Partnerships and Alignment Business and Industry. Currently, Indonesia has more than 14 thousand vocational secondary education units and as many as 2,139 vocational higher education facilities (341 polytechnics, 705 academies, 38 community academies, 94 institutes, 563 high schools, and 395 universities with vocational majors). From the data for 2021, there are 5,249,149 vocational students and 1,275,989 vocational college (PTV) students. In the job training sector, vocational training facilities and infrastructure are also increasing in terms of quantity. Until 2022, there are around 321 government-owned training institutions. Another vocational training modality to support the implementation of vocational training is the availability of Competency Standards. In terms of human resources, in supporting the implementation of vocational training, there are 3,578 Government Instructors owned by the central and regional governments and there are 4,069 Private Instructors. In addition, in the implementation of apprenticeships which are part of the implementation of vocational training, there are 3,025 Apprentice Mentors. In carrying out the certification, there were 47,129 Competency Assessors. In terms of partnerships with industry, 91 Communication Forums for Training Institutes with Industry (FKLPI) have been formed at vocational training institutions, and 21 Skill Development Centers (SDC) based at the provincial and district/city levels.

Mapping vocational education with Supply-Demand-Linkage model to boost innovation is captured in the following diagram.



## METHODS

### 3.1. Research design

This study was conducted on several industry players and regulators in the sectors of Islamic economy. With this study, researchers can contribute constructive thinking to management and regulators in the Sharia-based Economy sector related to talent management in order to increase competitive advantage in the era of disruption. This study was conducted in Province of East Java in Indonesia. The approach used is a qualitative and quantitative approach

or Mix Methods Research (mixed methods research). By using an explanatory sequential design, in the first stage, quantitative data analysis is carried out followed by quantitative analysis as confirmation.

### 3.2. Qualitative approach

Denzin K. Norman; Lincoln S. Yvonna, argues that the policy process is a form of qualitative method with the aim of discussing how the relationship between visible knowledge in research and action is made. Policy making is a multidimensional action that has various aspects, so it requires adequate resource persons. Various literatures explain that decision making related to policy is an event of a group of decision makers at a certain time and place to examine an issue (or opportunity), considering a number of alternative patterns of action by considering the advantages and disadvantages. each option, weighing various appropriate alternatives. with goals and priorities, and finally choose the most suitable alternative and considered the best to realize the goal. Qualitative approach with key informants are policy-making officials. There will be discussions/meetings, interviews, distributing questionnaires and literature reviews where researchers conduct a series of studies involving various kinds of information from libraries such as books, encyclopedias, documents. Qualitative approach with key informants are policy-making officials at the Coordinating Ministry for Maritime Affairs and Investment, KNEKS and other stakeholders.

### 3.3. Quantitative approach

Descriptive analysis is a statistic used to analyze data by describing or describing the collected data as it is without making generalized conclusions or generalizations. Descriptive statistics aim to obtain a description of certain situations based on real observations by describing the responses of respondents. Data collection is part of the data submission stage related to data sources and how to obtain research data. In compiling, completing and completing this research, appropriate, clear and supportive theoretical data and information are needed in order to provide an overview of the actual problem. In collecting data in this study, researchers conducted research directly on the object of research to obtain the data needed to complete the data, namely by: Questionnaire is a data collection technique that is carried out by giving a set of questions or a written statement which is done by giving a set of questions on the statement written to the respondent to be answered. The quantitative approach we take is to policy-making officials at the Coordinating Ministry for Maritime Affairs and Investment, KNEKS and Stakeholders.

### 3.4. Research model

The quantitative approach carried out with the help of the Innovation System method also uses 3 variables: Supply, Demand and Linkage.

Table 4.1. Research Operational Variables

Variable	Dimension	Indicator
Supply	Human	Implementation of competency-based
	Infrastructure	Vocational
	ShariaResources	High School Education

Implementation of Specialization and Competency-Based Vocational Higher Education		
Demand	Market Information System	Characteristics of the needs of Market Information System the Sharia Economy workforce
	User	Strengthening User Roles (Industry and Business)
Certification Agency		Strengthening the role of BNSP in Competency Certification Quality Assurance
Linkage Overall system	Training	Competency Based Training
	Coordination	Strengthening the national coordinating team
	Funding Scheme	Strengthening the Funding Scheme
	Monitoring and evaluation	Strengthening the monitoring, evaluation and control

Source: Santoso et al., 2021, modified

Data were obtained through a process of participatory-observation, and interviews with key informants and key informants.

### Interview

That is a data collection technique in which the interviewer (researcher or the person given the task of collecting data) in collecting data asks a question to the interviewee who knows for sure the real situation and condition of the location.

### Participatory Observation

That is as an observation of patterns of human behavior in certain situations, to obtain information about the desired phenomenon. Observations were carried out by surveying the location directly. According to Sugiyono (2012) said that secondary data is a data source that does not directly provide data to data collectors, for example through other people or through documents. Secondary data sources are used to support information obtained from primary data sources, namely from library materials, literature, previous research, books, activity reports held by local governments and so on.

### 3.5. Prominent sectors in Province of East Java

The key sectors are selected based on their percentage contribution to the overall regional GDP of Province of East Java. The selected sectors include the industry of halal processed F&D and pharmaceuticals; trading and Islamic MSMEs; halal agriculture and fishery; as well as Muslim-friendly tourism and Islamic creative economy.

Table 4.2. Key Selected Sectors of Islamic Economy in Province of East Java

Peringkat	Lapangan Usaha	2018	2019	2020	2021	2022
1	Industri Pengolahan	29,75	30,32	30,67	30,71	30,60
2	Perdagangan Besar dan Eceran; Reparasi Mobil dan Sepeda Motor	18,19	18,49	17,92	18,44	18,67
3	Pertanian, Kehutanan, dan Perikanan	11,85	11,36	11,88	11,48	11,11
4	Konstruksi	9,71	9,39	9,30	9,07	9,04
5	Pendidikan Akomodasi dan Makan Minum	5,80	5,93	5,57	5,56	5,64
6	Informasi dan Komunikasi	4,53	4,55	5,15	5,24	4,97
7	Pertambangan dan Penggalian	4,30	4,00	3,54	3,99	4,36
8	Transportasi dan Pengudahan	3,43	3,44	3,00	2,91	3,53
9	Jasa Keuangan dan Asuransi	2,71	2,66	2,71	2,69	2,66
10	Jasa Pendidikan	2,59	2,61	2,83	2,69	2,48

### 3.6. Questionnaire

The questionnaire is designed for this research, accounting for the integration of vocational education system into the supply-demand-linkage of innovation model. The questionnaire is developed based on President Decree No. 68 Year 2022. Revitalization of Vocational Education and Training.



The questionnaire can be found in the Appendix section of this research, referring to the National Strategy of Revitalization of Vocational Education and Training, based on the President Decree No. 68 Year 2022.

## RESULT AND DISCUSSION

### 4.1. Research results

The focus group discussion was conducted to understand and derive the key issues related to vocational education and training in Islamic economy to support innovation. Afterwards, the questionnaires were given to various prominent stakeholders related to supply-demand-linkage of vocational education and training within the context of innovation in Islamic economy. The questionnaires were filled up by various stakeholders from chambers of commerce in Province of East Java, across multiple business sectors.

### 4.2. Findings implication

Based on the findings, it is evident from Strategy 1 that we can observe that the Province of East Java has well developed skill monitoring system, supported by job market information system connected with the career development. The manpower planning is also sufficiently developed within industry players across sectors of Islamic economy. For Strategy 2, it seems that the skill development fund, quality assurance, as well as professional mentors or trainers and assessors are gradually developed to strengthen the skills of human resources. The partnership among government, industry players and vocational education and training institutions also become the major concern and focus to enhance the competitiveness of the industry. Nonetheless, it seems that the Sectoral Skills Committee across different sectors are not developed yet, which

should become the major agenda for the Province. In addition, the cost sharing for vocational education and training still remain the main issue that needs to be addressed through partnership among government and industry players.

As for Strategy 3, the Province promotes the establishment of regional coordination and monitoring institution. However, the form of coordination committee has not been assessed with respect to its effectiveness and efficiency. The lack of an effective communication strategy to significantly enhance awareness and literacy regarding the revitalization of vocational education and training is evident from the questionnaire results, which indicate that stakeholders are not being adequately informed.

Looking at Strategy 4, it seems that the vocational education institution in the Province has adopted the national accreditation system for quality assurance, referring to international standard and best practices. Competency standard based on SKKNI is also developed to satisfy the needs of industry players, even though the KKNI level remain up to level 3 on average. The partnership between vocational education institutions and industry players has been strengthened to improve the absorbance of graduates. We can also observe similar findings in vocational universities in relation to Strategy 5, whereby the curriculum has been tailored to competency standard in line with SKKNI. The apprenticeship programs within workforce are well promoted to enhance the relevance of skills development of graduates according to the criteria from the industry. The similar evidence is more pronounced within training institutions, whereby competency standard, training material, and partnership program are relatively more developed to meet the industry requirement. The remaining issue remains on the productivity enhancement of the graduates. This is understandable since the majority of skills is still within the level 3 on average with respect to KKNI. This implies that the improvement of competency standard needs to be strongly promoted up to at least level 6 on average. The skills program up to level 8 should also be pushed by stakeholders in order to produce innovative professionals which in turn will support the competitiveness of the industry.

As for Strategy 7, we can see that the certification scheme of competency, along with quality assurance is already well implemented. Similarly, this is the important role of BNSP to further promote the certification scheme for competency up to level 6 to 8 on average. Looking at Strategy 8, it seems that the variety of funding schemes remain an on-going process that needs to be pushed forward. The vocational training scheme to address unemployment issue also remains the major issue within the Province. Lastly, as for Strategy 9, we can observe that the monitoring and evaluation program for revitalization of vocational education and training is still lacking with respect to broad implementation. This is crucial considering that the impact and outcome of the vocational program needs to be assessed in order to ensure that it strongly enhance the value addition of the industry, emanated from productivity factors of human resources.

## CONCLUSION

This research attempts to develop an integrated innovation ecosystem of Islamic economy, which focuses on vocational education and training. We integrate the vocational education and training into the supply-demand-linkage of innovation ecosystem, within the key sectors of Islamic economy. We also refer to the underlying regulation which is the President Decree No. 68 Year 2022 about Revitalization of Vocational Education and Training. The sample of observations is the relevant stakeholders in the Province of East Java, that include industry players, government, and vocational education institutions. The key sectors of Islamic economy include the industry of halal processed F&B and pharmaceuticals, halal agriculture and fishery, as well as Muslim-friendly tourism and Islamic creative economy, which are selected based on their percentage of contribution to the overall regional GDP. We use both quantitative and qualitative approach, by deriving data and information from Focus Group Discussions (FGD) and questionnaires. Whereby, qualitative approach is used by conducting in-depth discussions and interviews with relevant stakeholders.

When we look at the findings, the linkage side is relatively well developed, with respect to the presence of job market information, connected with career development and manpower planning. The partnership and apprentice programs between industry players with vocational education institution, vocational university, as well as training providers are well implemented. Regarding the supply side, both curriculum and training materials have been tailored to the competency standard associated with SKKNI, which in turn satisfies the industry requirement. The certification scheme and quality assurance from BNSP are also well adopted. As for the demand side, the industry players across value chains are active in promoting on-the-job training, as well as collaborating with vocational education institutions, universities and training providers to ensure that the graduates are absorbed with strong alignment of skills and industry criteria. Nonetheless, the major issue remains on the ability and productivity of the graduates, which is understandable since the vocational ecosystem currently still focus on the KKNI up to level 3 on average. This level focuses on the operational part of the job. On the other hand, the skill set needs to adopt to the development of future technology, including IoT, AI, etc. Therefore, the government altogether with vocational education and training institutions as well as industry players should focus on improving the skills up to level 6 till 8 on average. This is crucial in order to produce highly innovative graduates to enhance value addition of the industry, emanated from productivity factors of human resources.

### Author's Contribution

Sugeng Santoso, Ginanjar Dewandaru: Contribute to formulating research ideas, collecting data, processing data, and interpreting data

Lucky Nugroho, Sutan Emir Hidayat: Contributing to writing systematics, researchmethods, analyzing interpretation results

Salmi Mohd. Isa, R. Nur Hidayat, Muhammad Ramadhani Marfatah: Contributed to compiling a literature review.

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### Declaration of Competing Interest

The author declares that there is no conflict of interest.

### Ethical Approval

Ethical approval No patient-identifying parts in this paper were used or known to the authors. Therefore, no ethical approval was requested.

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