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Mapping the Sustainable Human-Resource Challenges in Southeast Asia's FinTech Sector

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Abstract: The significance of human resources (HRs) has increased with the increasing awareness of sustainability issues and corporate social responsibility. However, the rapidly emerging financial technology (FinTech) sector still presents an HR challenge. Southeast Asia, which accounts for the highest adoption rate of mobile banking, has set new records regarding the number of transactions, as well as funding amount, in recent years. Moreover, borderless financial cooperation, coupled with in-demand tech talents, will rapidly boost the development of the region. Thus, this study explored the new opportunities as well as challenges of a new business model, FinTech, in Southeast Asia's banking and enterprise sector in the post-COVID-19 era. It also examined how organizations can achieve sustainable development via the interaction of the new operating model with existing ones by developing relevant strategies in the context of the "new normal" working condition. By reviewing the literature on HR management (HRM), we proposed how banking and FinTech companies could supply tech talent with the relevant experience or engage in training projects before recruiting. Additionally, since organizations desire sustainability-minded employees, they offer flexible working arrangements and well-established reward policies that can create remote work performance and retention rates. Being committed to upskilling and reskilling global talent by offering talent mobility opportunities across the organization, as well as by fully embracing the creation of value for cross-cultural talent, companies can support their employees' long-term career goals and maintain competitive strength. Finally, organizations must focus more on flexible adjustments and cross-domain communication for global talent. Forming strategic alliances with FinTech companies would be an alternative conduit that can ensure that regional laws comply with the local culture and national law, for bias and conflict reduction.

Keywords: Southeast Asia; digital finance; sustainable development; business integration; human resource; FinTech

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1. Introduction

A host of human resource (HR) challenges accompanies the rapidly emerging financial technology (FinTech) sector. Technological advancements and digital innovation have affected the approach to developing business models and work designs, thereby increasing the responsibilities of HR management (HRM). Particularly, the increasing demand for digital innovation platforms, following the outbreak of the coronavirus disease (COVID-19), has triggered an "always-on" work mode (Bajgorić et al. 2022), thus necessitating a talent acquisition strategy that is not limited by national borders or time zones and indirectly driving the demand for a new form of the gig economy, as well as promoting new contracts for atypical jobs and freelancers. This reshapes the traditional, urban working culture and presents new banking services. The pandemic exposed how FinTech-enabled solutions can increase business capability, although fast-moving FinTech presents a dilemma for HR. The framework of HR in managing technological changes in the post-COVID-19 era has become very critical because of the rapid changes in work arrangements (Anjum et al. 2022;

Caligiuri et al. 2020; Hamouche 2021; Marek et al. 2020; Kutieshat and Farmanesh 2022; Pass and Ridgway 2022; Watson 2022). In response to the global pandemic and the existing "new normal", organizations must explore long-term strategies for remaining competitive in terms of HR. Further, to clarify the future roles, skills, and mindsets of HR in delivering sustainable development strategies, organizations must respond to the new power dynamics in HRM for the effective application of their business policies and processes.

Southeast Asia is among the fastest-growing FinTech markets globally because of the extensive mobile Internet penetration, as well as the strong government support, in many countries in the region (Imam et al. 2022). Presently, the investments in the global financial market in Southeast Asia's FinTech enterprises reached a record USD 3.5 billion in 2020, according to United Overseas Bank Limited (UOB) data. Singapore, Southeast Asia's financial hub, accounted for nearly half of the region's deals at USD 1.6 billion (UOB 2021). Additionally, the skill-related policies in Southeast Asian countries are shaping the extent of their participation in the global value chain, thus facilitating the evolution of Southeast Asia's labor market toward increased mobility for skilled professionals (Crocco and Tkachenko 2022). Along with newly established digital banks and FinTech companies, skilled HR mobility is among the most expected benefits in Southeast Asia. However, the region faces the challenge of connecting and creating partnerships with technology-savvy companies because this may impact their future success. Global talent and sustainable development will be key to building and implementing strategies. As businesses consider adopting new technologies, those in Southeast Asia are experiencing a tech-talent crunch. Nevertheless, FinTech stimulates required skills for the labor market; thus, reskilling and upskilling are necessary for talent development, to ensure that organizations can develop the required skills to remain competitive.

As observed, FinTech can facilitate the progress of society through job creation and financial inclusion, availing social and economic opportunities for global economics while revealing the new challenges that enterprises must overcome. To survive, banks and enterprises must develop new capabilities, jobs, and skills (King 2018). The COVID-19 pandemic has occasioned fast-tracked innovation, as well as the digitization of processes in the financial sector (Demirgüç-Kunt et al. 2021). Therefore, modern business models must significantly consider digitalization, the formulation of new regulations, and the modification of customer expectations. The newest service modes in banks, such as payment innovation, digital currency, blockchains, and smart contracts, are fast emerging, although there is still enough space for further development. However, the lack of technological skills and capabilities accounts for the biggest obstacle. Particularly, this virtual reality must create a competitive advantage for the HR element. Moreover, strategic talent development, which supports environmental sustainability, is critical (DuBois and Dubois 2012; Zhang et al. 2019; Mujtaba and Mubarik 2021). Talent management (TM) can sustain the competitive advantage of an enterprise (Cappelli 2008).

The pandemic and gig economy have created a complex labor environment with scarce high-quality talent across many sectors. This future will require the resilience of organizations, as well as their willingness to explore different scenarios in an uncertain world. Conversely, in the digital-transformation process, technology development accounts for a new challenge for HRM. Technology development generally corresponds to change and the ability to prepare the team; however, it poses a big question in the banking context: how do you organize talent in a technology-savvy world and manage the process of change given an emerging demand. Digital transformation is not only accompanied by talent crunch and cultural-transition requirements, it is accompanied by remote-work-management needs to overcome the lack of agility for teams. This motivates us to highlight some key concepts and how they may directly benefit sustainable development. Therefore, this study examined the HR practices that cover cross-culture and business deployment as a strategy for mitigating workforce challenges (tech-talent crunch) in the post-COVID-19 era of the new, sustainable organizational development.

Here, we explored the new opportunities and challenges that the FinTech new business model brings to Southeast Asia and how the model can interact with existing operating models, in the context of the "new normal" working arrangement occasioned by the pandemic, to achieve sustainable HRM. This study aims to demonstrate the circumstances of Southeast Asian countries, mainly Vietnam, Indonesia, and Singapore, because of their specialty in national-political mechanisms and economic scales, which represent the fastest growing and most mature markets in this region from the FinTech perspective, respectively (Le et al. 2020). As a potential investment market, employers across the region must increasingly hire tech talent to maintain and grow their businesses.

Thus, this article contributes to the literature by presenting an extensive and comprehensive review of related published studies, exploring how the FinTech sector supports Southeast Asian sustainable HR development. We summarized the literature review of HRM and proposed that banking and FinTech companies could deliver tech talent with the relevant experience or engage in training projects before recruiting. Companies that engaged their employees' performances effectively can retain sustainability-minded employees. Offering flexible work arrangements and well-established reward policies can improve remote work performance and retention rates. Therefore, companies can support their employees' long-term career goals and maintain competitive strength. Strategic alliance with FinTech companies will be an alternative channel for ensuring that regional laws comply with the local culture and national law, for bias and conflict reductions. HR can be infused into Southeast Asia's FinTech sector via the establishment of good policies and a revolution of regulations.

The rest of this paper is organized, as follows: Section 2 presents the existing FinTech circumstances in Southeast Asia. Section 3 presents the literature and theoretical background of the dilemma of digital transformation. Section 4 presents and discusses the sustainable HR-development strategies for the FinTech sector. Section 5 presents the detailed continuity challenges and solutions in Southeast Asia, and Section 6 presents the conclusions and recommendations.

2. FinTech Circumstances in Southeast Asia

FinTech is a fast-growing business field in which technology is employed to facilitate millions of transactions daily. Despite the fears and uncertainty that reduced investment and economic growth at the start of the outbreak, COVID-19 has promoted FinTech companies seeking investments. According to the 2022 KPMG's Pulse of Fintech H2'21 report, a record number of FinTech deals drove overall global investment to USD 210 billion in 2021 via 5684 transactions (venture capital, private equity, and mergers and acquisitions). Across the Asia-Pacific region in 2021, 1165 fintech transactions were completed, totaling USD 27.5 billion (KPMG International 2022). Digital financial services are benefiting from this trend because it is facilitating borderless financial cooperation.

FinTech exhibits significant potential in its application in green-finance and sustainable businesses. Moreover, FinTech has demonstrated its new-generation role, as well as its adaptable ability, following the growing technology. As observed, most businesses have relied more frequently on FinTech because of the pandemic, facilitating technology-based transactions, such as digital payments (Karim et al. 2022). Southeast Asian startups generated a record USD 25.7 billion in funding in 2021, significantly doubling the USD 9.4 billion that was raised in 2020, as cash-rich global investors tapped the region's potential amid digitalization driven by the COVID-19 pandemic (Nikkei Asia 2022). According to "e-Conomy SEA Report 2021", the online industry of Southeast Asia is expected to grow from an estimated USD 174 billion in gross merchandise volume by the end of 2021 to USD 360 billion by 2025, after which it is projected to hit USD 1 trillion by 2030 (Google et al. 2021).

2.1. HRs and Societal Values in an Evolving FinTech World

FinTech has an important role to play in improving employee wellbeing and increasing engagement in the workplace. For that, various motivating and retaining measures are used by leading FinTech companies to improve their productivity and profitability. The concept of borderless cooperation or collaboration in today's world is considered a normal phenomenon, although to be known is not always regarded as to be done. Moreover, developed countries have far more advantages in researching, conducting, and maintaining compared with their developing counterparts. Here, the developmental segmentation of countries is presented in Table 1, based on the data obtained from the World Bank in 2020 as well as from their 2021 populations.

Table 1. HR development in major Southeast Asian countries.

	Countries	**Population (Millions)**	**GNI per Capita (USD)**	**HDI (2020–2021)**
Developing	Indonesia	273.5	3870	0.718
	Thailand	9.8	7040	0.777
	Vietnam	97.3	2650	0.704
Developed	U.S.	334.8	43,530	0.926
	Japan	125.6	40,360	0.919
	Australia	26.07	53,690	0.944

Note: This table shown the segmentation of developing and developed countries, their population, gross national income (GNI) per capita in USD, and Human Development Index (HDI), as well as their 2020 and 2021 data, respectively. Source: World Bank database.

The dimensions of the study are GNI per capita and HDI. Countries are divided into two major categories for comparison, namely the major developed countries in global and selected developing countries in Southeast Asia. This study did not overuse the comparison methodology to differentiate the circumstances of the various countries. We focused on three distinctive Southeast Asian countries (Indonesia, Thailand, and Vietnam), with high human development (0.7–0.79) in HDI but different internationalization business approaches (in this study, we mainly focused on the FinTech approach) and other supportive information for employees, which would be applied for research purposes. Moreover, Indonesia and Vietnam are the two pacesetters regarding growth in digital financial services (Davis et al. 2017; Nguyen 2020). As a significant result, Vietnam rose to rank second in the Association of Southeast Asian Nations (ASEAN) in terms of FinTech funding, now attracting 36% of the regional investment, which is second only to Singapore (51%) (Dang 2020). As of 2021, based on data according to the Google, Temasek, and Bain report, the digital economy in Vietnam has reached a value of USD 21 billion, representing 7.6% of GDP (Google et al. 2021). The talent market has especially heated up in Vietnam, which has long been a popular destination to hire remote engineers due to lower costs. Vietnam's innovation and startup scene has reached new heights. Although Vietnam was among the poorest countries in the world in 1990, the country reduced its extreme poverty status by 50% in the last decade and has demonstrated a long-term growing demand for U.S. export of goods and services over the last 30 years (Messina 2020). In addition, as Santoso et al. (2021) conducted in Indonesia's banking sector shows, along with companies operating using FinTech, talent with technical skills, including applied expertise and technological and analytical capabilities, is limited and in demand. Thus, there is growing demand for remote tech talent in Vietnam and Indonesia.

2.2. Legal, Policy, and Regulatory Environments of FinTech

The positive intervention from the government through long- and short-term policies and campaigns, respectively, can increase the productivity of talent education (Mohammed et al. 2018). Contrarily, one positive effect of developed countries on developing ones, particularly those in Southeast Asia, is that political authoritarians and limited cyber freedom still exist, thereby challenging the citizens' approach to worldwide knowledge; moreover, local researchers are also being supervised. One reason is that the Internet plays a critical role in political influence: it can dramatically reduce the cost of executing a social orientation campaign and maintain the citizens' dignity in an expectable manner (Sinpeng 2020).

To support and develop local technology and overcome the policy restrictions, citizens without FinTech experiences must build trust between individuals and FinTech service providers, as well as between the FinTech company and the national government. Since the process of supplying FinTech to society is guaranteed to be safe, trust can further build the confidence of a FinTech-based enterprise. Kiwanuka and Rogers observed that a FinTech enterprise can be acknowledged based on users' knowledge, persuasion, decision, implementation, and confirmation (Kiwanuka 2015). FinTech users' trust is demonstrated by their confidence to employ the services of FinTech providers (Rogers 1995).

Despite governments' control of daily activities on the Internet, they have still taken early steps to encourage the development of the FinTech sector through policy interventions. These mediations incorporate monetary motivations for graduate start-up networks; smooth out-migration processes to attract unique and on-demand special abilities; and differentiate strategy papers that delineate the numerous valuable opportunities that public, territorial, and nearby legislatures could implement to support the FinTech sector (Flanagan et al. 2017). For instance, FinTech facilitates the socio-economic development of Vietnam. Vietnamese authorities have been working to encourage the development of FinTech companies by setting up a FinTech steering committee, preparing the national financial-inclusion strategy, and cautiously seeking appropriate regulation strategies (Nguyen 2020).

2.3. FinTech's New Business Model and Investment Types

When the COVID-19 pandemic spread globally, many individuals suffered extreme medical challenges and death rates increased. The best approach for stopping the spread of the pandemic was to shut down all friendly and monetary-related exercises on the scale of the impacted nation, for indefinite periods. This caused many countries to enforce a total lockdown, which is still operational. The lockdown affected different areas to varying degrees. Many companies have been forced to adopt work-from-home (WFH) modes for their employees (Kaushik and Guleria 2020). The pandemic affected almost every sector globally; however, the necessity of the technology to follow the WFH concept has never been so urgent as it is today. Moreover, it is not likely a natural demand for technological development but is a necessity for entrepreneurial startups and the stability of firms.

The WFH concept involves running and completing business activities while avoiding close contacts or some business tasks, which are unnecessary for achieving the aim. Based on this concept, the need to maintain high work efficiencies in tasks, such as smart contracts, long-distance medical services, online conferences, legal consulting, and online school classes, have attained a new level that did not enjoy sufficient trust in the past. Except for smart-contract services, the others follow the same mechanism of in-service operation that utilizes digital devices to reduce the time spent on the distance to almost zero, as well as improve the communication process (Kaushik and Guleria 2020). A smart contract, which applies Blockchain technology, applies to many fields, including education, medicine, and rights of knowledge. Since Blockchain technology benefits FinTech enterprises by helping them avoid data modification, contract fraud, duplication, inconsistency, and prolonged contract processing, it can be sustainable and capable of complying with SDGs, since a smart contract can reduce the amount of printed paper used in the traditional signing method and protect customers from cyber threats. Further, the smart contracts based on blockchain technology, combined with the exchange of money, delivery of services, and unlocking of content protected by digital rights management, provide new approaches to the safety management of home-quarantined periods (Zhang and Wu 2020).

Conversely, FinTech enterprises generally adopt inclusive approaches to finance, thus enabling consumers to have apt access to a wide range of financial services and products.

Digital financial services are inherently borderless, supporting companies seeking cross-border financing to compete globally and expand their businesses beyond their borders. The cross-border financial certificate is a common application at present. Generally, FinTech business models in banking include payment business models, wealth-management business models, crowdfunding business models, lending business models, capital-market business models, and insurance-services business models (Nguyen et al. 2020). For instant, Singpapore, the government support for foreign investment attracts venture capital funding (Fan 2018). The increase in venture capital investment in Southeast Asia stoked momentum in the region's startup ecosystem.

2.4. FinTech Transforms Pandemic Threats into Opportunities

Although COVID-19 harms the capital and survival factors of firms, including banking and financial activities, which require customers to visit banks or financial organizations to solve their issues, it has unveiled new opportunities based on the Internet. The pandemic has heightened the urgency to use digital financial services. Visa Inc. pointed out that approximately two-thirds of Southeast Asians utilize digital-banking platforms. Despite the limited access to traditional banking services, the rising penetration of smartphones, as well as the rapid growth of e-commerce, have increased the utilization of digital financial services in Southeast Asia.

From a macro view of the effect of the pandemic on the financial and banking sectors, Zhilkina et al. (2022) reported that the economic crisis (in recent years are COVID-19 pandemic and the aftermath of the trade war between the U.S. and China that broke down the global supply chain) is still an inevitable phase of the economic cycle. The pandemic is not the preferred choice for FinTech enterprises to pursue SDG criteria. Regardless of the crisis segmentation, it will generally increase unemployment and decrease payment ability, thereby accounting for a potential reduction in the expected return on investment (ROI) for FinTech enterprises. Put differently, the pandemic has increased the waiting period for FinTech enterprises to start profiting, after recovering their original investment amount. Exchange rates also react to public communications, and this causes significant currency risks in the business cycle for FinTech enterprises (Ayadi et al. 2022).

To increase the safety and reliability of performing some tasks on personal electronic devices, which are considered a borderless solution to the banking and financing sectors (as investing) as well as to employees' business operations, contract binding, long-distance education, etc. Suseendran et al. (2020) proposed that the utilization of the Internet of Things (IoT) might increase the benefit of a company to facilitate the banking and finance sectors in a FinTech company. This requires the involvement of the local, mainly young, population along with low government intervention, to achieve the free growth of a promising market. Figure 1 illustrates the utilization of FinTech technology, and the conditions that FinTech enterprises can satisfy to meet all the cybersecurity requirements are summarized in the following four areas: financing, asset management, payment, and other FinTech. Considering the cruciality of the benefits accruing from emerging FinTech areas, with the main challenge of banks being to satisfy changing customer demands, FinTech offers new opportunities, as well as challenges to be overcome, to sustain the financial system.

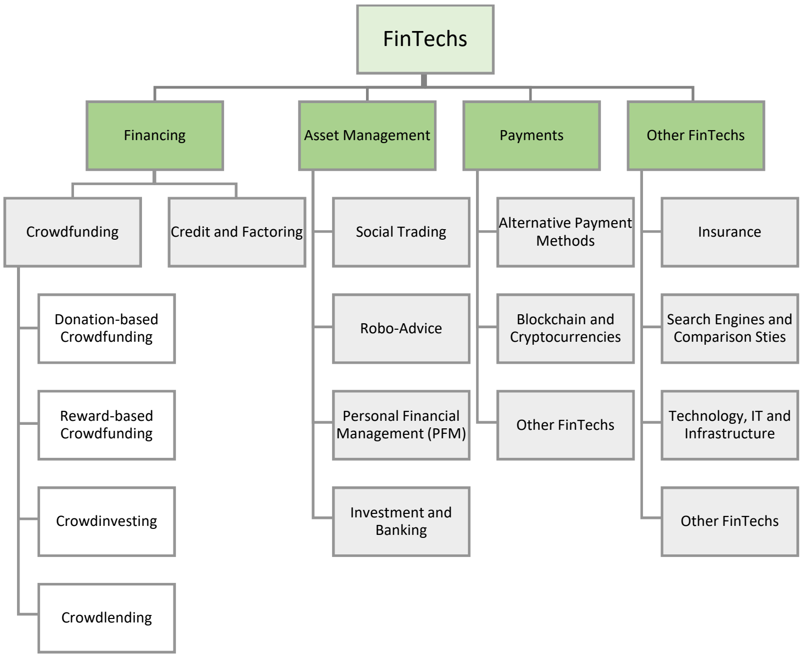

Figure 1. Segments and elements of FinTech (source: Suseendran et al. (2020), Banking and FinTech (Financial Technology) Embraced with IoT Device, Figure 5, in *Data Management, Analytics and Innovation*, page 205. Copyright 2020 by Springer Nature, with permission).

Vietnamese FinTech has shown a strong upswing across fields in recent years when, together with Singapore and Indonesia, by contributing to the common market share of Southeast Asia (Le et al. 2020). Based on the selection, full services have transformed Vietnam into the next target for new foreign direct investment (FDI), since only half of the total population employs banking services for their daily needs. Vietnam has been considered a potentially lucrative FinTech market because of its young and tech-savvy population, high mobile-phone user rate, and Internet-penetration rate, as well as its relatively low financial-inclusion levels (Nguyen 2020). Additionally, the Vietnamese government has been implementing multiple policies, programs, and projects to cultivate a favorable environment for promoting financial inclusion as well as a cashless society. Thus, Vietnam's fast-growing FinTech market is promising for suppliers of technology that supports digital banking, digital payments, blockchains, and cryptography (Nguyen 2020). However, the key challenge facing the country's FinTech market is the lack of a supportive regulatory framework. Therefore, the government must enforce cooperation and share information to remove the barriers to the progress of FinTech and e-commerce innovations. When the government invests in reducing cash transactions, it would pursue a cashless economy that is assured of increased tax returns and reduced illegal activities (Rogoff 2015). This would be facilitated by an increased inclusion of larger groups of people into formalized financial systems (Nasr et al. 2018; Allam 2020).

3. Digital Transformation Dilemmas in HRM

The increasing expectations of customers in the digital age are forcing companies to embrace digital technological advancements to innovate and develop new business models. Nowadays, digitalization, with different concepts, is among the technological megatrends in global business (Baskerville et al. 2020). There are extensive developments in digital technology in recent years. For instance, there are four types of digital transformations, namely process, business model, domain, and cultural/organizational transformations. Organizational transformation integrates digital technology and business processes, as described in this paper.

The concept of digital transformation involves the enhancement of skill training for learners through the application of digitalization. Digital transformation refers to the ability of an organization to "*adapt, respond, and position itself for success in the face of rapid technological evolution*" (Guinan et al. 2019, p. 717). When an organization is transformed via digital technologies and capabilities, it improves its processes, engages talent, and drives new value-generating business models. By adopting digital transformation, organizations can enhance their business processes and achieve better efficiencies (Vahdat 2022). Companies can work faster and more innovatively to compete better in the marketplace.

The key to the success of digital transformation lies in the internal culture of the enterprise, as well as the mindsets of the talent (Tabrizi et al. 2019; Frankiewicz and Chamorro-Premuzic 2020; Sánchez-Bayón and Aznar 2020). Since HRM is evolving into a more technology-based profession, it has become a very significant component of successful business transformation (Bikse et al. 2021). Its involvement drives a performance culture as well as fully engages employees, to get their buy-in. Their efficiency, resilience, and productivity are required by businesses struggling to remain competitive and advance. The failure of an organization to align its digital transformation efforts with its internal values and behaviors can exert a knock-on effect on its culture. For instance, insufficient financial budgets and high-quality talent (Albukhitan 2020; Pelletier and Cloutier 2019), as well as not readily adjusting the organizational structure (Gray and Rumpe 2017; Stich et al. 2020), will inhibit the reshaping of the business process of such an organization. With the explosion and acceleration of the startup landscape in Southeast Asia to new heights, the developers who can create innovative, fast-growing businesses also increased.

3.1. How Organizations Can Achieve Their Business Goals through Digital-Transformation Strategies

The workplace must employ a digital-transformation strategy to change via new and innovative content, in-house training, performance support, an inclusive collaborative environment, and information exchange (Vey et al. 2017). Digital transformation is more about leadership, change, and governance (all captured in corporate governance) than it is about technology. Through a flattening of a company's structure, innovation and technologies can help high-performance management, with fewer intermediaries (Erkmen et al. 2020). Haseeb et al. (2019) examined the strategies for reflecting sustainable competitive advantages and business performances via questionnaires, which were distributed among the managerial staff of Malaysian SMEs. The roles of social and technological challenges in achieving a sustainable competitive advantage and sustainable business performance benefit practitioners. Thus, organizations must incorporate digital transformation solutions into their business structures to improve efficiency and flexibility. In order to gain a deeper understanding of the digital transformation phase. The following research questions were posed:

3.2. How Digital-Transformation Strategies Drive HR

Appropriate work design and training criteria are critical. There are many publications on the relationship between human-capital efficiency and bank and enterprise performance. Meles et al. (2016) and Al-Musali and Ismail (2016) reported that human capital exerts a greater beneficial effect on bank profitability than the other components (structural and physical capitals) of intellectual capital. Several forces are accelerating the adoption of digital technologies within HRM, because the ability to secure and manage the best available talent is essential to delivering innovation (Shahi and Sinha 2021). For example, in the always-on era, millions of people have transitioned into remote-work arrangements because of the COVID-19 pandemic, it has boosted strategic HR digital transformation via facilitating platforms built specifically for employee onboarding, as well as digital business models adopted by numerous companies to maintain operations and preserve revenue flows (Tregua et al. 2021).

FinTech requires a new style of leadership that is based on authority and high performance. Due to this, there is a new style of digital leadership emerging from the top to drive change from the top. WFH environments, as well as newly virtualized business transactions and interactions, can be supported by their active company culture and their wide range of business-enabling technologies. This will benefit organizations by providing them with very strong resource management. For instance, automation speeds up processes and reduces errors. Additionally, it redirects human workers from mundane repetitive tasks to higher-value actions that machines cannot perform, thereby creating improved workplace environments and improved employee and customer experiences (Frankiewicz and Chamorro-Premuzic 2020).

Although we are increasingly aware of the importance of digital culture and solutions, there are still some gaps in understanding (Tabrizi et al. 2019). Aside from budget restrictions and limited departmental resources, digital skills are lacking among managers (Heavin and Power 2018). It is essential to create a digital culture across the organization because encouraging employees and other stakeholders to become accustomed to the digital culture, technology, and solutions would help businesses persuade the workforce in the transformation phase (Tabrizi et al. 2019). Before planning a transformation, businesses need to create a digital culture within the organization. It may fail because most stakeholders in the company might not be pre-pared for the transformation (Ostroff et al. 2020). Thus, a potential drop in performance and employee efficiency can be expected in the transition phase (Heavin and Power 2018). To do this, companies must understand how to avoid failing to endorse the transfor-mation process without considering their stakeholders, as this could negatively affect their efficiency (Loonam et al. 2018).

4. Sustainable HR Development Strategy for FinTech

After the pandemic, HRM departments faced new challenges (Hamouche 2021; Kutieshat and Farmanesh 2022). When accelerated techniques, regulations, and socioeconomic disruptions transform industries and business models, they will simultaneously change the skills, which employers require, and shorten the shelf life of employees' existing skill sets (Cedefop 2015). This indicates that initiating additional active steps toward creating a culture of innovative thinking, as well as fostering talent development, would motivate employees to learn the required skills and knowledge. To educate workers on this new era, organizations must focus on advancing professional development and gaining new experiences. Numerous studies demonstrated that recruiting tech talent is becoming increasingly challenging because the need for more specific skill sets is widening the talent gap and causing a shortage of leadership talent (Abi Abdallah 2013). It may become very challenging to narrow this gap as the availability of skilled workers continues to reduce.

Recently, the role of HRs in developing sustainable business organizations is attracting increasing attention (Daily and Huang 2001; Kramar 2014; Renwick et al. 2016; Haseeb et al. 2019; Mariappanadar 2019; He et al. 2021). This is well-established in the literature as a fundamental contributor to the competitive advantages of firms (Haseeb et al. 2019). Since HRs can be vital enablers for building sustainability via their activities and processes, practices, and strategies, research has considered the future of sustainable HRM (SHRM) (Kramar 2014; Renwick et al. 2016; He et al. 2021) and whether it can contribute to environmental sustainability in organizations (Renwick et al. 2016; Tanova and Bayighomog 2022; Zubair and Khan 2019), since SHRM offers some insights into the current position of HR functions in organizations regarding sustainability and clarifies the role of HR in promoting the effectiveness of organizations via sustainability. Thus, businesses must rely on their greatest asset, humans, to achieve a balance between quality and service, good marketing and sales methods, and customer care (Tien et al. 2021). A few pieces of the literature have reviewed the effect of COVID-19 on SHRM (Caligiuri et al. 2020; Chen et al. 2021; Collings et al. 2021b; Vaiman et al. 2021; Liang et al. 2022) because the topic is garnering research interest, although the approach remained piecemeal and singular (Liang et al. 2022). As Collings et al. (2021a, p. 819) put it, "*the pandemic creates an unprecedented opportunity to* *elevate the status of the HR function in an organization*", although "*it is challenging to begin any discussion on the future of TM without considering the impact of COVID-19*" (Vaiman et al. 2021, p. 253).

Additionally, survival and thriving given modern business dynamics depend largely on companies' business cultures (Permana et al. 2015). The pandemic forced many companies to redefine how and where they work, how they collaborate as a team, and how they create a long-term culture. For this reason, cultural characteristics account for another essential piece of the SHRM ecosystem. To create a winning culture that will attract and retain the best and brightest talent, the organization must consider its current and future employees or talent acquisition, which requires long-term planning that involves building relationships with such talent. The clearer the core values and the business strategy are, the stronger the employee engagement will become (Bedarkar and Pandita 2014; Markos and Sridevi 2010). Great talent can reflect an organization's growth; thus, proposing employee values that attract, engage, and retain talent is critical (Santoso et al. 2021). However, creating a corporate culture that attracts and retains great talent is challenging because time and resources are generally allocated to rapid growth rather than focusing on building long-term relationships. Therefore, this study explored the factors that must be considered when FinTech enterprises promote SHR development.

Sustainability research highlights new challenges and opportunities for businesses in the post-Covid era. The pandemic has forced enterprises to rethink their management practices for corporate sustainability in order to survive and thrive in the future (Suriyankietkaew 2022). Southeast Asian enterprises were also affected by it (Suriyankietkaew and Nimsai 2021). Despite the fact that FinTech and sustainability research are two major drivers of change in the financial sector, there is little literature addressing the connection of the areas (Nassiry 2018; Sanjaya et al. 2019; Arner et al. 2020; Chueca Vergara and Agudo 2021; Merello et al. 2022). The results of empirical research show that SHRM has a positive effect on the use of FinTech, and employee job satisfaction has a positive effect on it as well (Sanjaya et al. 2019). Therefore, the purpose of this research effort is to map out the challenges of sustainable HRM in the FinTech sector. In order to examine this research theme, four research questions are as follows.

4.1. How a FinTech Enterprise Can Maintain SHRM According to the Work Density

Much of the literature on HR-development strategies have attracted enormous attention. Different aspects of HR development, e.g., the processes of training, workforce and talent planning, and talent evaluation, have been examined and reported in the relevant scholarly literature. The rate and trend of development in today's world are generally accompanied by unique needs occasioned by technological changes. Further, the macro situation, including economic and politics (the COVID-19 pandemic and the U.S.–China trade war, or even the Ukraine–Russia conflict), could be the crux factor that can change the international demand for the technological services rendered by a technology company. For example, while COVID-19 may be partly to blame for the labor shortage, other factors are also at play, making it a challenge for some businesses to return workers to the workplace or office. However, to maintain HR sustainability, many dimensions must be considered: (1) freely selected employment, (2) wages and benefits, (3) human treatment, (4) freedom of association, and (5) zero discrimination. Further, managers may avail incentive schemes on the wages selected for workers, although this depends on work-density education and generational gaps, as well as implicit bias from the labor demand.

A high-performance organization requires a strong capacity for innovation and a high concentration of talent. Therefore, making the right hires for the support team is critical to strengthening the organization. In addition to the ability to collaborate effectively with others and work in a team, this industry requires the ability to manage conflict and build relationships. Today, the battle for top talent is fierce. The low retention rates of millennials widen the talent gap in the sector. An alternative approach is to hire candidates who can offer a knowledge that the company's needs or ensure the training of new employees are trained on the skills the company wishes to acquire. This strategy aims to develop employee skills according to the needs of the company. When companies deliberate about finding the skills they need, recruit from nontraditional sources, and prioritize candidates' preferences, they are more likely to select the candidate with the right skills and capacity. For example, how to guide a team toward dealing with the challenges of digitalization and automation-transformation society is also a key ability for being a talent.

The SHRM issue appears in the background, since the FinTech sector requires different types of talent from the general labor market, although finding the right talent to support this challenging situation is generally challenging. Based on the service rendered by a FinTech enterprise (or developed through integration with the existing system, for example, banks can develop their FinTech products), FinTech products are very flexible because their interfaces and code algorithms can be directly adjusted to customers' electronic devices. Moreover, the flexibility of FinTech products can cause unprecedented challenges to the traditional financial market. However, to claim that FinTech in the banking sector can compete with the traditional system, we must also consider its associating challenges. Nguyen et al. (2020) reported that the FinTech sector could encounter short-term issues with the (1) legal corridor, (2) infrastructure, (3) FinTech companies, (4) customers, and (5) HRs. To deal with the rapid changes (both financial and technological) taking place in the FinTech industry, talent must be flexible and adaptable. They are required to have analytical and critical-thinking skills that can help them find creative solutions to such problems.

4.2. Key Factors Selected of the FinTech Talent Demand

To identify the key factors that can be selected to satisfy the FinTech-talent demand, this research employed literature reviews. In doing so, we examined the relationship between the major keyword sources, as follows: first, a, outstanding and intelligent human individual can be considered gifted and classified as (1) linguistic, (2) spatial, (3) musical, (4) bodily (kinesthetic), (5) logical (6) intrapersonal, and (7) interpersonal (Feldhusen 1994). Second, among the talent characteristics defined by Renzulli et al. (1976), the FinTech sector requires almost all of the following characteristics: (1) learning, (2) motivation, (3) creativity, (4) leadership, (5) artistic, (6) musical, (7) dramatic, (8) precise communication, (9) expressive communication, and (10) planning. Third, FinTech in the banking sector requires a combination of logical and interpersonal abilities, with banking, financial logic in core operations, and hardware/software-design knowledge. Fourth, even though the foregoing classifications are many, a person does not have to exhibit all. Therefore, the recruiter must concentrate on the content of the job vacancy to decide the main characteristics that should be prioritized. FinTech business models could be influenced by local conditions (Laidroo et al. 2021). Additionally, behavioral competence will be the most important employee competency in the banking and FinTech industries (Santoso et al. 2021). Accordingly, the talent division needs to provide strategic solutions to select and hire qualified talent in the banking and FinTech industries based on the definition and characteristics of each core competency factor. The comprehensive criteria for a FinTech talent are listed in Table 2.

Table 2. Comprehensive criteria for a FinTech talent.

	Fundamental Criteria		Description
Basic Characteristics	**Logical Thinking**	**Interpersonal Skills**	
Learning	v	v	Managerial level learns new skills and develops new visions.
Motivational		v	Regardless of self-motivation, the manager must be able to motivate others.
Creativity	v	v	FinTech requires an infinite creativity.
Leadership		v	Flexibility combines new leadership styles with elements of authority-based and high-performance leadership.
Artistic	v		Developing skills in creative thinking and innovation.
Musical			Music literacy is not required in most cases. Music in FinTech products can be outsourced.
Dramatic			Drama is not required, except for dramatic factors that are applied to product ideas, and these are categorized under creativity.
Precise Communication	v		Non-managerial level communicates professional knowledge of job tasks.
Expressive Communication		v	Level communication to enhance productivity and cooperation.
Planning (Umble et al. 2003) *		v	This includes time value, HRs, and financial, operation, and logistic abilities as well as sales and marketing abilities.

Note: This table illustrates the general talent requirements of a FinTech enterprise namely the basic criteria of the role of work (managerial and non-managerial level). The basic characteristic criteria depending on the particular knowledge area are listed in the first column. Logic thinking and interpersonal skills, listed in columns two and three, are compared as the fundamental criteria. The feature description is listed in the fourth column. Source: the authors, via literature reviews. The symbol "v" denotes the dimension, * defines the research of Umble et al. (2003), and enterprise resource-planning factors should be considered in planning.

The table, with serval dimensions, illustrates the general requirements of a FinTech enterprise. It is worth noting, banking technology that is adapted to business requirements must comply with the legal and regulatory constraints applicable at the local, national, and regional levels. As aforementioned, the banking-sector-based FinTech industry differs from others, since it requires the basic criteria of the work role (managerial and non-managerial level) to be based on the area of expertise, as well as the characteristic compared with personal, logical thinking and interpersonal intelligence. The requirement applies to managerial- and non-managerial-level employees, and this has generated new challenges, namely a talent gap and SHRM. Put simply, a talent with more than one professional field in the FinTech sector is logical in technical knowledge and is a sensation in financial mathematics, such as accounting. Thakor (2020) acknowledged that FinTech in the banking sector, from 2008 to date, determined the age of employing technology by new entrants to offer non-intermediated financial services directly to customers. FinTech does not necessarily require a physical business venue; it requires the delivery of financial services to deal with high workloads and with no preferences. To this end, Muthaiyah and Zaw (2020) present the top skills needed in terms of FinTech readiness that should be included in the existing curriculums offered at the tertiary level, from the expert opinions gathered by the relevant stakeholders, requiring solid technical-training architecture with skill sets, which include those related to critical thinking, regulatory, and compliance areas.

To recruit employees as well as to manage existing employees, a FinTech enterprise manager(s) must focus on managing the HR to efficiently accomplish the work and promote the qualified person to the managerial level. The promotion procedure can follow the regulations of a particular firm. Some potential issues need to be addressed: Does the firm flatten the hierarchy and chain-of-command in order to implement high-performance management? Does it adopt a conservative mindset of a centralized, functional structure? Mahzura (2018) utilized 70 observations from 14 companies in five years (meaning five years multiplied by 14 companies), to observe whether the firms exhibited institutional or managerial ownership. This is significant because ownership and leadership are interrelated. Additionally, a valuable dimension for determining a company's value is for the investor to make decisions regarding their investments.

However, even excluding the company's HRs and structure, the outcome also represents a new challenge for managers in the banking sector. Moreover, consumers of FinTech products require a significant level of trust in the company regarding the perceived risk, not only regarding the common financial-profession factor. Consumers want to trust FinTech companies in matters of anti-cybercrime, digital privacy, digital financial-service agreement, and the criticality of the control from the national government, to ensure that FinTech enterprises perform ethically and transparently (Hu et al. 2019). Briefly, owing to economic development and technological advantages, a FinTech enterprise requires a highly flexible company structure to adapt to the demands of millennials but with strong leadership to control the financial ethics. The restructuring exercise is happening to the "*changes in an employee's roles and employment status, which, in turn, may create new and increased demands on employees and their well-being in Asia*" (Le et al. 2020; Yusuf 2015).

4.3. How Enterprises Can Bridge the Gap between Progressive and Traditional HRM Approaches

Although Southeast Asia is injecting FinTech majors into universities in recent years, the process of educating the talent still faces challenges. For instance, Indonesia and Malaysia are still debating the impact of FinTech on Muslims. The Muslim community accounts for 42% of the total population of Southeast Asia, which also accounts for 25% of the total world Muslim population (Yusuf 2015). It also explains why the customer segmentation of FinTech in Southeast Asia must be diversified; moreover, FinTech enterprises must have an in-depth understanding of religious factors for their customers and employees. Saad and Fisol (2019) described the law of the permissible, or what is prohibited from the perspective of Shariah. In detail, there are five preservations to be considered for every single FinTech product for the customer, and they are the preservations of religion, life, intellect, progeny, and wealth. Indonesia, as a Muslim-majority country, has shown positive growth in emerging FinTech innovation. These significant benefits include cost-effectiveness, process-business efficiency, and financial inclusion, according to Rafiki and Nasution (2021). Therefore, the responsibility of a FinTech enterprise is wider than expected.

Thus, in the Southeast Asian FinTech banking sector, a religion specialist and a chief planner must be allowed to join FinTech enterprises to ensure that regional laws comply with the local culture and national law (this special demand did not exist before). By finding the right leaders to guide businesses through these challenging times, FinTech can enable transformation and exploit potential to drive growth and innovation. It has been a trend in the financial services industry to appoint directors with digital backgrounds, not necessarily from their own management teams, to deal with threats as well as to capitalize on opportunities created by fast-evolving technologies. Spreitzer and Porath (2012) mention that training can be linked to employee social sustainability, owing to the fact that helping employees grow and develop helps sustain a high-performing workforce). Therefore, employee training and development programs are a big part of workforce grooming.

4.4. How FinTech Enterprises Can Motivate Their Employees

Motivating, engaging, and retaining employees are some of the most important aspects of an organization (Mureșan et al. 2021; Werner 2021). A few studies on HR have responded to the worldwide COVID-19 crisis (AlQershi et al. 2021; Aguinis and Burgi-Tian 2021; Delibasic et al. 2021; Hitka et al. 2021; Nayal et al. 2022; Tamunomiebi and Worgu 2020; Watson 2022). Since most workers are now required to work remotely, the management of distance and boundary has become the primary focus of HR. The factors that can motivate staff working remotely to stay engaged and productive are critical. There are extant literature reviews on TM (Aguinis and Burgi-Tian 2021). AlQershi et al. (2021) examined the relationship between TM and sustainable business performance (SBP) even during COVID-19, as well as the challenges that confronted organizations. The result demonstrated that TM and performance exhibited a significant correlation (Aguinis and Burgi-Tian 2021). Watson (2022) proposed that organizations can empower employees to collaborate with their work to eradicate barriers and increase workforce collaboration. Tamunomiebi and Worgu (2020) identified talent acquisition, development, and retention as TM dimensions. They observed that talent has become a very crucial pillar that companies, and organizations rely on it to attain their strategic visions (Tamunomiebi and Worgu 2020). However, Hitka et al. (2021) observed that COVID-19 impacted HRM, in terms of motivation, in Slovakia. A significant decrease in respondent preferences was recorded in all researched motivation factors. In the post-COVID-19 era, employees have a greater desire for well-being and happiness over competitive pay packages. As a result, employers have begun to cover COVID-19-related issues and provide financial support to their employees. For instance, investing in employee health can help employers control healthcare costs by creating a healthier workforce. Therefore, companies should be concerned with the levels of satisfaction and happiness of employees (Mureșan et al. 2021). Nayal et al. (2022) suggested that firms should make advancements regarding the well-being of their employees in this new normal. As Ehnert et al. (2014) stated that "*HRM sustainability is crucial for organizations because of increased occupational health issues, shortage of human resources, and an aging population*".

5. Discussion: HR for Sustainability in Southeast Asia's FinTech Sector

The hybrid work era poses new challenges for sustainable HR leaders but also has several opportunities to leverage Fintech to support it (Hoang et al. 2022; Imam et al. 2022; Khalifa and Baz 2022). For instance, traditional financial industry often positions the technical department as the backend of support and services, so that its salary and incentive mechanism are not attractive, resulting in serious problems such as the outflow of core talent and difficulty in recruiting (Li 2020). A solution must be found to the talent crunch.

Nevertheless, FinTech industries offer them advanced, innovative work environments to explore technology and finance beyond traditional boundaries. In contrast to traditional bank employees, FinTech employees receive highly compensated, as well as have the flexibility to work remotely. Therefore, this section offers an overview of the study by discussing how the FinTech sector can achieve its objectives in Southeast Asia.

5.1. Potential Trade-Offs between the Sustainable Development Goals (SDGs) in TM Strategies

In the era of sustainability, FinTech enterprise managers still face a challenge in formulating policies and strategies that can attract young customers and employees. In line with the social change due to technology, work–life balance (WLI) is highly demanded for employees' welfare and the company's long-term development strategy. A huge lack of technical expertise in mobile devices, big data, and personalized-service specialists (who can understand technical demands along with customers' needs) require new solutions, thereby unintentionally creating pressure on the FinTech enterprise and breaking the work–life balance of employees (Sanjaya et al. 2019). This would result in macro-scale losses, as the government would lose from tax revenue and new enterprises, while local existing FinTech enterprises would suffer from low innovation and shortage of skilled workers.

Le et al. (2020) investigated a broader scale of the work–life balance, particularly among Vietnamese and Indonesian employees. Business productivity is higher among Vietnamese and Indonesian companies with a work-life balance. Mazur (2015) demonstrated that "[. . .] *work time and work location flexibility, as well as the development of supportive managers, contribute to increased work–life balance*". As long as work–life balance is considered by the manager or company's board of directors, the improvement of an employee's work–life balance would improve productivity and willing commitment, ensure satisfaction, and lower the rates of absenteeism and accidents. Notably, this strategy must include the TM and SHRM factors to prevent the brain-draining phenomenon, in which talent seek better lives or higher-paying jobs with political stability (Grubel 1987).

To explore the opinions of Southeast Asian employers regarding the significance of digital transformation, as well as the relevant competencies of employees, this study outlined a series of case studies as surveys to demonstrate how such integrated approaches can support the integration of a substantial HR, while revealing their trade-offs via FinTech. The four examples are as follows:

Example 1. *A is a programmer who exhibits superior ability in logical thinking. However, since A concentrates too much on logical sophistication, A has not had sufficient vision for their development as a whole. Therefore, creativity is limited in the profession of A, making A capable of a non-managerial level, i.e., a task-execution position.*

Example 2. *B applies for the position of project manager. With the logical thinking required in B's profession, B exhibits narrow project vision, although B does exhibit good interpersonal ability. B can be a sales team leader in the project.*

Example 3. *C starts from a non-managerial level, although C has learned how to consider their project from a broad perspective and can communicate with others to produce high-precision and flexible outcomes for the whole project. Even though this performance consumes C's time to enhance their professionalism, C is capable of promotion to the managerial level.*

Example 4. *D holds a bachelor's degree in financial law and exhibits strong logical thinking. D is talkative and can facilitate interpersonal communication, although their technical knowledge and experience in project planning are almost at the zero level. D can be a law assistant for the chief law executor, since FinTech requires cross-professional knowledge between technological law and financial law.*

The above case studies explored the trade-offs between the SDGs through Southeast Asian enterprises. It is critical to strike a balance between diversity, equity, and inclusion in the workplace, as well as legal compliance and avoidance of discrimination. For example, discrimination or human-capital factors affect the wage gap. This may accrue from the new technologies and innovations that widen skills gaps. However, filling such gaps with advanced engineering talent represents only one step toward solving the issue.

The following selected papers were reviewed, and several broad areas emerged from the analysis of the solutions. Based on the connections and interdependencies among the SDG labor market, it still exhibits the following biased circumstances in Southeast Asia:

(1) Large pay disparities and wage inequality: Income inequality in Southeast Asia remains stubbornly high. It has not only a gender pay gap exists but also urban-rural disparities, as well as differences within the urban and the industrial sector. For instance, the Singaporean, Vietnamese, and Indonesian job markets offer the highest wage level for engineering and product-management roles (Fintechnews Singapore 2021). As discussed above, the FinTech labor supply in Southeast Asia requires skilled employees with FinTech knowledge in good quantity, as well as those with the quality for managerial level. Potential gaps exist in Southeast Asia's labor market and in their workforce's skills, knowledge, and training, thereby widening inequalities.

(2) Race discrimination and religious difference: Discrimination in the workplace generally occurs during recruitment, working processes, promotion, and punishment. For instance, based on the analysis of the mass sample and observations of Giuliano et al. (2011), employees in the U.S. and the managers of four common races, Whites, Blacks, Hispanics, and Asians, the following shocking results were obtained: racial discrimination did not always occur between two different races, and the scenario in which the manager and employee were White and Black, respectively, was the highest among the one-year-quitting probabilities. The following outcome involved an employee and manager that were both Black, while the Asian-employee scenario recorded the lowest probabilities regardless of the race of the manager in the one-year promotion probability. Since most people believe that managers tend to promote a person of the same race as them, the highest probability would be that Black managers would be likely to promote White and Asian employees more than other managers of any other race would. Even though the race and culture of Southeast Asia are incompatible with those of the U.S., as well as almost all the races in the world, the allocation of the Southeast Asian races would mainly be Asian, and the discrimination would be due to religion and gender rather than race.

(3) Population gender inequality and education: Gender inequality represents the most concerning issue across Southeast Asia. The researchers also observed that gender inequality is not due to most particular factors, such as national growth, health, educational status of the population, and local culture. The education of the country on gender is sometimes impacted by the family/society level; the middle- and high-income countries of Asia have more chances for school enrollment that are >30%. Since the beginning of 1990, Southeast Asia countries, including Vietnam, Thailand, and Malaysia, have accounted for a high proportion of females that are involved in the non-agricultural workforce, and Vietnam and Lao PDR are two nations that have women significantly represented in their parliaments, accounting for $\geq$20% (Mehrotra and Kapoor 2009). Linked to the second circumstance, the consequences of discrimination, regardless of gender, race, or academic level, is that qualified employees would quit their jobs, while higher-level management would not be able to ensure the operating circumstances and make effective decisions.

(4) High-level education and job opportunity: Educational orientation will make students apply for the jobs. A FinTech company in this circumstance is encouraged to perform recruitment employing the same criteria as the existing ones. For instance, the company can be motivated by the government to hire more women of different races. However, this is not an obligation, nor is the manner of requesting the employee to understand and respect gender equality. The execution of this request toward them is challenging to supervise. Villegas et al. (2019) reported that the recruitment

must be effective and benefit the company as a whole; thus, the recruitment must be conducted in an ethical and unbiased manner, which must not contain any condition that is beyond a candidate's decision. The factors of talent recruitment can also be consulted.

(5) Moral performance manner and external factors: Villegas et al. (2019) also concluded that the manager plays a predominant role in hiring new talent, as long as the manager can be open-minded, treat matters seriously and treat all candidates on an antidiscriminatory basis. The complete ignorance of stereotypes to avoid confirmed biases, which has become an everyday issue in the age of information technology (Woo 2019), must be considered a phenomenon in which a firm or individual judges the situation, according to the information they interact with, before measuring the average characteristics of a group, followed by deciding on an individual. It also exerts a psychological effect on the candidates even if they knew that the results were biased, though this is not the only harmful long-term practice for enterprises. Moreover, when the hired candidate is not suitable for the vacancy. This will result in the whole enterprise's employee community becoming burdened when the suitable person is displaced. There is a low chance of the enterprises recruiting candidates for the vacancy with appropriate requirements.

For the recruitment scenario, the candidates are gathered from every available race and gender, the bias does not exist, and the proportion of the candidate rates are theoretically largely equal, to ensure employee diversity and their long-term safety and willingness to work harder on their job. However, this study does not refute the idea of only one ethical factor being employed for recruitment, but the manager must deliberate on the personal characteristics. Conversely, the manager must determine the knowledge of their profession to avoid the failure of communicating with others and managers. The integration of every individual is key to the whole society. Put differently, the fairness of the candidate's judgment and selection must be somehow expressed clearly by the manager and all others who participate in the whole recruitment process.

5.2. Continuity Challenges in Southeast Asia

Southeast Asia is competing and succeeding on the global FinTech stage. Mobile payments lead the FinTech boom in Southeast Asia. The rise of online and mobile-app-based services has grown significantly over the past few years, making the gig economy and platform trending topics, while reshaping the experience of work for a very large number of people. FinTech businesses are also attracting attention from Southeast Asian governments that wish to ensure the sound development of FinTech as a strategy for developing and enhancing the financial systems of their countries (Iwasaki 2018). The main challenge is how organizations can prepare for the high demand for non-in-person services during the times of crisis after pandemics, through digital transformation. The key to the success of digital transformation lies in the internal culture of the enterprise and the mindset of the talent. Moreover, accelerating digital transformation will account for the future of the development of the orientation of international enterprises, and this would cause the dilemma of cultural transformation and the shortage of HR requirements for Southeast Asian enterprises. The right balance must be struck between standardization and localization. The role of HRM in developing sustainable business organizations is attracting increasing attention. Localized-workforce challenges would arise in organizations that resolve them. These characteristics are seen in the following examples of the challenges of typical FinTech businesses in Southeast Asia:

(1) Talent gap and skill shortage, as well as resource scarcity in higher education: The FinTech boom causes a talent war in Southeast Asia (Flanagan et al. 2017). This growth accounts for specific talent needs, since companies seek specialized skill sets. Further, the labor shortage exposes the need for skill improvements in key markets and the oncoming talent crunch. Additionally, the development of information and communication technology (ICT) plays an essential role in the evolution of HRM

(Thite et al. 2012). However, one of the first challenges confronting HR professionals is the understanding of the fundamentals of FinTech and blockchain, as well as how they function. In Southeast Asia, these higher education resources are scarce, and vocational training for FinTech professionals is insufficient (Fintechnews Singapore 2021). Developing talent maps for higher education would be a core part of innovation and social development (Mohammed et al. 2018).

(2) Ability of HR to track and measure sustainable development performances: The impact of COVID-19 on the labor market exhibits serious ramifications regarding achieving SDGs. Although developed nations can fully explore different sustainable business models to achieve sustainability, this might not be the case for developing nations because of poor governance, which is characterized by inequality, patronage, corruption, and other challenges (Imasiku 2021). Bonding with the team in a hybrid environment is also challenging, e.g., in a hybrid workplace (on-site and remote work arrangements) and for hybrid employment (atypical and freelance workers versus full-time workers). The balance between diversity, equity, and inclusion in the workplace, as well as the avoidance of discrimination and legal compliance, are key. HR performance is often challenging to measure in actual quantitative terms and requires conceptual guidance on the measurement of sustainable development. For instance, it is critical to understand how to improve the effectiveness and organizational performance, fill all the skill gaps, and unify all employee abilities; develop knowledge, skills, and competencies; and increase the potential of HR and personal growth.

(3) Limited development environment and insufficient policy support: Countries gradually progress by introducing technology in stages. However, emerging and developing countries have fallen behind developed ones. Moreover, digital and other types of businesses have not evolved at the same pace in the Southeast Asian sectors that allow cash transfers via mobile phone numbers only. There is also limited access to bank loans and credit cards, accounting for the low utilization of banking services. For instance, Singapore and Thailand are both engaged in national initiatives in this area, as part of their efforts to create domestic infrastructure for electronic payments. The government would, thus, open up a better development environment and be flexible to the development of the ecosystem. Conversely, talent policy does not focus sufficiently on financial-technology talent. The introduction of FinTech and related industrial policies lack talent measures. Additionally, a supportive regulatory framework is still lacking. Most Southeast Asian countries lack bankable projects or suffer because of less-friendly business regulations or the absence of a robust financial system. However, talent policy does not adequately consider financial-technology talent.

(4) Level of security and resilience: By facilitating new levels of trust and automation in contractual agreements, smart contracts can revolutionize finance via the adoption of smart contracts in FinTech and other sectors. This indicates that a high level of security requires big data apps across various sectors and banking. Financial regulation and soft skills are key to the development of organizations and countries. Nowadays, the financial industry must store data and systems on the cloud, although it still faces many information security and regulatory issues. In the process of clouding only part of the data, it will also encounter obstacles regarding the flow of data between systems. To better improve the speed of computing and testing, cloud service is a technology that the financial industry can consider for adoption. Above all, the most crucial issue is ensuring the reliability of FinTech businesses, and this will require both public and private initiatives, including the creation of mechanisms and rules, the establishment of security measures, and awareness-creating activities for users.

5.3. FinTech Solution to Support Sustainable HRs in Southeast Asia

As previously stated, organizations can enhance their business processes and achieve better efficiencies by adopting digital transformation. However, a company's culture is vital to all businesses, and the ability of organizations to promote a unique company culture to attract global talent and keep current employees is critical. A framework of recommended SHRM requires more flexibility and resiliency for global talent inclusion. The possible solutions are, as follows:

(1) Building industry with experienced FinTech developers and new FinTech talent pools: There are many practical benefits for organizations that focus on talent because it is a primary source of competitive advantage. High-performing organizations are identifiable by their talented individuals who demonstrate initiatives, creativity, and excellence in performance and productivity (Lockwood 2006). To attract and retain top talent, organizations can hire trained managers in the field of FinTech to enhance HRM and decision-making capabilities. Their duties would involve helping the talent with soft skills, such as adaptability, flexibility, collaboration, and critical and creative thinking. The desire to engage in cross-functional jobs and the willingness to upskill, especially in digital literacy, are also significant. Moreover, the development of a new FinTech talent pool, delivering tech talent with relevant experience and engaging with potential candidates on social networks, is crucial. To reduce bias and conflict, a strategic alliance with FinTech companies to ensure that the regional law complies with the local culture and national law is required.

(2) Develop career-advancement programs and match career-development strategies: Availing a good career-development program is a gateway to improving employee engagements, such as engagement training projects (for example, a buddy- or sponsored-work-placement program or a FinTech talent platform). For instance, the utilization of a buddy system may accelerate the productivity of new hires and enhance job satisfaction, making it easier for employers to retain individuals and helping new hires to feel supported, while they also gain the relevant knowledge that their peers had gained through experience. Further, by using IT-based technology, businesses can maximize efficiency and save money while maintaining employee quality of life and well-being through human resources management (Vahdat 2022). For maximum effectiveness, career development programs should integrate training and development strategies. Therefore, collaborations between FinTech companies and educational institutions can foster learning and awareness of FinTech talent.

(3) Committed to upskilling and reskilling global talent: The retention of tech talent is a looming challenge in Southeast Asia. To fully embrace reskilling and upskilling for long-term talent, tangible rewards, recognition, or promotion are the main drivers that can encourage employees to learn new skills. It helps create loyalty and talent retention. A well-designed skill-based workforce strategy will enable organizations to proactively identify future skill needs and develop an actionable plan to retain, build, employ, and deploy the required talent (Brunello and Wruuck 2021). Being a FinTech talent can focus on people-related, business, and customer-related, as well as work-style competencies (Sanjaya et al. 2019). Achieving enterprise sustainability requires continuous on-the-job training, job rotation, job enlargement, and job enrichment, as suggested by Ehnert et al. (2014). Upskilling and reinventing sustainably are priorities for Southeast Asian firms.

(4) Availing flexible work arrangements and reward policies: Motivating remote staff to stay engaged and productive can increase employee retention and create a good company culture. By enabling flexibility in the work design of employees, organizations have accounted for a more motivated and productive workforce (Boxall and Huo 2022). A good reward strategy results in both sustainable-value creation and increased performance. Furthermore, the availabilities of incentives, recognition, and rewards, as well as availing a benefit that substantially affects employee retention, can indirectly accrue gains (Werner and Balkin 2021). Enabling trained staff can reduce the costs of recruitment and training and achieve maximum ROI for the organization.

(5) Eliminating unnecessary regulatory barriers and well-supported government policies: For a country, the cultivation of FinTech talent requires multiparty linkage and the continuous promotion of local governments, financial institutions, enterprises, and

universities. Educational institutions and policymakers must support the country's transformation into a global FinTech hub. Nathan et al. (2022) studied the financial development of Vietnam during the COVID-19 pandemic and observed that government support for FinTech was necessary for the diversification of the economy. The government and policymakers could play a strategic role in supporting FinTech companies, by empowering them to advance financial literacy and participation among people. Moreover, it strengthens labor-market competition. The adverse impacts of COVID-19 on the labor market will exhibit serious consequences regarding attaining SDGs. Flexible labor-market arrangements can induce greater job mobility. Policy responses must be designed that consider the immediate, short-term, and medium-term ramifications of the pandemic, such as the expansion of digital infrastructure and promotion of an innovation district among the cluster of higher-education institutions in Southeast Asia (Brunello and Wruuck 2021). Women's economic empowerment also can help address the workforce underperformance (Tang 2022). Moreover, the development of a FinTech business infrastructure and regulatory sandboxes could foster FinTech startups quickly (Nathan et al. 2022).

In summary, building industry-experienced FinTech talent developers can enhance HRM and decision-making capabilities. Additionally, delivering tech talent with the relevant experience or engaging in training projects can help new hires feel supported, while they also gain the relevant knowledge that their peers had gained through experience. Moreover, talent growth must be supported via a variety of career-advancement programs and the matching of career-development strategies. Being committed to upskilling and reskilling global talent by offering talent mobility opportunities across the organization, as well as by fully embracing the creation of value for cross-cultural talent, companies can support their employees' long-term career goals and maintain competitive strength. Finally, well-supported government policies as well as eliminating unnecessary regulatory barriers, will foster the potential competitive advantage of SHRM in Southeast Asia. The solutions lie with governments, employers, and enterprises being committed to more equitable actions.

6. Conclusions and Recommendations

With the development of technology and the improved speed of the Internet in Southeast Asia, the population that is familiar with smart personal devices has also increased, facilitating promising FinTech development. Particularly, the increase in mobile payments has propelled Southeast Asia to become a global frontrunner in the adoption of FinTech. Therefore, FinTech demand will keep growing in Southeast Asia in the long term. However, the effect of this growth on user adoption is of practical significance for the successful implementation of FinTech strategies by banks (Hu et al. 2019). However, the talent gap must be gradually narrowed. The key conditions include the local government's positive reaction, elimination of discrimination, and digitalized education. The conditions support Southeast Asian countries' stable economic growth in the world and encourage education organizations to produce more modernized courses indirectly.

Nowadays, the pandemic has reshaped the experience of work for many people. Millions of people worldwide have started working remotely, and the rapid rise in the gig economy and platform has resulted in a fast-growing workforce. There is no doubt that invisible-talent assets play a vital role in an organization or business as HRs. As observed, the pandemic has expanded the role of HRM and shaped new financial services via FinTech. Businesses must increase their workforces, while remaining resilient by hiring contract workers, temporary workers, and freelancers. With a hybrid workplace (on-site and remote workers) and hybrid employment (atypical and freelance workers versus full-time ones), it would be challenging to create adequate collaboration with the team. Additionally, the role of HRM in developing sustainable business organizations is increasingly attracting attention. It is also crucial to determine how to strike a balance between diversity, equity, and inclusion in the workplace, as well as the avoidance of discrimination, ethical judgment, and legal compliance. This might impact the retention of top talent and the improvement of business performance. In borderless financing, when companies seek to compete globally and expand their businesses beyond their current domestic borders, they must incorporate digital-transformation solutions into their business structures to improve their efficiency and flexibility. A massive shortage of tech talent looms given emerging technologies. The current FinTech landscape seeks talent that can switch roles as the business evolves, although businesses in Southeast Asia are struggling to find sufficient skill-specific talent to keep up with the ever-growing demand for FinTech.

In this study, we summarized the solutions for SHRM in the Southeast Asian FinTech revolution. To uncover the challenges organizations will face in the post-COVID-19 era and proffer solutions to these challenges, we explored how the provision of SDG training through digital transformation can enhance an organization's development capabilities. We reviewed some of the literature and proposed that building industry-experienced FinTech talent developers can enhance HRM and decision-making capabilities. Further, delivering tech talent with the relevant experience or engaging in training projects will help new hires feel supported, while they also gain the relevant knowledge that their peers had gained through experience. Furthermore, being committed to upskilling and reskilling global talent by offering talent mobility opportunities across the organization, as well as by fully embracing the creation of value for cross-cultural talent, companies can support their employees' long-term career goals and maintain competitive strength. A strategic alliance with FinTech companies would be a conduit that ensures that regional laws comply with the local culture and national law, thereby reducing biases and conflicts. Finally, well-supported government policies as well as eliminating unnecessary regulatory barriers, will offer a potential competitive advantage in Southeast Asia in promoting sustainable business development. Accelerating the cultivation of contactless business service models and promoting the innovation of business models for e-commerce will enable entirely new kinds of business ventures to become substantial new engines for economic development.

The framework proposed in this study can be replicated for talent issues confronting FinTech adoption in the post-COVID-19 Southeast Asian economy. This study has offered a brief overview of the issues. It has not attempted to be very broad; it has, rather, been confined mainly to sustainable development within FinTech and HRs that are relevant to the existing pandemic. Further, a future study can investigate deeper into the sustainable aspect of HRs in organizations and how those organizations impact HRs' participation in FinTech, as well as the overall digital economy.

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