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Objective
The Journal of Valuation and Property Services is a publication specifically intended for property professionals to keep abreast with the developments in the property industry as well as the real estate profesion.

This journal serves as a platform for the exchange of information and ideas on property issues. It seeks to:

i. address areas of major interest and practical relevance to the real estate profesion.
ii. create awareness of new theories, techniques and applications as well as related concepts relevant to the real estate profesion.
iii. discuss policy issues and regulations and their implications on the property market.

We therefore welcome articles with theoretical and practical relevance to the real estate industry and profesion, property valuation, property management, property investment and market analysis.

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MANAGING THE SOCIO-ECONOMIC UNCERTAINTIES OF COVID-19: THE ROLE OF GOVERNMENT FOR THE 'NEW NORMAL/ECONOMY'

Dr. Suraya Ismail
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ABSTRACT

Governments have intrinsic duties to its citizens; namely- safeguarding the citizens' survival and physical security, and the citizens' rights to socio-economic well-being. The Covid-19 pandemic threatens all the above. The pandemic takes lives from families and the Movement Control Order (MCO)/ social distancing robs many firms and households from their everyday incomes and social interactions. Far reaching government intervention has become a necessity to save the economy, which is unlikely to emerge unchanged. The Government has started with Stage 1; a stage we depict as 'Protect and Shield', essentially a phase to protect both households and firms from insolvencies, whilst at the same time limiting the carnage of Covid-19. This paper will further discuss and examine the role of government in regenerate and reform industries in Malaysia.

Keyword: *Movement Control Order (MCO), Government, Regenerate, Reform, Real Estate, Technology, Covid-19*

MANAGING THE SOCIO-ECONOMIC UNCERTAINTIES OF COVID-19: THE ROLE OF GOVERNMENT FOR THE 'NEW NORMAL/ ECONOMY'.

Governments have intrinsic duties to its citizens; namely- safeguarding the citizens' survival and physical security, and the citizens' rights to socio-economic well-being. The Covid-19 pandemic threatens all the above. The pandemic takes lives from families and the Movement Control Order (MCO)/ social distancing robs many firms and households from their everyday incomes and social interactions. Far reaching government intervention has become a necessity to save the economy, which is unlikely to emerge unchanged.

The Government has started with **Stage 1; a stage we depict as 'Protect and Shield'**, essentially a phase to protect both households and firms from insolvencies, whilst at the same time limiting the carnage of Covid-19. Money must not be a hindrance to health services' ability to do everything possible to control the pandemic and treat the ill. To worry about public finances in such a moment is both perverse and counterproductive: spending too little is a greater threat to prosperity than spending too much.

However, more could be done in this stage when the Movement Control Order (MCO)'s strict regulations are loosened. As Malaysians are 'released' from the MCO, there must be a systematic approach for the cultivation of the general public's new behaviour for the 'new normal'.

We also propose **Stage 2: Regenerate and Reform**, where the government plays a significant role in financing and re-directing the economy with clear and transparent reforms to create a soft landing for the post-pandemic ***'new economy'- an economy that promotes modernization of practices, innovation within the domestic supply chain, safe procedures with less destruction to the natural environment with an agile, healthy and resilient workforce.***

We proposed three major structural reforms:

1. Innovate all sectors into higher technology/ mechanization in order to ensure higher labour productivity at the back of decreasing total number of workers. For example, an ageing population of farmers with low productivity should be replaced with fewer but younger agropreneurs with higher agricultural productivity. Improved technology in the security services could reduce the number of workers and to retain a few higher quality workers to oversee the technology. Higher productivity in manufacturing and construction would reduce and supplant the over reliance on cheap foreign labour for its competitive advantage. Innovation and productivity measures will need to be eco-friendly and sustainable, with less wastages and damages to the natural environment.
2. Retrain and reskill workers from the impacted industries to other sectors that will emerge under the new demand and supply conditions. Examples can be public health, care services, green technology and large-scale R&D.

3. Attract the best minds into providing thought leadership in public health and education/ training sectors. These are the two main pillars for creating an agile, healthy and resilient workforce. Strengthen the economy by investing in the ecosystem (public and private entities) of these two sectors. Apart from the clear economic benefits to local citizens, it is also a 'pull-factor' for the international business community, where our public health system is viewed as highly accessible to all strata of society and competent in managing outbreaks and pandemics.

The above Item 1, Stage 2 reforms have been mentioned for many decades, but Malaysia has been lackadaisical in systematically injecting innovation into firms to ultimately strengthen the domestic supply chains. Innovation-left to its own devices will not flourish in firms, as was and is currently the case for Malaysia. Many economies have had the benefit of the government acting as an entrepreneurial state[1] in spearheading innovation within large-scale government funded research and development. These innovations spilled over to the domestic supply chains, which enables individual firms to capitalize on the general improved technology and privatize the gains. The logical progression will be firms that are better prepared for the new global value chains post-pandemic since its current practices are already at the required international standards.

Post-pandemic 'new economy' affords the opportunity for government to strike a strategic partnership with firms in many sectors. The government have started the 'protect and shield' funds during the MCO period. Further injection of funds will have to take place anyway since post-MCO warrants a 'new normal' for business practices; amongst others, social distancing will need a safer, heathier working environment for fewer workers with higher productivity. This will be the much-needed 'push factor' for all sectors to modernize.

As mentioned in Item 2, Stage 2, new industries will grow under the new supply and demand conditions. Our prognosis rests on industries that promotes green technology, public health, care services and general large-scale research and development (R&D). We also forecast that the protection of wild-life and natural resources (rivers and forests) as well as maintaining a safe and healthier physical environment in buildings will be the next growth poles for the creation of high value-added jobs.

Stage 2 reforms can be funded by the government through:

a) Government spending in individual firms for Item 1, these injections can be converted to equity in firms (non-voting preference shares) -impeding the slide into a centrally planned economy; and

b) Government spending in human capital for Item 2 and 3.

The paper sets out a strategic roadmap for the ease of transition from post-MCO to the 'new normal' for households and firms, based on improved living standards for the general public as well as the improved innovation in firms and the creation of new jobs for the new fields. For the latter, it is a 'win-win' situation for

[1] Mazzucato (2013); Cohen (2006)

both firms and government. This injection will provide the opportunity for Malaysia to embrace technological changes based on productivity gains in firms. This wide-scale approach creates strong domestic supply chains. For the former, higher returns based on productivity gains for firms enable higher pay[2] to workers under improved skills and working conditions. Higher pays will in evidently lead to strong domestic demand and the improved living standards for households.

Stage 1 – Protect and Shield: Easing Out from the MCO with the Right Behavioural Changes.

An all-of-government approach with the Ministry of Housing and Local Government (KPKT); cooperation with KPKT and local councils will ensure our buildings (commercial and residential) are equipped with better health and fire safety standards. The overcrowding of housing residents in cramp places is flouting both health and fire-safety building regulations; and highlights the failure of building maintenance policies[3].

- A poor housing environment paired with overcrowding conditions are commonly associated with higher rates of diseases[4]. Risk factors in the urban environment (i.e. poor sanitation, waste management, inadequate ventilation) contributes to vector proliferation and spread of diseases. A typical PPR in Kuala Lumpur consisted of at least 316 units per block with 17 floors. If the average household size is 4.6, then assuming if all units are occupied, approximately 1,455 people would be crammed all together in one building. Indeed, a study modelling the influenza transmission in Delhi found that areas with 'slum neighbourhood characteristics' (e.g. population density and estimated contact rates) significantly associated with larger epidemics earlier peaks[5]. We suspect this is also the case for Selangor Mansion, Malayan Mansion and Menara One Condominiums that housed foreign workers in overcrowding conditions. Overcrowding are also death traps for its residents in terms of fire safety. We proposed direct intervention by local councils to impose hefty fines for those landlords who flout public health and fire safety regulations in the country.

- Sanitation remains an issue for these high-density PPRs, low-cost apartments and other shelters provided to foreign workers. Given the current outbreak, it is imperative that sanitation efforts in the PPRs are intensified to reduce the risk of disease spread[6].

- As countries becomes more developed, more of its buildings are from the existing stock, in the ratio of 90 percent existing stock and 10 percent newly built buildings[7]. The failure for building owners to invest in systematic maintenance of their buildings will only create negative equity buildings and more public health and safety issues in the future. It is important for both the public and private sectors to start taking building maintenance seriously, and for KPKT to earmark this as the new growth sector for technical building professionals.

[2] This needs to be institutionalized in firms for the culture of innovation to thrive; where higher productivity is reflected in the larger share of labour's share of wages. Firms' retained profits are set aside for long-term developmental considerations rather than extracting companies' largesse for mainly private individual gains (Mokyr (2018); Mazzucato (2013), Jomo (2020)

[3] Puteri Marjan & Theebalakshmi (2020)

[4] Neiderud, C. J. (2015)

[5] Chen et. al (2016)

[6] The Federal Territories Minister, Tan Sri Annuar Musa urged the management committees of PPRs should 'take proactive measures such as maintaining the cleanliness of their respective flats or apartments'. (Adib Povera, 2020)

[7] Bon (2018)

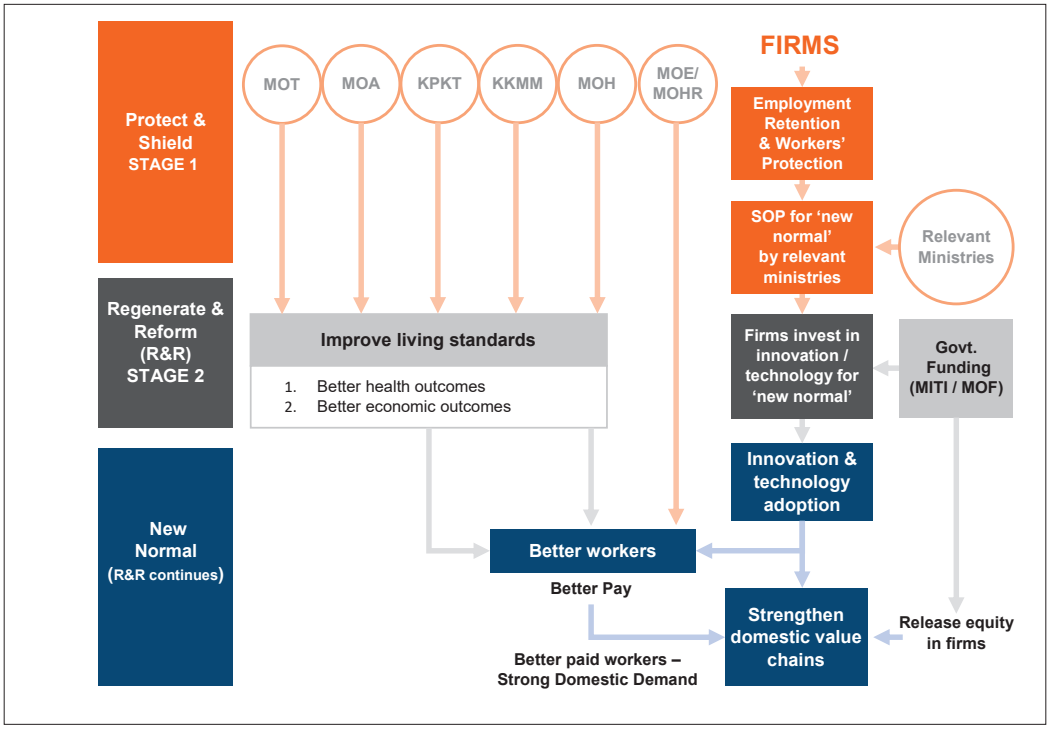

Figure 1: Initiatives to the New Economy

Stage 2 - Regenerate and Reform the Economy: Building the Pillars for a Sustainable Enhancement of the Economy

Post-MCO initiatives can be viewed as opportunities to realign structural reforms that are much needed. Figure 2: Share of total employment by economic sectors show that 63% are in the services sector.

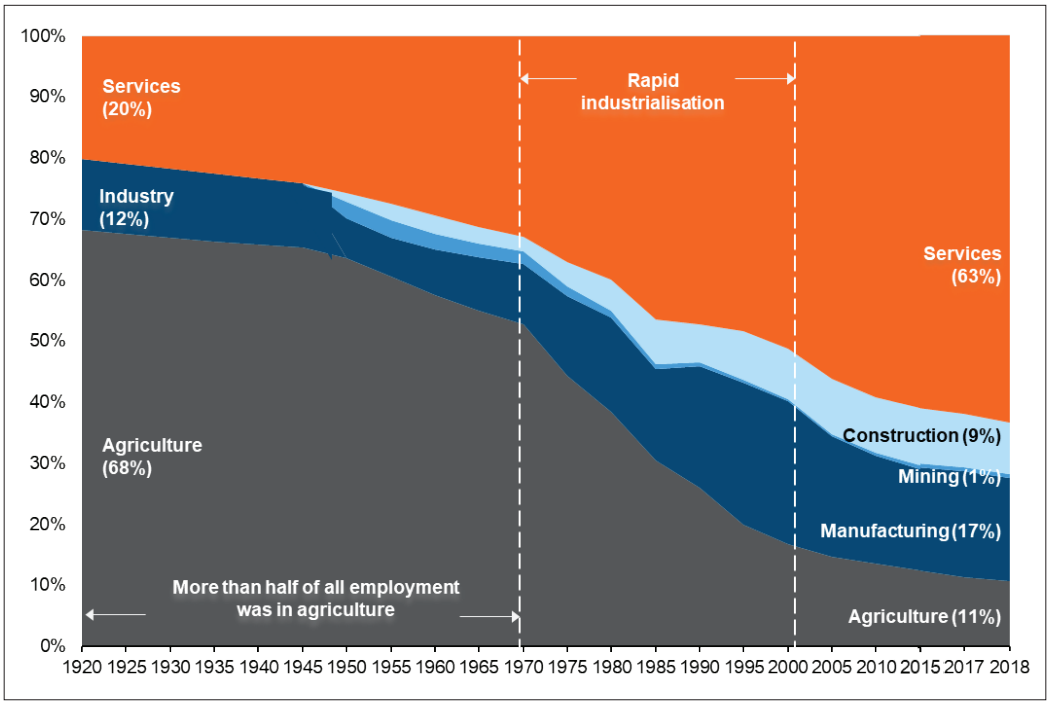

Figure 2: Share of Employment by Economic Sectors, 1920 – 2018
Source: KRI (2017), DOS (2018), DOS (2019)

However, upon closer scrutiny, only 14-15% of the private sector services are in the 'modern services' as shown in Figure 3: Modern services as a percentage of GDP. Indeed, these are the sectors that are least impacted by the MCO as well, as per Figure 4: Percentage of workers with increased hours, worked from home, or no impact due to Covid-19, by industry.

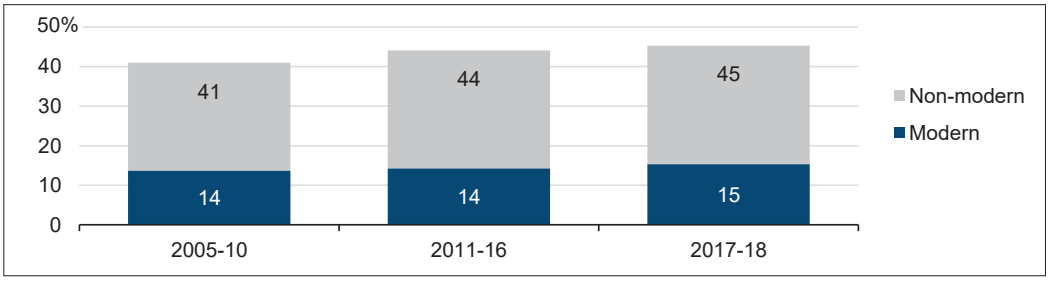

Figure 3: Modern Services as Percentage of GDP, Selected Years
Source: KRI (2017) and CEIC (n.d.). Modern Services Include Info & Communication; Finance; Insurance; Real Estate; Professional, Scientific & Technical Services.

This clearly indicates high value-added skills are more resilient but unfortunately our firms are not creating enough high skilled jobs. This can be seen by the Figures 4, where it clearly depicts the low-skilled, low productivity type of employments we have which are filled in by cheap foreign labour.

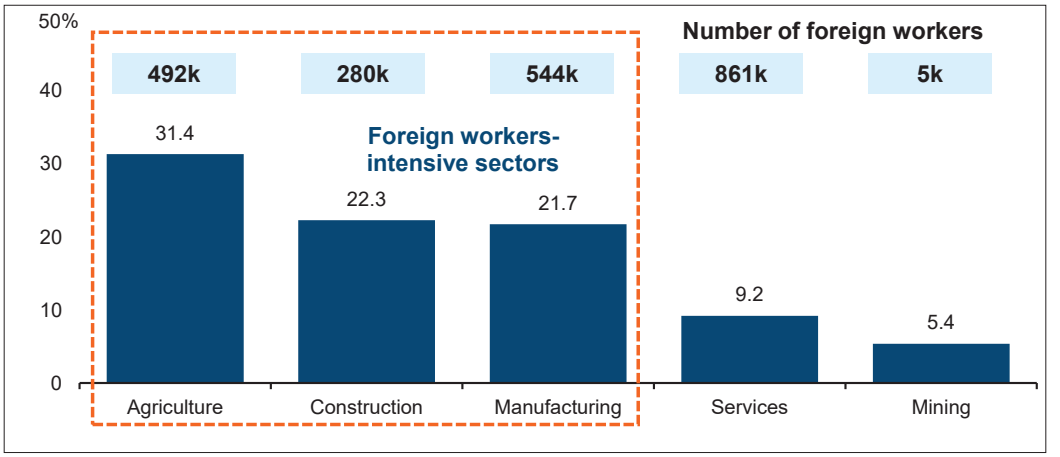

Figure 4: Share (From Total Employment) and Total Non-citizen Employment, by Sector, 2018
Source: DOS (2019)

The manufacturing, commercial agriculture and construction sectors are not increasing productivity based on increased mechanization nor innovation. This renders the opening of these factories and construction sites difficult due to practices that relies heavily on many workers along the 'conveyor belt'. Some firms are only willing to innovate due to multi-national-companies (MNC) or global-value-chains (GVC)'s demands to upgrade their products and workers environment as per demands of international standards. These were not executed based on the firms' R&D impetus as well as the domestic demand/ domestic supply chains.

We need to change the mindsets of firm owners to migrate out from the 'low-skilled, low pay' business model[8]. The post-MCO period affords the government the opportunity to intervene based on public health initiatives. For example, high-skilled workers on construction sites will reduce workers from ten to three persons. This will reduce our reliance on high numbers of cheap foreign workers. Similarly, a highly mechanized and productive agropreneur can be more productive than a few traditional farmers combined. Social distancing works well with improved technology and higher mechanization. Innovation-left to its own devices will not flourish in firms, as was and is currently the case for Malaysia. Many economies have had the benefit of the government acting as an entrepreneurial state[9] in spearheading innovation within large-scale government funded research and development. These innovations spilled over to the domestic supply chains, which enables individual firms to capitalize on the general improved technology and privatize the gains. The logical progression will be firms that are better prepared for the new global value chains post-pandemic since its current practices are already at the required international standards.

As shown in Figure 1: Initiatives to the New Economy under the heading for firms, the government has started 'protect and shield' funds during the MCO period. Further injection of funds will have to take place anyway since post-MCO warrants a 'new normal' for business practices; amongst others, social distancing will need a safer, heathier working environment for fewer workers with higher productivity. This will be the much-needed 'push factor' for all sectors to modernise.

[8] Khazanah Research Institute (2014)
[9] Mazzucato (2013); Cohen (2006)

The post-pandemic 'new economy' affords the opportunity for government to strike a strategic partnership with firms in many sectors. Stage 2 reforms can be funded by government through government grants for mechanization and innovation in individual firms. These injections can be converted into equity in firms (non-voting preference shares) -impeding the slide into a centrally planned economy. The option to 'release' the firms is presented in Diagram 1: Initiatives to the New Economy 1, when a strong domestic value chain is observed within the ecosystem. Innovation and high productivity will attract high-skilled workers, and in return, higher compensation to workers. It also ensures international benchmarks will be in place for workers' social protection. This is where the role of MOE and MOHR are intensified (as per Diagram 1). MOE - more for the creation of large-scale research and development in fundamental research for continuous innovation and mechanization of industries; whilst both Ministries' focus would be for the creation of an agile (inferring retraining and reskilling initiatives) and knowledgeable workforce. New industries will grow under the new supply and demand conditions. Our prognosis rests on industries that promotes green technology, public health, care services and general large-scale research and development (R&D). We also forecast that the protection of wild-life and natural resources (rivers and forests) as well as maintaining a safe and healthier physical environment in buildings will be the next growth poles for the creation of high value-added jobs.

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HUMANISING TECHNOLOGY FOR INDUSTRIAL REVOLUTION 4.0: BIG DATA APPLICATION IN REAL ESTATE

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ABSTRACT

Big data has been a very popular concept in recent years due to the rapid development in internet technology. The real estate sector has also been impacted from this new occurrence as the sector deals with knowledge, data and information; as such the management of data is very important. This is because real estate is heavily involved in decision-making processes such as determination of value, investment decision-making, taxes, building management, maintenance management and portfolio management. Traditionally in real estate, the human factor plays a major role in job functions. Nevertheless the capacity of human ability and knowledge is limited. Humans are able to produce complex decisions rather than an algorithm, but have limited ability to process high volumes of data known as big data (BD). The real estate sector has become more complex in recent days compared to a decade ago. It requires accurate data analysis in order to be credible in the decision-making process. Data in real estate derives from many resources such as purchase transaction records, material information, life-cycle assets and costings, utility consumption, expenses, and portfolio returns. The data comes with an element of risk, which depends on the aims and objectives of the job function. In the internet era, data has evolved to include more information from areas such as social media, digital pictures and videos, cell phone signals, among others. In the data management revolution under the Industrial Revolution 4.0 (IR 4.0), BD in real estate can be defined as data which has the characteristics of high volume, high velocity, high veracity and high value which transforms to be intelligence information. Nevertheless, the emergence of BD is believed will not be taking the role of humans in the future. How can humans play a major part in the innovation of data management in Malaysia? This paper will further discuss the role of humans in technology and the emergence of the BD concept in Malaysia to comprehend the requirements of IR 4.0.

Keywords: *Humanising, IR 4.0, Big Data, Real Estate, Technology, Malaysia*

1. INTRODUCTION

The real estate sector in Malaysia has contributed significantly to Malaysian economic growth. Total investment in the real estate sector in Malaysia has recorded approximately RM140 million worth of transactions, in 2017 compared to only RM38 Million in 2001 (see Figure 1). This has shown the significance of the property sector in Malaysia. In order to keep the momentum of performance of this growth, the real estate sector in Malaysia needs to evolve in line with the transformation in industry demands of IR 4.0. At the global level, real estate products have shifted from having traditional physical valuation methods and property management procedures, towards flexible, mobile, innovative and sophisticated products. For instance, residential property has shifted from just physical development into smart cities which heavily implemented technology. The digitalisation concept in real estate will bring new economic models and new democratic ways in the working lifestyle. Technology has also had an impact on the industry by replacing some job functions in real estate, face-to-face interactions as well as changing the workplace environment. For instance, property managers have found that they are losing working hours in terms of showing vacant apartments. This has been replaced by using technology tools such as videos and virtual reality. Other examples include the use of valuation systems to replace traditional methods such as Artificial Neural Network (ANN), Zillow, House Canary and Mass Appraisal. The use of these systems replaces human dependency in determining valuations. Inspections, which are synonymous with the valuer's job function, have already been replaced by drones and Geographical Information System (GIS).

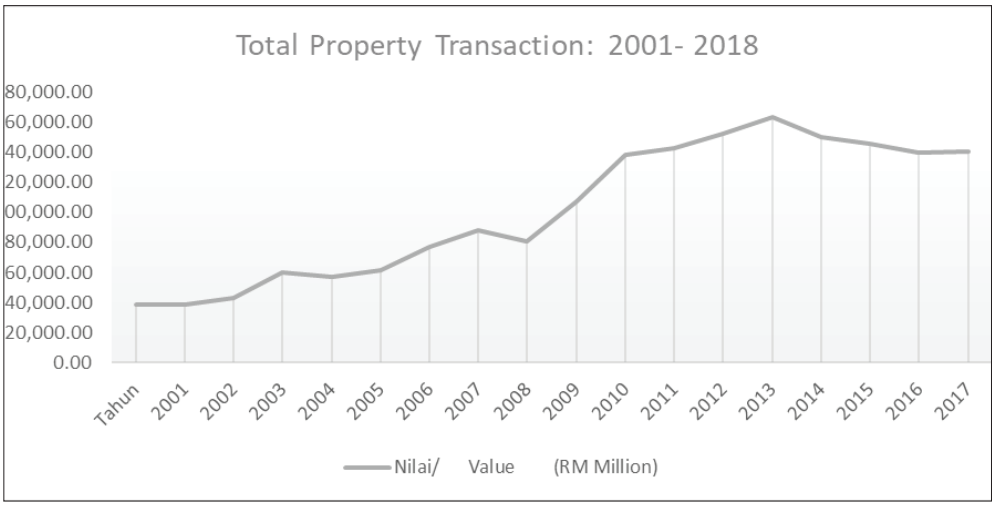

Figure 1: Total Property Transactions: 2001- 2018
Source: NAPIC 2019

The real estate sector at the global level has seen some innovation especially from the perspective of job functions, workspaces, job specifications and tools. It can be anticipated that in the future real estate will be dominated by technology applications such as artificial intelligence, BD and blockchain. It is believed that these technologies are relatively able to provide more relaxation time and therefore

people can focus on what the work-life balance really means. Therefore the real estate sector needs to add value due to the rapid change in technology by improving its products, business models, business strategies, innovation in property marketing, infrastructure upgrades and workplace conditions. This sector has seen several companies at the brink of collapse, especially in retail. Companies such as Mayer, Blockbuster, Toys R Us, Borders, Comet and Forever 21 have failed to respond to the changes in technology. These companies provide good examples of how disruptive technology can be, which leads to innovations being able to wipe out companies and retail property. On the contrary, companies such as Amazon, Facebook, Uber, Google, Netflix, Apple and Zalando are very quick to respond to the emergence of technology and manage to put aggressive plans into innovative business methods, business products and viability within the environment. These companies put less priority on property as a product but emphasise branding and culture. In addition, these companies are not focused in one region but established companies anywhere by manipulating technology workspace. With this development, the real estate world is at the turning point of transition with a profound and irreversible tilting of the real estate system in society and technology opportunities which can hardly be anticipated (Dijkastra, 2017).

Nonetheless the issue is whether technology is able to humanise people in the real estate sector. The introduction of the smart phone in 2007 has rapidly changed the way people do business, changed the way they interact, and has changed social and physical infrastructures. This includes the real estate sector which is currently in the process of redevelopment, modernisation and safeguarding (Jylha et al., 2019). According to Deloitte (2017), the real estate sector is going through a phase of deep change fuelled by a strong discontinuity from its cultural, social and demographic frameworks. Nevertheless according to the Global Proptech Survey (KPMG 2019), the real estate sector is at a moderate pace in terms of digitisation and automation, especially within job functions. According to the report only 58% of real estate companies are increasingly embracing digital technology while only 25% of respondents have a well-established data strategy that enables the capture and analysis of the right datasets (KPMG, 2019).

2. DISRUPTION IN REAL ESTATE

Disruption is a predictable pattern in all sectors where starts-ups use new technology to make it possible for something new and small to penetrate something existing and big in a short space of time (Vermeend & Smit, 2017). According to Veuger (2017), there are four phases involved in disruption, namely disruption, evolution, convergence and re-imagination of disruption. The research identified this phase of disruption and introduces a new product with a distinctive approach which is able to improve in state-of-the-art technology. This is followed by evolution where the proposition of value is based on the response of the respective industries. Convergence is an opportunity to broaden the customer base by attracting slow movers. The phase ends with the invention of the new product where newcomers in the market have a chance to take advantage of the market.

The new economy, led by technology, started many decades ago with the introduction of computers, which then evolved to the internet. The introduction of the smart phone has accelerated the new

economy concept to the digital economy. According to MDEC (2020), the digital economy refers to the actions taken by both the private and public sectors to adopt and utilise digital technologies to communicate with people, deliver goods and services and meet other core functions to raise productivity, revenue and income. It is estimated the global digital economy is now worth USD3 trillion.

The real estate sector has always been valued as an important commodity and pillar in nation economic growth. Nevertheless this sector has seen evolution which resulted from the impact from technology innovations. The IR 4.0 has shown the real estate sector that it is in need of innovation and parallels with consumer demand. The demand has brought disruption in real estate where property players need to anticipate trends in future consumer behaviour. For instance, the internet has reduced the demand for office space due to less demand in physical documents' storage space. This is due to the establishment of computing where all documents have been digitalised and saved in the cloud server. According to a report by Cushman and Wakefield (2018), office densification has shown that law firms signed leases that were 1/3 smaller space per employee than the previous lease. This indicates that the revolution in office space has had a significant impact on the demand in office property. The disruption in office property needs to be handled in order to ensure it will not have a spill-over effect on people, such as job losses and job functions replaced by computers. By not knowing the future demand or supply will make real estate value unpredictable and consequently creates volatility in the market. Retail property has had major disruptions with technology. Furthermore, according to Conway (2018), the number of real estate areas includes data analytics and platform applications that connect buyers and sellers, borrowers and lenders, customers and legal documents, customers and valuations. These areas are able to be replaced by an automation system which is driven by Artificial Intelligence (AI) application and can be replaced by algorithms rather than people-generated value.

The introduction of e-commerce has resulted in giant companies (as mentioned in the previous section) actively engaged with online retailers. Technology is able to provide options to consumers in terms of their shopping experience and products. Figure 2 illustrates a recent study by Zebra (2020) revealing that most of the global respondents (73%) preferred shopping lifestyle through mobile phone applications. More than half of the respondents were also more comfortable with online payments such as e-wallet, smart phone paying and cashless cards.

Figure 2: 2020 Study on Shopping Preferences
Source: Zebra, 2020

The evolution in office property is really concerning developers, governments and investors. According to a report by Yang et al. (2019), since 2010 flexible office space has been growing at an average rate of 23% per annum. A flexible office concept will allow companies to use space on a part-time basis with other facilities such as gymnasiums, conference rooms and cafés. In the US flexible office space has been offered by companies such as Regus, Spaces and WeWork. In Malaysia companies such as Komune, Uppercase, Worq, The Co and Nook are offering flexible working space in very strategic locations in Kuala Lumpur. These companies use emerging technology by offering an alternative workplace strategy. It can be anticipated in future that within the modern workplace, the ratio of space per full time employee is no longer based on square feet but will be based on the optimum space required and the function of the facilities. According to a recent study by JLL (2020), the modern workforce is also fluid due to alternative workplace strategies such as work-from-home arrangements, co-working and flexible working hours.

Disruption in the real estate sector has also occurred in the property management area. The task performed by humans, especially in buildings and operation management, has been taken over by smart home technologies, smart phone applications, remote security systems and robotics for cleaning and maintenance. This will have a significant impact on the number of available jobs in property management. Any disruption to drive the property management job function with job growth will have a significant impact for future employment. The disruptive in property management needs

to move away from pure operational management of the buildings to a more holistic approach, which requires knowledge that must be equipped among all stakeholders.

The disruption in real estate has not always had a negative impact on the real estate sector. It has also been able to create opportunities for industry players. For instance, the high demand in e-commerce will need the supply chain to be more effective in order to meet consumer demand. Supply chains need to be innovative: for example the process to deliver a product from raw needs to be sped up by using modern manufacturing technology to ensure the demand is able to meet the supply. The spill-over effect from innovation within the supply chain is increasing demand for distribution centres in major cities. In the US, Amazon has turned abandoned malls into distribution centres which are normally located in prime and easy access areas. Innovation in office property also indirectly makes office property players become more flexible in standard lease agreements. A flexible working space will require landlords to commit to long-term leases with tenants and they will also need to understand the agreements in terms of benefits and regulations. It is believed that office property will have a more significant impact from the disruption of real estate. According to a report by CBRE (2019), the office property vacancy rate in the Klang Valley area has steadily increased since 2015 with worrying over-supply conditions in 2019 (estimates) (see Figure 3). Although there is no evidence this over-supply condition is due to the disruption from technology, nevertheless for the Malaysian office property market, innovation in office property is highly necessary with the current condition. Office property players have to contemplate current trends in office property. At the global level, there has been a significant increase in growth of co-working spaces since 2015. Table 1 shows data on year-over-year growth of the number of co-working spaces and members worldwide. Without any innovative mechanism to overcome oversupply in the office market, it will lead to a high unemployment rate. According to Manyika et al. (2017), a weakness of the application of the IR 4.0 may occur in 2030 due to there being as many as 400 million to 800 million people worldwide having to find new jobs. As technology will disrupt the real estate sector in terms of space demand, change must focus on the innovation of space management.

Figure 3: Major Performance Indicators of Office Property in Klang Valley, Malaysia
Source: CBRE 2019

Table 1: Annual Supply and Demand of Office Property in the Klang Valley Area

	2015	2016	growth %	2017	growth %	2018	growth %
Number of co-working spaces	8900	12,100	35.96	15,500	28.10	18,900	21.94
Number of members	54,500	89,000	63.30	127,000	42.70	169,000	33.07

Source: Deskmag (2017)

There are other perspectives where the rise of technology will bring about disruption in the real estate sector. The real estate sector has to overcome the current process of supporting high quality data input. The basic element for high quality data is infrastructure to support the latest technology such as the introduction of 5G. Failure to support the rapid changes in technology could significantly make disruption in real estate become worst. In Malaysia although the internet penetration is high among Asian countries, nevertheless internet speed is among the slowest. With the growth of technology, especially in real estate related areas such as banking, commerce and services, the use of smart phone applications in business transactions is emerging; therefore internet speed is crucial to support these developments. According to a report by Khan (2018) on the readiness of future network cyber infrastructure in Malaysia, Malaysia requires a quantitative change in old telecommunication management plans which are well beyond the deployment of the 5G spectrum. This is required to meet the demand for responsiveness, emergence of massive data intelligence based applications which requires highly capable and reliable cyber infrastructure. Although Malaysia is quite slow in adapting innovation in real estate, the real estate sector is constantly moving and the readiness to adapt with advanced technology needs to be observed, in particular with infrastructure and facilities.

3. HUMANISING TECHNOLOGY

Humanising technology is highly related with how people live and work in a new way. To integrate the concept of humanising technology in real estate is to handle the demand and requirements for space and how it is used. The smart solution to harmonise between humans and technology in the real estate sector needs to be reconciled in order to minimise the impact of technology on humans. At the moment, the real estate sector still finds the best way to humanise technology. The disruption of technology on the real estate sector will make supply chains work more efficiently and integrated, which consequently will make less space, less cost and less time. Furthermore, the redevelopment, modernisation and safeguarding of the existing real estate sector are the current topics which are receiving broad scale attention and interest (Jylha et al. 2019). The integration of technology into the property sector is known as PropTech (Property Technology). The field is undergoing a transformation that will affect all related activities from the management of properties to the search for new houses and goes all the way to complete domestic digitisation (Battissti et. al. 2019). Nevertheless the benefit from technology to the real estate sector has not yet reached its maximum potential, as what has happened in other areas such as medical and engineering. According to Battissti et al., (2019) although

demographic and cultural changes will increasingly lead to an evolution of the organisational and operational models of real estate companies, the nature of these developments will still reflect more traditional, longstanding structural, strategic and operational features of the industry. Real estate has to continuously be an industry based on personal relationships. However, as this sector has been long established, the data that feeds the information becomes more significant in the decision-making process, especially for investors. As for governments, the data is very useful in making policies that aim to stimulate industry development. Furthermore, the co-modification of real estate which started as stand-alone assets, through Real Estate Investment Trusts (REITs), securitisation and increased interest from public and private funds, has raised the bar in terms of expectations, transparency and technological literacy (Winson-Geideman, 2018). In valuations, tax assessments and appraisals are in demand to handle many cases which require mass appraisals; paving the way for the Automated Valuation Model (AVM). Nevertheless in Malaysia, the use of AVM is still in the low percentage. Surveys among valuation firms in Malaysia on their automation level within the company has shown that 88% of companies are still at the semi-automation phase with letters, files, file cabinets and papers still widely used in the valuation job function (see Figure 4).

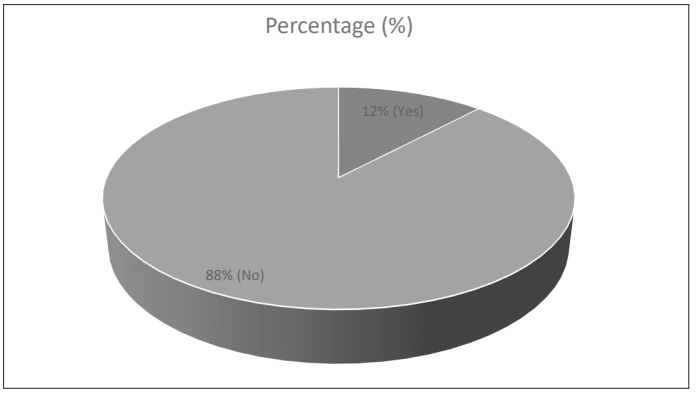

Figure 4: Automation Level Among Valuation Firms in Malaysia

Nevertheless this could provide benefit to the real estate industry in Malaysia to create a more humanising element from evolution in technology. The Malaysian real estate sector is not ready to adapt to the technology that has been designed from overseas, especially from developed countries. Technology has emerged from a very different environment, situation and affordability context than it finds itself in today. Technology has been enforced by IR 4.0 at the global level because it was perceived that all countries need to embrace technology, otherwise the industry will become defunct. However in the face of paradigm shift in terms of evolution in technology, many property players retreated due to several limitations such as knowledge, skills and practice. It has been said that technology will diminish many jobs in the future. There is convincing evidence that the combination of humans and technology has not been a total success. The potential of technology to increase productivity and quality of work is itself still in doubt. What can be seen with the rapid development of technology into the real estate sector is the neglect of basic human issues in the design and system. For instance AVM increases the output of valuation reports; nevertheless the system reduces the skills required by the lower group of employees, whilst increases the skills of the higher group

to control subordinates in the organisation. This will create the lower group in the organisation there are left without necessary skills. The lack of behavioural research before creating the technology or system will have a negative sentiment among people. Furthermore the design of technology is more technology-driven rather than cost-driven. The system has been created due to capability rather than job function needs. To make the system more humanistic it is necessary to recognise the negative implications on human needs and behaviour, as well as the cost and benefits. It needs to involve more stakeholders to understand the requirements for the system in the organisation by taking into account lower groups of employees.

With the evolution of technology in software and hardware, it seems to diminish the ability and function of humans in real estate job functions. Technology has created new boundaries between people rather than erasing the previous ones. The internet has transformed Malaysia to be more digital; where all government agencies and private companies set up their own websites and repository systems. Nevertheless the excitement of designing a website relies on technology itself, not humans. The majority of websites are still confusing, with designs and applications not being user-friendly. No doubt that the internet has bought radical revolution to technology which has impacted on people's way of life. It started with websites; and popular applications of technology have transformed to more sophisticated technology such AI, Blockchain, BD and Virtual Reality (VR). These technologies have the power to relieve people from traditional labour works to carry out tasks with greater speed, scale and accuracy which are beyond human capability. These sophisticated technologies will bring opportunities that need to be embraced and leveraged for the benefit of humans. The technology is already here and humans cannot simply turn their backs on the power and potential of these technologies.

For the housing industry, technology should be based on the human experience rather than processes or policy. This can result in serious issues for affordable housing. With the vast amounts of data available to all housing stakeholders, several problems should be able to be resolved, such as construction materials, demand and supply equilibrium, land matters and financing. It is important for the housing industry stakeholders to humanise technology rather than using technology to compound a process or policy. Furthermore, digital does not only bring technology in terms of software and hardware but also makes it capable of making things as easy as possible from the human perspective. In strata management, it is critical to deliver services by using technology platforms to be more personal and provide a human experience for tenants. Technology for strata management such as remote security systems, remote maintenance systems and mobile apps for management and administration must be armed with insights and expectations from the customers. The technology must be involved with accelerating the pace of solution management, testing early and learning quickly from customer feedback.

Nevertheless Malaysia is still making a great effort to meet the demand of the IR 4.0; therefore there are certain aspects in technology that needs to be revised. Humanising technology in real estate should look into the fundamentals of human needs, namely knowledge and personal ability, human relationships and safety. The real estate market in Malaysia is moving towards a mature market. As a

result it contains lots of data that needs to be transformed into knowledge. Previous industrial phases have emphasised more on knowledge, which created a knowledge-based economy. The knowledge-based economy has created rapid development of databases. The integration of Information and Communication Technology (ICT) and databases has transformed the computer system compatibility and interface to be more intelligent. To humanise the intelligent revolution in the technology, humans must control the technology by upgrading their own knowledge.

In principle, knowledge can create shared values in technology by taking different states of nature into technology. This is done by humanising and democratising technology and design, and also design of information-sharing systems for lower-level job classes. Furthermore, technology is supposed to prioritise people and at the same time offer communities better services. For instance, technology is able to facilitate a fairer taxation system, ensuring the rights of the community in a new digitalised society, equality in the privacy of personal data and technology without any differences. In addition, technology must be sustainable. For instance technology would be expected to solve the climate change issue especially in achieving Sustainable Development Goals (SDG) by the United Nations (UN). The use of technology must be economically and socially sustainable, synchronised with social cohesion, preserving cultural diversity, improving human quality of life, empowerment and democratic values.

Nevertheless what will happen to the millions of people who are affected by jobs that are replaced by these sophisticated technologies? Neglecting the needs of people in technology development will make people agonise. In the digital transformation which is based on the internet, these technologies are the disruptive elements in technology which lead to the disappearance of jobs. However these technologies are also revenue opportunities and create new jobs. For instance the use of smart phone applications has created new services such as Uber, Grab, Food Panda and home businesses. Other areas in the real estate sector will also see a substantial increase in unemployment numbers, such as office property. Office automation will remove some of the traditional jobs such as key punchers, data entry clerks and secretaries. What needs to occur now is that the personnel in these areas update their knowledge which requires almost similar skills but in the medium of technology. As soon as these groups of personnel are almost non-existent they will gain more knowledge, therefore gaining power and access to better jobs. Furthermore, the government must not be fully blamed for high unemployment due to office automation; blame also needs to be cushioned at the micro-level in organisations from the aspect of quality of work. Early involvement from employees can minimise the effect from office automation, which requires skills to recognise and motivate to adapt to technology in a working culture. Consequently the aim to humanise technology in the sector is able to be achieved.

4. BIG DATA APPLICATION IN REAL ESTATE

In the previous section, discussion has touched on the element of disruption of technology to the real estate sector and how the industry is able to cope with the uprising of technology. Historically, the sector presents as an early adopter and the industry as a whole has tended to be conservative, characterised by a very gradual evolution (Battisti, 2019). Changes in the sector have been seen as rapid at the global level, which means that the Malaysian real estate sector will eventually not be

able to avoid the evolution of technology. The need for markets to evolve will force property players to equip themselves with knowledge which could be embedded in the sector. Nevertheless the real estate operational model will still reflect the fundamentals that are based on traditional, longstanding structural, strategic and operational facets. Therefore it is necessary for the industry to implement technology that is capable of supporting the job function process in handling large amounts of data. This is due to the real estate industry always having to be faced with risk. Risk management is a methodological system, proactively using adequate processes, methods and tools (Sienou et al., 2006).

BD has now become a new field that requires information and integration of information systems. The evolution of BD has attracted both academic and professional experts. This field represents the latest developments in the field of electronic business nowadays. BD is the industry's hottest keyword (Waller & Fawcett, 2013). In the business industry in Malaysia, it has also shown the need for the use of BD in business decision-making and improving efficiency. It is a quantitative information explosion generated by human behaviour on the internet and social media that has attracted the attention of companies, academics and the business press.

In today's society, data is more valuable as it keeps all the dimensions of company information and needs to be kept in good order. However, this data is meaningless without the ability to analyse and produce results. Successful companies make decisions based on the facts and information available. Every business needs to create a strategy and be clear about the information required to achieve goals set. Data has been growing since the development of technology and social media. The development of this data is a good evolution if each party makes use of the data that can profit a business. The Figure below shows data growth from 2008 to present (Forbes, 2020) at 40% compound annual rate; reaching as much as 45 zettabytes (ZB) in 2020. To highlight from Figure 5 below, poor data management can cost up to 35% of business operating revenue.

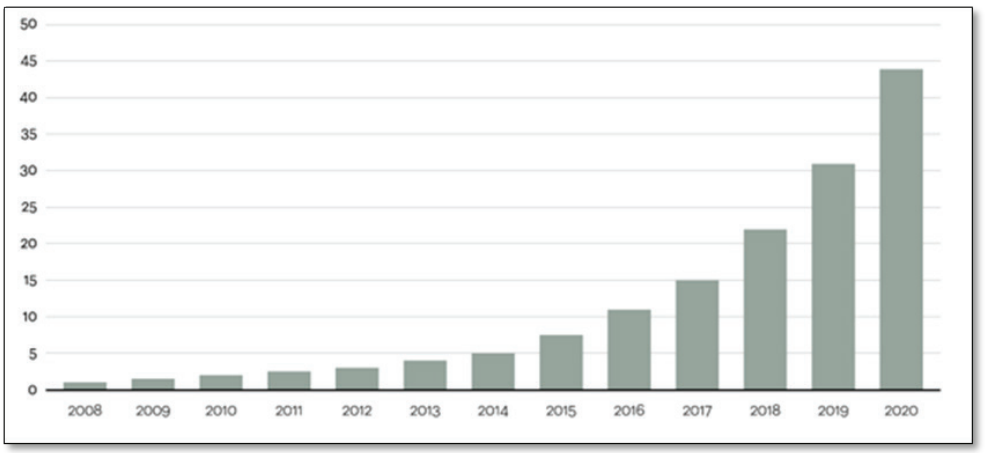

Figure 5: Growth of Data in Zettabytes (ZB)
Source: Forbes 2020

BD offers great potential to governments for areas such as cost savings, improved services and occupancy insights. The real estate information can be transformed into valuable recommendations for top officials, administrators and the public about how facilities are being used, how efficiently the assets operate, and to identify potential liabilities and opportunities in advance. Additionally, centralised information can bring clarity to a complex portfolio of multiple sites, building types and oversights. For many governments, seeing the whole picture is an enormous challenge because facilities may be centrally owned and managed or leased by individual agencies and departments. A centralised data management system can reveal insights that save money and suggest new ways to serve constituents, as well as inform traditional buy, sell, lease and occupancy decisions. The initiative will make it easier to allocate land to its highest and best use, creating new development opportunities (CBRE, 2019).

There are lots of complex datasets involved in real estate. Namely the data of rental, inventory, assets, people, operational, geographies, pricing, retail data, office data, locations, materials etc., therefore it is vital for property players to have a better platform to handle more complex and unstructured data. Those enormous sizes of data with variations and complexity brings new revenue models and vast spaces for the development of BD in property management (Du et al., 2014). There are areas of job functions in real estate that are able to elevate by utilising the concept of BD due to its high relationship with data management. There are areas that BD is able to enhance efficiency in property management activities such as:

i. Analytics in building automation systems
ii. Automation in property management job functions
iii. Machine learning in real estate marketplaces
iv. Price analyses for housing
v. Customer's preferences
vi. Office automation
vii. E-commerce for retail

Given the relative new concept of BD in real estate, the implementation must at least have a significant impact on the real estate job function, especially for government assets and facilities. The aim is to find the most reliable data to make data-driven decisions and more effectively meet the needs of the public. As stakeholders look to data and analytics to help achieve more efficient delivery of services and better program outcomes, investors will be a critical force behind developing enterprise strategy for delivering effective data and analytics' programs. Nevertheless, the challenges and barriers must be taken into account as it will be a large and time-consuming undertaking. This is where humans are able to play a vital role to ensure BD will use people in a major role instead of taking over the job function.

The approach of BD in real estate needs to recognise the role of the humans at its core function. BD applications will not just recognise the elements of the data but also the individual equipped with knowledge and skills. If the BD system fully recognises the value of the job function, both parties, namely technology and humans, need a greater focus. The use of BD in the industry needs

knowledgeable employees who are able to leverage the value of the data. For instance, in the housing industry, the function of the BD model is capable of analysing customer preferences, behaviours and outcomes, which are difficult to predict in reality. The human side of the BD technology is to understand how people perceive problems, use the information, suggest ideas and provide knowledge. As the real estate industry is always about people, to therefore understand how humans operate is essential. For instance, the social aspect in property management will shape property managers to handle the issues of property management in strata buildings. Data scientists may play a major role in BD systems. Nevertheless the role played by social scientists will remain important for the data to leverage more value, depending on the purpose. Consequently the combination of data scientists and social scientists will create customer insight teams, eventually humanising technology through BD applications to achieve results in the real estate industry.

5. CONCLUSION

This paper highlights the aspect of humanising of technology, and focuses on the real estate industry in Malaysia. The perspective of discussion emphasises the disruption of technology to real estate areas. It suggests humanising technology in order to keep a balance of the impact of technology on the industry and the opportunity of using the BD concept in real estate job functions. The movement of technology into the real estate industry is unable to be stopped, which places risk on the industry and makes it vulnerable. Therefore in order to get the full benefit from technology, industry players need to recognise the advantage that humans could identify from it. Specifically, by recognising the potential use of technology it is possible to redefine the process, also with advantages from the perspective of humanising the technology. In examining the practical implications of technology to the real estate industry, the viewpoint must be from different disciplines in real estate, namely valuations, property management, estate agencies, appraisals and asset management. In addition, the stakeholders involved in the real estate market, such as investors, sellers and buyers are all human. If technology is able to balance the need for the market and technology it will be able to make the market more secure. This is able to be achieved because technology offers important opportunities in assessing real estate risk in the decision-making process.

The effect of technology must rely on the involvement of people in order to remove their resistance to change. Effectiveness refers to the success of technology in terms of final implementation and operation. Technology is not supposed to be blamed if people are not able to find balance in terms of benefit from the perspective of humanising the technology. Disappointment in technology is not inherent in the technology itself. The disruption in the technology can be transformed into opportunities where the enhancement of the skills is a good justification for employees to demand salary upgrading. The automation strategies will bring new position known as system analyst where employees need to advance their skills into more analytical rather than clerical areas.

The term humanising in technology, which puts people and social as main elements, could also be known as socio-technology. The implementation of technology inevitably has a significant change to society and industry. A research effort is needed in the field of humanising technology to match

that in the hard science area, which only emphasises on product. The way decision-makers look into technology need a paradigm shift where more attention should be given to the element of humans in technology and organisations. Furthermore, employees need to begin to humanise their job functions to become more aware of the application of technology and stop being unresponsive to changes. The attitude to accept technology's behaviour and role can take part where eventually technology is able to become human being rather than human doings. Technology will not be able to replace humans, as humans can evolve with the technology. Humans need to upgrade their knowledge from the aspect of increasing digital culture. Machines and technology have been created to serve and assist humans and not the other way around.

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THE SIGNIFICANCE OF REAL ESTATE IN UNIVERSITY ENDOWMENT FUND PORTFOLIOS

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ABSTRACT

University endowment funds have a key role in providing opportunities for universities beyond their normal budgets (eg: student scholarships, additional professorships etc). In many cases, these university endowment funds are significant pools of assets; eg: Harvard ($39 B), Yale ($30 B), Stanford ($28 B) and Princeton ($26 B) in the US, Oxford (£7 B) and Cambridge (£6 B) in the UK and Sydney University (A$2.5 B) in Australia. This often sees separate investment management organizations established to manage these assets. The significance of these university endowment funds to university operational budgets highlights the importance of the portfolio asset mix of these endowment fund portfolios; this includes real estate. This sees a range of alternate asset classes (eg: private equity, hedge funds, venture capital) as key assets in many university endowment fund portfolios. This paper examines the operation of university endowment funds and the role of real estate in the portfolios of the leading university endowment funds globally. With university endowment funds taking on increased importance in Asia, a range of critical strategic issues are assessed for these university endowment fund portfolios; particularly in the context of the current COVID-19 crisis.

Keywords: *University endowment funds, philanthropy, asset allocation, real estate, alternate assets, COVID-19*

1. INTRODUCTION

University endowment funds are a pool of philanthropy and donations to universities that are a critical source of university income to supplement their normal operating budgets to fund student scholarships and additional professorships etc. Leading university endowment funds include Harvard ($39 B), Yale ($30 B), Stanford ($28 B) and Princeton ($26 B) in the US, and Oxford (£7 B) and Cambridge (£6 B) in the UK. The effective investment of these funds is of crucial importance, as they are multi-generational funds to support ongoing university activities.

This paper will explore the significance and operation of university endowment funds globally; including their asset allocation strategies and the role of real estate in their portfolios. Their increasing importance in universities in Asia will also be discussed. The impact of COVID-19 on these university endowment funds will also be highlighted.

2. SIGNIFICANCE OF UNIVERSITY ENDOWMENT FUNDS

2.1 Significance

University endowment funds are an important income source to universities to fund a range of activities, including student scholarships and professorships. They are the aggregation of the many donations and philanthropy to the university; eg: Harvard has over 13,000 such donations in the Harvard University Endowment Fund. In most cases, these donations are for a specified university function.

The extent of these university endowment funds depends on the philanthropic "culture" of the country. While many countries have a strong philanthropic culture for donating to the arts, social issues, medical research, environmental causes and religious causes, some countries also see significant donations to universities. This is particularly the case in the US amongst the private universities, such as Harvard, Yale, Stanford, Princeton and MIT.

These university endowment funds have a key role in providing an extra income source to the normal operating budget of universities to support activities such as student scholarships and additional professorships. In many cases, they provide one of the main income sources in the university budget; eg: Harvard (35%) and Yale (32%); often being the major income source to the university.

An essential element of these university endowment funds is capital preservation where the capital can not be eroded. This is to meet the donors' requirements that the funds be used to support future generations of students, not just the current generation of students. This sees the income stream from the endowment fund coming from the investing of this capital; hence asset allocation becomes a critical issue for these endowment funds. Real estate is one of the assets that figures prominently in many of these asset allocations for endowment funds.

The assets under management (AUM) for these endowment funds often sees separate investment management companies established to manage the assets, being separate to the normal university finances. Typically, once the AUM exceeds $1 billion a separate investment management group is established for more effective asset management. There is a strong governance structure established, involving a Board of Trustees, Investment Committee and professional investment team at the operating investment management level. The spend rate is typically 4-5%; but this needs to be from the generated income stream, not by eroding the endowment fund's capital.

This sees endowment funds operating at three strategic levels; fund-raising, spending and investment. COVID-19 has had a clear impact on these university endowment funds; impacting AUM and income returns on these assets.

2.2 Fund-raising Strategy

Typically, donors indicate specific conditions for how their donation can be used. This includes funding student scholarships and additional professors. Given the importance of these endowment funds to university budgets, most universities have increased their focus on employing high-quality fund-raising teams to increase the AUM of these university endowment funds. Donors want their donations to be used to support future generations of students; hence they are seen as long-term investment funds and supporting inter-generational equity. The endowment donation can not be withdrawn, but can be made in a series of staged payments.

2.3 Spending Strategy

To meet these donor-specific goals of supporting specific activities, the spend rate is typically 4-5% pa. This highlights the asset allocation in the portfolio and asset returns needed; as these activities are funded off earnings, not capital erosion. So to meet the requirements of a spend rate of 5%, expected returns on the portfolio would typically need to be 5% (for spend rate) + 2% (for impact of inflation on asset value) +1% (for re-investment); giving an overall expected portfolio return of at least 8% pa to meet these requirements.

2.4 Investment Strategy

University endowment funds use sophisticated investment management strategies, including professional teams and rigorous risk management procedures. This sees the Board of Trustees overseeing management and asset allocation, the Investment Committee making the strategic investment decisions, and the professional investment management team delivering the strategy. For example, the Yale Endowment Fund have 30 professional staff in their investment management team. As they are long-term investors, liquidity is not a critical issue in their asset allocation decisions; as such, the asset allocation in the endowment fund is typically a mix of liquid and illiquid assets.

The level of AUM in the endowment fund is critical in impacting the asset allocation; particularly in terms of diversification and number of asset classes used. Typically, this sees external fund managers used; eg: with AUM of over $1 billion, over 100 external asset managers would be required by the endowment fund; for AUM less than $250 million, around 25 external asset managers would be required.

Recent years have seen a strategic shift in the asset classes used; eg; using the "Yale model". This has seen a shift from the traditional domestic stocks and bonds portfolio to an international portfolio including alternate assets such as private equity, hedge funds, venture capital, real estate and natural resources. This sees a larger number of asset classes and higher allocations to these alternate assets used today to deliver this investment performance. ESG concerns have also taken on increased importance in recent years; particularly concerning the divesting of fossil fuel stocks in the fund's portfolio. Subsequent sections of this presentation will examine the asset allocation of specific leading university endowment funds to highlight their asset allocation strategies.

3. PREVIOUS RESEARCH

Compared to the level of research on pension funds, the level of research on university endowment funds is limited. Key issues such as performance, asset allocation strategies, manager selection, decision-making, success factors and asset management have been assessed in various finance journals. No previous research has specifically assessed real estate in their portfolios. Industry reports have also been produced (eg: CFA, Sutton Trust, NACUBO), as well as books involving specific university endowment fund portfolio strategies (eg: Yale, Oxford).

4. US UNIVERSITY ENDOWMENT FUNDS

The major university endowment funds are in the US; particularly in the US private universities. The National Association of College and University Business Offices (NACUBO) produce an annual survey of over 770 US university endowment funds to produce a snapshot of this sector. The leading US university endowment funds are Harvard ($39.4 B), University of Texas* ($30.9 B), Yale ($30.3 B), Stanford ($27.7 B), Princeton ($26.1 B), MIT ($17.6 B), Pennsylvania ($14.6 B), Texas A&M ($13.5 B), Michigan ($12.4 B) and University of California* ($11.8 B), where University of Texas and University of California represent multi-university systems.

This sees over $650 Billion in US university endowment funds in 2019, with 5 university endowment funds having in excess of $25 B, 13 having in excess of $10 B and 111 having in excess of $1 B. In 2019, over $23 B was the annual spend to support university budgets; being a spend rate of 4.5% of AUM to support student financial aid (49%), professors (11%), campus facilities (7%) and academic programs (17%). This accounted for 6.6% of university operating budgets; although this varied considerably across universities. 2019 endowment fund performance was 5.3%, with 5-year performance being 5.2% pa, 10-year performance being 8.4% pa and 25-year performance being 7.9% pa.

Those endowment funds with more significant AUM were able to access more asset classes, a wider range of fund managers and a greater depth of investment for more effective asset allocations. In particular, the average asset allocation was:

- Stocks: 35.2%; comprising US stocks (14.1%) and non-US stocks (21.1%)
- Fixed income: 11.7%
- Private equity/managed alternates: 39.0%; comprising private equity (12.3%), managed alternates (19.1%) and venture capital (7.6%)
- Real assets: 12.3%; comprising real estate (5.9%), mining/energy (4.4%), agriculture/ timberland (0.6%)
- Cash: 1.7%.

4.1 Yale University Endowment Fund

The Yale University Endowment Fund is a leading US university endowment fund and highlights many of the issues captured in this presentation; particularly the role of real estate in the endowment fund's portfolio.

The Yale endowment fund is #3 in the US, having $30.3 B in AUM; managed via a separate investment management company. 2019 saw $1.4 B allocated to the Yale operating budget; seeing a spend rate of 4.6%. This saw the Yale endowment fund contribute 32% of Yale's operating budget; being the largest contribution to Yale's operating budget. 82% of these endowment funds are for specific purposes; eg: professors (24%), scholarships (18%) and special purpose (28%); only 18% of the Yale endowment fund donations are unrestricted in their role. 2019 performance by the Yale Endowment Fund was 5.7%, with 11.1% pa over the last 10 years, 11.4% pa over the last 20 years and 12.6% pa over the last 30 years. The "Yale model" is seen as the classic university endowment fund model, particularly relating to the asset allocation mix. The Yale endowment fund has grown from $1 B to over $30 B over the last 35 years, comprising original donations, new donations and asset growth.

The 2019 Yale endowment fund asset allocation is US stocks (2.7%), foreign stocks (13.7%), bonds/cash (8.4%), leveraged buy-outs (15.9%), venture capital (21.1%), real estate (10.1%), natural resources (4.9%) and absolute return (23.2%). This sees 73% of AUM allocated to the alternate assets. Importantly, real estate makes up over 10% of the portfolio of the Yale endowment fund.

Other leading US university endowment funds also see significant levels of real estate in their portfolios. This includes Harvard, Stanford, Princeton and MIT.

5. UK UNIVERSITY ENDOWMENT FUNDS

The UK university endowment funds are dominated by Cambridge (£6.9 B) and Oxford (£6.1 B); comprising 81% of the total £16.1 B in UK university endowment funds. Other leading UK university endowment funds include Edinburgh (£460 M), Kings (£258 M), Manchester (£238 M) and Glasgow (£202 M). This sees only Cambridge and Oxford having in excess of £1 B in their endowment funds. The annual spend is approximately £650 M from these UK endowment funds.

5.1 Oxford University Endowment Fund

The Oxford University Endowment Fund is #2 in the UK, having £4.1 B in AUM; being managed via a separate investment management company and representing 40 major investors. The 2019 spend rate was 4.25%, seeing over £781 M distributed for university operations since 2009. The Oxford endowment fund had delivered 8.1% pa over the last 3 years, 9.6% pa over the last 5 years and 9.2% pa over the last 10 years. The asset allocation comprises public equity (53%), private equity (23%), real estate (8%), credit (8%) and cash/bonds (8%); seeing less diversification across the asset classes compared to the Yale Endowment Fund. Importantly, real estate accounts for 8% of the Oxford endowment fund portfolio.

6. AUSTRALIAN UNIVERSITY ENDOWMENT FUNDS

The Australian university endowment funds account for over A$15 B in AUM. Leading university endowment funds include Sydney (A$2.5 B), Monash (A$2.5 B), UNSW (A$2.5 B), ANU (A$1.4 B) and Melbourne (A$1.3B), with 5 endowment funds having in excess of A$1 B in AUM. This sees an annual spend of approximately A$600M to support a range of university activities.

6.1 Sydney University Endowment Fund

The Sydney University Endowment Fund is #1 in Australia, having A$2.5 B in AUM and being managed as a separate investment management company. The 2019 spend rate was 4.5%, seeing over A$110 M generated to support university activities. 2019 performance saw a return of 12.0%, with 9.2% pa delivered over the last 5 years.

The asset allocation was stocks (35%), private equity (25%), debt (24%), derivatives (4%), real estate (1%), infrastructure (6%) and cash (2%). Whilst real estate only accounts for 1% of the endowment fund AUM, other real estate assets including commercial property, farmland and student housing investments are used to support the core teaching and learning functions and are managed internally.

7. ASIAN UNIVERSITY ENDOWMENT FUNDS

Endowment funds in many of the leading Asian universities will take on increased importance going forward. This includes universities in Malaysia (eg: University of Malaya), China (eg: Tsinghua University, Peking University), Hong Kong (eg: University of Hong Kong), Singapore (eg: NUS), Japan (eg: University of Tokyo) and South Korea (eg: Seoul National University). These university endowment funds will be essential income streams to support crucial university activities for future generations of students; particularly in the quest for increased global rankings.

8. REAL ESTATE INVESTMENT STRATEGIES IN UNIVERSITY ENDOWMENT FUNDS

University endowment funds use a range of real estate investment strategies. These are largely influenced by their AUM and experience in real estate investing, and include:

1: direct real estate
2: separate accounts
3: JV/club deals
4: non-listed real estate funds
5: REITs/ listed real estate securities
6: real estate fund of funds.

Clearly, the larger university endowment funds have more flexibility in their depth of investing in real estate and accessing high quality real estate fund managers. Typical levels seen for real estate in the major university endowment funds are 5-10%; although some leading university endowment funds have higher levels of real estate in their asset allocation; often being those that have higher exposure to the alternate asset classes in their asset allocation. These levels of real estate in endowment funds tend to be marginally higher than that seen in pension funds.

9. UNIVERSITY ENDOWMENT FUNDS AND COVID-19

Universities have been significantly impacted by the global COVID-19 crisis with income short-falls; particularly relating to reduced intakes of international students. The obvious question is can these university endowment funds be used to cover these income short-falls? It is important to recognise that these university endowment funds are not “rainy day” funds; but have a specific focus to meet strategic long-term goals for current students and future generations of students via activities such as student scholarships. This sees the vast majority of these university endowment funds as being fixed in how they can be expended. As such, these university endowment funds can not generally be used to offset the impact of COVID-19.

Possible options for universities that impact on their university endowment funds in terms of dealing with COVID-19 income shortfalls are:

1: increase the spend rate
2: deploy flexible mandate endowment funds

3: sell-off real estate
4: fund student scholarships first
5: use previous discretionary funds
6: change focus of current-use funds
7: deploy unspent endowment funds.

10. IMPLICATIONS

University endowment funds have taken on increased importance in recent years globally as an important additional source of income for universities to fund essential activities such as student scholarships etc. Often using separate investment management companies, they employ sophisticated investment strategies. This sees the asset allocation process as fundamentally important for income generation in delivering the investment returns needed to support these activities. This has seen many of the leading university endowment funds increase their exposure to the alternate assets such as private equity, hedge funds, venture capital and derivatives. Importantly, real estate is seen as an important asset class in many university endowment funds as an effective asset class to help university endowment funds deliver the necessary returns to achieve their long-terms goals in supporting the current generation and future generations of university students.

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Specific details of 2019 activities of the various university endowment funds discussed in this paper were obtained from their respective websites.

APPROACHES AND PRACTISES TO OVERCOME CHALLENGES IN WAQF LAND DEVELOPMENT

Mohd Arif Mat Hassan[1], Anuar Alias[2], Siti Mashitoh Mahamood[3] and Feroz De Costa[4]

ABSTRACT

Waqf land is a religious-related property donated by a donor as a voluntary charitable act, which turns into a foundation for a country's social and economic development. In Malaysia, it is placed under the jurisdiction of the State Islamic Religious Councils (SIRCs). The SIRCs are responsible as the exclusive trustee to govern, manage, and develop these lands for the benefit of the Ummah. This study aims to explore the approaches to overcome issues and challenges in waqf land development. This qualitative study has systematically reviewed the literature of waqf land development approaches and practises in Malaysia and analysed the subject matter according to the related themes and variables. This study has established that the SIRCs are faced with several challenges, such as insufficient funds and unsystematic management. The practical development approaches that can be implemented by the SIRCs have been tabled in this article. These approaches and practises can overcome the issues and challenges faced by the SIRCs in developing waqf land.

Keywords: *Waqf, Land Development, Islamic Real Estate, Islamic Social Finance, Systematic Literature Review*

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1. INTRODUCTION

1.1. Background

Land is a limited resource, and it is one of the main factors of production. It plays a large role in economic growth and to satisfy humans' unlimited needs and wants. Rapid developments lead to a high demand for land. Hence, it should be managed effectively within the scarcity of land setting. Effective management will unlock the value of the land to its highest and best use. This study focuses on developing sacred land known as waqf land by the State Islamic Religious Councils (SIRCs) or "Majlis Agama Islam Negeri".

The SIRC is a sole trustee of waqf land in each state in Malaysia according to The Federal Constitution's Ninth Schedule, List II (State List). The SIRCs explicitly administrate the waqf land in Malaysia. According to Islamic law, they are authorized to manage the waqf land within their state jurisdiction with the best standard of practice and suitable management system. Previous literature have raised several issues, and challenges faced by the SIRCs in developing land under their jurisdiction. Various efforts have been taken by the SIRCs and other recognized institutions to overcome these challenges, but not all of the SIRCs are able to perform well in developing waqf lands.

Besides the SIRCs, there are federal agencies involved in waqf land development in Malaysia. The agencies under the Prime Minister's Department which are highly involved with the SIRCs are Jabatan Wakaf, Zakat & Haji (JAWHAR), and Yayasan Wakaf Malaysia (YWM). These agencies support the SIRCs in accomplishing the potential of waqf development in a more orderly and efficient way. It is noted that these agencies are more of an active complementary agency and is not an actual authority because in Malaysia, land is a state matter. JAWHAR and YWM have embarked on several projects in collaboration with the SIRCs to develop waqf land. According to JAWHAR, there are a few high impact waqf projects that have been established in various states in Malaysia.

The estimated amount of waqf lands according to YWM as recorded by the SIRCs are around 30,889 hectares (Mahmood, Mustaffha, Hameed & Johari, 2017) and less than 10 per cent have been developed (Abu Bakar, Hussain & Hamed, 2017). The worth of these waqf lands are approximately RM111,413,890 (Hamid, 2015). Although the SIRCs do have a vast amount of possible lands to be developed, however, a big number of these lands are still not being developed and are in idle. It has been reported that about ninety-nine per cent of these lands are currently undeveloped (Mohammad, 2009). Various efforts have been taken by the SIRCs and other recognized institutions to overcome these challenges but not all of the states are able to perform well in developing waqf lands. The SIRCs must ensure that preventive measures are undertaken in handling these idle lands (Mahamood, 2006).

It is imperative to study about land development that "belongs" to the SIRCs. This study involves the issues and challenges together with the approaches and practises of waqf land development under the jurisdiction of SIRCs. The aim of every SIRC is to ensure that the administration and management is in a systematic and effective manner for the benefit of the Ummah. The SIRCs have been playing their roles to develop the waqf lands through various initiatives and approaches with the standard of practice and appropriate management system. Unfortunately, the great potential of this land has yet to be materialized (Puad, Rafdi & Shahar, 2014). The potential of waqf can still be explored and optimized for better outcomes.

1.2. Objective

The objective of this study is to explore the issues and challenges in developing waqf land and to determine approaches and practises used by the SIRCs in Malaysia in developing waqf land under their jurisdiction.

2. LITERATURE REVIEW

Prior studies have attempted to unravel the idle waqf land issues (Noor & Awang, 2013; Mat Rani & Mohd Sha'ary, 2012; Qayoom, 2015), but the issues remain. Hence, a study was needed to be conducted to establish the critical challenges and possible solutions in fostering waqf lands. It shall be a key factor for the SIRCs to become successful trustees. The revenue gained from the development of these lands would be carefully utilized accordingly in creating an advantage for the Ummah.

Religious matters that are concentrated by the SIRCs cover a wide area of Islamic administration including Syariah courts, Islamic family law, fatwas, enforcement, prosecution, conversion, religious education, mosque, baitulmal, zakat, fitrah, waqf etc. These include the significant role of SIRCs as trustees in managing waqf lands. Registered waqf lands are under the authority of the SIRCs as the sole trustee (Sayin, 1998; Mat Rani, 2006). The SIRCs act as the exclusive authority in guarantying that the land is accurately administered and resourcefully managed. This is to ensure that, these lands will be able to gain significant returns and to fund any altruistic activities (Mahamood, 2005).

A waqf land is a piece of land donated by the donor as a "voluntary charitable act that becomes a source of fund for the social and economic development. It aims to establish a charitable scheme in improving the welfare of the less privileged segments such as the poor, insolvent, needy, orphans, widows, and so on. It has strict principles such as perpetuity, inalienability, and irrevocability" (Cizakca, 2006).

Generally, there are two (2) types of waqf i.e. "Waqf Am and Waqf Khas. Waqf Am refers to any form of waqf dedication aimed at general welfare without specifying any beneficiary (individuals or organisations/institutions) or a specific purpose. This category of waqf is applicable to things or objectives directed towards general social welfare and charitable purposes. In contrast, Waqf Khas is a type of waqf with specified beneficiaries or purposes" (Mahamood, 2001).

The SIRCs hold the accountability to manage the waqf land. These include the power to develop the said land. The number of waqf lands recorded has been increasing over the years. In 2013, there were 4,524 lots of waqf land with a total area of 11,092 hectares worth RM99,329,171 (Isamail, Rosele & Ramli, 2015). In 2015, it had gradually increased to 5,740 lots with a total area of 16,751 hectares worth RM111,413,890 (Hamid, 2015). A recent study by Mahmood et al. (2017) tabled the staggering increase to 14,356 lots with a total area of 30,888.9 hectares. This huge number however does not include the unrecorded Waqf land. There are approximately 30 per cent of unrecorded waqf lands (Ismail, Salim & Ahmad Hanafiah, 2015) and the actual size, location and ownership are remained unknown (Mahamood, 2006).

3. METHODOLOGY

This research used the content analysis as the qualitative approach. Qualitative content analysis is defined as "any qualitative data reduction and sense-making effort that takes a volume of qualitative material and attempts to identify the core consistencies and meanings" (Patton, 2002).

A systematic literature review (SLR) method has been used in this study. Research through literature review can be described as "a form of research that reviews, critiques, and synthesizes representative literature on a topic in an integrated way such that frameworks and perspectives on the topic are generated" (Torraco, 2005).

There are four (4) phases involved in conducting SLR. The phases are concisely explained in this section:

Phase 1: Selection of Databases

Prominent databases were identified in the first phase. Scopus and Web of Science (WoS) databases were used in this study. These databases were considered because these databases are robust and cover many areas of studies related to this research, including social science, arts, and humanities, economics, finance, business, management, Islamic studies, etc.

Phase 2: Keyword Search Configurations

The articles selected involve the identification of keywords and the search configuration was developed. The keywords search were constructed to cover the databases identified in Phase 1. In total, 51 articles were retrieved from the Scopus and WoS databases in this second phase of the systematic review process. The keyword sets and search configurations are as follows:

Scopus:
TITLE-ABS-KEY ("Wakaf Land" OR "Waqf Land" OR "Awqaf Land")

WoS:
TS = ("Wakaf Land" OR "Waqf Land" OR "Awqaf Land")

Phase 3: Articles Filtered: Acceptance and Rejection

Phase 3 encompasses the filtering of articles. The articles were filtered for duplication and 13 duplicated articles were omitted. The process was further refined for the remaining articles and 38 abstracts were then reviewed for the inclusion and exclusion criteria.

The review focused on the publication date, language, subject area, and specifically on the articles written in the areas of land development under the SIRCs jurisdiction. The acceptance and rejection criteria is outlined as the inclusion and exclusion criteria.

The articles were included in this SLR were published between 2009 to 2019 using the English language. The articles were scholarly full paper that were available and focused on waqf land development in Malaysia. Articles that were published before 2009, not written in English, full paper were unavailable, unrelated to Malaysia, and not related to waqf land development were all excluded.

Phase 4: Analysis

After filtering, 16 articles remained and were then carefully assessed. After reading the abstracts, the data were obtained. Next, the themes and sub themes were detected by exhaustively reading the full articles. The qualitative analysis was then executed by the means of content analysis to identify themes related to waqf land development in Malaysia.

The articles were then further analysed through a coding process based on common characteristics. Thematic analysis was used to determine the appropriate themes and the sub-themes. The articles were analysed using a sophisticated qualitative data analysis software called ATLAS.ti which finds all the keywords and phrases related to the subject matter.

This approach looks for patterns, threads, constructs, and commonalities and this data analysis technique enables the identification of key issues and challenges discussed in the articles using coding, grouping, and networking. The related themes are issues and challenges (IC) and approaches and practises (AP).

The whole process of the SLR is shown in the diagram below:

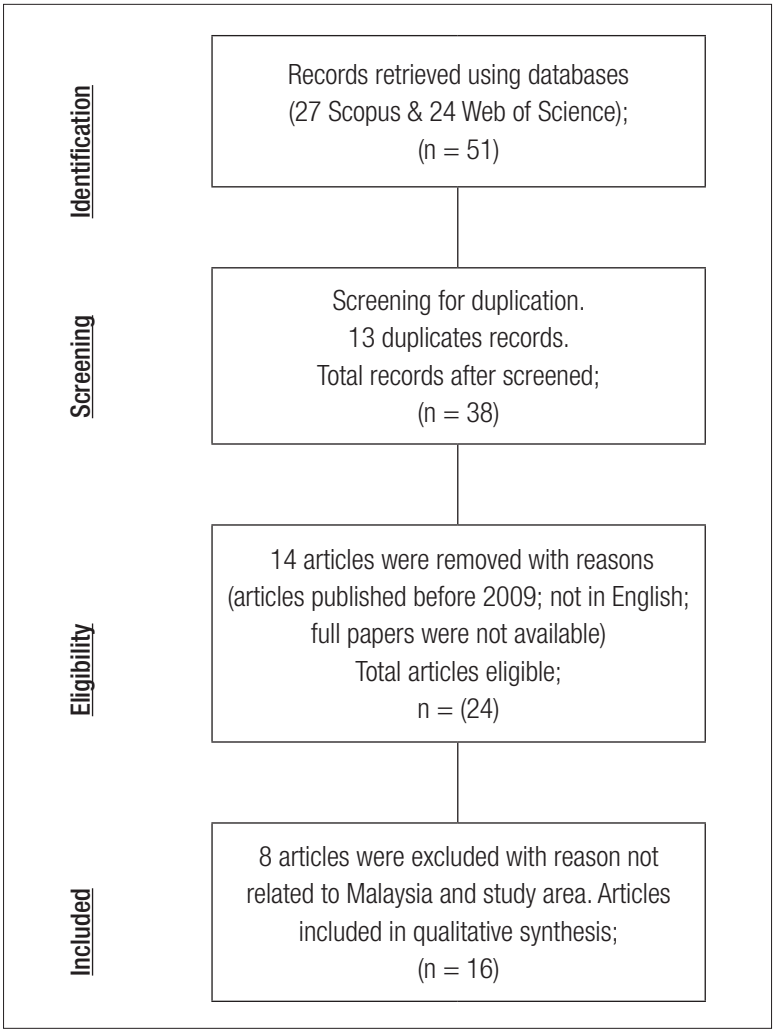

Figure 1: SLR Process

4. RESULTS AND ANALYSIS

4.1. Results

This research has been able to provide results from the qualitative data analysis using Systematic Literature Review (SLR) with the assistance of the ATLAS.ti software. 16 full articles have been assessed and coded according to the themes.

The list of the 16 articles according to the titles are as in Table 1.

Table 1: List of articles used in the SLR

No.	Title of the articles
1.	"A Comparative Study of Waqf Management in Malaysia"
2.	"Acquisition of Waqf Lands by The State Authority: A Case Study of Land Acquisition in Terengganu"
3.	"Administration and Management of Waqf Land in Malaysia: Issues and Solutions"
4.	"Adopting Al-Hikr Long Term Lease Financing for Waqf And State Lands in Malaysia To Provide Affordable Public Housing"
5.	"Application of The Build, Operate, Transfer (BOT) Contract as A Means of Financing Development of Waqf Land: Malaysian Experience"
6.	"Classification and Prioritization of Waqf Lands: A Selangor Case"
7.	"Compulsory Acquisition of Waqf Land by The State Authorities: Compensation Versus Substitution"
8.	"Cooperative-Waqf Model: A Proposal to Develop Idle Waqf Lands in Malaysia"
9.	"Developing Waqf Land Through Crowdfunding-Waqf Model (CWM): The Case of Malaysia"
10.	"Factors Influencing the Adoption of The Crowdfunding-Waqf Model (CWM) In the Waqf Land Development"
11.	"Factors Influencing the Behavioral Intentions of Muslim Employees to Contribute to Cash-Waqf Through Salary Deductions"
12.	"Integrated Framework for Development on Waqf Land in Pulau Pinang"
13.	"Maqasidic Approach in The Management of Waqf Property: A Study with Reference to Malaysian Contemporary Issues"
14.	"Modeling Crowdfunders' Behavioral Intention to Adopt the Crowdfunding-Waqf Model (CWM) In Malaysia: The Theory of The Technology Acceptance Model"
15.	"Substitution of Waqf Properties (Istibdal) In Malaysia: Statutory Provisions and Implementations"
16.	"Waqf Private Property Trust Fund as Property Unlock Initiative"

Further analysis of the publications from year 2009 to 2019 found that there is no article related to this study indexed in Scopus and Web of Science in the year 2009, 2012, and 2014. The average number of articles published is less than two articles annually and the highest number of articles published is four for year 2015 and year 2018.

The number of articles according to year of publication are as follows:

Table 2: Number of Articles According to the Year of Publication

Year	Number of articles
2009	0
2010	1
2011	1
2012	0
2013	1
2014	0
2015	4
2016	1
2017	3
2018	4
2019	1
Total	**16**

Source: ATLAS.ti Analysis

This study has identified six themes related to the issues and challenges. The breakdown of these issues and challenges according the number of articles is as follows:

Table 3: Waqf Land Issues and Challenges Discuss in The Articles

No.	Issues and Challenges	Number of articles
1.	Undeveloped, idle & inactive	14
2.	Funding & financial issue	11
3.	Human resource issue	5
4.	Management & administration issue	5
5.	Law & legislation issue	4
6.	Land matters & criteria	3

Source: ATLAS.ti Analysis

Sixteen selected articles have been systematically analysed. This study has identified four themes related to the waqf development tools and practises in Malaysia. The breakdown of these themes according to the number of articles is as follows:

Table 4: Waqf Land Development Approaches And Practises Discussed In The Articles

No.	Approaches & Practises	Number of articles
1.	Joint-venture & Partnership	2
2.	Government Assistance	4
3.	Public Participation	6
4.	Internal Management	4

Source: ATLAS.ti Analysis

4.2. Analysis

The analysis on the issues and challenges faced by the SIRCs in developing land under their jurisdiction were made according to the selected literature gathered from the SLR process. From this SLR, we discovered the approaches and practises used by the SIRCs to overcome these issues and challenges.

4.2.1 Issues and Challenges (IC) in Waqf Land Development

The highest number of issues is related to the theme of undeveloped, idle, unproductive, underutilised, unattended, and slow rate of development of waqf land in Malaysia. This is followed by funding and financial issues. The human resource issue theme shared the same percentage as the management and administration issue theme. The least issue discussed in the assessed articles were related to land matters and criteria. Nevertheless, issue related to law and legislation was also discussed by a quarter of the total number of articles.

IC1: Undeveloped, Idle & Inactive Waqf Land

There are 30,889 hectares of waqf land in Malaysia (Mahmood et al., 2017). According to Datuk Anan C Mohd, the former Director of JAWHAR, there are 11,091.82 hectares of undeveloped waqf land. It consists of 4,836.5 hectares of Waqf Am and 6,255.32 hectares of Waqf Khas. The SIRCs have a large amount of potential waqf land to be developed but many of these lands still remained not developed. Concurring to Datuk Dr. Sohaimi Mohd Salleh who was the former Director of JAWHAR, revealed that about ninety-nine per cent of the waqf lands are presently lingered idlily.

IC2: Funding and Financial Issues

The most discussed and mentioned challenge is regarding the insufficient funds and financial aid. This is the most critical issue and has been widely discussed among the

scholars. According to the former JAWHAR Director Datuk Dr Sohaimi Mohd Salleh, waqf lands remain undeveloped, mainly due to the shortage of financial resources (Mohammad, 2009).

The SIRCs faced challenges in completing the development plans because of the scarcity of mainly financial resources whereby some SIRCs do not even have the chance to develop the land under their jurisdiction because of this funding and financial issue. The shortage of financial resources and insufficient capital have hampered the waqf land developments. This is primarily due to the revenues received from the waqf land which will be entirely spent on a variety of payments involving the maintenance, repair, management, and administration of waqf properties which occasionally surpass the revenue of waqf. Moreover, a percentage of the profits are required to be spent on assorted taxes. Some other influences that affects the financial troubles include the SIRC's issue of not being able to lease out the land at a competitive rate and their failure to systematically collect rent arrears from their renters.

IC3: Human Resource Issue

Human resource and expertise are related to the person in charge in the whole supply chain land development and decision making within the SIRCs. It is also involving the support staffs and the administration staffs, and not only limited to the mutawalli. This study has identified that the SIRCs have issues related to human resource and expertise. There is an absence of workforce in managing the lands (Ismail et al., 2015) and imbalance organisational structure, which operates with limited staff and knowledge. The lack of knowledge in this study refers to the knowledge related to financial knowledge, administrative and land development, commercialization, and business development.

The lack of expertise and professionals, constraint the undertakings of research and planning, financing, and the application of viable, and money-making development plans (Ismail et al., 2015). In some cases, the individuals in charge for land development were found to be unqualified and incompetent (Abdul Rashid et al., 2017; Mohd Ali, Ahmad & Ahmad Mahdzan, 2015). Due to this lack of professional support, these lands will be left deprived of fitting short-term or long-term development projects (Mokhtar, 2015).

A recent study by Md Saad et al., (2017) found that the SIRCs employed professionals that are untrained and are unable to perform their job tasks and responsibilities in handling land under their jurisdiction. The SIRCs have inadequate staffs to supervise the projects of waqf land developments. Nevertheless, the SIRCs are still hesitant to hand over their powers in developing the lands which is due to sensitive concerns such as the loss of the influence of the state and each state's ruler or identified as the Sultan.

IC4: Management and Administration Issues

The human resource issue is highly related to the management and administration issue. The shortage of professional staffs and competent manpower is one of the weaknesses in managing the waqf land in the SIRCs, resulting in inefficient management and administration. The shortage of officers has resulted in the administration of waqf land to be inadequately managed (Abdul Rashid et al., 2017; Abdul Jalil et al., 2019).

Another component in the limitation of waqf land development is the poor management. The lingering struggles in the administration and management of waqf land in Malaysia have constrained and hindered the project developments. This is primarily because of the red tape and absence of transparency in managing the waqf land which have prohibited input of ideas towards the development of waqf land and have affected the purpose of the SIRCs as the only trustee of waqf within Malaysia.

In all the states, the SIRCs have mostly confronted the related setback that is inefficient waqf management. Issues of management and administration by the institution contributed to other issues and problems which eventually led to other challenges such as bureaucratic management issues.

IC5: Law & Legislation Issue

There are certain rules and regulation that must be followed and adhered to when dealing with land development especially land under the SIRCs' jurisdiction. This is a notable challenge because the development of waqf land involves the Shariah law and land law. Various legal systems are used in connection with waqf land legislation. Ab Hasan et al., (2015) noted that there is an existence of conflict of jurisdiction between Shariah and conventional system which has resulted in the ambiguity and impediment towards the land development process. Currently, each state has their own rules and regulation involving land and because land is a state matter.

Every state has the authority to endorse their individual waqf laws which is not subjected to the federal law. Some of the states do not have an independent enactment, however they are still implementing the Islamic Religious Administration Enactment of the Federal Constitution, that limits just a third of the Muslims' wealth, can be endowed. The absence of standardisation of waqf laws among the states in Malaysia has caused disparities in terms of process, procedure for issuance of fatwa, understanding of laws and waqf affairs. The lack of legal necessities for the management of waqf in the past had ensued in the ineffective and unsystematic management of waqf land.

IC6: Land Matters & Criteria

The least issue discussed is related to land matters and criteria. Issues and challenges related to land matters and criteria involve a few elements and factors such as physical, size, shape, legal right and ownership, location, value, and record of registration of land title. The lack of comprehensive databases concerning these criteria and other pertinent data have impeded the waqf land developments.

It is imperative that any issues related to land matters and criteria to be solved before embarking into land development. Several prior studies have found that it is difficult to trace and identify the land under the SIRCs jurisdiction due to these issues (Mokhtar, 2015; Isamail et al., 2015; Mohd Ali et al., 2015; Abdul Rashid et al., 2017).

4.2.2 Approaches and Practises (AP) in Waqf Land Development

Regarding the approaches and practises, most of the articles used in this study discussed the public participation in waqf land development. Beside self-initiatives, the SIRCs also involved the government in assisting them to develop waqf land. There are four (4) articles discussed these approaches. Only two (2) articles highlighted joint-venture and partnership in their article.

AP1: Joint Venture and Partnership

The SIRCs have established smart partnerships or joint ventures in developing land under their jurisdiction. This joint ventures and partnerships have been done with interested parties such as individuals, federal department, state agencies, corporate institutions, financial institutions, and private firms in monetary forms and sharing expertise. Joint ventures between the SIRCs and the interested parties is based on the principles of mudharabah or musharakah. These principles enable the parties involved to receive profit according to the agreed ratio (Abdullah & Meera, 2018; Abdul Jalil et al., 2019).

This joint venture and partnership with an interested party can be initiated because the SIRCs do not have to contribute huge capital because it acts as the 'owner' of the land. There are two (2) local and one (1) overseas examples of joint-venture projects highlighted. The first example is JV between the SIRC of Penang (MAINPP) with UDA Holding Berhad in developing housing schemes in Seberang Jaya, Pulau Pinang (Pitchay, Thaker, Mydin, Azhar & Latiff, 2018). The second example is JV between SIRC of Federal Territory (MAIWP) and Lembaga Tabung Haji subsidiary (TH Technologies) in developing a purpose-built office known as Menara Imarah Wakaf in Kuala Lumpur using a Built-Operate-Transfer (BOT) contract (Mohd Noor & Yunus, 2012). The overseas example given by Pitchay, Meera & Saleem (2015) is the joint venture between King Abdel Aziz waqf (KAAW) with Bin Laden Group under a BOT contract in developing ZamZam Tower

in Mekkah which consists of a shopping complex, a shopping mall, and hotels. These joint ventures involved financial institutions in financing the projects.

AP2: Government Assistance

Government assistance can be through funding the capital and facilitating the land development in terms of advice and expertise. The majority of the works of literature point out that SIRCs are having a significant challenge in developing land under their jurisdiction because of the insufficient fund and lack of expertise (Abdullah & Meera, 2018; Awang, Hamid, Nazli & Lotpi, 2017; Salleh, Hamid, Harun & Ghani, 2015; Thaker & Pitchay, 2018).

The federal government of Malaysia has established Department of Awqaf, Zakat, and Hajj (JAWHAR) and Yayasan Wakaf Malaysia (YWM) to coordinate the development of waqf properties by the SIRCs. It also helps, facilitates, and complements the SIRC efforts in improving the efficiency and effectiveness of waqf administration, management, and development. JAWHAR & YWM are also responsible for observing and assisting the SIRCs development projects if the project fails to complete due to a shortage of financial resources and expertise. These entities are responsible for administering and managing matters specifically related to waqf (Thaker & Pitchay, 2018).

According to JAWHAR, their JV programs with the SIRCs called Waqf Property Development Program has a total of 17 large scale and high impact projects involving a total cost of RM290.25 million with a total land area of 23.771 hectares. These JVs is funded by the federal government using the Malaysia Plan (RMK) allocation. Th federal government becomes the main source of funding for the SIRCs for developing waqf land through many projects and developments. (Thanker & Pitchay 2018). JAWHAR has also published several manuals for the SIRCs to improve their knowledge and practises. Six (6) manuals and guidelines have been produced to streamline the process and procedure of land development by SIRCs. The notable manual is 'Waqf Lands Administration Manual 2010' (Harun, Hamid, Salleh & Bidin, 2017).

AP3: Public Participation

Besides government assistance, public participation is equally important in waqf land development. Federal Government had allocated some budget through the Malaysian Plan for the SIRCs, but the amount of budget allocated is inadequate to develop a huge amount of waqf land (Abdul Jalil et al., 2019).

Participation from the public can be done through contribution in terms of monetary (cash). Cash waqf is considered as a crowdfunding method because it pools money

from the public to fund waqf land developments (Isa, Ali & Harun, 2011; Abdul Jalil et al., 2019; Thaker & Pitchay, 2018). The cash waqf concept received a soft reaction from the public but it was found to be more realistic to practice since it can be done in any amount and it is low compared to endow property or land as waqf (Abdul Jalil et al., 2019). Cash waqf can be done online and offline at various platforms of the SIRCs.

The public can also participate through corporate waqf by buying shares issued by corporate waqf entities. In Malaysia, the first corporate waqf was established by Johor Corporation's (JCorp) by offering its company's shares as waqf in 2006. Meanwhile, the SIRC of Selangor (MAIS) issued the Selangor Share Scheme with the same purpose which is to elevate public participation in cash waqf by purchasing the share units (Isa et al., 2011; Abdul Jalil et al., 2019).

AP4: Internal Management

The SIRCs can self-develop lands under their jurisdiction using internal funds and expertise. The development project can be managed internally. Normally the type of development involve is a small-scale project such as constructing single-storey shops or bazaars for rental. The internal funds within the SIRCs' jurisdiction are money from rental of premises, cash waqf from the public, proceed from istibdal, zakat fund allocation, etc. (Harun et al., 2017; Hisham, Jaseran & Jusoff, 2013; Salleh et al., 2015).

Some of the SIRCs have established subsidiary known as "Perbadanan" or "Corporation" which are responsible for administering and managing matters related specifically to waqf. The states that have established the entities are Selangor, Negeri Sembilan, and Johor. MAIS has established a subsidiary called Perbadanan Wakaf Selangor (PWS) in 2011, which specifically focuses on collecting cash waqf as an in-house financing method (Pitchay et al., 2015; Thaker & Pitchay, 2018).

5. CONCLUSION AND RECOMMENDATION

5.1. Conclusion

There are many challenges faced by the SIRCs in developing land under their jurisdiction. Based on the systematic literature review and analysis of the previous literature, the crucial challenge is related to the insufficient funding and financial issue. Land development requires huge capital and the SIRCs are unable to perform their duty as a sole trustee in developing the waqf land effectively. Another critical challenge faced by the SIRCs is the inefficient management and administration. There are also some weaknesses such as mismanagement and poor documentations in the administration system that need further improvement. These challenges are highly related to human resource and expertise. Issues and challenges faced by the SIRCs in developing more than thirty thousand hectares of waqf land in Malaysia can be overcome and dealt with. The issue with underdeveloped land under the SIRCs jurisdiction is mainly because of insufficient funds (capital). Based on this study, there are four (4) themes of approaches and practises that have been adopted by the SIRCs in developing religious land in their state. Besides self-initiative, the SIRC needs assistance from the federal government, private company, developer, and public participation to improve their role as an effective sole trustee.

5.2. Recommendation

There are a few rooms for improvement for the SIRCs to overcome any challenges related to land development. More continuous campaigns and promotion needed to be done to increase public awareness and participation in waqf. The SIRCs must maintain the synergy and strategic collaboration with the related parties including collaboration between the SIRCs. Internally, SIRCs can improve their management system using an updated database, ICT upgrade, hiring professional experts, and strengthening the organizational structure. With all the effective approaches and best practises, the SIRCs can strengthen and reform the waqf administration in Malaysia and improve the economy of the Ummah. The application of appropriate development tools will have a significant impact to the SIRCs. Future research can be done to determine the suitable tools and best practises in developing land under the SIRCs jurisdiction.

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