

## ELECTRONIC LAND ADMINISTRATION SYSTEM: IS THE NATION READY?

Anesh Ganason,  
Policy and Consultation Division,  
Department of Director General of Lands and Mines (Federal)  
Ministry of Energy and Natural Resources (Malaysia)  
Email: anesh@jkptg.gov.my

### ABSTRACT

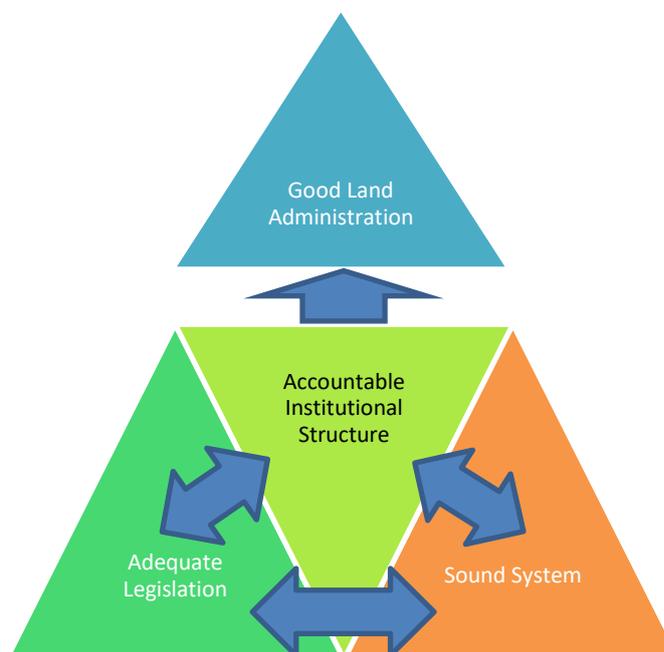
The basis of good land administration depends on the legislation, institutional structure and having a reliable system. With the emergence of the digital age, electronic land administration is the new approach in land administration. The narrative for having an electronic land administration is to provide an efficient system with safe and accurate information. To achieve a sound electronic land administration system, the need for proper infrastructure that supports electronic system in the land administration must be in place. This is coupled with a secure and safe environment for information to be shared for the integrated system to work. All these conditions must be cost effective. To sustain this electronic land administration system and ensure it functions well, the legislation that supports it must be in place, the procedures have to be simple and not cumbersome to the public and the land administrators. The adequate upskilling of staffs and dissemination of relevant information to the public must be in place to fulfill the implementation of a workable electronic land administration system.

Key words: Land Administration, electronic land administration

### INTRODUCTION

Land administration includes legislative provisions, institutional structure (which upholds the legislation and implements the procedures) and a system (which acts as a tool that encompasses the legal as well as institutional framework). The success of any land administration is measured by weighing all these three aspects equally. Figure 1 provides an illustration of the relationship of these 3 aspects as the building blocks of a good land administration.

Figure 1: Model of a Good Land Administration



Enhancement of land legislation in Peninsular Malaysia has obtained maturity with numerous amendments to the National Land Code (Revised-2020) [Act 828] since its inception in 1965. The institutional structure of the land administration has evolved from the British administration to post independence (Ganason, 2012b). The system that machines these land related legislations and land institutional structures have remained the same with very little changes compared to the demand of the industry or market. The land administration ecosystem is still generally manual-based when it comes to applications and decision-making processes. The government introduced a computerized system to facilitate land registry information, endorsement and memorials of transactions on the document of title, computation of land tax or quit rents and preparation of document of titles

(Ismail, 2011a). In 2004, the Malaysian government decided to convert this computerized system to an electronic based system through the introduction of the Sixteenth Schedule of the National Land Code (Revised-2020) [Act 828]. A fully electronic system that encompasses the whole process chain is yet to be achieved because application and decision-making processes are still manual based.

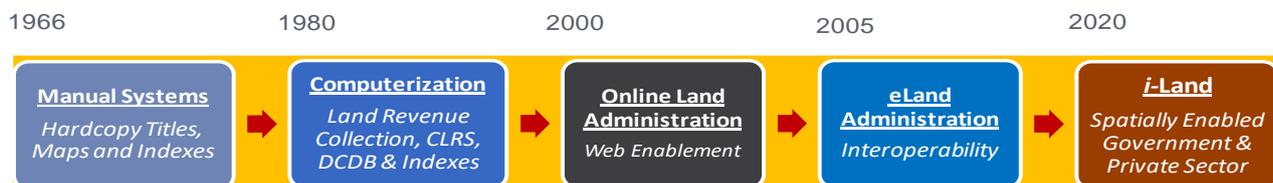
The efforts of the government to provide an electronic land administration system is commendable but it does not reach the public. Currently all land applications processes and instruments of dealings are filled in manually by the registered proprietor or interested party. The legislation in place to facilitate these parts of the process and legal protection is still immature in nature or insignificant within Act 828. The relevant provisions of an electronic land administration protect the processes within the land office that looks at the level of security of land data and issuance of the document of title. To achieve a complete electronic land administration system, an extension of the electronic system that covers applications and decision-making processes must be in place to provide the relevant tools for an accountable institution. An efficient service delivery could be questionable when public must dwell in archaic manual procedures that are cumbersome and not easily understood. These documents have to be verified by professionals like conveyancing lawyers or planning consultants before it is submitted to the land office via post or by hand. This takes time and money which are borne by the public. Once the instruments are presented to the land office another round of checks and keying in the information into the electronic system by clerks at the land office could provide margin of error or documents not properly attached for processing. This could lead to rejection. All these hassles can be overcome by making the whole process electronic and seamless for the benefit of the public and the land administration. Addressing the lack of facilitating the need to make these processes electronic could be the fundamental gap of having a proper efficient land administration system.

This paper would provide an insight on the need to transform the Malaysian land administration into a complete electronic environment. The article will focus on some relevant areas that needs to be addressed by the land administration to prepare itself to adopt a complete electronic-based system. This proposal will also be coupled with the needs to make some relevant legislative amendments to Act 828 to provide protection to the proprietors, the transactions, the land data, and the land administration.

## THE CONCEPT OF ELECTRONIC LAND ADMINISTRATION SYSTEM

The evolution of the Malaysian Land Administration system was discussed in length by Ismail (2011a) where he explained in detail how the evolution of land administration from a manual based system to fully integrated system by 2020. Figure 2 explains his evolution of land administration system in general (Ismail, 2011b).

**Figure 2: Paradigm of Land Administration in Malaysia**



Unfortunately, the drive to fully convert the land registration system is still underway. The Prime Minister in his keynote speech during the Opening of the National Land Day on 27<sup>th</sup> July 2021 mentioned that the government has finally agreed to roll out the implementation of electronic land administration system to all the states in Peninsular Malaysia in stages and should complete by 2024.

Please bear in mind that the electronic system that is envisaged by this development is still based on electronic aspects that affects work process after the presentation counter at the land offices. This means that the application done by the public is still manual based. The legal provisions in Act 828 still does not allow applications of all the processes in electronic format but there is an enabling provision for example section 292A that provides the Minister to modify any provisions to allow electronic lodgments of instruments of dealings. This is a linchpin for the legislators to enable an electronic transaction guideline to be introduced in the future. It would not be bold or forward to imagine that land administration could provide services electronically from one's own home or at the go similarly as online banking.

Karim et al. (2010) suggested that a good land administration system should be able to manage public land, recording of data, protecting private interests, able to assess land value, define land uses and provide potential application processes. This idea is concurred by Abdul Karim et al, (2011) and these elements should be enhanced with risk management systems to evaluate the gaps within the system. Ismail, (2011b) went on further to suggest that it is the responsibility of the Government to provide systematic and accurate recording system that would provide confidence and security to proprietors and land tenure.

Introducing electronic land administration has been seen as a tool to increase efficiency, reducing fraud and to improve economics of land (Abdul Karim et al., 2011). The usage of an electronic system would improve verification and reduce incomplete information needed that are dependent to various government organizations (Gupta et al., 2019). Osman & Kueh (2010) suggested that having an integrated system with strong legal framework would catapult the government in making effective decisions regarding land administration.

Besides addressing the need for efficiency and a tool for decision making, electronic land administration system should also focus on security and the need to curb land forgery and fraud. Zakariah et.al (2020) provides a narrative where the challenges in fraud cases are due to the computerized land registration system security. That study also pointed out limited power of Registrar or land administrator, the lack of expertise and resources in land administration, lack of concern among legal practitioners and commissioners of oath, and the abuse of power coupled by the loopholes in computerized land administration system contributes towards the occurrence of fraud and forgery in land administration. Abdullah et al., (2017) suggested that the weaknesses in the registration system that is in place is due to the increase in fraud and forgery in land administration and went further to suggest that the land administration in Malaysia should introduce the assurance fund to provide a total solution to compensate the lost for proprietors.

When information is difficult to obtain and are incomplete, it becomes tedious and inefficiency in delivering the services becomes evident (Wu & Kepli, 2011). To facilitate these matters many believe that by introducing electronic land administration will improve this lack and also to reduce the loopholes that could invite land fraud and forgery (Ganason, 2012c). By using the e-government concept that is being pushed by the government it is only proper that land administration should follow suit and not left behind (Karim et al., 2010). Sallehuddin Ishak (2017), suggests that the government should harmonize the legislations that are in place, provide more smart partnership research and development activities on land administration, improve the development of human capital in land administration and get the public involved in the whole agenda of creating a computerized land administration system.

From the literatures that were available on Malaysian Land Administration, it provides a vast opportunity for the policy makers to look into many pertinent aspects in improving the system based on the three pillars of good land administration i.e. adequate legislations, accountable institutional structure and sound system. Act 828 that provides the legal authority on land administration is still very much manual-based when it comes to applications and decision-making process because it is still heavily depended on paper-based instruments. With the move of many industries towards electronic transactions and internet-based information it is all warranted that the land administration provides services which uses electronic mechanisms. The introduction of the Sixteenth Schedule in Act 828 and the provision 292A were efforts that was seen by the government has easily implemented because it was within the governments control and as a medium to reform the institutional structure of the land administration. But these legislation as discussed earlier was only part of the whole ecosystem. It does not translate to immediate efficiency within the land transaction process. Cumbersome paperwork and information collection from various parties like the courts, inland revenue board and the national registration boards were still done manually. The respective local authorities do have electronic systems but building approval submissions and the attached documentations were still sent manually.

The consequence of this semi electronic systems does not achieve the high expectation of the public for a faster service rendered by the land administration. With the increasing concern of security on land transactions, the need to hasten the use of electronic elements has driven the government to expand the electronic land administration system to most of the states in Peninsular Malaysia. But this expansion only focuses on the system within the land office and does not look completely at the application processes or even presentation processes due to the restriction of the legislation which does not complement it currently. Many of the fraud cases are based on the identity fraud, documentation fraud and collusion with land office personals to falsify documentations. These elements can be reduced to an insignificant number by providing electronic security elements and to facilitate a complete electronic framework for the whole land administration process. By addressing the whole ecosystem of the land administration, the elements of good land administration can be addressed.

## **WHAT THE NATION NEEDS**

When it comes to land administration, what the public are expecting is an efficient, correct, safe, reliable, and relatively affordable service. The cumbersome documentation and confusing procedures should be forgone or reduced to make land administration more user friendly (Zakariah et al., 2020). Emphasis on going electronic or providing more online transactions is one way of promoting the usage of an electronic land administration. But pushing the drive of a fully electronic system, the government should not leave the population who do not have the access of technology of internet services (Sallehuddin Ishak, 2017). Many of the rural or the elderly are still afraid to conduct online transactions or even to use the computers let alone to own one. The manual methods should still be available for these people and there should be some transition period for this to be available until the government can guarantee that the whole nation is fully equipped with information technology infrastructure.

Once the infrastructure to encourage electronic transactions are in place, it's the land administration procedures should be improved to facilitate the users that includes the registrars and public. The changes that have been done throughout the years have always been behind the presentation counter (Ismail, 2011b). The change from a manual based system to a computerized based system dealt with the information within the registry and the registration processes which is solely confined to the land office premises only (Ganason, 2012c). The need for a future electronic land administration system should include the proprietors, the financial institution, legal fraternity and collaboration with the courts and Inland Revenue Boards. The interaction with local authorities and relevant technical agencies also should develop their integrating electronic systems for the purposes of development processes within the land administration. The idea of these innovations is for proprietors to fill up their forms in their computers or laptops at home or in the office or on the go, obtain all their relevant supporting documents that includes legal documents, loan documents, development plans, stamping or court orders via the system. With only a click of the button this information is presented at the land office via email or through a push system to the land office and after approvals these proprietors would obtain their finished product via a digital land title.

These innovations should provide adequate safety and protection towards the information being relayed in the system (Karim et al., 2010). Digital signatures and the number of entities handling this information must be limited. When the responsibilities of creating the instruments of dealings and obtaining that information is shared by all parties and not only the Registrar of Titles, would in a way reduce forgery and fraud practices in land administration processes (Abdul Karim et al., 2011). The electronic audit trail will lead to the person or the entity that had provided the false or misrepresented information in the system and it would make investigations by the authorities much easier.

All these processes would lead to the question of cost. The current cost of doing business is handled by conveyancing lawyers and planning experts. When the processes have been transferred to the proprietors or interested parties, how should the cost be structured? Having an exuberant cost would distract the public in carrying out transactions electronically and prefer to do businesses manually. The cost also must be set to justify the responsibilities the conveyancing lawyers carry on putting their practice as attestors to make sure the identity of the parties involved are genuine.

## **THE WAY FORWARD**

The future in land administration is to completely migrate all its transactions and dealings into a fully electronic environment. These will not only stop at the registration and preparing of document of title only, but the electronic environment should stretch out to cater the preparing of instruments of dealings and the applications for non-dealings and development processes. The whole Act 828 must be covered from cover to cover. The Sixteenth Schedule should be extended to include all processes.

There should be an electronic platform where land proprietors or interested parties can fill up their electronic instruments of dealings or application forms via online at their own home. Each party can purchase or register a dealing license or prepaid account for the relevant dealings that they want to execute. The gateway for each transaction should be via the relevant state land administration system. This is to provide the access to the PTGs or the Land Offices in accordance with the Document of Title. The license can be issued by the respective state or a national based internet security company. To make it extra protective the introduction of blockchain technology can be deployed for these methods. Blockchain technology can be used to protect the relevant personal information created by the public and the information shared by each regulating agencies should also subscribe to this technology to work together to provide a secure system (Gupta et al., 2019).

The workflow of the transaction electronically should be developed to make it easy for the public. The question arises, should the proprietor go through some other entity or middleman to conclude their transactions? What services do these entities provide? When can the information of verification be obtained by the proprietor from the various agencies? What else could these middleman entities do beside attestations? The system can be developed to assist the applicant to reduce errors in filling the relevant instruments by correcting the information through logic. The next question that arises is do we need conveyances to attest the person submitting the instruments? This can be set aside because the technology would ask relevant information and the proprietor will have to engage in various information insertion that would determine if they were a natural person or not (Stefanović et al., 2018). The need for the conveyances is to provide legal documentations like agreements pertaining to sales and purchases, leases, or mortgages. A problem might arise when dealings with properties situated in Malay Reserve Areas. According to the Fifth Schedule of Act 828, attestation must be done by the land administrator. There should be some sort of avenue where the land administrator and the proprietor or interested parties could engage in a virtual meet to carry out the attestation if the legislation still requires it.

Considering that a large amount of personal information will be deposited into an electronic system, some sort of cloud computing database could be introduced. The risk of data manipulation or data attack might occur (Karim et al., 2010). This is where the government should have a full proof e-government policy to protect personal data and engage with the latest technologies in personal data securities. The integration of many entities sharing their data for the purposes of verifications could also lead to data being intertwined and could create confusions towards the end users (Osman & Kueh, 2010). These obstacles or shortcomings can be overcome by using blockchain technology where the need-to-know basis will be applied and only the relevant information is created in a codex for a specific purpose.

The most difficult obstacle is the reach of internet and electronic platforms to the whole country (Idrus & Atan, 2004). To anticipate the success of such a system would lead to the assumption that each proprietor is electronically literate. This is a huge thing to hope for, but the land administration must disseminate adequate information to the public. The government also needs to provide or encourage the telecommunication companies to provide adequate infrastructure to support Wi-Fi at hard-to-reach places. The legislation cannot discriminate individuals who cannot afford these benefits but are still land proprietors. The manual provisions and counter services still have to be available to cater the old and the physically impaired land proprietors to come to the land administration to complete their transactions (Sallehuddin Ishak, 2017). The current move of various land offices to provide online quit rent payments is a good move to inculcate electronic transactions in the land administration. The land administration should look how the banking sector has moved from manual over the counter services to semi-automated transactions using ATM cards and now the fully online transactions. People are pushed to accept these changes and as time goes by, they adopt and feel happy with these changes.

Finally, when the land administration has shifted to a fully electronic environment, the institutional structure of the land administration must be adjusted to the needs of the services. I foresee the number of staffs in the land administration might dwindle because of the number of people coming to the land offices for businesses will reduce (Ganason, 2012a). The authorities should either redeploy the staffs to services that require human assistants or provide upskilling to have a certain level of ability with electronic management and coordinating task in the electronic environment. The tools that the land administration staff would use

could be for personal identification detectors, geospatial programmes, coding program to facilitate each transaction and database maintenance and storing processes.

The heart of land administration will still be the registrar of title, but the supporting staff would have to be upskilled to facilitate electronic environment processes. The settlement officers that are needed to do field work could be facilitated with the latest GIS tools for field work or desktop work and reduce redundancy (Osman & Kueh, 2010). The need for keying in clerks and checking clerks can be transformed to do other processes because the need for this will become less with the proprietor keying in their information and the system verifying them before it is sent to the land offices. More soft skill and interpersonal skills must be entrusted to the staffs because most of the transactions will be done via the phone or computers and some level of compassion has to be built among the staffs.

To move all these aspects in place, the legislation must be created to address all the building blocks and to create legitimacy for the working of an electronic land administration system. The creation of online forms, the logics to autocorrect and to provide digital verifications, the needs for conveyances to get involved in preparing the documentations, the methods and procedures of presentations, the preparation of document of titles and safeguarding the registry are the major concerns in the new legislation. Another concern is to create a new electronic land administration regulation rather than having it in Act 828. By having a regulation, it is easier to govern, and amendments are much easier to be carried out with changes in electronic environment occurring very often. The power to amend any regulation can be done by the Minister in Charge of Land and does not need to go to Parliament which would take a longer time. These are some aspects that needs serious consideration by the land administration at large.

## CONCLUSION

The area of study on Malaysian land administration is still a very much untapped area for future research. Most of the international literature dwell on the issues of security of tenure and propagate good governance concepts and tools to be adopted by various jurisdictions of land administration. The literatures and understanding of land administration in Malaysia is still very young and could be much more robust with more and more studies on the institution structure to suit the current Malaysia context. Adding to that more research can be focused on the need to shift the legislation policies or practices and doctrine that encompasses these various provisions within the Act 828 to adopt more Malaysian culture and belief and depart from the heavily colonial dependent works. Having a much more local understanding provisions could help the public and government in providing a better suited service (Krigsholm et al., 2019).

The shift of the Malaysian Land Administration from a semi computerized to a fully electronic system also provides an avenue for the Government to introduce the latest elements of security aspects in reducing identity and documentation fraud. With many spatial and electronic data have evolved and has become much easier to manage, integrating these elements together would help the administration to produce an efficient service (Zulkifli et al., 2016). Introducing a new Geospatial Act would be timely for all the relevant agencies that are linked with land administration to use a similar data to produce complete decision-making tools to facilitate the State Authorities. This coupled with the Electronic Government Activities Act 2007 would create an opportunity for various department to share or develop electronic data seamlessly and to facilitate the public with a more secure environment to carry out their transaction in the comfort of their homes.

By introducing an electronic land administration system, the government would highly regulate companies that issue security licenses for land transactions. The need for regulating this service rather than opening it up to the market is to control the flow of personal information and government agency data which could be misused by unscrupulous entities. As online transactions to become much more common, the liberating of this control would happen, and it could also reduce processing fees. Conveyancing law firms will have to obtain licenses to provide land transaction services, these licenses also could be extended to surveyor, town planners when it comes for preparation of development plans for subdivision, partitioning, amalgamation and surrender and re-alienation processes. This could also lead to many internet security companies mushrooming in Malaysia coupled with many geospatial service providers and blockchain companies that would support this industry.

The limitation of this research is land administration is very endemic across jurisdictions. The two main principles of land dealings are based on the deeds system or the Torren system. Although Malaysia practices the Torren system which are used in major Commonwealth jurisdictions like Australia, Canada, and Singapore but each country has different social principles that dictates the development of their legislations. The nuance of these elements makes it difficult to have comparative studies with other jurisdictions. Borrowing best practices and principles are encouraged but replicating it in Malaysia would need lots of tinkering to suit the domestic consumption. This is also seen in the literature that discusses land administration in Malaysia which have rich discussion in the context of Malay Reserves, planning issues and Waqf land but when it comes to land administration institutions and land administration system development there are still an ocean of knowledge that needs to be explored. Future research can be done in addressing how electronic land administration system impacts the decision-making process when it comes to land administration. Providing the relationship of how converting from a manual based method to an electronic based method provides more accountability and social responsibility towards the State Authority in deciding each land applications. Another field of research is to look at the context of the occurrence of fraud and forgery in an electronic environment. The introduction of an electronic system concurs with the narrative that elements of fraud and forgery could be curtailed could be another area of research.

The major question that needs to be answered here is, is the Malaysian society ready to accept an electronic land administration system? With more and more of generation Y citizens coming into the work force and Generation X citizens taking over as leaders, I think the mindset for something efficient and easy to handle is pushing the need for an electronic land administration. With information nowadays easily accessed, maintaining land administration as it is will only bring the downfall of its existents. The expansion of e-Tanah to all the states in Malaysia by 2024 shows that the government is driving the change towards and electronic land administration system. The legislation is in place and needs some enhancement and with the progress of information technologies now and in the future, there are no boundaries that cannot be touched. With an adequate legislation, the relevant systems can play its part in moving the engine of change in land administration. Better systems mean more efficient and effective results or output that would see the land economics become more robust and interesting. The valuation of land and its usage could be planned even better with GIS as its main tool for the State Authority to provide better view on the potential of the land. Finally with the tools and legislations in place the institutional structure of the land administration will be able to practice better governance, provide accountability and closer to the needs of the public. With all these hopes, Malaysia is ready for an electronic land administration system.

## REFERENCES

- Abdul Karim, N. S., Raja Othman, R. A., Ismail, M. S., & Maidin, A. J. (2011). Identifying and overcoming the risk of fraud in the Malaysian electronic land administration system. *2011 International Conference on Research and Innovation in Information Systems, ICRIS'11*. <https://doi.org/10.1109/ICRIIS.2011.6125671>
- Ganason, A. (2012a). Land Administration System in Malaysia: A Proposal for Rebranding the Functions of the Federal Lands Commissioner and the Department of Director General of Lands and Mines. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2097449>
- Ganason, A. (2012b). Land Administration System in Malaysia: Single Title System: A Stimulant to Land Administration Reform. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2097443>
- Ganason, A. (2012c). Land Law and Property Development Conference: Land Development Issues & Latest Initiatives Undertaken by JKPTG to Improve Service Delivery System of Land Administration. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2097459>
- Gupta, N., Das, M. L., & Nandi, S. (2019). LandLedger: Blockchain-powered Land Property Administration System. *International Symposium on Advanced Networks and Telecommunication Systems, ANTS, 2019-December*. <https://doi.org/10.1109/ANTS47819.2019.9118125>
- Idrus, R. M., & Atan, H. (2004). Closing the Digital Divide in Malaysia - Catching Them Young. *Malaysian Online Journal of Instructional Technology, 1*(1).
- Ismail, M. S. (2011a). Land Administration in Peninsular Malaysia – A General Overview. *Jurnal Pentadbiran Tanah, 1*(1).
- Ismail, M. S. (2011b). National Land Code 1965: Electronic Land Administration System In Land Registries. *Jurnal Pentadbiran Tanah, 1*(1).
- Karim, N. S. A., Nordin, Z. A., Maidin, A. J., & Ismail, M. S. (2010). Electronic land administration system in Malaysia: A proposed review from ICT and legal perspectives. *Proceedings 2010 International Symposium on Information Technology - Visual Informatics, ITSIM'10, 1*. <https://doi.org/10.1109/ITSIM.2010.5561355>
- Krigsholm, P., Ridanpää, K., & Riekkinen, K. (2019). Blockchain as a Technological Solution in Land Administration-What are Current Barriers to Implementation? *Geospatial Information for a Smarter Life and Environmental Resilience*.
- Osman, S., & Kueh, H. U. (2010). Land Administration , Land Management and Spatial Information in Sarawak , Malaysia. *The XXIV FIG International Congress*.
- Sallehuddin Ishak, A. (2017). Halatuju Pentadbiran Tanah Secara Elektronik Menjelang 2021. *Jabatan Ketua Pengarah Tanah Dan Galian Persekutuan, 1*(1).
- Stefanović, M., Pržulj, Đ., Ristić, S., Stefanović, D., & Vukmanović, M. (2018). Blockchain and Land Administration: Possible Applications and Limitations. *Proceedings of the 5th International Scientific Conference on Contemporary Issues in Economics, Business and Management (EBM 2018), November*.
- Wu, R., & Kepli, M. Y. Z. (2011). Implementation of land title registration system in Malaysia: lessons for Hong Kong. *Malayan Law Journal Articles, 1*.
- Zakariah, Y., Samsudin, S., & Ngadiman, N. (2020). An overview of the fraud and forgery challenges in land registration system. *European Journal of Molecular and Clinical Medicine, 7*(3).
- Zulkifli, N., Sabit Mohammad, M. T., & Hamzah, A. H. (2016). Suggested Information Strategies for Malaysian Land Administration. *GATR Global Journal of Business Social Sciences Review, 4*(2). [https://doi.org/10.35609/gjbssr.2016.4.2\(8\)](https://doi.org/10.35609/gjbssr.2016.4.2(8))