Review Article

Spatial Data for Sharia Compliant Smart City: A Review

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Abstract - *A GIS combines the art of design, methodologies, and spatial analysis in mapping with the latest technology in the planning process to find the most suitable sites for economic Planning developments and will assist solve problems Smartly. Most of the development challenges that Muslims face in the present is a lack of possibilities the Sharia Compliant (SC). Due to the breadth and complexity of GIS and modern technologies, this paper aims to highlight the best sites that assist in creating smart ideas for Sharia compatible cities through the use of Geographic Information System (GIS)*

Keywords - *Sharia Compliant, Smart Cities, Geographic Information System (GIS)*

I. INTRODUCTION

Marked the last period of the twentieth century, the phenomenal rapid developments in GIS have invaded all areas of technological studies smart in project management, science , and research, and this coincided with the tremendous technological breakthrough that contributed greatly with new features, programs, speed , and capabilities, moving away from the ancient uses strategic information systems. This technology integrates joint database operations with maps and graphs' unique visualization and geographic analysis benefits [25]. All these developments must also include the development of human thinking in societies and transition to creative thinking in the economic and developmental aspects, or the areas that seek to rejuvenate the comprehensive civilization. GIS supports the re-examination of critical action cases that contribute to society's development in general. Surprisingly, accounts of GIS around the world have increased dramatically; for instance, about $150 to $270 billion were used only in the united states in the area of rental technologies [12]. Creative thinking contributed to creating the idea of smart cities, which resulted from the integration of GIS with Smart technology. This modern concept has created the creation of thinkers and developers in finding many ways to reach that intelligent civilization challenge [2]. Technical developments have also contributed to spreading Islamic knowledge, assets, and ideas through technical methods, which is the cornerstone that supports all life activities in Islamic countries. The development of tourism in countries reflects the development of the economic, strategy, technology, and other pillars of development worldwide [3]. GIS has shown that they have a great technological background serving all important areas in the world. This can be traced back to the idea of smart cities that have emerged from the strength of the link between science, technology, and GIS. They are the most powerful and active guides who play a key role in the emergence of smart development ideas [18]. Smart cities can be defined in general as [10] points out that they are ecosystems created by the interaction, integration, organizations, material infrastructures, and interdependence of living organisms with their environments because of the power that drives them to rely on the use of resources. The concept of a smart city is not limited to technical aspects only but goes beyond the development of the members of society and focuses on the users who represent the society in general [9].

II. BACKGROUND OF THE STUDY

List the importance of Geographic Information Systems (GIS) related to the majority of science and other areas such as Engineering and modern scientific technology to interpret and analyze the sites and the different spatial phenomena. This is done by giving preliminary data on the phenomenon through technical devices. Sometimes the term GIS is used to emphasize the role of effective problem solving with a focus on the skilled user [24]. They are analyzed and converted into graphs and other scientific information, and the GIS program has accurate maps of the phenomenon. It also helps make the right decision, and science will play an active role in this regard. The Spatial data studies of the modern smart city it has been interacting with the development also several types of tourism, which always need analysis of the sites for the establishment of various projects or develop it. Many tourist areas have been discovered by the internet or GIS, where the Social Media consider the first engine of the global tourism industry, which plays an important role which there are composed of activities and fragmented sectors of sporadic integrated with planning properly to be one of the tourist industry goal and objectives [20].

A. Scope of the Research

The study includes a geographic information system (GIS) and analysis of locations and SPSS for analyzing questionnaires through various social media, including major and subsidiary elements. Targeting the appropriateness of the Islamic sharia of Smart City. Moreover, a simple spatial question of information may require access to data from several sources. These sources should be integrated consistently within an orderly arrangement to link the objectives of different analyses. The results of the GIS analysis included showing the importance of some tourist sites that attract tourists to Kuala Lumpur.   Figure 1. The Sharia Compliant Services in the study area
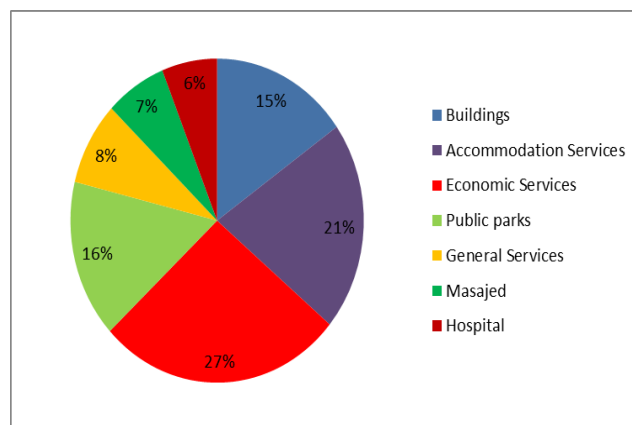

Fig. 1 The Sharia Compliant Services in the study area

B. Proposed Analytical Technique

To test the proposed model and interrelational analysis of the data of the existing locations of Masajed, Hotels, Hospitals, Malls, Banks, and other important services for visitors in Kuala Lumpur. The GIS interrelational package will be employed for the analysis to choose the best sites and the idea of establishing a Smart City through some tourist services. These kinds of data based on tourist maps and the presence of some of the best places favored by visitors, allowing the creation of a database that is easy to understand. Services can be divided as follows: As presented in table 1, Figure 1 displays the data used in the study area and the percentage of them.
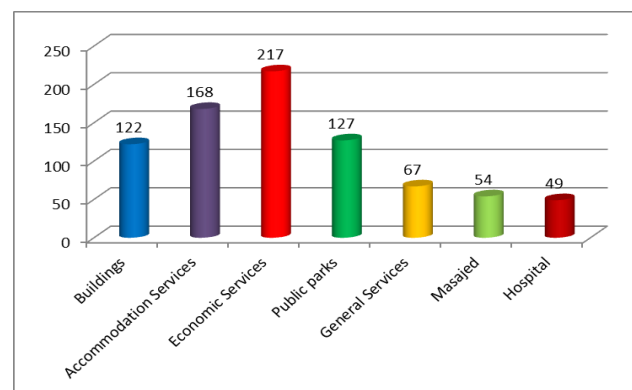
III. ANALYSIS AND DISCUSSION

Concerning the geographical Distribution of sites, mostly the public facilities, is as follows: Buildings 122 by (15%). Accommodation Services 168 by (21%) include Hotels sharia, non-sharia, and Residential Suites. Economic Services 217 by (27%) include Banks and Malls. Public parks 127 by (16%) include all places located in the open air, which distinguishes it can be free or low nominal fees, for instance, Lakes, Sports clubs public, and public parks. General Services 67 by (8%) include Museums, Stadiums, International Towers, Convention Center, Public

library, and General post office. Masajed 54 by (7%). Hospitals 49 by (6%). Based on the study data, most of the available tourism services shall be responsible for providing and securing the place and time of prayer in all sectors in which Muslims work. This can be the cornerstone of having prayer rooms in various recreational and public places [13]. All services mentioned above include wireless network service, except Masajed , which is equipped with modern electronic devices of lighting, cooling, and sound devices, modern displays, surveillance cameras, and other modern devices.

Fig. 2 The Services Percentage in the study area

1- Wars

2- Weather fluctuations

3- Road accident

4- Terrorism

Table 1. The Sharia Compliant Services in the study area

Variables	Number of Items	Percentage
Buildings	122	15%
Accommodation Services	168	21%
Economic Services	217	27%
Public parks	127	16%
General Services	67	8%
Masajed	54	7%
Hospitals	49	6%
Total	804	100%

Fig. 4 The Sharia Compliant Services in the study area

Fig. 5 Source: (Santhiman et al., 2006)
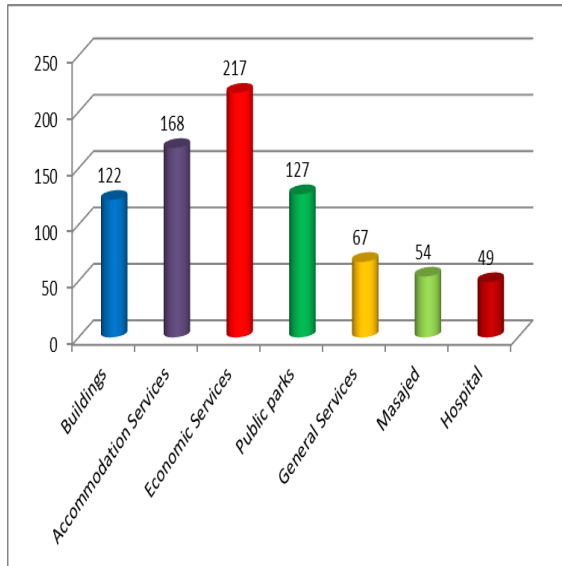
From all of the above, the capital of Malaysia enjoys huge advantages for the components of Smart Cities. But the concept of a smart city was not a smart electronic device nor a huge internet network, nor use of the internet in all things, but also includes the preservation of these great essences and the possibilities of digestion and protection from their effective management ensure their continuity and development. The concept of Smart City at present and using GIS not only in the use of the internet in all areas and smart devices but transcended the conscious stage concept to finding alternative and excellent solutions in the management of crises in the countries. When solving any problem can find that the Arcmap program can story all layers of the city, such as the infrastructure of the state and the network of roads and transport and buildings of various types and all the services located in the state or the city or the area to be planned or repaired here the program can search for the best ways alternative. For example: improving quality of life and reducing the need for traditional construction projects in all their forms, improving the
operation of city services, improving resilience, and exploiting multiple transportation modalities better [12]. GIS assists in finding solutions to the problems of different cities, for instance for that:

We find that the capital of Malaysia has already started to jump into protection and project management effectively. To name just a few, a summary of the most important projects in this area will be mentioned: (Flood Detection System and Operation and Enhanced the Solid Waste Management) .The concept of the Smart City includes the development of long-term development projects with comprehensive and specific objectives. The first
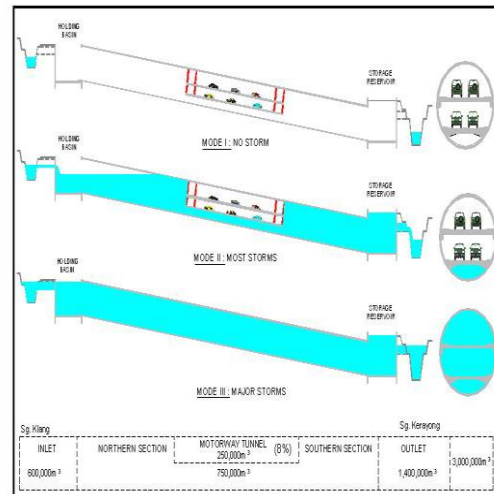
project: Flood Detection System and Operation: Flood occurrence, smart tunnel operating system, and traffic flow: a case of Kuala Lumpur smart tunnel Malaysia. Wrote in this regard [16] describes the tunnel's effectiveness and breadth and many benefits resulting from the construction of the massive edifice. The project was an innovative solution to the problems of floods and traffic congestion. This topic dealt with many goals: ease the traffic in the south and bypass the stormwater from KL City, the length is 9.7km. In this project has been used global crisis management, which is in three stages:

1- Prevention and preparation, which is the pre-crisis phase.
2- Learning and revision include the post-crisis phase.
3- The most important learning and revision phase includes the post-crisis phase (6.).

The second project: Solid Waste Management: The search on this topic [16], enhanced the Municipal Solid Waste Management in Kuala Lumpur by implementing strategies and action plans from European countries. The main goal is the development management to diminish the weakness of current municipal solid waste MSW management in Kuala Lumpur. One of the major problems facing Kuala Lumpur is solid waste. In 1970, Kuala Lumpur produced 98.8 tons of solid waste, which rose in 2005 to 3,478 tons per day. This was the result of the huge population growth.
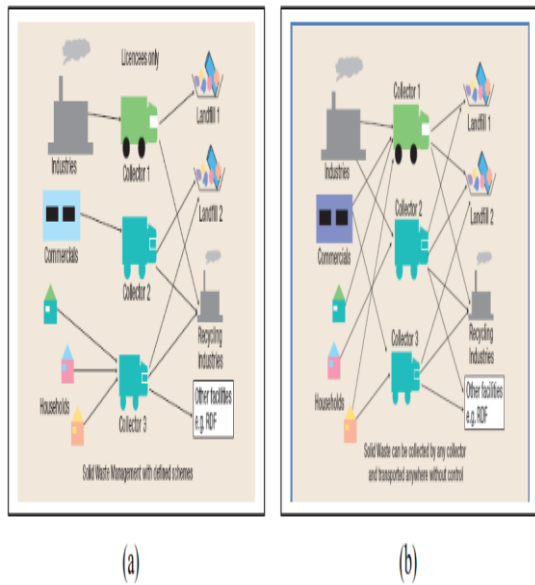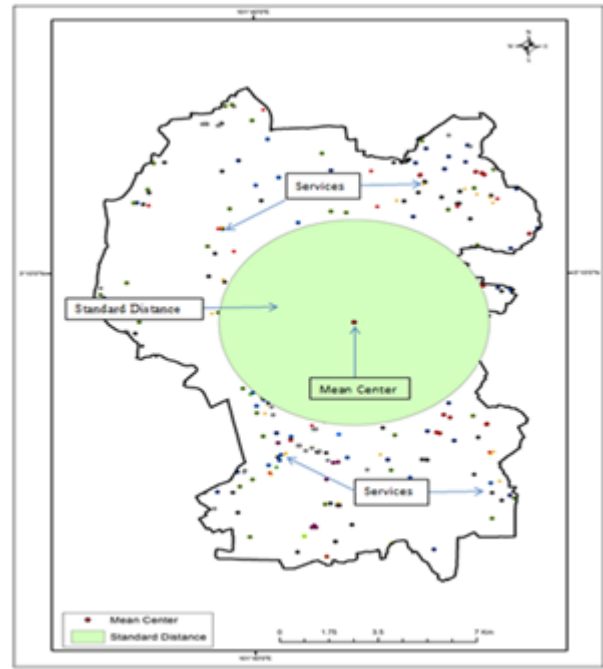
Fig. 6 (a)Solid waste management framework to 2008. (b) Solid waste management framework to 2007 (Source from United NationsDevelopment Programme, 2008)

Map 1. The Distribution of the services in the study area

The idea of the alternative project or emergency is to connect the buildings or services via other alternative networks, provided that the control key or main server is outside the main area or the congestion area so that the control can be quick to any problem and solve it effectively. Emergency or alternative networks must be maintained periodically and administered arbitrarily and should also be under the management of skilled hands trained in crisis management. Through the use of ArcGIS in the analysis of important tourist areas , we can lay the groundwork for the construction of modern Smart projects. The standard distance is one of the most important measurements of spatial dispersion, used to determine how widespread or different concentrated phenomena, is a circle representing an analysis of the phenomenon data. The mean Center Is a circle

representing an analysis of the phenomenon data located at the center of the standard distance, indicating the concentration of services in the central area of Kuala Lumpur. And we conclude from this when thinking about Smart development projects must be away from the area of the accumulation of services and can be the establishment of future projects either be in the northern or southern part of the spcital, as shown in Map1.

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