

GIS IN THE HUMANITIES: THE SPATIAL PATTERN AND DISTRIBUTION OF THE VOYAGE OF *PANGLIMA AWANG* OR *HENRY THE BLACK*

Tarmiji Masron
mmiji@usm.my

Mohamad Luthfi Abdul Rahman
luthfi@usm.my

School of Humanities
Universiti Sains Malaysia

Abstract

Panglima Awang or *Henry The Black* or *Enrique of Melaka*, a man of Malay descent, was on board Ferdinand Magellan's ship when he made his voyage around the world. Panglima Awang was a captive and a slave on board. He was taken to Goa, India and then onward to Portugal. In Portugal, a conflict broke out between the Portugese and Captain Fernando (or Ferdinand Magellan) who, at the instigation of Da Gama, was maliciously accused of siding with some foreigners. Tired of the unwelcome pressure, Captain Fernando made the decision to change his mission and instead sail around the world with Panglima Awang. From Portugal they set sail for Spain. Also on board was Pigafetta who recorded every little detail of the voyage. Besides depicting the events that took place during the voyage of Panglima Awang, this article attempts to integrate geographical information technology into research in the fields of literature and history. This is achieved by identifying the route taken by Panglima Awang as well as his stopover locations, and analysing the spatial pattern and distribution of the voyage.

Keywords: Geographical Information System (GIS), Humanities, voyage, *Panglima Awang*

INTRODUCTION

Panglima Awang (Harun Aminurrashid, 1958) or *Henry the Black* (Lord Stanley of Alderley, 2007) or Enrique of Melaka (Nik Hassan *et al.*, 2009) was a man of Malay descent who participated in Ferdinand Magellan's (Lord Stanley of Alderley, 2007) voyage around the world. *Henry The Black* was also known as Henrich in Spanish. The voyage of Panglima Awang was by no means ordinary, beginning with him being taken captive and made a slave on board a Portuguese ship. However, he was a man with a great mission, which was, to prove that the world was round. From a freedom fighter he became a slave, and later participated in a scientific exploration. His voyage gave a new scientific and geographical dimension to our world. From Portugal Magellan and his crew set sail for Spain, and it was there that the discussion about the world being round and not square, began. Pigafetta, who also joined the voyage recorded every little detail of it. Apart from depicting the events that took place during the voyage of Panglima Awang, this article also attempts to identify the route taken as well as Panglima Awang's stopover locations, and to analyse the spatial pattern and distribution of the voyage of Panglima Awang @ *Henry The Black*.

GIS IN HUMANITIES

The Geographical Information System (GIS) refers to a database management system that comprises computer hardware and geographical data specifically designed to develop, manage, store, update, manipulate, analyse and display all kinds of information about a particular geographical referent (Aldenderfer, 1996: 4; Knowles, 2002:186). This technology is widely used in the fields of planning, information management, as well as land and resource management. In the fields of pure and applied literature, this technology first carved a niche as a tool to help researchers and academics understand a given field using a different approach and looking at things from a different viewpoint.

According to the *National Endowment for Humanities*, Science and Mathematics employ empirical and objective methods to study the world around us. On the other hand, researchers in the field of Humanities, use subjective and rational methods to conduct their research (www.neh.gov, 2010).

GIS in the Humanities and Digital Humanities refer to technology and information-based applications and methodology which give new insights into or provide solutions for related issues and problems in the field of

Humanities. Among studies that use this approach are those by Yoshio and Shiro Koike (2006), Atsuyuki Okabe and Tohru Yoshikawa (2006), Eihan Shimizu and Takashi Fuse (2006), Martin Holmes and Claire Carlin (2008), Tarmiji Masron *et al.* (2010a), Susan Schreibman and Ann Hanlon (2008), Usman Yaakub *et al.* (2009), Tarmiji Masron *et al.* (2008a), Tarmiji Masron *et al.* (2008b), Salsiah Che Lah (2007), Ruslan Rainis *et al.* (2004), Tarmiji Masron *et al.* (2010b), Tarmiji Masron and Mokhtar Saidin (2009) and Narimah Samat *et al.* (2010).

PANGLIMA AWANG BY HARUN AMINURRASHID

The novel opens with a description of the mood that was prevalent soon after the fall of Malacca to the Portuguese. During this period, there emerged a group of young men who aspired to fight the Portuguese in order to recapture Malacca after the Sultan had fled the state. Prominent in the group were Panglima Awang and Panglima Hitam who zealously resisted the Portuguese. In their attempt to recapture Malacca, they launched several attacks on the enemy. Panglima Hitam was killed in one of these offensives. Panglima Awang continued the fight against the invaders until he was captured aboard a Portuguese vessel that he was attacking.

Upon his capture, Panglima Awang was taken as a slave on board the ship and taken to Goa, India, later to Portugal. On the ship, he was placed under the command of Captain Fernando. In the beginning, Panglima Awang refused to participate in the voyage for fear of being killed. However, Captain Fernando succeeded in persuading him to do so and in fact, promised to take him back to Malacca if he proved to be a good slave.

They set sail from Malacca, Goa being their first port-of-call. While in Goa, some of the slaves were sold. However, Panglima Awang was not one of them. He continued on the voyage under the command of Captain Fernando.¹ From that moment on, his name was changed to Enrique to prevent the others on board from discovering that he was actually a captive.² Panglima Awang was released from captivity after he agreed not to try to escape. He gradually became a competent sailor and later on, a close companion of Captain Fernando. Panglima Awang had, at some point, pleaded with Fernando not to sell the *keris* heritage of the Malaccan warriors which the Portuguese had seized. He recounted the extraordinary power of the *keris* to the Captain and spoke of the special significance they had for the Malays.

When the ship dropped anchor in Africa, black slaves were taken aboard to be sold in other parts of the world. During the voyage, Da Gama was said to have attempted to abuse a slave but was prevented from doing so by Captain Fernando. Consequently, Da Gama tried to kill the Captain, but his attempt was foiled by Panglima Awang. Not long after that, the ship arrived in Portugal. Panglima Awang who had learned the Portuguese language while on board, was able to communicate fluently in it. While in Portugal, he (Enrique/Henry) lived in the city of Lisbon and worked in an apple orchard. The narration continues with Captain Fernando informing Panglima Awang that they would be sailing for the land of the Moors in the north part of the African continent. The purpose was to purchase merchandise from the Moors. Following this, they set sail for the Madeira Islands, and then Morocco. They laid anchor there for two weeks before returning to Portugal.

In Portugal, at the instigation of Da Gama, a conflict erupted between the Portuguese and Captain Fernando who was falsely accused of siding with some foreigners. Under pressure, Captain Fernando made the decision to change his mission and instead sail around the world, taking Panglima Awang with him. They sailed as far as Spain where they arrived less than two weeks after leaving Portugal. It was there that discussions about how the world was round, not square began. From Spain, they sailed with some Spaniards in search of new uncharted territories. Pigafetta who was on board, kept a detailed journal of their travel. After a year at sea, they still had not sighted land until they arrived in Pernambuco, Brazil. Once their stock was replenished, they continued their journey skirting the coast of South America until they reached Patagonia via the Straits of Magellan. Two years later, they reached Guam. Panglima Awang who had disembarked when they reached the island of Muzzava, discovered that the islanders spoke a language akin to Malay. It made him feel that he was back in Malacca. He was informed that the island was under the dominion of Cebu.

Magellan and his crew then continued their journey until they reached Cebu where they were given a warm welcome by the locals. Pigafetta who was ordered to find out about the situation in Malacca discovered that state of affairs there was still critical. Grateful for the good treatment accorded them, they decided to help the people of Cebu attack their enemies on the island of Matan. In the assault on Matan, Captain Fernando was killed and Panglima Awang wounded. Their ship was taken over by Duarte Barbosa

who regarded Panglima Awang as a slave. In fact, he had planned to kill the Ruler of Cebu whom he felt had victimized them.

Panglima Awang then combined forces with the Ruler of Cebu and killed Barbosa. In the novel, Panglima Awang's voyage on board the ship captained by Fernado ends here. After the Captain's death, Panglima Awang boarded a Siamese ship to return to Malacca. From Cebu, they sailed along the coast of North Kalimantan until they reached the northern part of Sabah. They anchored at Brunei where they were attacked by pirates. As the story goes, the leader of the pirates, Panglima Hitam, from whom Panglima Awang had been separated for 10 years, was an old friend. They finally cast anchor in Johor to draw up strategies to enter Malacca. The story ends with a meeting between Panglima Awang and his fiancée.

RESEARCH METHODOLOGY

This study attempts to integrate the geographical information system (GIS) into the fields of literature and history by using the GIS approach to gain an insight into the spatial pattern of Panglima Awang's voyage. To achieve this, geographical information technologies such as the Geographical Information System (GIS) and remote sensing data were employed. Figure 1 shows the Conceptual Framework of the study carried out.

GIS in the humanities refers to the application of GIS in the fields related to the Humanities which include philosophy, language, literature, archaeology, politics and civilization studies. In the research conducted, an attempt was made to use GIS in a literary investigation specifically in the examination of a literary text. The element of space in voyaging was studied and analysed. In this case study, the voyage of Panglima Awang as narrated in the novel of Harun Aminurrashid was examined. For this purpose, information such as location, mode of travel and journals of events were identified. Besides examining the text of Harun Aminurrashid, the identification of locations and coordinate readings for the locations specified using applications from Google Earth also was carried out. The product of the integration of qualitative and quantitative methods is a map detailing the voyage of Panglima Awang. In addition, through the use of GIS spatial analysis, Panglima Awang's spatial pattern was analysed.

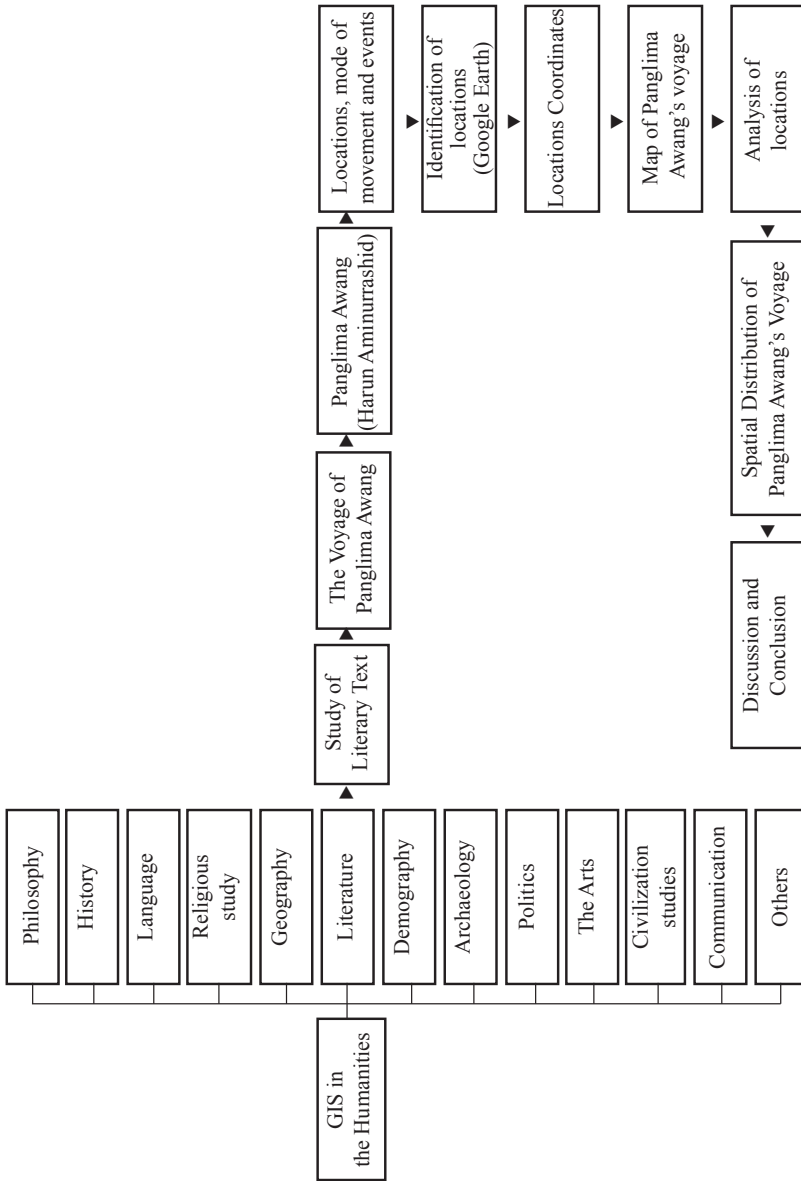


Figure 1 Conceptual framework of the study.

Figure 2 shows the flow chart of the research methodology. To achieve the objective of the study, a text identification exercise was carried out. In the study, a text written by Harun Aminurrashid was used. Other than that, Pigafetta's original manuscript translated by Lord Stanley of Alderley was also examined, particularly for the purpose of comparison and location of references. For the purpose of location identification, mode of movement, duration of travel and activities as well as events on the voyage, a reading of the text was conducted. Two categories of information were identified in an effort to construct a route map of Panglima Awang's voyage, as well as to analyse the spatial pattern of the said voyage. Spatial information includes country names, place names and locations, while attribute information comprises mode of movement, journal of events and dates as well as the duration involved. Time feature information is used to explain the route map of Panglima Awang's movements.

In Harun Aminurrashid's text, 22 locations and place names were mentioned. These were countries visited by the ship Panglima Awang was on. His voyage started in Malacca and ended in Malacca. As the place names and country names were already known, the next step was the identification process and the search for these locations and place names using Google Earth applications. The search for the 22 locations and place names was highly dependent on the data base provided by Google Earth. Where a location or place name was successfully identified, the reading of its position coordinates too was easily obtained.

The places or locations identified were used to construct the voyage map of Panglima Awang. Panglima Awang's stop-over locations were analysed to identify the pattern and distribution of his movements. The statistical method of "Average Nearest Neighbour" was used to analyse the spatial pattern of his voyage. Average Nearest Neighbour (ANN) statistical analysis measures the distance between each characteristic or feature on the map and its "nearest neighbour", then calculates the average of all the distance features on the map. If the average value is less than the average value for random distribution, the features are considered as clustered. If the average value of the features is greater, it shows a clustered distribution, and a value greater than 1 indicates a dispersed or scattered distribution.

This technique, however, is analysed without restrictions. Two things stood out—one, the difficulty to limit the extent of the study area, and two, the dependence of the analysis on the characteristics obtained in the study. The "nearest neighbour" analysis tends to show patterns that are random, clustered or dispersed depending on how much of the neighbouring area is included

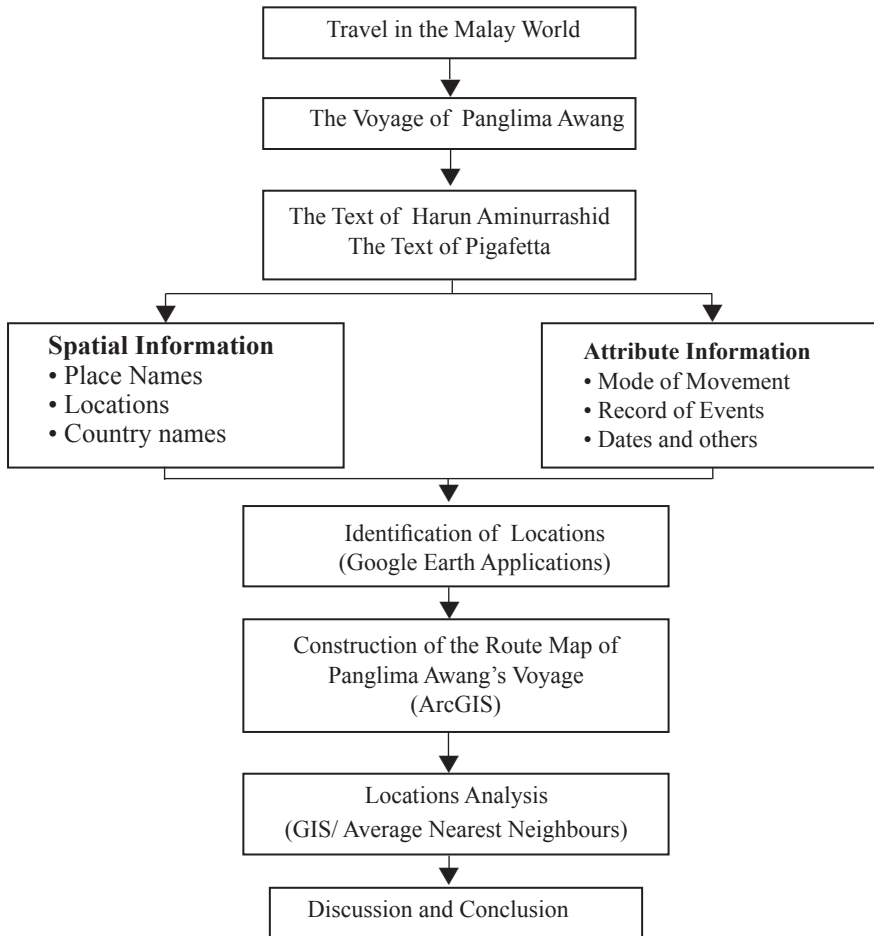


Figure 2 Research methodology.

in the analysis. The analysis or theory of spatial autocorrelation is the basis for the first law in geography which is known as TFL. “Everything is related to everything else, but near things are more related than distant things”. This postulate in geography is known as Tobler’s First Law (TFL). TFL is extremely useful in underpinning the interpolation process to predict and anticipate the circumstances of a given phenomenon.

ANALYSIS AND DISCUSSION

The chronology of the voyage recorded by Pigafetta differs from that described by Harun Aminurrashid. Pigafetta’s focus was Magellan, and Harun Aminurrashid’s, Panglima Awang, a slave on Magellan’s ship (Harun Aminurrashid, 1958:viii). Table 1 shows the chronology of Magellan’s voyage (Lord Stanley of Alderley, 2007:lx). It is based on the chronicles of Pigafetta who was taken along by Magellan on his mission as a record-keeper. From the map, we can safely say that Magellan’s voyage around the world had started from Seville, Spain, on 20 October 1518. The voyage ended on 27 April 1521, that is, upon the death of Magellan in Matan, two years six months and seven days afterwards. However, his ship continued its homeward journey to Seville which it reached on Monday, 8 September 1522.

Table 2 shows the chronology of the voyage of Panglima Awang who was initially taken as a slave aboard Magellan’s ship. The table was adapted from Harun Aminurrashid’s novel as well as Pigafetta’s records. From Malacca, which was the starting point of the voyage, Panglima Awang was taken to Goa and several other locations until he arrived in Seville. In the novel, Harun Aminurrashid did not indicate any specific dates of the journey and stopovers at the stated locations. From Seville, Panglima Awang continued his voyage around the world with Magellan. When Magellan died in Matan on Saturday, 27 April 1521, Panglima Awang made the decision to return to Malacca by boarding a Siamese ship. However, there is no clear evidence of this or any indication of the dates of his onward journey to Malacca. In Harun Aminurrashid’s novel, it is stated that Panglima Awang returned to Malacca via the coast of Kalimantan, Sabah, Brunei, Johor and Malacca. However, the authenticity of this homeward journey is disputable due to lack of proper records. There is, of course, the possibility that Panglima Awang was himself killed in Matan.

Table 1 Chronology of Magellan's voyage.
(Source : Lord Stanley of Alderley, 2007)

Location	Date	Year
Magellan arrived in Seville	20 Oct.	1518.
Magellan's armada set out from Seville	Monday, ³ 10 Aug.	1519.
Magellan sailed from San Lucar de Barrameda,	Tuesday, 20 Sep.	1519.
„ arrived in Tenerife	26 Sep.	„
„ sailed from Tenerife	Monday, 3 Oct.	„
„ arrived in Rio de Janeiro	13 Dec.	„
„ sailed from Rio	26 Dec.	„
„ sailed from Rio de la Plata	2 Feb.	1520
„ arrived in Port of St. Julian	31 Mar.	„
Eclipse of the sun	17 Apr.	„
<i>Santiago</i> destroyed		
Magellan set sail from Port of St. Julian,	24 Aug.	„
„ sailed from the Santa Cruz River	18 Oct.	„
„ arrived in Cape of the Virgins, gateway to the Straits	21 Okt.	„
Bade farewell to <i>San Antonio</i>	Nov.	„
Magellan sailed out of the Straits towards the Pacific	Wednesday, Nov. 28,	„
Magellan arrived on San Pablo Island	24 Jan.	1521
„ arrived on Tiburones Island	4 Feb.	„
„ arrived on the Ladrone Islands	Wednesday, 6 Mar.	„
„ arrived on Samar Island, the Philippines	Saturday, 16 Mar.	„
„ arrived on the Island of Mazzava	Tuesday, 28 Mar.	„
„ arrived on Cebu island	7 Apr.	„
Magellan's death in Matan	Saturday, 27 Apr.	„
The Burning of the <i>Conception</i>	May,	„
The arrival of <i>San Antonio</i> in Seville	6 May,	„
The arrival of the <i>Victoria</i> and the <i>Trinity</i> in Tidore,	Friday, Nov. 8,	„

Location	Date	Year
The <i>Victoria</i> set sail from Tidore	21 Dec.	1521
„ discovered Amsterdam Island	Tuesday, 18 Mar.	1522
„ arrived at the Cape of Good Hope	18 May, ⁴	„
„ arrived on the Island of Cape Verde	Wednesday, ⁵ 9 Jul.	„
„ arrived in San Lucar	Saturday, ⁵ 6 Sep.	„
„ dropped anchor in Seville	Monday, ⁵ 8 Sep.	„
Thanks giving at the Church of Our Lady of Victory	Tuesday, ⁵ 9 Sep.	„

Table 2 Chronology of Panglima Awang's voyage.

(Source: Adapted from Lord Stanley of Alderley, 2007, and Harun Aminurrashid, 1958)

Panglima Awang (PA) set sail from Malacca aboard Magellan's Ship		
Location	Date	Year
PA arrived in Goa, India		1512
PA arrived on the African Continent		1512
PA arrived in Lisbon, Portugal		1512
PA arrived in the Northern Part of the African Continent		1513
PA arrived on the Madeira Islands (Portugal)		1513
PA arrived in Morocco		1513
PA arrived in Portugal		1515
Arrived in Seville	20 October,	1518
Magellan's Armada set sail from Seville	Monday, 10 August,	1519
Sailed out of San Lucar de Barrameda,	Tuesday, 20 September,	1519
Arrived in Tenerife	26 September,	1519
Set sail from Tenerife	Monday, 3 October,	1519
Arrived in Rio de Janeiro	13 December,	1519
Sailed from Rio	26 December,	1519

Location	Date	Year
Set sail from Rio de la Plata	2 February,	1520
Arrived at the Port of St. Julian	31 March,	1520
Eclipse of the sun	17 April,	1520
The <i>Santiago</i> destroyed		
Set sail from the Port of St. Julian,	24 August,	1520
Set sail from the Santa Cruz River	18 October,	1520
Arrived at Cape of the Virgins, gateway to the Straits	21 October,	1520
Bade farewell to <i>San Antonio</i>	November,	1520
Sailed out of the Straits towards the Pacific	Wednesday, Nov. 28,	1520
Magellan arrived on the Island of San Pablo	24 January,	1521
Magellan arrived on Tiburones Island	4 February,	1521
Magellan arrived on Ladrone Island	Wednesday, 6 March,	1521
Magellan arrived on Samar Island, the Philippines	Saturday, 16 March,	1521
Magellan arrived on the Island of Mazzava	Tuesday, 28 March,	1521
Magellan arrived on Cebu Island	7 April,	1521
Magellan's death in Matan	Saturday, 27 April,	1521
The burning of the <i>Conception</i>	May,	1521
PA arrived on the Island		
PA sailed along the coast of Kalimantan		
PA arrived in the Northern Part of Sabah		
PA arrived in Brunei		
PA arrived in Johor		
PA arrived in Malacca		

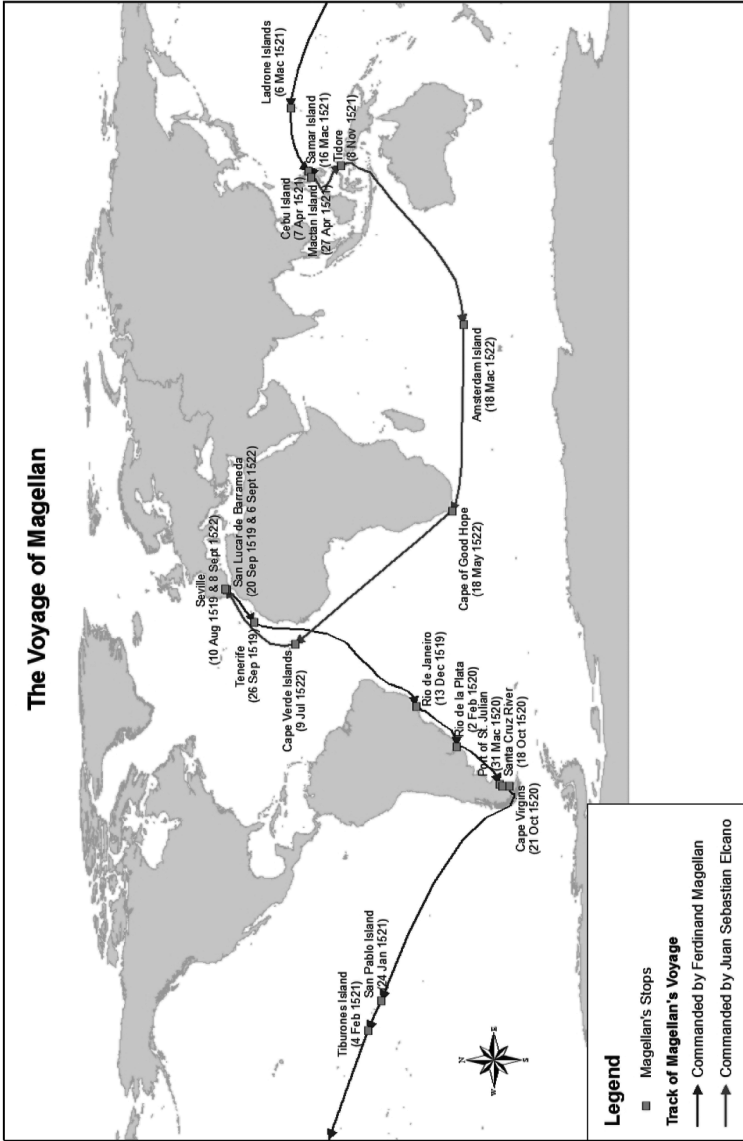


Figure 3 Route of Magellan's Voyage.

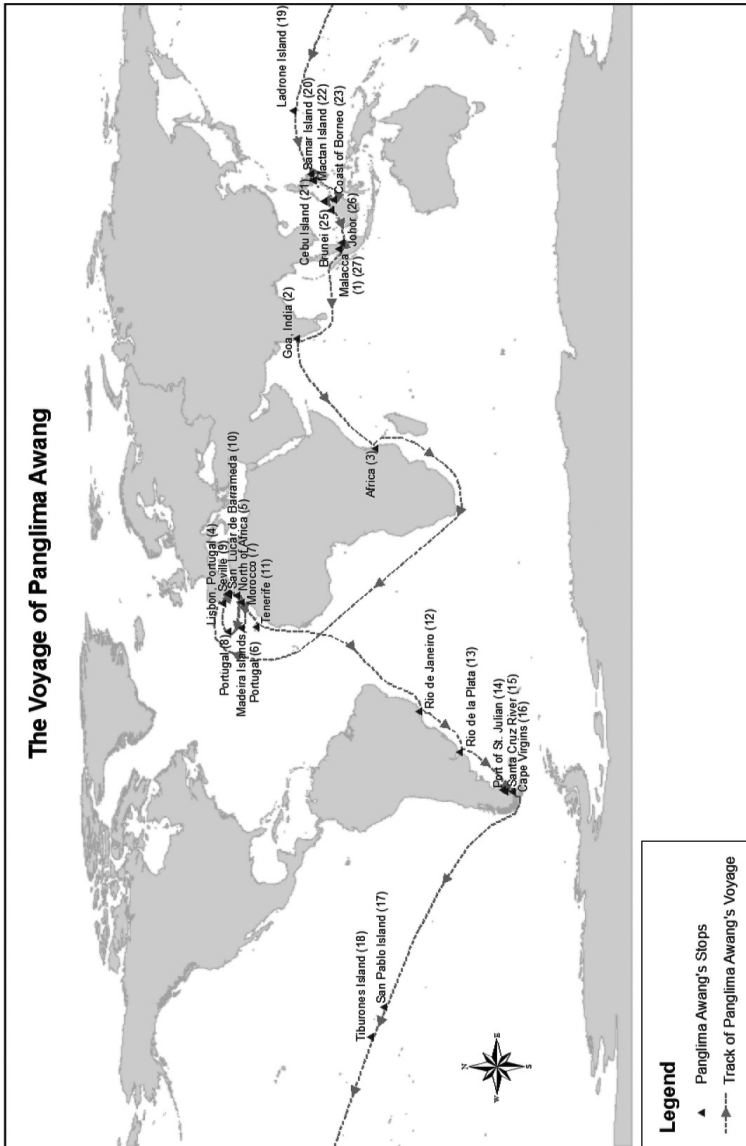


Figure 4 Route of Panglima Awang's Voyage.

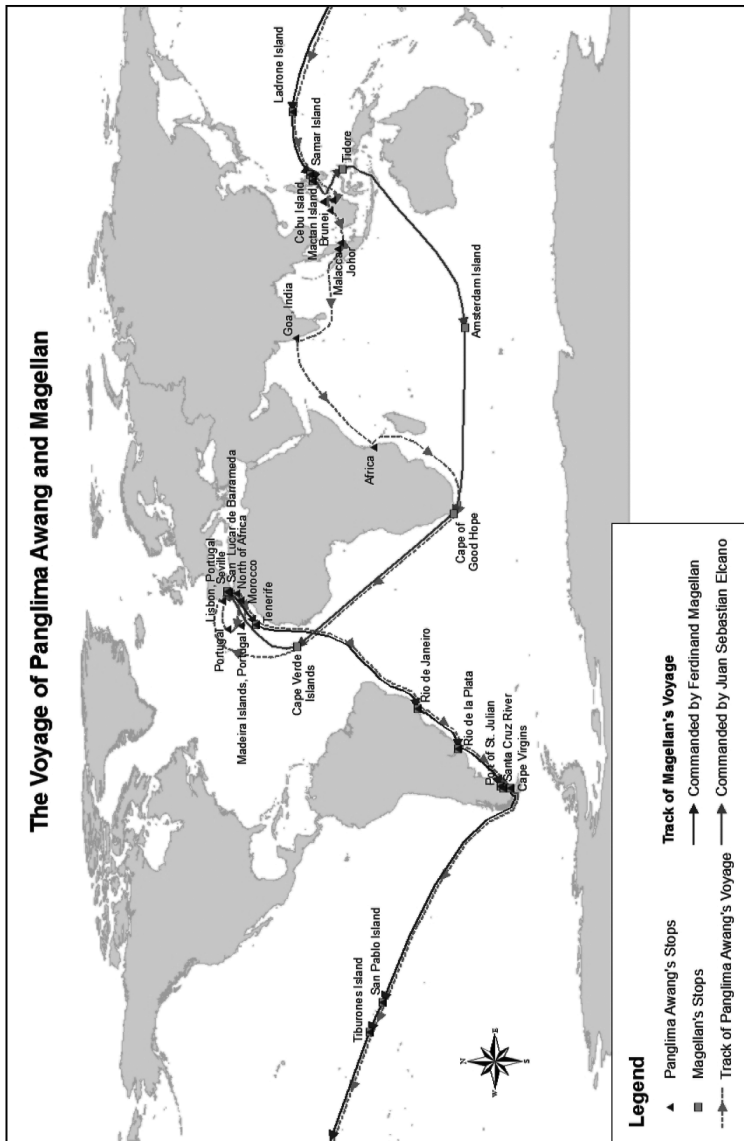


Figure 5 Route of Magellan and Panglima Awang's Voyage.

Figure 3 shows the route taken by Magellan as well as his ports-of-call on his voyage around the world. The map was constructed based on the chronology recorded by Pigafetta. The voyage started from Seville and ended in Seville. Nevertheless, it must be emphasized that Magellan only got as far as Matan as it was there that he died. The journey back to Seville was not made under the leadership of Magellan or along with him. Figure 4 shows the route of the voyage of Panglima Awang, a large part of which was made along with Magellan. In Harun Amirulrashid's novel, Panglima Awang's voyage started from Malacca where he was taken as a slave aboard Magellan's ship. He then sailed with Magellan on the voyage around the world starting from Seville. However, following the death of Magellan in Matan, Panglima Awang took a route different from that taken by Magellan's ship. It is said that Panglima Awang returned to Malacca whereas Magellan's ship continued its homeward journey to Seville (Figure 3).

From the point of view of spatial analysis, the pattern of Panglima Awang's distribution of spatial stop-overs differs from that of Magellan's. Among the factors that influenced this was the number of locations, the initial locations for each map constructed, and the mission of their voyage. The results of the analysis of the stop-over locations of Panglima Awang are as follows:

The Average Nearest Neighbour

Observed Mean Distance: 7.117087
 Expected Mean Distance: 13.621076
 Nearest Neighbour Ratio: 0.522505
 Z Score: -4.746584
 p-value: 0.000002

On the other hand, the results of the analysis of the stop-over locations of Magellan are as follows:

The Average Nearest Neighbour

Observed Mean Distance: 12.010923
 Expected Mean Distance: 13.777969
 Nearest Neighbour Ratio: 0.871748
 Z Score: -1.097257
 p-value: 0.272529

Panglima Awang's stopover locations significantly (99% confidence level) show a cluster pattern, whereas Magellan's stopover locations do not significantly show any particular pattern at all. Although the Nearest Neighbour Ratio of Magellan's stopover locations show evidence of a cluster pattern, it is not statistically significant. Thus, it is probable that the pattern occurred randomly. There is a possibility that the difference between the two patterns arises because Panglima Awang made many stop-overs in neighbouring places, such as those around North Africa-Portugal-Spain and the Philippines-North Kalimantan. On the other hand, Magellan's ports-of-call were distributed over distant locations, except for those around the Philippines. This had much to do with the objective and mission of their voyage as well as the neighbourhood factor and the interruptions that occurred on their journey. For example, in the beginning, their mission was more commercial and political in nature; however, this changed when they reached Seville. A rebellion broke out in the Philippines and Magellan's ship was attacked. This led to his death. As has been explained earlier, the number of locations as well as the initial sailing locations also had a great influence. According to records, the initial location of Panglima Awang's voyage was Malacca; however, it was Seville for Magellan, despite the fact that Panglima Awang had started his voyage as a slave aboard Magellan's ship.

The results of this analysis will be different if more ports-of-call are added to the existing list due to new evidence of stopovers salvaged from other sources and records (input data), because the results of the pattern analysis require an aggregate of all the locations. This analysis was done using unprojected data (still in WGS1984). Usually, pattern analyses are carried out using projected data to obtain a more accurate distance between the points. Nevertheless, as the research area encompasses the whole world, the use of unprojected data is acceptable as there is no projected coordinate system that can project an area as extensive as the world accurately.

CONCLUSION

This article attempts to highlight the application of geographical information system in trying to gain greater insight into historical and literary events. The GIS approach was used to try to understand and analyse the voyage of Panglima Awang. Magellan and Elcano had sailed westward. Had the two continents, America and Africa, not obstructed them, they would probably have sailed along a straight course. The absence of a map of the world that

was complete at that time, might have been the reason they were not able to determine beforehand where or at which location they would stop over. Logically speaking, they would stop whenever they sighted land, after having sailed for some time. There is also the possibility that Magellan was only looking for an alternative route to Tidore. It was Elcano and several of his crew members who actually sailed around the world when he decided to sail westward after Magellan's death in Matan, the Philippines. Perhaps the enterprise was initiated by Magellan, but he failed to return to his original location (if we were to regard Europe as his starting point). However, if we were to take the Malay archipelago as the starting point of the voyage, then the voyage can be said to have been completed when Magellan reached the Philippines which is part of the Malay archipelago. Infact, this is a fair description of Panglima Awang's voyage. Although there are no specific records to prove that he succeeded in returning to Malacca, by arriving in the Philippines, he succeeded in reaching the Malay archipelago. It is thus indisputable that Panglima Awang or Enrique of Melaka was the first Malay to voyage around the world in the 16th Century.

NOTES

- 1 In Pigafetta's *The First Voyage Round The World By Magellan*, Magellan is referred to as Captain Fernado.
- 2 In Pigafetta too, the name Panglima Awang is changed to Henry.
- 3 10 August was a Wednesday, and 8 August, a Monday: the dates for all the weeks and months tally and are consistent with one another.
- 4 According to the log book of Albo: according to Pigafetta, May 6.
- 5 These dates are according to the ship's log; there is a day's difference from the time on the Island of Cape Verde and Seville.

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