



Validation of Qibla Direction of Raudhatul Jannah Mosque, Panceng Gresik

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Abstract: Roudlotul Mosque Jannah is the only mosque in Wonorejo Hamlet, Dalegan Village, Panceng District, Gresik Regency, built in the 1970s. The mosque used to be a small prayer room which was later converted into a mosque for local residents. In the past, only a simple method was used to measure the direction of the Qibla, namely using a compass. Meanwhile, the science of determining the direction of the Qibla has now undergone many developments and given rise to methods that are considered more accurate. Therefore, the author is interested in researching the accuracy of the direction of the Qibla of the mosque using the Rashdul Kiblat global Qibla direction measurement method and the Qibla azimuth used with Mizwala Qibla Finder and Isamicastro application. After conducting research, it can be obtained that the direction of the Qibla is Roushotul Jannah deviated or was not quite right towards the actual direction of the qibla with a difference of $3^{\circ} 37' 58.62''$ less to the south. Research into the direction of the qibla of mosques or prayer rooms is very important, considering that the qibla is Wrong One condition legitimate for a very prayer important. So the research on the direction of the Qibla makes the congregation in the mosque or prayer room more solemn and does not doubt the direction of the Qibla.

Keywords: Rashdul Qibla, Mizwala Qibla Finder, Isamicastro v3.0.

Abstrak: Masjid Roudlotul Jannah adalah satu-satunya masjid di Dusun Wonorejo, Desa Dalegan, Kecamatan Panceng, Kabupaten Gresik, yang dibangun pada tahun 1970-an. Masjid itu dulunya adalah mushola kecil yang kemudian diubah menjadi masjid untuk penduduk setempat. Dulu, hanya metode sederhana yang digunakan untuk mengukur arah kiblat, yaitu menggunakan kompas. Sementara itu, ilmu penentuan arah kiblat kini telah mengalami banyak perkembangan dan memunculkan metode yang dianggap lebih akurat. Oleh karena itu, penulis tertarik untuk meneliti keakuratan arah kiblat masjid dengan menggunakan metode pengukuran arah kiblat global Rashdul Kiblat dan azimuth kiblat yang digunakan dengan aplikasi Mizwala Qibla Finder dan Isamicastro. Setelah melakukan penelitian, dapat diperoleh bahwa arah kiblat adalah Roushotul Jannah menyimpang atau tidak cukup tepat ke arah kiblat yang sebenarnya dengan selisih $3^{\circ} 37' 58,62''$ kurang ke arah selatan. Penelitian tentang arah kiblat masjid atau mushola sangat penting, mengingat kiblat itu Salah Satu syarat yang sah untuk sholat yang sangat penting. Sehingga penelitian tentang arah kiblat membuat jemaah di masjid atau mushola lebih khushyuk dan tidak meragukan arah kiblat.

Kata kunci: Kiblat Rashdul, Pencari Kiblat Mizwala, Isamicastro v3.0.

A. Introduction

Every day, Muslims must always perform prayers, both obligatory prayers and sunnah prayers. In performing these prayers, the requirements of prayer must be met, starting from the obligatory requirements and the valid explanation of prayer. One of the valid requirements of prayer that is very important is that Muslims are required to face the Qibla when praying, namely facing towards the Grand Mosque (Kaaba) located in the city of Mecca, Saudi Arabia. This is as Allah has explained in QS. Al- Baqarah: 144. As explained in the verse, Allah SWT has determined the direction of prayer for Muslims, which must face the Grand Mosque according to the teachings of the Prophet Muhammad SAW. This applies to all Muslims



wherever they are. If you want to pray, you must face the direction of prayer, which is the Grand Mosque.

The obligation is for the people Who stay near Mosque Haram or in Mecca Possible won't face a problem What even. However, Muslims Who stay Far from Mecca, like Indonesia, possibly face difficulties and even sometimes happen conflict social. Problems regarding the direction of the Qibla are still widely found among Muslims in Indonesia. In the general public, there are various ways to determine the direction of the Qibla. They are starting from simple methods to methods using current technology.

In general, Muslims in Indonesia believe that facing the Qibla means facing the direction of the setting sun, which is towards the west. This is because if viewed geographically, Indonesia is located to the east of Mecca or Saudi Arabia. Therefore, Indonesian Muslims assume that the direction of the Qibla must face the west.

When determining the direction of the Qibla of a mosque which is a house of worship or a place where Muslims perform their prayers, it is very important to be careful. If the direction of the Qibla is wrong, people will indirectly direct their prayers in a direction other than the Kaaba. This has happened as long as the mosque has been standing and used for worship. The fact is that some mosques are still found to have the wrong direction of the Qibla. Several years ago, some of the 193 thousand mosques in Indonesia experienced a shift in the direction of the Qibla. A shift of between 0.7 and 1 degree is the average.¹

The public's ignorance of the actual direction of the Qibla causes mosques that are far from Mecca to no longer face the Qibla, but only face the west. This happens because the public assumes that facing the West with the right intention and belief is enough to face Qibla. This is also caused by the factor of the congregation not questioning the direction of the Qibla of the mosque and prayer room because they trust the committee, religious figures, or the party that built the mosque or prayer room from the beginning. The most important thing for the congregation of the mosque or prayer room is the ability to perform worship devoutly. They want to avoid technical problems related to the physical construction of their prayer room.²

As the problem regarding the direction of the Qibla explained above, it does occur in many mosques in Indonesia. One of them is the Roudlotul Mosque. Jannah is located on the north coast of Gresik, precisely in Wonorejo Hamlet, Dalegan Village, Panceng District, Gresik Regency. Based on information obtained by the author from interviews and pre-research observations, according to the mosque administrators, in determining the direction of the qibla of the mosque in the past, they only used a simple compass and assumed that the direction of the qibla was sufficient by facing west according to what was suggested by previous community leaders. (Muzamiluddin, 2024) Sometimes, some local people still ask about the accuracy of the direction of the qibla of the Roudlotul Mosque. Jannah. And most people do not know about

¹Ahmad Musonnif dan Kutbuddin Aibak, *Metode Penentuan dan Akurasi Arah Kiblat Masjid-Masjid di Tulungagung* (Tulungagung: IAIN Tulungagung, 2018).

²Efa Ainul Falah, "Upaya Mengoreksi Arah Kiblat," *Badan Litbang dan Diklat Kementerian Agama RI*, 2011 <<https://balitbangdiklat.kemenag.go.id/berita/upaya-mengoreksi-arrah-kiblat>> [diakses 28 Desember 2023].



the method used in measuring the direction of the Qibla. They only follow what was determined by community leaders in the past.

From the explanation above, it can be understood that further research is needed on this very important matter. Because of the many discussions about the changing direction of the Qibla at this time, Muslims are also concerned about the accuracy of the direction of the Qibla that they are facing. Therefore, the author is interested in researching more deeply related to the study of the direction of the Qibla which the author then poured into the form of this research paper. In conducting the accuracy test of the direction of the Qibla, there are two accuracy test methods used by the author. First, using Rashdul Kiblat Global. Second, using the Qibla azimuth with the Mizwala device Qibla Finder and Isamicastro application v3.0.

Research on the direction of the Qibla of mosques has been done by many previous researchers. Such as research conducted by Elly Uzlifatul Janah, et al. entitled "Verification of the Qibla Direction of Jami ' Nurul Huda Mosque, Cangakan Village, Kanor, Bojonegoro". In this study, the Mizwala method was used. Qibla Finder and Google Earth. Based on the results of his research, it can be concluded that the Jami 'Nurul Huda Mosque Cangakan Bokonegoro has a deviation of 8° to the North using Mizwala Qibla Finder and a deviation of 9° 19' 48" with *Google method Earth*.³ Although there are similarities with using the Mizwala method Qibla Qibla Finder, the thing that differentiates this research is the addition of methods used in this research, namely the Rashdul Kiblat method and the Islamicastro v3.0 application.

This study aims to determine the accuracy of the direction of the Qibla of the Roudlotul Mosque. Jannah Dusun Wonorejo Desa Dalegan Kecamatan Panceng Kabupaten Gresik. The benefits of this research are theoretically for the contribution of ideas and also as a source of information for researchers who will conduct further research on this problem from various perspectives and references related to measuring the direction of the qibla, especially the direction of the mosque's qibla and is expected to have practical benefits for the community in terms of reviewing the direction of the qibla or determining the direction of the Qibla. Especially for the community around the object of the mosque research and the general public at large.

B. Methods

The type of research used in this writing is qualitative research, namely a study that focuses on the analysis or interpretation of qualitative data/ research materials (in the form of quality, value/grade) using the *field research method*.⁴ Furthermore, the location of this research was carried out at the Roudlotul Mosque. Jannah is located in Wonorejo Hamlet, Dalegan Village, Panceng District, Gresik Regency. To obtain supporting information, the author uses various data collection methods in this study, namely observation, interviews, and documentation. The

³E U Jannah et al., "Verification of the Qibla Direction of Jami' Nurul Huda Mosque, Cangakan Village, Kanor, Bojonegoro," *Al - Afaq*, 6.1 (2024)
<<https://journal.uinmataram.ac.id/index.php/afaq/article/view/8475%0Ahttps://journal.uinmataram.ac.id/index.php/afaq/article/download/8475/3164>>.

⁴Fakultas Syariah Universitas Qomaruddin, *Pedoman Penulisan Karya Ilmiah* (Gresik: Universitas Qomaruddin, 2023).



data sources consist of two types, namely: primary data (observation and interviews) and secondary data (from books or academic journals related to the direction of the Qibla).

C. Results and Discussion

1. Understanding and Legal Basis for the Direction of Qibla

Linguistically, the word qibla comes from Arabic. *قِبْلَة* which is the mashdar form of the sentence *قَبَلَ - يَقْبِلُ - قِبْلَةً* which means facing.⁵ Qibla is also commonly called *qibala* which means meeting and *kiblatan* means the direction of the meeting.⁶ In another sense, the word qibla (*qiblah*) comes from the word *istaqbala* which has the same meaning as *wajaha*, which means facing.⁷

In the Great Dictionary of the Indonesian Language, the meaning of Qibla is the direction to the Kaaba in Mecca (during prayer). According to the complete Indonesian dictionary, there is a slight difference in the meaning of Kaaba and Qibla. In the complete Indonesian dictionary, the Kaaba is a sacred building in the form of a cube located in the Grand Mosque in Mecca which functions as the Qibla for Muslims and a place for tawaf during the Hajj and Umrah.⁸ Meanwhile, Qibla is the direction in which Muslims face when they perform prayers.⁹

Meanwhile, Slamet Hambali's explanation of the meaning of the direction of the Qibla is that the direction of the Qibla is the closest direction to the Kaaba (Mecca) via the closest route that passes through the circle of the earth.¹⁰ Muhyiddin Khazin defines the qibla as referring to the shortest distance of the great circle passing through the Kaaba (Mecca) and the surrounding cities.¹¹

As the opinion of the scholars who explain facing the Qibla in performing the prayer is obligatory because it is one of the requirements for the validity of the prayer. This is as explained in QS. Al- Baqarah verses 149-150.

وَمِنْ حَيْثُ خَرَجْتَ فَوَلِّ وَجْهَكَ شَطْرَ الْمَسْجِدِ الْحَرَامِ وَإِنَّهُ لِلْحَقِّ مِنْ رَبِّكَ وَمَا اللَّهُ بِغَفِلٍ عَمَّا تَعْمَلُونَ
وَمِنْ حَيْثُ خَرَجْتَ فَوَلِّ وَجْهَكَ شَطْرَ الْمَسْجِدِ الْحَرَامِ وَحَيْثُ مَا كُنْتُمْ فَوَلُّوا وُجُوهَكُمْ شَطْرَهُ لِئَلَّا يَكُونَ
لِلنَّاسِ عَلَيْكُمْ حُجَّةٌ إِلَّا الَّذِينَ ظَلَمُوا مِنْهُمْ فَلَا تَخْشَوْهُمْ وَاخْشَوْنِي وَلِأُتِمَّ نِعْمَتِي عَلَيْكُمْ وَلَعَلَّكُمْ تَهْتَدُونَ

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⁵Ahmad Warson Munawwir, *Al - Munawwir Kamus Arab - Indonesia* (Surabaya: Pustaka Progresif, 1997).

⁶Moehammad Awaluddin, "Analisis Setting Out Arah Qiblat dengan Menggunakan Metode GPS Real Time Kinematic," *Elipsodia*, 1 (2018), 7.

⁷Musonnif dan Aibak.

⁸"Definisi Kakbah," *Kamus Besar Bahasa Indonesia Versi Online* <<https://kbbi.web.id/Kakbah>> [diakses 9 Mei 2024].

⁹"Definisi Kiblat," *Kamus Besar Bahasa Indonesia Versi Online* <<https://kbbi.web.id/kiblat>> [diakses 9 Mei 2024].

¹⁰Slamet Hambali, *Ilmu Falak : Arah Kiblat Setiap Saat* (Yogyakarta: Pustaka Ilmu, 2013).

¹¹Muhyiddin Khazin, *Ilmu Falak Dalam Teori dan Praktek* (Yogyakarta: Buana Pustaka).



Meaning: 149. *So from wherever you go out [for prayer, O Muhammad] turn your face toward al-Masjid al-Haram, and indeed, it is the truth from your Lord. And Allah is not unaware of what you do. 150. And from wherever you go out [for prayer], turn your face toward al-Masjid al-Haram. And wherever you [believers] may be, turn your faces toward it in order that the people will not have any argument against you, except for those of them who commit wrong; so fear them not but fear Me. And [it is] so I may complete My favor upon you and that you may be guided.*

According to M. Quraish Shihab, the initial wording of verses 149 and 150 is the same, namely the command to face the Grand Mosque (Kaaba) when performing the prayer. In both verses, the command to face the Grand Mosque is repeated to emphasize and explain that the command is general for everyone, at all times, and everywhere. This is also done so that there is no longer any reason for the people of the book, the polytheists, and the hypocrites to oppose the Prophet in the matter of changing the direction of the qibla.¹²

2. Historical Profile of the Qibla of the Roudlotul Mosque Paradise

Roudhotul Mosque Jannah is the only mosque located in Wonorejo Hamlet, Dalegan Village, Panceng District, Gresik Regency. It is precisely located in RT 01 RW 08. Astronomically, the Roudlotul Mosque Jannah is located at 6° 54' 39.13" S and 112° 28' 46.65" E. The mosque is named " Roudlotul Jannah " which means the garden of heaven, with the intention of the mosque as a place of worship that provides a sense of comfort for its congregation so that the congregation feels at home when they are in the mosque.

Based on the explanations from several sources who were informants in this article, it can be seen that the origins of the Roudlotul Mosque Jannah were originally a prayer room owned by Mr Haji Sholeh. The prayer room for the surrounding community, in addition to being used as a place of prayer, was also used as a place for children to study the Koran and other social activities.

As time went by, in the 1970s community leaders and residents of Wonorejo Hamlet took the initiative to establish a mosque for the residents of Wonorejo Hamlet. This was because during Friday prayers the residents had to go to the mosque in the centre of the village (now called the Jami Mosque). Baitur Rochman) which is located very far away. So that not a few people who want to perform Friday prayers often miss Friday prayers or even when they arrive at the mosque the congregation has dispersed. Therefore with the encouragement of the Village Government to build their mosque so that it is not far away. After going through a deliberation process with community leaders in Wonorejo hamlet, the prayer room owned by Mr. Haji Sholeh was chosen to be used as a mosque.

Meanwhile, to determine the direction of the Qibla of the Roudlotul Mosque Jannah based on information the author obtained from the results of interviews regarding determining the direction of the Qibla of the Roudlotul Mosque Jannah can be understood as the process of determining the direction of the Qibla of the Roudlotul Mosque. Jannah uses a simple tool in

¹²M. Quraish Shihab, *Tafsir al-misbah: Pesan, Kesan dan keserasian Al-Qur'an volume 7* (Jakarta: Lentera Hati, 2002).



the form of a compass. The measurement of the direction of the Qibla was carried out by Mr. Hj Thoha who served as the administrator of the DMI (Indonesian Mosque Council) Panceng District, Gresik Regency at that time, witnessed by the mosque administrators and other community leaders. The measurement of the direction of the Qibla was carried out twice because the Roudlotul Mosque Jannah underwent two renovations using the same method, namely using the compass method. However, when measuring the direction of the qibla during the second renovation of the mosque, there was a slight change/shift in the direction of the qibla from the direction of the qibla of the previous mosque building. The direction of the Qibla of the Roudlotul mosque Jannah, where the direction of the Qibla on the second floor is under the direction of the Qibla on the ground floor without any special measurements of the Qibla direction for the second floor.

3. Measuring the Qibla Direction of Roudlotul Mosque Paradise

Qibla direction measurement is a stage in the Qibla direction accuracy test which aims to determine the direction of the Qibla from one place so that it is in the same direction facing the Kaaba in the city of Mecca. In this study, the author will use the Rashdul Kiblat Global method and the Azimuth theory Qibla-Sun with Mizwala device Qibla Finder and Android apps Islamicaastro v3.0 as explained below:

a. Rashdul the Global Qibla.

1) Theory

Rashdul Qibla is one way to find out the direction of the Qibla by using the time when the shadow of the sun's rays points towards the Qibla. This is a traditional method that is quite accurate for finding out the direction of the Qibla using only the sun's shadow, which is obtained from the sun's rays shining on an object that is standing upright.

According to Slamet Hambali, the method of measuring the direction of the Qibla using the *Rashdul Qibla method* is divided into two, namely the local *Rashdul Qibla method*. Or called *Rashdul daily qibla* and *Rashdul global qibla* or called *Rashdul annual qibla*. However, in this study, the author only used the *Rashdul global Qibla method to measure the direction of Qibla*.

Rashdul Qibla global itself occurs when the sun is directly above the Kaaba and is at the culmination point or the highest point of the sun above the Kaaba, which is when it is at $39^{\circ} 49' 39''$ East. The position of the sun above the Kaaba occurs when the declination of the sun is equal to the latitude of the Kaaba, which is $21^{\circ} 25' 25''$ North. The sun will then reach its highest point above the Kaaba. In other words, the position of the sun is exactly or close to exactly at the zenith point of the Kaaba, it occurs when the declination of the sun is the same as the latitude of the Kaaba.

Based on these provisions, the Rashdul global qibla method does not occur at all times but only occurs twice a year, namely: *First*, on May 27 or May 28 at 11.57 LMT (*Local Time*).

Mean Time) or at 16.18 WIB and *Second on* July 15 or July 16 at 12.06 LMT (*Local Time*) *Mean Time*) or 16.27 WIB.¹³

2) Steps

The implementation of this research coincided with the phenomenon of the sun being above the Kaaba which occurred on Monday, May 27, 2024. The measurements were taken at 16.18 WIB at the Roudlotul Mosque. Paradise Wonorejo the Dalegan Panceng Gresik. The equipment that the author uses is simple tools including a camera tripod, water level, rope, weights (in the form of stones or others), markers, and rulers.

Steps in measuring the direction of the Qibla using the Rashdul method, global Qibla at the Roudlotul Mosque Jannah is as follows:

- Determine the area of the mosque that is still exposed to sunlight at 16.18 WIB.
- Prepare and install tools to measure the direction of the Qibla in the form of a camera tripod, rope, and weights (in the form of stones).
- Make sure the measuring tool is level using a spirit level.
- When the time shows 16.18 WIB, immediately observe the shadow that occurs and mark it using a marker and ruler that can make a straight mark.
- The resulting line is the intended direction of the Qibla.

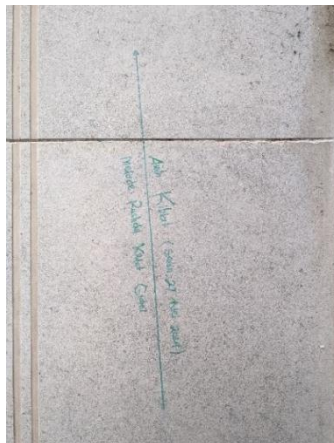


Image 3.1 Results of the Rashdul Global Qibla method measurement

- From the resulting line, the direction of the Qibla is slightly slanted to the south from the original direction of the Qibla.

a. Mizwala Combination Qibla Finder and Islamicastro Application v3.0

1) Theory

Islamicastro application is one of the Android applications that is very useful in the practice of astronomical science, in it several features can help in practising astronomical science. The Islamicastro application is an application created by one of the lecturers of Qomaruddin University, namely Muhammad Faishol Amin, S.Hi., M.Hi. Application Islamicastro v3.0

¹³Ahmad Izzudin, *Ilmu Falak Praktis* (Semarang: Pustaka Rizki Putra, 2012).



provide various features, including direction Qibla, time prayer, location, ephemeris data, position month and the sun, and help.

In the matter of determining the direction of the Qibla, the Islamicastro v3.0 application is very helpful thanks to the application's fairly complete algorithm, including:

- a) Time and place data is generated with the GPS satellite connection contained in every Android mobile device.
- b) Qibla direction and Qibla azimuth.
- c) Sun direction and sun azimuth.
- d) Solar declination data and *equation of Time*.¹⁴

As for the method of measuring the direction of the Qibla, the application provides a choice of 2 methods, namely the istiwa mobile method and the Qibla compass. In the istiwa 'Mobile method, the direction of the Qibla obtained is a straight line which is based on the application's calculations facing the Qibla. In applying the calculation results so that they face the Qibla exactly, other tools are needed to be more accurate. Where in this study the author combines it with using mizwala.

Mizwala itself is a tool created by Hendro Setyanto, M.SI. to determine the direction of the qibla using sunlight. Determining the direction of the qibla with mizwala is by using sunlight, and taking a shadow at the desired time. Then the dial plane is rotated by the angle in the program. After that, look at the azimuth angle of the qibla on the dial plane and pull it with thread. The line is the direction of the qibla.¹⁵

2) Steps to measure Qibla direction

Location: Roudlotul Mosque Paradise

Date : June 10, 2024

Time : 15.53 WIB

Tools : Mizwalah Qibla Finder, marker, ruler, thread, and also Islamicastro v3.0 application

Before using the Mizwala method Qibla Finder should search for the data needed to measure the direction of the Qibla with the help of the Islamicastro v3.0 application as per the following steps:

- a) Open the previously installed Islamicastro v3.0 application and select the “ **Kiblat Direction** ” menu. (Make sure the device is connected to the internet and activate the location feature)
- b) When entering the " **Qibla Direction** " menu, the application will automatically display the coordinates of the measurement location. And wait until the smallest accuracy (± 5 meters).
- c) Once the accuracy is below 5 meters then *screenshot* so that the data does not change.

¹⁴Nilna Minakhah, *Studi Akurasi Aplikasi Android Islamicastro versi 1.8.12 Dalam Penentuan Arah Kiblat*, 2019, 1 <<https://eprints.walisongo.ac.id/id/eprint/10304/>>.

¹⁵Imroatul Munfaridah, *Ilmu Falak Dasar dan Perhitunganya* (Ponorogo: Nata Karya, 2019).

- d) Next, select the " **Istiwa 'Mobile** " method to see the direction of the mosque's qibla. When it appears like the image below, immediately *screenshot it* so that the data does not change.

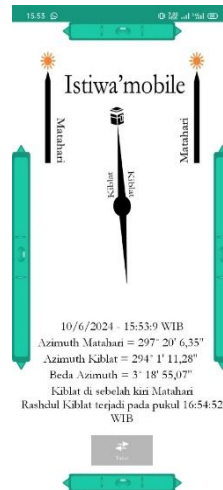
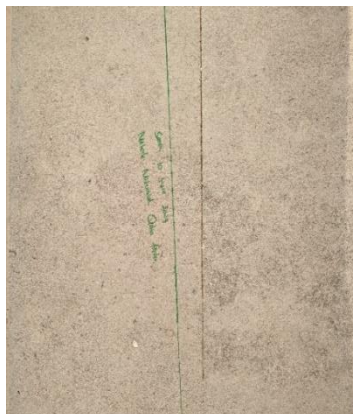


Image 3.2 Display of Istiwa' Mobile features of the Islamicastro v3.0 application

With the data obtained from the Islamicastro v3.0 application as shown in the image above, the next step is to apply it to the Mizwala media. Qibla Finder with the following steps:

Prepare and install the tools to measure the direction of the Qibla, namely Mizwalah Qibla Finder, marker, ruler, and thread, and determine the area of the mosque that is exposed to sunlight (at 15.53).

- Then place the sun's shadow in the place provided on the field dial. Do not change the position of the field and keep the position of the mizwalah so that it does not move.
- Azimuth difference value (based on data obtained from the Islamicastro application).
- Draw a line on the floor based on the thread that has been attached to the Mizwalah.
- The resulting line is the actual direction of the Qibla.



Drawing of the Mizwala method measurement results



From the resulting line, the direction of the Qibla is slightly slanted to the south from the original Qibla direction. As with the line obtained using the global Rashdul Qibla theory.

4. Analysis of the Accuracy of the Qibla Direction of the Roudhotul Mosque Paradise

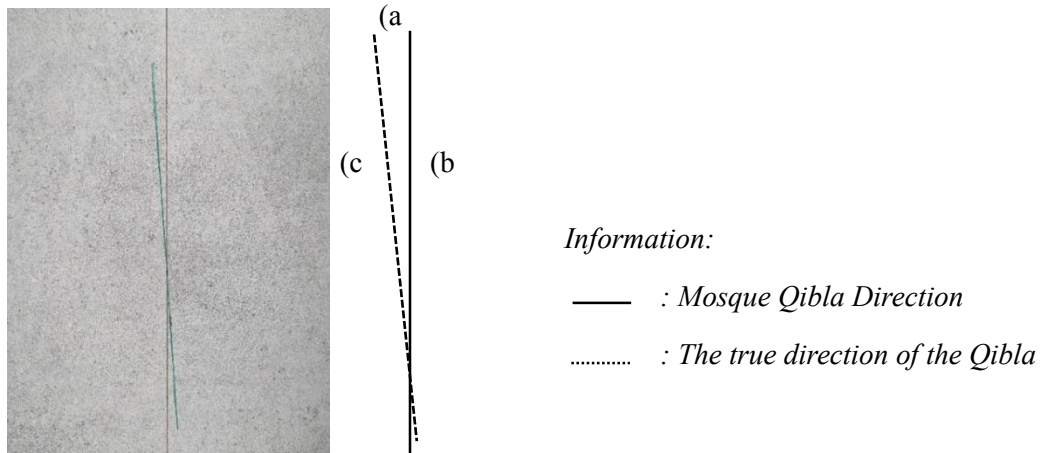
Based on the previous explanation, the direction of the Qibla is something that cannot be separated from Muslims. This is because the direction of the Qibla is one of the requirements for valid prayer. Meanwhile, the calculation and measurement of the direction of the Qibla itself has developed following the development of science and technology that increasingly helps in determining the direction of the Qibla. So that the direction obtained is more accurate. Starting from the latest theories and also more modern measuring instruments, such as theodolites and satellite assistance.

In the problem of determining the direction of the Qibla of the Roudhotul Mosque Jannah, Wonorejo Hamlet, Dalegan Village Panceng Gresik Regency at the time of his elders used a device in the form of a compass. The measurement of the direction of the Qibla was carried out by Mr. Hj Thoha who served as the administrator of the DMI (Indonesian Mosque Council) Panceng District Gresik Regency at that time witnessed by the mosque administrators and other community leaders.

Roudhotul Mosque Jannah Dusun Wonorejo itself experienced changes. This happened when the direction of the Qibla was measured during the second renovation of the mosque using the same measurement method, namely using a compass. The change in the direction of the Qibla occurred when it was felt that the previous direction of the Qibla was not quite right towards the actual direction of the Qibla (the Kaaba).

Meanwhile, in determining or checking the direction of the Qibla (mosque, prayer room, or langar), the use of this compass should be avoided to measure the direction of the Qibla. This is because the direction indicated on the compass is not the actual direction, but Earth's magnetic field. In addition, that thing metal around the compass influences the magnetic field, which is very influential, especially in the mosque where framework steel around it.

Furthermore, when the accuracy test of the direction of the Qibla was carried out using the calculation of the direction of the Qibla using the spherical triangle theory (*Spherical Algorithm*) and measurement of Qibla direction using global Qibla rashdul theory and Qibla azimuth with the Mizwala device Qibla Finder and the Isamicastro v3.0 application, it can be seen that the direction of the Qibla of the Roudhotul Mosque Jannah is slightly off or not quite right towards the actual direction of the Qibla. Then to calculate the size of the angle resulting from the intersection between the current direction of the Qibla and the direction of the Qibla after an accuracy test is carried out to find out the difference, the author uses the following illustration and calculation:



Data obtained:

$$(a) = 2 \text{ cm}$$

$$(b) = 31.5 \text{ cm}$$

$$(c) = 32 \text{ cm}$$

Calculation:

$$\tan \alpha = \frac{(a)}{(b)}$$

$$\tan \alpha = \frac{(2 \text{ cm})}{(31.5 \text{ cm})}$$

$$\tan \alpha = 0.0634920634921$$

$$\alpha = 3.6329507394882$$

$$\alpha = 3^\circ 37' 58.62''$$

So, the difference between the direction of the mosque's qibla and the actual direction of the qibla is **3° 37' 58.62''**.

D. Conclusion

After carrying out a series of research procedures and also measuring the direction of the Qibla of the Roudhotul Mosque Jannah, Wonorejo Hamlet, Dalegan Village Panceng, Gresik Regency, then the conclusion obtained from the formulation of the existing problem is:

1. The method used by the mosque administrators in determining the direction of the Qibla of the Roudhotul Mosque Jannah, Wonorejo Hamlet, Dalegan Village The direction of prayer in Gresik Regency is by using a compass assuming that the direction of the Qibla is facing west.
2. After the accuracy of the direction of the Qibla of the Roudhotul Mosque was carried out Jannah, Wonorejo Hamlet, Dalegan Village Panceng Gresik Regency using the spherical triangle calculation theory (*Spherical Algorithm*) and measurements using global Qibla rashdul theory and Qibla azimuth with the Mizwala device Qibla Finder and the Isamicastro v3.0 application, then the results are obtained if the direction of the Qibla is Roushotul Jannah deviates or is not quite right towards the actual direction of the Qibla with a difference of 3° 37' 58.62''. With a difference of only 3° 37' 58.62'', it is still in an acceptable category considering its position which is very far from the city of Mecca.



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