

## THE USE OF KOMPAS IN DETERMINING THE ACCURACY OF QIBLA DIRECTION (CASE STUDY ON MOSQUES IN SERDANG BEDAGAI REGENCY)

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### ABSTRACT

This study aims to examine the accuracy of the Qibla direction in several mosques in Serdang Bedagai Regency, determined using a compass, and compare it to the Qibla direction calculated astronomically using geographic coordinates and GPS-based digital applications such as Google Earth. According to scholars, those who can see the Kaaba directly must face the Kaaba building ('ainul Ka'bah). However, for those far from Mecca, facing the Kaaba's direction (Jihah Ka'bah) is sufficient. Accurately determining the Qibla direction is essential for the validity of prayer. In Serdang Bedagai Regency, people commonly use a compass to find the Qibla direction, but its accuracy is often influenced by local magnetic fields and user error. This study employs an empirical legal research method, focusing on 17 mosques as a sample out of 665 mosques in the region, selected using purposive sampling. The researchers also conducted interviews for additional data. The results show that most mosques have a deviation in the Qibla direction, with an average difference of 2° to 25° from the correct direction. This indicates that manually using a compass without calibration and consideration of local factors can lead to inaccuracies. The study recommends using more accurate methods, such as GPS devices, digital apps, or observing the sun's position during Rashdul Qiblah, especially for new mosque constructions.

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## INTRODUCTIONS

In the rapidly growing digital era, hospitals must adapt to technology and communication Prayer is the main worship, which means true worship is only to get the pleasure of Allah SWT. In addition, prayer is one of the five pillars in Islam. Therefore, everyone who wants to perform the prayer correctly must do it in accordance with the

instructions that have been set by Allah SWT and His Messenger through the Qur'an and al-Hadith, without adding or subtracting in the slightest. (Gimnastiyar et al., 2025; Harahap et al., 2024) (Arifin, 2020)

In the implementation of prayer, there are provisions that determine whether this worship is valid or not. If some or all of these conditions are not met, then the prayer is considered invalid. Therefore, it is important to meet all the existing requirements, one of which is facing the qibla. (Bimasakti et al., 2023)

The direction of the qibla is a fundamental aspect in the implementation of prayer for Muslims, because prayer must be carried out facing the Kaaba located in the Grand Mosque, Mecca. Mistakes in determining the direction of the qibla can have an impact on the validity of worship. Therefore, the proper determination of the direction of the qibla is very important, especially for the construction and arrangement of the direction of prayer saf in mosques (Wakia & HR, 2020). The Qibla is the direction that Muslims go to when performing prayers at the Kaaba in Mecca. In Latin, the qibla is known as the Azimuth. Ahmad Izuddin described the qibla as the form of the Kaaba building or the direction that Muslims go to when carrying out various religious activities. Thus, linguistically, the direction of the Qibla indicates facing the Kaaba during prayer (Tanjung, 2018).

For those who live around the Masjid al-Haram, pointing their faces towards the Kaaba is very simple, as they can see it directly. However, for people who live outside the territory of Makkah, such as in Serdang Bedagai Regency, calculations are needed to determine the direction of the qibla. (Amir, 2020)

In Indonesia, the method of determining the direction of the qibla that is commonly used in society is to use a compass. Compasses are considered to be practical, inexpensive, and easy to operate. However, the accuracy of the compass in determining the direction of the qibla is often questioned, mainly due to the influence of local magnetic fields, the limited understanding of the user's understanding of the working principle of the compass, and the lack of calibration. This has the potential to cause deviation or deviation from the direction of the Qibla from its actual position. (Alamsyah et al., 2022; Cahyani et al., 2022)

Serdang Bedagai Regency as one of the regions in North Sumatra Province has many mosques whose qibla direction is determined using a compass manually. However, not many studies have been conducted to measure the accuracy level of Qibla direction in this region. Therefore, it is important to conduct research that examines the use of compasses in determining the direction of the Qibla, as well as comparing the results with more precise astronomical methods such as geographic coordinate calculations or the help of GPS-based digital applications.

This study aims to assess the accuracy level of the qibla direction in a number of mosques in Serdang Bedagai Regency whose qibla direction is determined using a compass. It is hoped that the results of this study can provide recommendations for the community and mosque managers in using a more precise and accurate method of determining the direction of the qibla.

## METHOD

In writing scientific papers, to obtain validity, the approach used in collecting data in this article is to use a descriptive quantitative approach with field research methods. The purpose of this approach is to measure the level of accuracy of the Qibla direction determined using a compass in several mosques in Serdang Bedagai Regency, then compare it with the Qibla direction based on astronomical calculations based on geographical coordinates. The object of the research is the qibla direction of the mosques in Serdang Bedagai Regency which totals 665 mosques which are the research population. The sample in this study is 17 mosques from several sub-districts using the Purposive Sample technique which is a (Scott, 2011) *non-random sampling technique*, with the vastness of Serdang Bedagai Regency and the large number of mosques requiring the researcher to draw non-probability samples. In addition, the researcher also conducted interviews

The data that has been collected is then compiled in chronological order, where separate information is identified, selected, verified, and rearranged regularly according to the mapping framework of the problem being studied. The next step then involves data analysis that runs simultaneously with the process of data mining, data interpretation, and other narrative preparation in writing. The data that has been collected is processed by reducing the information in a certain pattern, then organized into theme categories, followed by interpretation based on the scheme that has been implemented. From there, conclusions can be analyzed using descriptive-analytical methods.

## RESULT AND DISCUSSIONS

### Understanding and Evidence Regarding the Qibla

In terms of language, the qibla comes from the sentence "*Qabala – Yaqbalu*" which means "*al-wajhatu*" which is to face, in al-Qamus al-Muhit the qibla means "*al-Jihatu*" which is the direction, while the opposite of it is "*al-Dabratu*" which is behind or back. In carrying out prayer, the position of the individual body must lead to a goal, which is a guideline for every person who worships. The destination faced is literally the Kaaba. Every Muslim at prayer is obligated to lead to the Kaaba, as explained by Sa'da Abu Jaib: (Al- Fairuzabadi, 2005)

الْكَعْبَةُ، لِأَنَّ الْمُسْلِمِينَ يَسْتَقْبِلُونَهَا فِي صَلَاتِهِمْ

Meaning: "The Qibla refers to the Kaaba because Muslims turn their faces to the Kaaba when performing prayers."

Known as the qibla, this name is in accordance with the meaning of the language which means that Muslims when performing prayers will focus on the Kaaba, and the Kaaba will focus on them. Thus, the person who prays and the Kaaba is in a position to face each other. This statement was expressed by Muhammad al-Amin al-Harari asy-Shafi'i in a commentary entitled *Hadaiq Rauhi war Raihan*: *وَأَمَّا سَمِيَتْ قِبْلَةً؛ لِأَنَّ الْمُصَلِّيَ يُقَابِلُهَا وَهِيَ تَقَابِلُهُ* "The Qibla is so called because the person who is performing the prayer leads to it and the Qibla is also the direction to which it is going". (Al-Shafi'i, 2001)

The definition of Qibla according to terms will be explained based on the views of jurists and astronomers:

- 1) Tgk. Mohd. Ali Muda: Facing oneself towards the Qibla means directing oneself towards the Kaaba, regardless of where one is. This can be measured using the azimuth of the north point, which is the angle produced between the desired location for jibla and the direction of the North and the Kaaba.
- 2) The Qiblah, according to Muhyiddin Khazin, can be understood as the direction or shortest distance traveled through the line connecting the city of Mecca (Kaaba) with the city in question.
- 3) Ahmad Izzuddin: The most straight path for everyone is the Kaaba, and all Muslims are obligated to face it when worshipping.
- 4) Nurmal Nur: Since the direction of the Kaaba in the Grand Mosque in Mecca is the qibla, a Muslim should face this direction when praying or laying the body in his final resting place. (Jaib, 1988)

Simply put, what is meant by the direction of the qibla is facing the qibla at the closest distance to the Kaaba in Mecca, and every Muslim is obliged to face it when performing prayers (Tanjung, 2017). There are various arguments that are the basis for the obligation to face the qibla when performing prayers. One of the verses in the Qur'an that discusses a lot about the direction of the Qibla is:

1) Al-Baqarah: 142

سَيَقُولُ السُّفَهَاءُ مِنَ النَّاسِ مَا وَلَهُمْ عَن قِبْلَتِهِمُ الَّتِي كَانُوا عَلَيْهَا قُلْ لِلَّهِ الْمَشْرِقُ وَالْمَغْرِبُ يَهْدِي مَنْ يَشَاءُ إِلَى صِرَاطٍ مُسْتَقِيمٍ

Translation: "Perhaps those who are less intelligent ask, "What caused the Muslims to abandon their Qibla (Baitul Maqdis), which they had established before? God, who is responsible for all people, owns the East and the West. You might comment, "He chose to follow the right path."

2) Narrated by Bukhari from Anas:

حَدَّثَنَا إِسْحَاقُ بْنُ نَصْرٍ قَالَ حَدَّثَنَا عَبْدُ الرَّزَّاقِ أَخْبَرَنَا ابْنُ جُرَيْجٍ عَنْ عَطَاءٍ قَالَ سَمِعْتُ ابْنَ عَبَّاسٍ قَالَ لَمَّا دَخَلَ النَّبِيُّ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ الْبَيْتَ دَعَا فِي نَوَاحِيهِ كُلِّهَا وَلَمْ يَصِلْ حَتَّى خَرَجَ مِنْهُ فَلَمَّا خَرَجَ رَكَعَ رَكْعَتَيْنِ فِي قُبْلِ الْكَعْبَةِ وَقَالَ هَذِهِ الْقِبْلَةُ

Translation: "According to Ishaq bin Nashr, Abdurrazaq bequeathed it to us through Ibn Juraij, who then obtained it from Atha. Ibn Abbas told me that the Prophet prayed wherever he saw him entering the Kaaba and did not stop until he left." (Khazin, 2005)

### The Direction of the Qibla According to Fuqaha

The scholars agree on the obligation to face the Kaaba for people who can see it directly. However, the difference of opinion among the fuqaha revolves around whether a person who lives in a place or country far from the Kaaba is obligated to face it. The views of the conflicting scholars can be explained as follows:

- 1) According to Ahmad al-Kasani (Hanafi Madzhab): That everyone who sees the Kaaba must face directly as ordered in order to be able to do so. However, it is enough to face the Kaaba if one cannot see it because of its great distance. According to the Hanafi madzhab, it is enough to face the Kaaba rather than directly observe the building if one is far from the Kaaba and the city of Mecca and cannot see it.
- 2) Ibn Rusyd al-Qurtubi (Maliki Madzhab) : The Hanafi school that does not oblige those who live far from the Kaaba to face directly, in line with the view of Ibn Rushd. According to Ibn Rushd, it will certainly be a challenge for someone who is far from his desire to approach the Kaaba. He said that measuring instruments such as compasses are needed to face the Kaaba properly. Ijtihad does not require this, because it is too difficult to try to use technology and measurement techniques. This argument shows that the majority of Maliki scholars are of the opinion that jihad al-Ka'bah is sufficient to perform prayers for those who are unable to see it.
- 3) Imam Ash-Shafi'i: Imam as-Shafi'i said: A person who is in Mecca and has a clear view of the Kaaba is no different from someone who lives far away and cannot see it. With the help of the sun, moon, stars, mountains, wind direction, and other natural cues, the two individuals should try their best to face the Kaaba building. These occasions can help a person in directing his gaze towards the Kaaba. (Qal'aji, 1988)

According to the Shafi'i school, people who live far from Mecca and cannot see the Kaaba, are still obliged to face it, as explained by Imam Nawawi. Advances in astronomical science and technology have brought us closer to our ambition to see the Kaaba, although that may still seem impossible. Therefore, the Shafi'i school is the only school that differs from the Hanafi, Maliki, and Hanbali schools, all of which will be discussed in more detail later. The third sect, in general, holds that it is sufficient for a person who is far from the Kaaba to face only that direction, although the Shafi'i sect still insists that the person must face directly towards the Kaaba. (Izzuddin, 2012; Nurqolbi DY et al., 2024)

Ibn Qudamah (Madzhab Hambali): that for a person who cannot see the Kaaba because it is far away, it is enough to face the Kaaba without having to see the building directly.

### Method of Measuring the Qibla Direction of the Mosque in Serdang Bedagai Regency

According to research findings regarding the device used to determine the direction of the qibla of mosques in Serdang Bedagai Regency, there are at least 11 mosques that are representatives of several sub-districts within the Serdang Bedagai Regency area, which use the compass as the main instrument to find the direction of the qibla, including: 1) Nurul Huda Mosque Jl. Simpang Tiga Pekan Kel. 2) It-Tifaq Mosque Hamlet I Sukajadi Village,



Perbaungan District, 3) Al-Ikhlas Mosque Dusun II Sukajadi Village, Perbaungan District, 4) Al-Muttaqin Mosque Dusun XII Celawan Village, Pantai Cermin District, 5) Jami' Al-Ikhlas Mosque in Kota Pari Village, Pantai Cermin District, 6) Nurul Iman Mosque in Dusun VII Celawan Village, Pantai Cermin District, 7) Al-Muttaqin Mosque in Dusun IX B Bingkat Village, Pegajahan District, 8) Al-Mubarak Mosque Dusun IV Pematang Setrak Village, Teluk Mengkudu District, 9) Al-Ikhlas Mosque Dusun II Liberia Village, Teluk Mengkudu District, 10) Al-Abrar Grand Mosque Dusun II Firdaus Village / Jl. Lintas Medan-T.Tinggi, Kec. Rampah, 11) Mosque At-Thoyyibah Dusun X Desa Firdaus / Jl. Lintas Medan-T.Tinggi, Kec. Rampah.

Only a small part of all mosques in Serdang Bedagai Regency are represented by the mosques mentioned above. The purpose of this Qibla direction measurement tool research is to collect data from various sub-districts in this region. It was found that each sub-district has a mosque that uses a compass as a tool to determine the direction of the qibla. In Serdang Bedagai Regency, the compass is still the main instrument to determine the direction of the qibla.

The above statement is in line with the words of one of the BKM (Mosque Nazir Agency) administrators, namely:

Mr. Syaiful Anwar, Secretary of the Management Board of the It-Tifaq Mosque, in Dsn I, Sukajadi Village, Perbaungan District, He said that:

"This mosque was rebuilt and moved backwards to the backyard and the direction of the qibla was remeasured by the religious leaders of this village using a compass" (Interview with Syaiful Anwar, 2025)

In addition, Mr. Ridho Alpian Purba, Chairman of the Board of the Nurul Huda Mosque Board, Jl. Simpang Tiga Pekan District, Perbaungan District, also said:

"When this mosque was built, previously the direction of the qibla was measured first using a compass in the direction of the cardinal, and it had been agreed by the community, and was attended by the Regency MUI at that time (Interview with Ridho Alpian Purba, 2025).

In addition, Mr. Muhammad Abduh, Chairman of the Board of the Al-Ikhlas Mosque Secretariat, Dsn II Liberia Village, Teluk Mengkudu District, also stated:

"In the past, the direction of the qibla in this mosque used a compass, but to my knowledge, the direction is still towards the west (Interview with Muhammad Abduh, 2025).

In addition, Mr. H. Sishakli Siregar, Chairman of the Board of the Al-Abrar Grand Mosque Board, Dsn II Firdaus Village / Jl. Lintas Medan - Tebing Tinggi, Kec. Rampah, Serdang Bedagai Regency also said:

"Previously, this mosque was in front near the side of the road, then this mosque was built again, then the qibla direction of this mosque was measured again by the Ministry of Religion using a compass. And the direction of the Qibla also changed from the previous direction" (interview with Mr. H. Sishakli Siregar, 2025).

To determine the direction of north and south, the compass uses a magnetic needle that adjusts to the earth's magnetic field. The operation of a compass often relies on the notion of a magnetic field. The magnetic poles of the earth can be shown with this tool. The compass needle will always point north and south of the magnet due to its magnetic characteristics.

Compasses have several functions and benefits, including finding the magnetic direction of the north, taking angular measurements, assessing angles on maps, and determining the orientation of places, and identifying cardinal directions. However, when using a compass, it is important to keep this tool away from objects made of metal, such

as coins, cutting tools, etc., as these objects have the potential to change the direction of the compass needle and prevent it from pointing in the correct north direction. ( Cahyani et al., 2022; Helmi & Badrian, 2024)

Determining the face of the qibla using a compass is currently often carried out by the Muslim community. The direction indicated by the compass refers to magnetic north. However, magnetic north is not always in the same direction as true north. This difference is called magnetic oblivious angle or declination, which varies from place to place and can change over time. Another problem that may arise when using a compass is the effect of local gravitational pull, which can be affected by the metal material as well as the electric current around the compass. Nonetheless, the compass can still serve as an alternative option in the absence of more accurate equipment. (Amen&A Sutopo, 2022) ( Ansori & Ali, 2022; Hasjun et al., 2024; Vidyana et al., 2025)

It is important to understand the different types of compasses available on the market. Many compasses are not very accurate. Compasses are often used without first adjusting or verifying their magnetic declination. Information on the strength of the correction or magnetic declination can be obtained from the Meteorology, Climatology, and Geophysics Agency (BMKG). Ensuring the accuracy and correctness of the instructions received is essential.

#### **BKM (Mosque Nazir Body) Does Not Know the Measurement of the Qibla Direction of the Mosque**

Many BKM (Mosque Nazir Agency) do not really understand how to assess the direction of the qibla of the mosque, including the tools used to do so. There are two possible explanations for this: the BKM (Mosque Nazir Body) may not exist or may not function as the administrator of the nazir during the Qibla measurement briefing for their mosque. Second, the problem of determining the direction of the qibla of their mosque has received less attention from the local community and BKM (Mosque Nazir Agency). In SEM PLS involves *t-value* and *p-value analysis* to assess the significance of relationships between variables, providing a solid basis for empirically and reliably testing theoretical assumptions.

In this case, the researcher has examined a number of mosque administrators who claim to be the elements of how to determine the direction of the qibla of the mosque or what tools are used in determining the direction of the qibla, namely: 1) Al-Amin Mosque Dusun VIII Celawan Village, Pantai Cermin District, 2) Jami' Grand Mosque Dusun IV B Sukasari Village, Pegajahan District, 3) Taqwa Mosque Dusun II Pegajahan Village, Pegajahan District, 4) Nurul Huda Mosque Dusun II Pasar Baru Village, Teluk Mengkudu District.

The managers of the four places of worship are elements of techniques and tools used to determine the direction of the Qibla. Most of them admitted that they were not present when the measurements were taken. In addition, these mosques have existed for a long time, even before the formation of settlements in the area. As mentioned by:

Mr. Nasrun Harahap, Chairman of the BKM of the Jami' Grand Mosque, Hamlet IV B, Sukasari Village, Pegajahan District, Serdang Bedagai Regency. He said:

"I don't know how the direction of the qibla of this mosque was measured at that time, nor do I know what tools were used to determine its direction. Because I am an overseas, I am also a new generation who was appointed as a BKM administrator, since I settled in this area, this mosque has been established. And as long as I served as the chairman of BKM, there was never a redetermination of the direction of the qibla for this mosque" Interview with Nasrun Harahap, 2025).

In addition, the same was conveyed by Mr. Muhammad Isa, Secretary of the BKM of the Taqwa Mosque of Dusun II, Pegajahan Village, Pegajahan District, Serdang Bedagai Regency:

"I don't know, because I was not a native here, my wife was a native here. In addition, my wife could not tell me how to measure the direction of the qibla in the Taqwa Mosque or the tools used to do so" (Interview with Muhammad Isa, 2025).

**The BKM (Mosque Nazir Agency) confirmed that the direction of the mosque's Qibla had been measured, but did not know the type of tool used.**

In this problem, there are two mosque nazirs who have been interviewed by researchers. They admitted that the location of their mosque had been measured by a team from the Ministry of Religion that was experienced in determining the direction of the qibla, the results were in accordance with the direction of the qibla of the mosque.

However, they did not know what tools were used, namely: 1) Sulaimaniyah Mosque Jl.Serdang Kel. Simpang Tiga Pekan Perbaungan, 2) Al-Hidayah Mosque Dusun VI Desa Firdaus, Kec. Rampah.

The alignment of the mosque which is said by the management to face the right direction for the prayer, is also in accordance with MUI Regulation Number 5 of 2010 which mandates that the direction faces the northwest. However, behind this statement, many mosque administrators do not know what tools and methods are used to determine the direction of the qibla of their mosque.

Statement from Mr. H. Zulkifli, Imam of the Sulaimaniyah Mosque which is located at Jl. Serdang Kel. Simpang Tiga Pekan Perbaungan, Kec. Perbaungan, He said that:

"The Qibla direction for this mosque was remeasured about seven years ago, and now it is correct, pointing directly to the Kaaba. Because it is measured by BHR from the Ministry of Religion and also from KUA Perbaungan. But I don't know how the measurements, methods and tools used to determine the direction of the qibla of this mosque. Because I wasn't in the mosque at the time. And the next day, the chairman of BKM said that yesterday there was a measurement of the direction of the qibla in our mosque, and the direction was right" (Interview with H. Zulkifli, 2025).

In the same vein, Mr. Jalil, the Treasurer of the BKM Al-Hidayah Mosque is located in Hamlet VI, Firdaus Village, Kec. Rampah, :

"The Al-Hidayah Mosque was measured after the demolition of the old mosque, I don't know what tools to use to measure it, because at that time I was working. And he said that the direction of the qibla of this mosque has been determined accordingly" (Interview with Jalil, 2025).

It is natural that some people do not understand the methods and equipment used in determining the direction of the Qibla. To understand it, it takes knowledge and in-depth discussion. However, as a BKM (Mosque Nazir Agency), at least it is necessary to understand everything related to the mosque, including the issue of the direction of the qibla. This is important so that the responsibilities carried out can be in accordance with religious understanding. Moreover, if someone asks a question, it can be answered easily.

Undoubtedly, the mosque used the right equipment to study astronomy, such as GPS, a reliable magnetic compass, theodolite, and measurement formulas, assuming that the measurements were in accordance with the correct rules. Therefore, the BHR (Hisab and Rukyat Agency), which of course has experts in the field, becomes the official body that determines the direction of the mosque's qibla. (Hijri & Anis, 2021; Izzuddin et al., 2021; Pathuddin et al., 2023)

Therefore, it can be said that the compass is a basic tool used in mosques in Serdang Bedagai Regency to determine the direction of the qibla. However, there are still mosques whose method of determining the direction of the qibla is not clear. The direction of the qibla can be measured because of two things: first, the mosque nazir does not exist or has never worked at the BKM (Mosque Nazir Agency). Second, it is possible that the BKM (Mosque Nazir Agency) and the local community do not care about the direction of the qibla or forget how to measure it in their mosques.

## **Kompas as an Important Means to Determine the Direction of the Qibla for the People of Serdang Bedagai Regency**

The most widely used tool by the people of Serdang Bedagai Regency to determine the direction of the qibla is the compass. This is evidenced by research conducted in two stages. First, by looking at and ascertaining the exact location of the mosque building which according to the compass instructions is facing west. In the second stage, interviews were conducted with religious leaders and mosque administrators in Serdang Bedagai Regency, discussing the determination of the direction of the qibla. The west direction is considered the qibla because the people at that time understood that the qibla of prayer in the west is the Kaaba. The compass was the only tool used at that time to determine the direction of the West. (Khalifah, 2021)

From the observations of researchers conducted by visiting a number of mosques in Serdang Bedagai Regency, with the belief that the sun sets in the West, the majority of mosque buildings are located facing West. The researcher talked with the Mosque Management Agency in Serdang Bedagai Regency to find out the reason behind the orientation of the mosque qibla in the region towards the West, namely towards the sunset. Based on the results of the interview, the opinions of the people of Serdang Bedagai Regency about the direction of the qibla facing the West are influenced by the influence of certain religious figures who have a great influence on society and knowledge inherited from previous generations. According to them, the city of Mecca is symbolized by the West, which is the place where the sun sets. As a result, in determining the direction of the Qibla, they were only satisfied with the existence of a mosque facing directly to the West, even though they did not actually know the exact degree of the direction of the Qibla.

If we trace the historical and oldest mosques from the 1990s in Serdang Bedagai Regency and also the newly built modern mosques, one of the tools used to find the direction of the qibla is the compass. This happens for several reasons:

- a) When building a mosque in Serdang Bedagai Regency, the compass became the only instrument used to determine the direction of the west and direction of the qibla.
- b) Kompas is an easy-to-use, useful, and affordable tool that is available in many places (interview with Muhammad Adi, 2025).

Today, Theodolites, total stations, mizwalas, and other contemporary instruments are available to ascertain the direction of the Qibla. However, we also understand that this technology is quite expensive, and people with limited resources cannot afford it. As a result, the residents of Serdang Bedagai Regency continue to use the compass to determine the direction of the qibla. (Hasan et al., 2022; Parks et al., 2024)

Furthermore, it is not always a straight line that is parallel to the physical mosque facing West. From research conducted in the field using a digital compass, it was found that most of the mosques in Serdang Bedagai Regency turned out to have a West direction that was not exactly straight forward, but leaned to the left. This suggests that assumptions regarding the straight West are not always true and need to be re-examined with more precise tools. (Sapphire, 2022; Yaqin & Azmi, 2023)

Following the explanation above, the direction of the qibla for most mosques in Serdang Bedagai Regency has not been clearly determined based on astronomical calculations. There are several reasons that make the direction of the qibla in Serdang Bedagai Regency not correct based on astronomical calculations, including:

- a) The minds of people who still do not openly accept the determination of the direction of the Qibla based on astronomical calculations, they believe that the decision regarding the direction of the Qibla that has been determined through astronomical studies is no different from others. They also wondered why the change in the direction of the qibla was a big problem, even though they thought the direction of the qibla of the ancient mosque in Serdang Bedagai Regency was in accordance with the correct direction of the Kaaba. (Hakim, 2023)



- b) People believe that their Qibla points to the West. The basis of this concept is Surah al-Baqarah verse 142 of the Qur'an which states that Allah has east and west. Therefore, in Serdang Bedagai Regency, the west direction is considered the right direction of the qibla. ( Srianani & Ukhti , 2022)
- c) The community considers Tuan Guru and Asatidz as important religious leaders in directing the direction of the qibla. They are strong, respected, and liked, and have an influence on society. The people have great respect for this Master because of his presence, and they will reconsider the choice of the qibla of the religious leader to see if his choice is wrong and needs to be changed if the qibla changes. If the direction of the mosque's qibla is changed, they feel it is a form of disrespect to these figures. (Nabilla & Daulay , 2024)

In accordance with the points mentioned and various other factors, the researcher has observed the suitability of the direction of the qibla of the mosques used as examples in this study, using modern tools such as *Google Earth*, with the following results:

| Qibla Direction Calibration |                        |                       |                           |                     |           |
|-----------------------------|------------------------|-----------------------|---------------------------|---------------------|-----------|
| Yes                         | Name of the Mosque     | Azimuth<br>Qibla (AK) | Azimuth<br>Mosque<br>(AM) | Qibla<br>Correction | Direction |
| 1                           | Sulaimaniyah Mosque    | 292° 43' 48"          | 290° 49' 12"              | 1° 54' 36"          | North     |
| 2                           | Nurul Huda Mosque      | 292° 43' 12"          | 271° 54' 36"              | 20° 48' 36"         | North     |
| 3                           | Majid It-Tifaq         | 292° 43' 12"          | 293° 59' 24"              | 1° 16' 12"          | Westward  |
| 4                           | Majid Al-Ikhlās        | 292° 43' 12"          | 275° 17' 24"              | 17° 25' 48"         | North     |
| 5                           | Al-Muttaqin Mosque     | 292° 42' 0"           | 277° 55' 12"              | 14° 46' 48"         | North     |
| 6                           | Jami' Al-Ikhlās Mosque | 292° 41' 24"          | 293° 31' 48"              | 0° 50' 24"          | West      |
| 7                           | Nurul Iman Mosque      | 292° 43' 12"          | 273° 58' 12"              | 18° 45' 0"          | North     |
| 8                           | Al-Amin Mosque         | 292° 42' 36"          | 272° 18' 36"              | 20° 24' 0"          | North     |
| 9                           | Jami' Grand Mosque     | 292° 47' 24"          | 267° 26' 24"              | 25° 21' 0"          | North     |
| 10                          | Taqwa Mosque           | 292° 46' 12"          | 275° 17' 24"              | 10° 10' 12"         | North     |
| 11                          | Al-Muttaqin Mosque     | 292° 46' 48"          | 278° 55' 48"              | 13° 51' 0"          | North     |
| 12                          | Al-Mubarak Mosque      | 292° 43' 48"          | 296° 30' 0"               | 3° 46' 12"          | West      |
| 13                          | Nurul Huda Mosque      | 292° 43' 12"          | 297° 28' 48"              | 4° 45' 36"          | West      |
| 14                          | Al-Ikhlās Mosque       | 292° 43' 48"          | 275° 42' 36"              | 17° 1' 12"          | North     |
| 15                          | Al-Abrar Grand Mosque  | 292° 44' 24"          | 298° 52' 48"              | 6° 8' 24"           | West      |
| 16                          | At-Thoyyibah Mosque    | 292° 45' 0"           | 298° 46' 12"              | 6° 1' 12"           | Westward  |
| 17                          | Al-Hidayah Mosque      | 292° 44' 24"          | 295° 2' 24"               | 2° 18' 0"           | Westward  |

Only one mosque, the Jami Al-Ikhlās Mosque in Kota Pari Village, Pantai Cermin District, Serdang Bedagai Regency, has a Qibla direction almost parallel to the position of the Kaaba, based on researchers' search of 17 mosques using Google Earth. The It-Tifaq Mosque in Hamlet I, Sukajadi Village, Perbaungan District, and the Sulaimaniyah Mosque on Jalan Serdang, Simpang Tiga Pekan Perbaungan Village, Perbaungan District, Serdang Bedagai Regency are two more mosques whose Qibla direction has been determined by astronomical method and is still acceptable. The angle that separates the direction of the mosque building from the direction of the qibla is different for the other 14 mosques, which ranges from 2 to 25 degrees from the location of the Kaaba.

## CONCLUSION

In conclusion, the compass is a tool used to determine the direction of the qibla of the mosque in Serdang Bedagai Regency. The findings of the research obtained through interviews show that there are 11 (eleven) BKM (Mosque Nazir Agency) who stated that they measure the direction of the qibla of their mosque with a compass. This is due to the fact that although this tool has its drawbacks, it is very easy to obtain and use, both by experts and by the general public. However, there are also 4 (four) mosques that do not know at all about how to measure the direction of the qibla and the tools used for it. This may be due to two reasons: First, measurements are carried out when the BKM (Mosque Nazir Agency) is not present or has not acted as the location manager. Second, BKM (Mosque Nazir Agency) and local residents do not care or forget about the problem of measuring the direction of their mosque's qibla. In addition, there are 2 (two) BKM (Mosque Nazir Agency) who stated that their mosque had been measured according to the direction of the qibla, but did not know the tools used.

From the analysis of the researcher conducting a study on 17 mosques through Google Earth, only one mosque has a qibla direction almost parallel to the location of the Kaaba, namely the Jami' Al-Ikhlas Mosque which is located in Kota Pari Village, Pantai Cermin. In addition, there are several other mosques whose Qibla direction is still acceptable and has been measured using the astronomical method, such as the Sulaimaniyah Mosque located on Jl Serdang, Simpang Tiga Pekan Perbaungan Village, and the It-Tifaq Mosque in Hamlet I, Sukajadi Perbaungan Village. As for the other 14 mosques, there is a deviation in the direction of the qibla in most mosques with an average difference of 2° to 25° from the actual direction. This suggests that the manual use of the compass without calibration and consideration of local factors can lead to inaccuracies in determining the direction of the Qibla. This study recommends the use of more precise methods such as GPS devices, digital applications, or observation of the position of the sun during Rashdul Qiblah, especially for the construction of new mosques.

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