**METHODOLOGY**

**Research Design**

The major goal of this study is to gather data from students and tricycle drivers to determine the requirements needed for the development, what features the system should have, develop the booking system with the integration of IoT, and evaluate its overall effectiveness based on ISO 25010. To achieve this, the study uses a descriptive research design to understand the challenges faced by the students at Cagayan State University – Gonzaga Campus regarding transportation inside the campus and how IoT integrated tricycle booking system can address these issues.

**Instrumentation**

To collect relevant data, the study uses a combination of multiple data collection techniques:

1. Interview - The researchers will interview the available tricycle drivers and students to hear their thoughts about daily transportation problems, their opinions and expectations for a booking system. This helps in identifying what the tricycle booking system should address.
2. Questionnaires – The researchers will conduct a survey questionnaire for students to determine the requirements needed for the system development and the feature they would like to see in the system. The survey also assesses their willingness to use technology.
3. Observation – The researchers will conduct on-site observations to understand the daily situation of the students getting to the tricycle terminal located outside the campus.

**Data Gathering Procedure**

The data collection process begins with the preparation of survey questionnaires and interview questions. Before conducting the study, the first step is to make a formal request letter to the College Dean, Campus Executive Officer, and the Head of the Tricycle Drivers Organization for the study to be conducted. Once the request letter is approved by the College Dean and the Campus Executive Officer, survey questionnaires will be distributed to students during vacant hours to avoid distractions of classes. Selected tricycle drivers also participate in the interview once the request letter is approved by the Head of the Tricycle Drivers Organization. Meanwhile, the researchers observe the daily situation of the students in the campus during their vacant hours. After the data gathering phase, the researchers will collect and tally the data.

**Participants of the Study**

The participants in the study consist of two main groups:

1. Students – Selected through cluster sampling, these students represent the primary users of the tricycle booking system.
2. Tricycle drivers – Those operating in front of the campus, as they are the key service providers for students’ transportation.

Both students and tricycle drivers will share their daily experiences, thoughts, and concerns through survey questionnaires and interview. Their insights will play an important role in designing the system, making sure it addresses their needs and improves transportation inside the campus.

**Data Analysis**