CHAPTER III

RESEARCH METHOD

3.1 Types of research

This research uses quantitative research with a comparative approach. Quantitative research is research that starts from something abstract, focuses on a theoretical basis from which a hypothesis is then formulated to be tested so that it leads to concrete events (Sidik & Sunarsi, 2021).

3.2 Design of research

Design of research used as a guide in carrying out the research process. The research design aims to provide clear and structured guidelines for conducting research (Hardani, 2022).

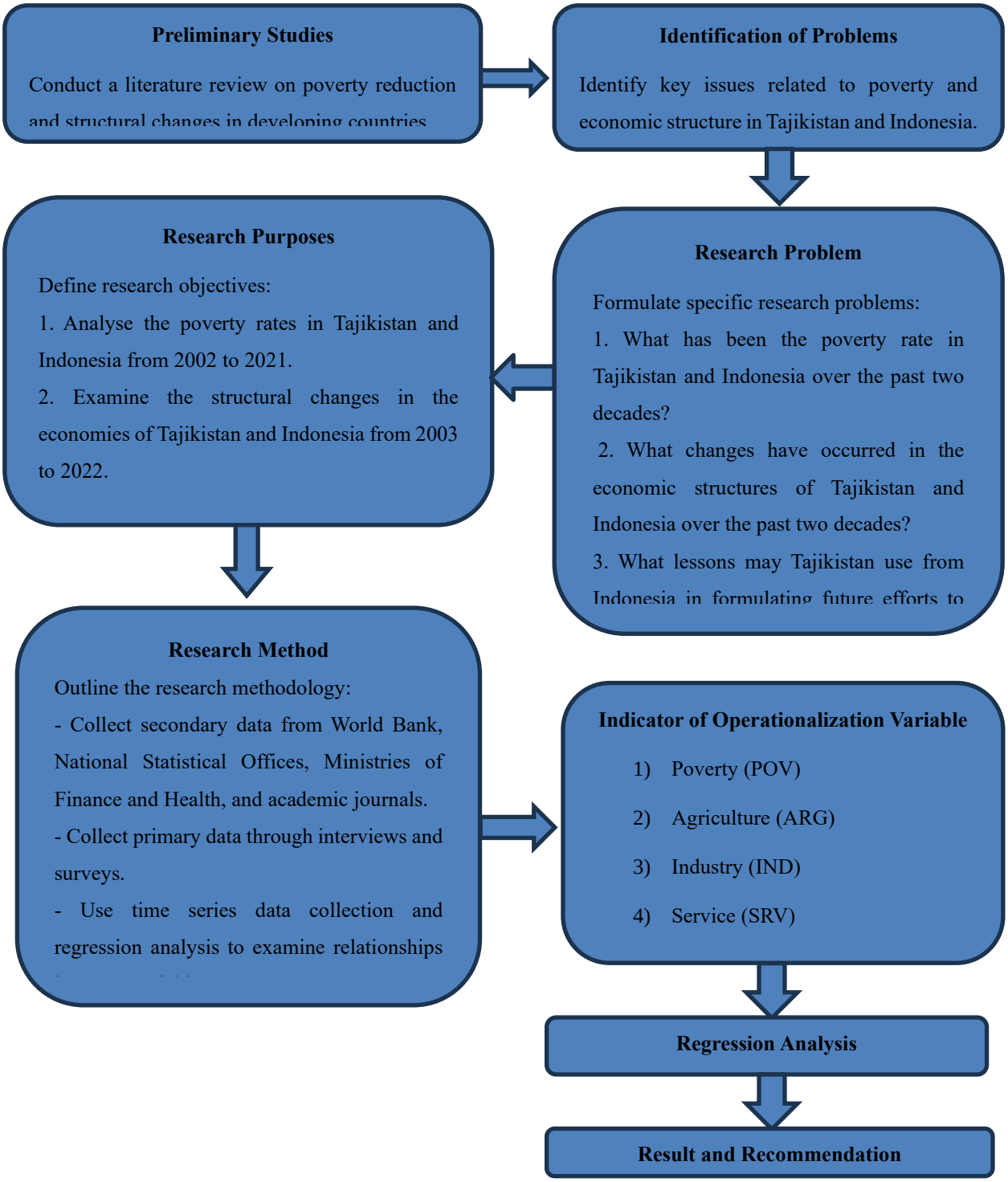

Figure 3.1 Design of Research

3.3 Definition and Operationalization of Variables

In this study there are 2 variables, namely independent variable and dependent variable. Independent variables are variables that cause or have a theoretical possibility of having an impact on other variables, this variable is Structural change. Dependent variable is a variable that structurally thinks scientifically into a variable caused by changes in other variables, this variable is Poverty reduction. Structural change is a change in economic structure from traditional sectors with low productivity to sectors of the economy with higher productivity. Poverty reduction is a condition of depreciation which are reflected in low income, skills, productivity, and opportunities to participate in development

3.3.1 Operationalization of Variables

An operational definition is a kind of guide on how to measure a variable. According to Sugiyono, (2008) the operational definition of a research variable is an element or value that comes from an object or activity that has a certain variety which will then be determined by the researcher to be studied and conclusions drawn. The operational definition of a variable is an attribute or trait or value of a person, object or activity that has certain variations that are determined by the researcher to be studied and then conclusions are drawn. The research variables can be described in the table as follows:

Table 3.1 Operationalization of Variables (Including Dummy Variable for Government Policy)

Types	Variable	Definition measurement	Indicator	Unit	Source of Data
(Y)	Poverty (POV)	Poverty is measured by the poverty rate, which is the percentage of the population living below the poverty line, which reflects the extent low level of income, skills, productivity, and opportunities in a population.	Poverty rate.	Percentage (%)	World Bank
(X1)	Agriculture (AGR)	Agriculture is measured by value added, measured by the production of food crops, horticulture, fisheries and forestry.	Value added	USD ($)	World Bank
(X2)	Industry (IND)	Industry is measured by value added, measured by the processing of raw materials, semi-finished, or finished goods into high-quality products.	Value added	USD ($)	World Bank
(X3)	Service (SRV)	Service is measured by value added, which reflects the economic results of the activities of individuals or organizations to meet the needs of others.	Value added	USD ($)	World Bank
(X4)	Government Expenditure (GOV_EXP)	Government expenditure is measured by the percentage of GDP, to spent on health and education, reflecting the government's efforts to reduce poverty through social spending.	Government expenditure on health and education	Percentage (%)	World Bank

3.4 Data Collection Sources and Technique

In this study, we utilize a combination of primary and secondary data sources to gather comprehensive information on the variables of interest for Indonesia and Tajikistan from 2002 to 2021. The following outlines the data collection sources and techniques used:

1. Data Collection Sources

a. Statistical Data:

- World Bank: The primary source for poverty rates, sector contributions to GDP (agriculture, industry, service), and government expenditure data. The World Development Indicators database provides reliable and consistent data for both countries.
- National Statistical Offices: Additional data on economic indicators and government policies might be sourced from BPS (Badan Pusat Statistik) for Indonesia and the Agency on Statistics under the President of the Republic of Tajikistan.
- Ministries of Finance and Health: Specific data on government expenditures on health and education can be sourced from the respective ministries in both countries.
- Academic Journals and Reports: Peer-reviewed journals, government reports, and publications from international organizations like the United Nations and Asian Development Bank for contextual and supplementary data.

2. Data Collection Techniques

a. Time Series Data Collection:

- Annual Data: Collect annual data on the following variables from 2002 to 2021:
- Poverty Rates: Percentage of the population living below the poverty line.
- Sector Contributions to GDP: Percentage contributions of agriculture, industry, and services to the GDP.
- Government Expenditure: Annual expenditure on health and education (in USD or local currency).

b. Data Analysis Techniques:

- Time Series Regression: Employ time series regression models to analyze the impact of independent variables (sector contributions, government expenditure, policy implementation) on the dependent variable (poverty rate).

- Statistical Testing: Conduct various statistical tests, including partial and simultaneous testing, to assess the significance and impact of each variable.

3.5 Model and Analysis Method

3.5.1 Model

To analyze the impact of structural changes and government policies on poverty reduction in Indonesia and Tajikistan, we will run two separate regression models for each country using the same set of variables over the period from 2002 to 2021.

Model for Indonesia

$$POV_{IDN,t} = \beta_0 + \beta_1 ARG_{IDN,t} + \beta_2 IND_{IDN,t} + \beta_3 SER_{IDN,t} + \beta_4 GOV\_EXP_{IDN,t} + \epsilon$$

Model for Tajikistan

$$POV_{TJK,t} = \beta_0 + \beta_1 ARG_{TJK,t} + \beta_2 IND_{TJK,t} + \beta_3 SER_{TJK,t} + \beta_4 GOV\_EXP_{TJK,t} + \epsilon$$

Explanation:

$\boldsymbol{POV}$: Poverty rate in the respective country and time period.

$\boldsymbol{ARG}$: Contribution of agriculture to GDP in the respective country and time period.

$\boldsymbol{IND}$: Contribution of industry to GDP in the respective country and time period.

$\boldsymbol{SER}$: Contribution of services to GDP in the respective country and time period.

$\boldsymbol{GOV\_EXP}$: Government expenditure on health and education in the respective country and time period.

t = time period (year) from 2002 to 2021

$\boldsymbol{\epsilon}$ = Error term

3.5.2 Analysis Method

1. Time Series Regression

   Time Series Regression (TSR) is basically the same as regression, especially regression with dummy variables. In this study, the TSR model is a model that handles the trend and seasonal components separately. In general, a trend is defined as a long-term direction that continuously goes up or down, and seasonality is a recurring pattern with the same period, for example 12

months per year. The seasonal pattern TSR model is generally written as follows: (Melisa, 2021)

2. Classic Association Test

Classic Association Test is to test the relationship between two or more variables in a sample to apply to the entire population from which the sample was taken. (HARDANI)

a. Statistical Testing

The statistical testing in this study is based on a hypothesis and involves analysing the collected data statistically. We will perform the following steps:

Null Hypothesis ($H0$): There is no significant relationship between the dependent variable (poverty rate) and the independent variables (agricultural sector, industrial sector, service sector, and government policy indicators).

Alternative Hypothesis ($H1$): There is a significant relationship between the dependent variable (poverty rate) and at least one of the independent variables.

b. Partial Testing

Partial Testing to determine the effect of the independent variable partially or individually on the independent variable with the assumption that the other variables are constant. So, it can be known that: (Jamaludin, 2020)

Null Hypothesis ($H0$): The coefficient of the independent variable is equal to zero (no effect).

Alternative Hypothesis ($H1$): The coefficient of the independent variable is not equal to zero (significant effect).

c. Simultaneous Testing

Simultaneous Test (F-statistic Test) is used to determine the magnitude of the influence of all independent variables on the dependent variable. So, it can be known that:

H0 : The added value of the structural change no effect on poverty

H1: The added value of the structural change has a negative effect on poverty.