# Jimpitan in Wonosobo, Central Java: an indigenous institution in the context of sustainable socio-economic development in Indonesia

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# III Research Methods

In line with the recent growing interest in applied ethnoscience, and particularly the potential of the Indigenous Knowledge Systems in various sectors of society that have reached sustainable community development, the role of local institutions in Indonesia has attracted the interest of policy planning officers, administrators, and academicians involved in the study and analysis of local systems of knowledge and technology within the context of socio-economic development (Slikkerveer 1999; Agung 2005; Todaro and Smith 2012; Deijil 2014; Saefullah 2019). Therefore, the need to document, and gain a better understanding of, indigenous knowledge and development at theoretical and methodological levels is required. After the theoretical orientation of the previous chapter, this chapter provides the methodology, presented in section 3.1. The research method and techniques are described in section 3.2.

## 3.1. Selection of Research Methods

### *3.1.1. The 'Leiden Ethnosystems Approach'*

In 1986, the Leiden Ethnosystems and Development Programme (LEAD) was officially established. Several in-depth studies were conducted in some countries as a collaboration of a group of anthropologists and development sociologists from Leiden University working in policy-based projects with local perceptions, practices, ideas, and skills, and their underlying cosmologies in the context of the process of socio-economic development. The LEAD program has been focusing on the concept of ethnosystems, which comprise indigenous knowledge, beliefs, and practices of local people based on prolonged experience and wisdom in the specific socio-cultural context. The ethnosystems concept studies the cognitive and behavioral components of specific communities with its methods of 'participant observation', 'semi-structured interviews', 'triad ranking', the construction of 'transects', and the use of 'community cartography' in close co-operation with members of the community. These methods are intended to gain a better understanding of indigenous knowledge systems, and also to enhance a realistic comparison between indigenous and global systems of knowledge and technology. In addition, there are three methodological principles that are taken into account. These are 'The Participant's View' (PV), 'Field of Ethnological Study' (FES), and 'Historical Perspective' (HP). The "Ethnosystems Approach" developed at Leiden University constitutes three principles based on the concepts of the

"Leiden Tradition of Structural Anthropology". They are: first, the 'Participant's View' (PV) (P.E. de Josselin de Jong 1956). It transforms the subjective perceptions and attitudes into an objective social system in order to gain the assessment of local cosmovisions, philosophies of nature, attitudes, opinions, perceptions, and decision-making systems in a particular culture. The principle provides a non-normative, local assessment of indigenous systems of knowledge, practice, and belief, which describes the *emic* approach. P.E. de Josselin de Jong (1956) says that the participant's view is important for comparative purposes. Second, the 'Field of Ethnological Study' (FES) refers to a specific geographical area that has similar cultural features. Hunter & Whitten (1976) introduced the concept of cultural area "that is defined as *a part of the world in which the inhabitants share many of the elements of culture such as related languages, similar economic systems, social systems, and ideological systems".* The FES principle allows the comparison of cultural characteristics among different indigenous communities within the same region and could be used as regional comparative research among different ethnic groups within the same region (J.P.B. de Josselin de Jong 1935). By using comparative approach we can formulate questions and search for answers in wider context which can be extremely important part for understanding problems within a particular area. It may also generate knowledge and insights that may turn out to be relevant for solving certain kind of problems (Radcliffe-Brown 1951). However, we can also be trapped in only collecting the materials if we are not going beyond empirical documentation of local conditions, which could provide more knowledge about the state of the world. This is called by Edmund Leach by "butterfly collecting" (Barnard and Spencer 1996). Third, the 'Historical Perspective' (HP) adds the historical dimension of long-term developments and practical situations across societies. In a certain way, the historical dimension can also be considered as part of the comparative approach in the sense of taking into account varying conditions not just in space but also in time. Awareness of historical development is relevant for understanding the present-day situation (Locher 1978; Matsumoto 2000).

J.P.B. de Josselin de Jong (1935) notes that, based on his studies on the Malay Archipelago and Indonesia, the world view constitutes the religious belief that affects the life of individuals and communities. In developing his concept of 'field of ethnographic study', he also made use of the insights of one of his students, Van Wouden (1935), who had worked on West Sumba, and who had contributed a lot to the comparative study of Indonesian cultures. Therefore, to better understand the activities that the local people are doing, we need first to be acquainted with their indigenous world view. Slikkerveer *et al.* (1995) state the importance of participants' views in a different society and cultural setting on planning and implementing development. The observation, description, and analysis method of integrating such a particular socio-cultural system develop the individual subjective perceptions and attitude into an objective social system. It provides a valuable component in the ethnosystems study: the people's indigenous cosmologies, perceptions, and decision-making systems. It allows the *emic* (internal) view, instead of the *etic* (external) view, and a non-normative assessment of local and regional cultures in the development context.

An *emic* perspective shows locally significant characters. The better the understanding of the culture, the easier the ethnoscientific analysis can be conducted. *Emic* analysis refers to one society and a set of interacting individuals (Sturtevant 1964). The view of economic

problems from the perspective of local people (*emic* view) is based on bottom-up approaches, which involve the participation of local people in the utilization of local resources and describe the process of development in the community (Saefullah 2019). The emic perspective is used to avoid biases in the researcher's effort in understanding the knowledge, beliefs, and practices of the local people as participants in gaining information on how the local people perceive, organize, and utilize their culture related to their environment and also its relevance to the local decision-making process in managing and solving development-related problems.

The *emic* and *etic* view in development renders the institutions and organizations into two groups: 'Traditional Institutions' and 'Exogenous Organizations'. In addition to those two classifications, this research will make one more classification in between, namely transitional organizations; referring to the work of Slikkerveer (1990), Agung (2005), Leurs (2010), Aiglsperger (2014), and Saefullah (2019), they have existed in the development policies. According to the previous descriptions, the local classifications of institutions and organizations include the indigenous institutions, transitional organizations, and exogenous organizations.

### *3.1.2. The Multivariate Model of the Utilization of Institutions and Organizations*

With respect to the utilization of *jimpitan* through generations in Wonosobo, Central Java, as a local indigenous institution, it is important to substantiate and extend the understanding of people's knowledge and practice of financial fulfillment. Therefore, in order to bring the three principles of ethnosystems in the desired model of combined qualitative and quantitative approaches, a specific multivariate model has been created to understand and describe the complex relationships between independent and dependent variables of the utilization of *jimpitan*. The existence of local institutions for many generations at the community level has provided the poor members with mutual aid activities, *e.g.* the *jimpitan*. As a community initiative, *jimpitan* has the potential to encourage people not only to participate in social activities to overcome social problems but also in more effective socio-economic activities for poverty reduction and empowerment at the community level, which eventually will contribute to the process of sustainable community development.

The multivariate model (Figure 3.1) which is based on the ethnosystems concept broadens the cultural perspective, and enables the assessment of the cognitive aspect and behavior of the group or a particular community as a system in a rather comprehensive way. It also allows the elaboration of the culture concept as historical processes of acculturation which conceive the analysis of the interaction between humans and the environment (Slikkerveer 1992; Agung 2005). The multivariate model which consists of quantitative and qualitative methods is used to record and analyze the indigenous cosmologies, belief systems, and attitudes in a scientific model; to transform the individual variables of perceptions and ideas into systems variables to get value-free measurement and comparison; to compare the indigenous knowledge systems with Western knowledge systems (Slikkerveer 1999).

The multivariate model employed in this research adopts the Leiden Ethnosystems Approach with some adjustments. There are several blocks of factors in this model. One is the block of dependent factors which are the utilization of indigenous institutions of *jimpitan*, the utilization of transitional organizations, and the utilization of exogenous organizations. Second is the block of independent factors which consist of (a) socio-demographic variables, (b) psycho-social variables, (c) perceived need for financial services variable, (d) socio-economic status variables, (e) institutional variables, (f) environmental variables, and (g) intervening variables. Referring to Aiglsperger's study (2014), the independent variables of (a) to (d) are measured on the individual level, which appoint to the individual concepts. The independent psycho-social variables and perceived need for satisfaction with financial services measure the cognitive aspects which relate to the systems of knowledge, belief, and opinion, where the psycho-social variables measured on a general basis and the independent perceived need for satisfaction with financial services assess people's knowledge, belief, and opinion specifically in relation to their experiences with the financial services. The factors measured at the system level relate to official components of the financial services operating in the research area as well as to external phenomena.

### *3.1.3. Operationalization of the Conceptual Model*

The model adapted from Slikkerveer (1999, 2007) is designed to analyze the various categories of background and variables influencing the categories of dependent variables of the utilization behavior as reported by the respondents in the sample surveys. The operationalization of the conceptual model into an appropriate tool of measurement is described by the block of factors. It will be divided into measurable units such as variables that affect the selection of research techniques and statistical means of data analysis. According to Bernard (2006), the operational definition consists of an instruction set of how to measure a variable that has been conceptually defined. Conceptual definitions are limited since it is not a defined measurement. Without measurement, a useful comparison cannot be made. Their indicators measure variables, and their values define indicators.

*Independent Predisposing Factors*

A decision at an individual level that affects the encouragement or discouragement of the utilization of *jimpitan* – predisposing factors – is influenced by socio-demographic and psycho-social factors. The socio-demographic and psycho-social factors comprise personal factors which describe the social-cultural background of the society. Psycho-social factors, sometimes called the 'soft' factors, are affected by external influences which sometimes could be misinterpreted. Meanwhile, the 'hard' socio-demographic factors such as gender, age, ethnic affiliation, education, religion, occupation of the head of the household, size of the household, and marital status are mostly factual (Slikkerveer 1990). Aslam *et al.* (2020) state that the socio-demographic factors (they called it borrower characteristics) influence the payment of the loan the people utilized from the microfinance institutions. Table 3.1 shows the operationalization of the concept of the block of socio-demographic factors into variables, indicators, and categories. The socio-demographic factors with its variables (Ferrara 1996; Djankov 2008; Nwaru *et al.* 2011; Ferede 2012; Cao *et al.* 2019; Moahid *et al.* 2020) are shown in table 3.1. The psycho-social factors include the documentation of

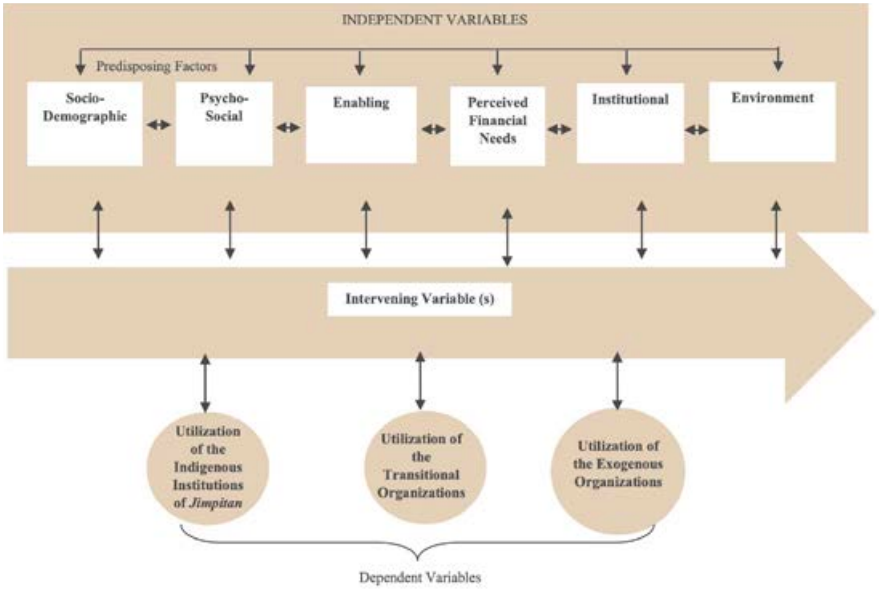


Figure 3.1 Conceptual Model of Available institutions/organizations
Adopted from Slikkerveer (1999, 2007); Warren, Slikkerveer, and Brokensha (1995)

'soft' factors during the household surveys which use specific techniques of documentation for the measurement, as shown in table 3.2 (Uphoff 2000; Matsumoto 2000; Agung 2005; Aiglsperger 2014). The data were collected from different geographical location representing rural and urban areas, and mountainous and low land areas. Kejajar is rural area located in mountain, Kalibeber is urban area located in low land, Wonosobo Barat is urban area located in the low land, and Sojokerto is rural area located in the low land.

*Independent Enabling Factors (Socio-economic Factors)*

Enabling factors are characteristics related to the socio-economic status of the household head at an individual level in society and cannot be altered by an individual (Slikkerveer 1990; Agung 2005). The variables in this block are household head income, family expenditure, and socio-economic status.

*Independent Perceived Financial Needs Factors*

The perceived need for and satisfaction with financial services will capture the indigenous people's perceptions of the utilization of financial institutions in society to fulfill their financial needs. It is the main reason which underlies the decision of choosing particular financial institutions to fulfill their financial needs, the considerations of choosing one specific financial institution among several, and the satisfaction level of utilization of specific financial institutions. The factor measures the cognitive aspects related to financial services which assesses people's knowledge, beliefs, and opinions, specifically concerning their experiences with financial services. One approach to understanding the functioning

of a services system is in terms of its utilization. Use of service is a primary, tangible expression of the demand, if not the need, for that service, and of the system's responses to the perceived needs and expressed demands. As an event, use is universally and readily recognized by both consumers and the provider of services and can be considered as a valid measure of the interaction between the two.

**Table 3.1 Independent Predisposing Factors: Socio-Demographic Variables**

| Concept | Variable | Indicator | Categories |
|---|---|---|---|
| **Socio-Demographic Factors at the individual level** | Village | Name of Village | Kejajar, Wonosobo barat, Kalibeber, Sojokerto |
| | Household size | Number of household members | 1 member; 2 members; 3 members; 4 members; 5 members; 6 members; 7 members |
| | Gender | Gender definition | Male; female |
| | Age | Number of years alive | <5; 6-10; 11-15; 16-20; 21-25; 26-30; 31-35; 36-40; 41-45; 46-50; 51-55; 56-60; 61-65; 66-70; 71-75; 76-80; 81-85; 86+ |
| | Place of birth | Location of the place of birth | This Village; other village (in the sub-district); other village (in the district); other (in the province); other |
| | Ethnic | Ethnic group | Sundanese; Javanese; Minangkabau; Batak; Manado; Makassar; China; other |
| | Religion | Religious affiliation | Animism; Islam; Catholic; Protestant; Buddha; Hindu; other |
| | Formal Education | Level of education completed | No formal education; primary education; high school; university; other |
| | Marital status | Present marital status | Single; married (monogamy); married (polygamy); widow/ separated; widower/separated; divorced; other |
| | Occupation | Type of main occupation | Farmer; civil servant; teacher; house-maid; laborer; retailer; entrepreneur; military force / police officer; craftsman; retired; other |

**Table 3.2 Independent Predisposing Factors: Psycho-Social Variables**

| Concept | Variable | Indicator | Categories |
|---|---|---|---|
| **Psycho-social factors at individual level** | Knowledge | Level of Knowledge | None; very little knowledge; little knowledge; average knowledge; much knowledge; very much knowledge |
| | Belief | Level of belief | None; very little belief; little belief; average; much belief; very much belief |
| | Opinion | Level of opinion | No opinion; very negative opinion; negative opinion; neutral; positive opinion; very positive opinion |

**Table 3.3 Independent Enabling Variables**

| Concept | Variable | Indicator | Categories |
|---|---|---|---|
| **Enabling factors at the individual level** | Household head income | Income of household head per month (IDR) | None; < 500,000; 500,001 – 1,000,000; 1,000,001-1,500,000; 1,500,001 - 2,000,000; 2,000,001 – 2,500,000; 2,500,000; 2,500,001 – 3,000,000; 3,000,001+ |
| | Total family expenditure | Expenditure of family per month (IDR) | None; < 500,000; 500,001 – 1,000,000; 1,000,001-1,500,000; 1,500,001 - 2,000,000; 2,000,001 – 2,500,000; 2,500,000; 2,500,001 – 3,000,000; 3,000,001+ |
| | Socio-economic status | Socio-economic SES status | Very poor, Poor, Average, Rich, Very rich |

**Table 3.4 Independent Perceived Financial Needs Variables**

| Concept | Variable | Indicator | Categories |
|---|---|---|---|
| Perceived Financial Needs factors | The reason for using the institution or organizations | the fulfilment of the needs | Social responsibility; financial needs; health care expenditure; educational cost; other |

*Independent Institutional Factors*

The institutional factors describe the accessibility of the institution in terms of physical, geographic, and economic accessibility (Gyeltshen 2008; Barslund and Trap 2008; Leurs 2009; Kendall 2010; Aiglsperger 2014; Saefullah 2019).

**Table 3.5 Independent Institutional Variables**

| Concept | Variable | Indicator | Categories |
|---|---|---|---|
| **Institutional factors at the system level** | Physical Accessibility of the institutions/ organizations | Distance to access the institutions/organizations | 0; 0.1-2 km; 2.1-4 km; 4.1-6 km; 6.1-8 km |
| | Accessibility of the institutions/ organizations | Travelling cost to institutions/organizations (IDR) | 0; 1,000-10,000; 10,001-20,000; 20,001-30,000; 30,001-40,000; 40,000+ |
| | Accessibility of the institutions/ organizations | Administration cost of the institutions/ organizations (IDR) | 0; 1,000-10,000; 10,001-20,000; 20,001-30,000; 30,001-40,000; 40,000+ |

*Independent Environmental Factors*

Environmental factors are the geographic area in which the community and institutions reside (Aregbeyen 2011; Abbam *et al.* 2015; Truong *et al.* 2020). Saefullah (2019) confirms that this factor depicts the information of the physical location of the village and its relation to the presence of institutions and organizations in the community.

**Table 3.6 Independent Environmental Variables**

| Concept | Variable | Indicator | Categories |
|---|---|---|---|
| **Environmental factors at the system level** | Location | Community Location | Rural, semi-rural/semi-urban, urban |
| | Location | House Location | Mountainous, plain, low land, coastal |

*Intervening Factors*

Intervening factors are forces outside the community which change or even create new behavior that deviates from traditional ways of life (Agung 2005). In this research, the intervening variable is divided into two sources, that is from the government/public and from the private sector, and each is divided into two parts that are regulation/rule and promotion.

*Dependent Utilization Factors of Available institutions/organizations*

The dependent utilization factors are the indigenous institutions of *jimpitan*, the transitional organizations, and the exogenous organizations, which operate on the system level. The definition of the concept of the factors is displayed by several variables, as depicted in Table 3.8. It is described in terms of reported activities between individuals and the institutions/ organizations operating in the research area.

| Table 3.7 Public and Private Intervening Variables | | | |
|---|---|---|---|
| **Concept** | **Variable** | **Indicator** | **Categories** |
| **Institution/ organizations utilization factors at the system level** | Impact of Public Regulation | The impact of public regulation on the institutions/ organizations utilization | No impact, very little, little, average, much, very much |
| | Impact of Public Promotion | The impact of public promotion on the institutions/ organizations utilization | No impact, very little, little, average, much, very much |
| | Impact of Private Regulation | The impact of private rule on the institutions/organizations utilization | No impact, very little, little, average, much, very much |
| | Impact of Private Promotion | The impact of private promotion on the institutions/ organizations utilization | No impact, very little, little, average, much, very much |

| Table 3.8 Dependent Utilization Variables of Institutions | | | |
|---|---|---|---|
| **Concept** | **Variable** | **Indicator** | **Categories** |
| **Institution/ organizations utilization factors at the system level** | Utilization of the indigenous institutions of jimpitan | The utilization of the indigenous institutions of jimpitan in the last 12 months | Yes; No |
| | Utilization of the transitional organizations | The utilization of the transitional organizations in the last 12 months | Yes; No |
| | Utilization of the exogenous organizations | The utilization of the exogenous organizations in the last 12 months | Yes; No |

## 3.2. Research Methods and Techniques

### *3.2.1. Selection of the Research Area*

The selected research areas for the fieldwork are four villages scattered in four sub-districts in Wonosobo, Central Java, which are still practicing the *jimpitan* tradition in conjunction with the available transitional organizations and exogenous organizations. In order to capture the indigenous knowledge, practices, and beliefs of people in Wonosobo, to understand the socio-economic activities of the people, research preference has been scheduled to the specified area representing the population which will meet the requirements of the "Leiden Ethnosystems Approach" and the principle of the

participant's view. Wonosobo is a mountainous district that has fifteen *kecamatan* (sub-districts). It is a well-known tourist city and one of the five biggest agricultural producers in Central Java. The research took place in several *desa/kelurahan* (villages) in different sub-districts in which the inhabitants still preserve and conduct *jimpitan* as their socio-economic activities on a daily life basis. In order to balance the representation of the overall population, the research area was selected primarily through the character of its nature, and its social, economic and demographic characteristics. Therefore, the research area is focused mostly on rural areas and in one urban area which is still using *jimpitan*, the indigenous institution, in addition to the utilization of available transitional organizations and exogenous organizations.

### *3.2.2. Target and Sample Population*

The planning strategy of the target population is a specific area whose inhabitants are still preserving *jimpitan*. Probability and non-probability sampling will be used to get the sample in this mix-method research plan. In order to complete the qualitative data, provide exploratory research, and collect socio-cultural data, non-probability sampling will be employed in the form of convenience sampling. The respondents were chosen based on their availability (Creswell 2014; Aiglsperger 2014), snowball sampling, in which the key informants provided names of one or two people in the population, who were then useful for gathering information of another person in the population and recommended someone who might be interviewed (Bernard 2006; Aiglsperger 2014). In the field research, the researcher asked the head of RT or RW for a person who really understands *jimpitan*. The head of RT or RW appointed a person in the committee of the *jimpitan.* They are the ones who usually manage the arisan meeting/*dawis*.

### *3.2.3. Development of Research Instruments*

In this research, qualitative questions and quantitative questionnaires were used during the surveys. The qualitative questions were prepared to identify and explore the knowledge, beliefs, and practices, and also the utilization of indigenous institutions, transitional organizations, and exogenous organizations. To meet the goals of this research, the formal structure of the household questionnaire consisted of several main sections. Block 1 to block 9 were prepared to capture variables considered as independent, intervening, and dependent variables in building the model. The six blocks are independent variables; socio-demographic, psycho-social, perceived financial needs, enabling, environmental, and institutional variables. One block is intervening variables, and three blocks are dependent variables; utilization of *jimpitan* and utilization of transitional organizations, and utilization of exogenous organizations. The qualitative questions were designed to explore the local people's knowledge and the benefit of *jimpitan* in comparison to transitional organizations, and exogenous organizations. The questionnaires for quantitative data were constructed based on 10 blocks in which each block was formulated into several questions and indicators to obtain detailed information supporting the qualitative questions. The survey questions were also adjusted to the conditions in the field research area, according to the local customs and culture, in order

to describe the local conditions which resemble the actual situation. The structured questionnaires were adopted from Slikkerveer (1990) with some adjustment to the characteristic of socio-economic condition, and have gone through several discussions. The samples accommodate different geographic areas from the Northern to the Western areas of Wonosobo. There were 226 households that filled in the questionnaires; however, after some data cleaning, there were 199 out of 226 that could be included in further analysis. The other 27 questionnaires were incompletely filled in by the households.

**Table 3.9 Distribution of Questionnaires**

| Village | Number of questionnaires | Surveyor/co-interviewer | Time of interview |
|---|---|---|---|
| Kejajar | 52 | Ayu Swaningrum, Rahayu Sutjiati, Suminah, Warisah | Oct/17 (2 – 3 weeks) |
| Kalibeber | 58 | Ayu Swaningrum, Nuril Khusniati | Nov/17 (2 – 3 weeks) |
| Wonosobo | 55 | Ayu Swaningrum, Endang Setyowati, Peni Wahyuningsih | Sep/17 (2 – 3 weeks) |
| Barat Sojokerto | 61 | Ayu Swaningrum, Irfan Suseno | Oct/17 (2 – 3 weeks) |

## 3.3. Data Collection and Analysis

The qualitative research was conducted using observation, interviews with the local people, literature research, and documentation of primary data. Along with the qualitative research, the quantitative surveys were conducted by distributing the structured questionnaires to the households in the four villages in the research area. According to Uphoff (1992), the most effective way to talk to the local people is to begin talking with the people in households, then in small groups of households in order to reconcile the perceived difficulties (agricultural, natural resource, health, or other issues) and problems that they are facing. The household surveys are essential to get a general description of the communities in order to be observed as an implementation of comparison in the context of the Field of Ethnological Studies (Saefullah 2019). They were conducted between August to November 2017 by using the structured questionnaires adapted from the ones used by other researchers, *ie.* Slikkerveer (1990); Agung (2005), Leurs (2010), Djen Amar (2010), Ambaretnani (2012), Chirangi (2013), Aiglsperger (2014), Erwina (2019), and Saefullah (2019). Thereafter, the conceptual model of bivariate and multivariate analysis is constructed and described.

### *3.3.1. Qualitative Data Collection and Analysis*

In ethnographic research, participant observation implies that the ethnographer observes activities in the field setting, and participates in them wherever possible, as a means to comprehend the real versus the ideal, distinguish what is explicit from what is tacit, and also grasp what is emically valid. Participant observation takes place

within the social settings that are known and essential to the ethnographer's hosts—those social settings which provide the socio-cultural contexts, processes, and meaning systems of their world or cosmologies (Whitehead 2004). The qualitative method is potentially beneficial for developing social theory and methodology in the Indonesian context (Somantri 2005). Qualitative research emerges due to the rapid social change and the resulting diversification of life in the world which confronts social researchers with new social contexts and perspectives, and as a result of a failing of traditional deductive methodologies—deriving research questions and hypotheses from theoretical models and testing them against empirical evidence—in differentiating the objects. The qualitative research's main aspects are the appropriate choice of methods and theories, the acknowledgment and analysis of different perspectives, the process of knowledge production from the researchers' reflections on their research, and the various approaches and methods. The qualitative research provides theories developed from empirical studies where knowledge and practice are studied as local knowledge and practices (Flick 2009). The qualitative research includes observations, interviews with key informants, literature review, and documentation. The information from the key informant, according to USAID (1996), is required in development activities. They are identification, planning, implementation, and evaluation. As such it is useful to (i) make qualitative, descriptive information sufficient for decision-making, (ii) understand the motivation, behavior, and perspectives of people who are interviewed, (iii) formulate recommendations to improve the program's performance, (iv) interpret the quantitative data by providing the how and why of what happened, and (v) design comprehensive quantitative study by providing preliminary information. The key informants who were interviewed in the field research between August to November 2017 come from different backgrounds; they are the head of the village (*kelurahan-lurah* and *desa-kades*); local figures; the head of *RT* or *RW*, *ie*. *Ketua RT/RW*; the institution's committee.

In general, the head of *RT/RW* and *lurah* or *camat* possess information about the person who is appropriate to be interviewed in dealing with the condition of the local people and the institutions. They referred the interviewer to the local figures, either to the elderly, village activists, *arisan* committees, or well-educated persons. From those people, we could gain some insightful information which then was used as qualitative data in this research. Participant observation involves getting closer with the local people, going out and staying in the specific area for a particular period, learning a new language, and knowing their life directly, so that it can be observed and recorded as information on their life. It includes entering one into a specific culture in order to intellectualize what one has seen and heard, to put it into perspective, and to write about it, as well as modify fieldworkers to instruments of data collection and data analysis (Bernard 2006).

### *3.3.2. Quantitative Data Collection and Analysis*

A prominent source of socio-economic data was the household surveys, from which we can obtain important indicators to inform and monitor development policies. Household surveys were, in developing countries, a dominant form of data collection, supplementing or sometimes even replacing other data collection programs and civil registration systems,

and the most flexible methods of data collection, with which almost any population-based subject can be investigated. Inferences are made to the whole population after determining the sample selected from which observations are made, or data are collected. The household surveys meet the needs of data used for statistical information (The Department of Economics and Social Affairs UN 2005). The household surveys can be conducted in urban and rural areas, to fulfill the need of achieving relevant, objective, and accurate information on the situation of households in both areas. Several topics covered in the survey include socio-demographic characteristics, labor market activity, income and expenditure patterns, indicators of living conditions (Statistics Canada 2010). The quantitative research conducted through household surveys provides complementary information to the techniques of participant observation and qualitative data collection in order to obtain sufficient insight into the utilization of institutions, particularly *jimpitan* in society. Conducting a household survey is necessary to gain a relatively complete estimation for a broad, general, geographically defined population on the use or non-use of many or all services (White *et al.* 1976). Household as the smallest decision-making unit in the village could describe the pattern of the socio-economic activities if we collect them in a region as may be called community, for instance, *RT, RW* or even village. Quantitative data does not only come from the surveys but also from the data owned by each village that describes the potential of their village so that it can be seen how the description of population and region in the research area is, while the data from surveys depicts the sample of the research area.

Illustration 3.1 Researcher (left side) with the respondents in Kejajar after interview. ©Ayu Swaningrum (Kejajar, 2017)

Illustration 3.2 Researcher (in the middle, with gray headscarf) is watching the respondents filling in questionnaires. © Peni Wahyuningsih (Wonosobo Barat, 2017)

The sample for the household survey was drawn from the villages that had conducted *jimpitan* during the 12 months prior to the survey, in which 226 households were selected from four villages. The selected villages in this study are Kejajar, Kalibeber, Wonosobo Barat, and Sojokerto. 199 out of the 226 questionnaires were valid and used for the next analysis. 27 respondents returned incomplete questionnaires and chose to go to their relatives or neighbors to get help. There were 669 family members within 199 households in four villages. The necessary information about these four villages will be provided in the following chapter. The respondents selected by these sampling procedures were randomly chosen, from four villages which are still using *jimpitan*. In Sojokerto village, the respondents were from four *dusun* (sub-villages): Boto, Wonokasian, Sojokerto and Bangon. In Kejajar village, the respondents were also from four *dusun*: Karanganyar, Purwosari, Gataksari, and Tegal Arum. It spreads in three *RW* and four *RT*. In Wonosobo Barat village: Sumberan Selatan, Sumberan Utara, Stasiun, Ngedok, Sambek, Puntuksari, and Sumberan Barat. In Kalibeber village, it spreads in seven *RW* and four *RT*.

The interview was sometimes conducted in a group, *eg*. in Kejajar from RT1 and RT2 of RW1. They were 6 adult women, 3 of them brought the children with them (illustration

3.1), also in Sumberan Utara, and others were conducted individually accompanied by the local person as surveyor/co-interviewer. To get closer to the local people, the researcher visited the four villages a number of times; visiting the head of the RT and RW, asking permission to conduct research in the neighborhood, asking about their people and environment. The household survey took place during three months from August to November 2017. The surveyor/co-interviewers were selected from the local people who were already familiar with their own neighborhood (Table 3.9). They were intentionally chosen in order to have better communication with the local people since it was conducted in the local language and to ease the process of data collection, and to get the best information from the respondents as well. The main obstacle was the considerable amount of time needed to get the permit from the local authority. Every selected village was categorized by its socio-economic condition and its location. Wonosobo Barat and Kalibeber have better socio-economic conditions compared to the villages of Kejajar and Sojokerto. Wonosobo Barat and Kalibeber are classified as an urban area, Kejajar and Sojokerto as a rural area. Kejajar is in the North and located in the mountainous area, whereas Wonosobo Barat and Kalibeber are located in the center of the district, and Sojokerto is rather distant from the center and more to the west.

The quantitative household questionnaires were analyzed using Random Forest that will be provided in chapter VI. Statistical methods were performed in accordance with the type of variables, which are included in the respective categories of factors, represented as blocks in the model. Before commencing to Random Forest, some tests were performed. First, the chi-square statistic ($\chi^2$) is conducted to see if two independent variables are statistically independent or associated. If the test shows dependency, secondly, the Cramer's V test is done to depict the degree to which the values of one variable predict or vary with those of the other variable. In this respect, if the phi-value from the Chi-square test and the value of Cramer's V displays a strong correlation between two variable independents, then we should drop one of the two variables. Random Forest will show which independent variables have predictive power in explaining the dependent variables, individually. Afterward, we will see the dominance of particular block/s in influencing the utilization of institutions. By averaging the importance value of variables in each block and checking it using the permutation test, we will know which block/s significantly influences the utilization of institutions.

Random Forests uses tree predictors to describe the predictive value of an independent variable over a dependent variable. Each tree depends on the collection of random variables and with the same distribution for all trees in the forest. It can be used for categorical variables for classification, or continuous variables for regression. The benefits of using Random Forests are: (a) handle regression and classification, (b) fast to train and predict, (c) depend only on one or two tuning parameters, (d) have a built-in estimate of generalization error, (e) can handle high-dimensional problems. Random Forest's additional features are: (a) variable importance, (b) different class weighting, (c) missing value imputation, (d) visualization, (e) outlier detection, and (f) unsupervised learning (Breiman 2001; Cutler *et al.* 2011).

## Conclusion

The method that is used in this study, to document and to capture the indigenous knowledge, practices, and beliefs of local people in the research area to understand the socio-economic activities of the people, is the Leiden Ethnosystems Approach that consists of three principles: (a) participant's view, (b) field of ethnological studies, and (c) historical dimension. The research area for the fieldwork is four villages in four sub-districts in Wonosobo. 226 households were selected from four villages. The selected research area in this study includes Kejajar with 51 respondents; Kalibeber with 50 respondents; Wonosobo Barat with 46 respondents; and Sojokerto with 52 respondents. 199 out of the 226 responses were valid to be involved in the further analysis. The data analysis used two methods of qualitative and quantitative analysis. The qualitative data was gathered through field observation, literature review, and interviews. The quantitative data were gained by structured household questionnaires. According to the conceptual model of institutions and organizations, the chosen independent and intervening variable was classified into 7 blocks to see which block dominantly influences the utilization of institutions and organizations. Those seven blocks are: (a) socio-demographic block, (b) psycho-social block, (c) enabling block, (d) perceived needs block, (e) institutional block, (f) environmental block, (g) intervening block. By using the Random Forest method, one can observe the predictive power of the variables, both individually and in the block, in explaining the utilization of the institutions and organizations *eg.* the value of importance.