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Chapter IX. CONCLUSIONS AND IMPLICATIONS

9.1 Conclusions

This final Chapter of this thesis presents the conclusions and implications of the study of the respondents' utilisation behaviour of the Plural Health Information & Communication System (PHICS) in Sukmiskin which includes the description and explanation of the significant factors influencing the patterns of utilisation by the local people of the two related distinct Health Information & Communication Systems (HICS) forming together the plural configuration in the research area, and the identification of the possible contribution to the improvement of local health information problem-solving, also known as 'information literacy'.

In addition, the implications of the research findings are described to encompass the theoretical and practical implications, as well as to provide a basis for the development of an empirical model of integration of Traditional and Modern Health Information & Communication Systems (T&MHICS) as a planning tool for realising 'Information Society Indonesia' (2003) in the near future.

In order to arrive at the conclusion of the realisation of this study's general aim, an overview is presented below of the conclusions, sub-divided into a number of specific objectives which have been achieved, and can be listed as follows:

Firstly, following the Introduction in Chapter I, the theoretical elaboration of the new field of health information & communication (HIC), and the conceptualisation of Plural Health Information & Communication Systems (PHICS) is presented in Chapter II, after which the complex process of utilisation of the constituting traditional and modern systems is presented as the subject of the special ethnoscience perspective on health information and communication utilisation. In addition, the recent development of a health communication strategy in Indonesia is described, providing a base for the policy-oriented dimension of the study. Special emphasis is placed on these PHICS which encompass two distinct components: the Traditional Health Information & Communication Systems (THICS) and the Modern Health Information & Communication Systems (MHICS). These concepts are described in an interesting process, where local medical knowledge systems exist alongside global medical knowledge systems, so far resulting in a theoretical distinction between the two systems, although it would be more beneficial to the local participants if in the practical setting, integration would be realised to provide them with the choice of alternative options among both systems. Such an integrative process has been referred to as the process of 'glocalisation', which as an integrated approach could also be functional in Indonesia in designing national health information and communication policies, as is further elaborated below.

The process of globalisation on the development of Health Information & Communication Systems (HICS) in Indonesia shows a dual impact on the health sector, which supports the argument of Diaz-Bonilla *et al.* (2002) who indicate that: '*Globalisation affects global health which in turn may improve or worsen the health of the poor in developing countries*'. In this context, globalisation is also related to the current world health problem which has been characterised by what WHO (1999) identifies as 'the double burden of disease'.

Furthermore, the development of Information & Communication Technology has evidently affected the field of communication, particularly after the recent digital revolution, manifest in both the Traditional Health Information & Communication Systems (THICS) and the Modern Health Information & Communication Systems (MHICS) in Indonesia. The Health Information System (HIS) is found to refer to the integration of devices, procedures and policies used to manage information in a systematic cycle with a view to support the implementation of

integrated and comprehensive health management within the framework of health care services to the community. Moreover, the theory shows that health information is required in all health programmes, ranging from the analysis of the situation, priorities, and alternative solutions through programme development, implementation and monitoring to the evaluation of health plans.

In addition, special attention is given to the theories and principles of the Utilisation of Plural Health Information & Communication Systems (PHICS), where it has become clear that the understanding of local utilisation patterns of PHICS – which so far received little attention in the literature – is crucial to the decision-making process of the health-seeking behaviour of the local people. Finally, the theoretical orientation of the study indicates that attention to the practical side of policy-based research in Health Information & Communication Systems (HICS) is also important for the future integration of different traditional and modern health information and communication systems (T&MHICS) in order to improve the overall health information and communication system among the population, which, in turn will contribute to the improved health and well-being of the population.

Secondly, the selected research methodology and the related appropriate analytical model and its components for the execution of the stepwise Bivariate, Mutual Relational, Multivariate and Multiple Regression Analysis of the collected quantitative data in Sukamiskin is presented in Chapter III. The ‘Leiden Ethnosystems Approach’ is chosen to gain a better understanding and explanation of the indigenous perceptions, practices, beliefs, values and philosophies associated with the level of health information and communication among the participants. The combination of three methodological principles of this approach, developed by Slikkerveer (1989; 1990), include the ‘Participant’s View’ (PV), associated with the anthropological concept of the *emic* view of cultures from within as contrasted to the *etic* view from outside. In addition, the Field of Ethnological Study (FES) is rooted in the Leiden Tradition of Structural Anthropology which refers to the later introduced concept of ‘culture area’ rendering Indonesia, regardless of its diversity of sub-cultures as one culture area. Finally, the Historical Perspective (HP) is used to facilitate the (pre-)historical analysis of complex contemporary patterns, including in religion, agriculture, resource conservation as well as in medicine in the research area of Sukamiskin.

The ‘new’ ethnoscience which considers local and regional systems of knowledge and practice within a more dynamic context of processes of development and change allows the analysis of the utilisation process of the distinct traditional and modern health information and communication systems. It is shown that such a perspective includes the execution of complementary qualitative and quantitative surveys, where in-depth interviews are followed by various household surveys.

The appropriate conceptual model is constructed on the basis of the Transcultural Utilisation Model, developed by Slikkerveer (1990; 1995, 2012) allowing the assessment of the cognitive and behavioural components of particular groups or communities as ‘systems’ in a rather process-oriented mode. The research uses a multidimensional approach towards ethno-information and ethno-communication on health and disease which is based on the significant evidence that an individual’s behaviour is affected by a number of factors, *i.e.* socio-demographic, psycho-social, economic, institutional and intervening variables.

Also special reference is made to a number of studies in various sectors and research settings which have successfully implemented the ethnosystems approach and the related conceptual model mentioned above.

The study of the Plural Health Information & Communication Systems in the Sunda Region of West Java, Indonesia embarks on explanatory research and uses the complementary

qualitative and quantitative methods and techniques for data collection and analysis regarding the knowledge, beliefs and practices in this field of the community members in Sukamiskin in West Java.

Thirdly, the description of Indonesia as a newly-developing country in Asia providing the background to the study in the Sunda Region is presented in Chapter IV, followed by the presentation of the general profile of the community of Sukamiskin. It includes a presentation of the characteristics of government and political organisations as well as Indonesia's administration which has recently been reduced from 27 to 34 provinces. Similarly, a description is provided of the geography and socio-demography of the Sunda Region, focused on the Province of West Java. It is shown that Indonesia is not only traversed by various international channels of transportation, running from west to east and *vice versa*, but it is also involved in many international commercial contacts pertaining to the acceleration of economic growth and the establishment of many multinational corporations. Indonesia's large population and the densely populated regions account for the present number of 263,991,379 inhabitants.

The research area of the community of Sukamiskin is also described. Because of its abundant natural resources and fertile areas, West Java, the fifth largest province of Indonesia, is dominated by the agricultural sector. The *kelurahan* ('community') of Sukamiskin is located within the administrative boundaries of the urban area of Bandung, the Capital of the Province of West Java.

Fourthly, the description of the daily life in Sukamiskin is presented in Chapter V. It describes the data both available in existing resources and collected among the people of the research population, *i.e.* the residents of the community of Sukamiskin, and the sample population comprised of the selected household heads. It shows that Sukamiskin is characterised as a community in the Arcamanik District, located in the eastern part of the city of Bandung, comprising four villages, namely Cisaranten Kulon, Cisaranten Bina Harapan, Sukamiskin and Cisaranten Endah. The area of Arcamanik District covers 512,99 ha and is approximately 700 metres above sea level. The name of Sukamiskin is explained as originating from the words *suka* which means market, and *miskin* which means musk perfume or fragrance. Hence, Sukamiskin refers to a market where people used to sell many different perfumes. The local administration in Sukamiskin includes six government administrators, *i.e.* six civil servants, and one internship worker. The six civil servants are the *lurah*, the head of the village, the secretary of the *lurah*, the head of the governmental section, the head of the secretary of the village, the head of the economic and law development section, the head of the social section and the head of the service section. In 2013, due to the population growth, the number of neighbourhoods has increased by five neighbourhoods, increasing the total of 83 to 88 neighbourhoods in 2013.

In addition, a general description is presented on the plural medical system, operational in Sukamiskin. The present health care practitioners are *bidan* ('midwives'), *dukun* ('traditional healers') acupuncturists, acupressurists, masseurs and *ajengan* ('religious healers'), doctors, obstetricians, paediatricians, and dentists. Several methods of treatment are also documented as performed by members of the community of Sukamiskin themselves in the form of traditional home remedies. The traditional treatment by the Islamic community of Sukamiskin is performed by the use of *bekam*, *rukiyah* ('holy water') and prayers. Other traditional treatments are acupressure, acupuncture and bone setting.

The structure of modern health care and related facilities available in Sukamiskin are referred to hospitals, *BKIA* ('maternal hospitals'), *Pusat Kesehatan Masyarakat (Puskesmas)* ('Community Health Centre'), clinics, *Pos Pelayanan Terpadu (Posyandu)* ('Integrated Health Post'), pharmacies, traditional remedy stores and *jamu* kiosks.

The members of the community of Sukamiskin perform primarily professions such as farmers, teachers, lecturers, domestic servants, religious leaders, entrepreneurs, labourers, private sector workers or are retired. The ethno-cultural composition shows a majority of the Sundanese people, followed by Javanese, Batak and other population groups, while the majority of the inhabitants in Sukamiskin are Muslim. The research population includes all the residents of Sukamiskin living in 14 hamlets and 83 neighbourhoods. The households which have been selected as the unit of the research consist of 125 household heads and a total of 617 household members. It is found, that in their daily activities, the community members use both the Indonesian and Sundanese language since the majority of the people have a Sundanese ethno-cultural background. Although the Sundanese culture is still embedded in specific socio-cultural values, it shows evidence of strong Islamic influence.

Fifthly, the Traditional Health Information & Communication System (THICS) in the community of Sukamiskin is described against the background of the belief systems, health concepts, information & communication systems, health policies and strategies and the recent impact of autonomy and technology of information and communication. THICS in the research area are built on the Sundanese values. The discussion about the Sundanese culture begins with the belief system in the Sundanese cosmology and the way of life. The *urang sunda* ('Sundanese people') have since many generations been accustomed to conducting their life in harmony with nature as their major philosophy, considering it a part of the universe. This concept forms the basis of the old Sundanese worldview of *tri tangtu*, which involves a vertical and a horizontal communication order expressed in the local philosophy '*hirup nu hurip, hirup kudu nyontoan jeung picontoeun dan hirup kudu neundeun jeung ninggalkeun*'.

Since it has become clear that the cosmology of the Sundanese people places greater emphasis on the mythic-spiritual matters, the communities share the belief that there is another life after life on earth. Hence, the concept '*lamun hayang hirup salamet laksanakeun tri tangtu dina kahirupan*' means that if an individual desires to live a *khusnul khotimah* ('right') life, then one should live one's life according to the principles of *tri tangtu*. In this way, humans can achieve a maximum quality of life. Likewise, the Sundanese people in Sukamiskin maintain the seven Sundanese ways of life which are *Cageur, Bageur, Bener, Pinter, Singer, Wanter* and *Cangker*.

In general, the health concept in the Sundanese people's perspective relates to decisions on housing, food, and maintenance of the water reservoir. The underlying concepts include: *tempat* ('place'), *lembur/palemburan* ('village'), *panyicingan* ('housing') and *kadaharan* ('food'), all of which follow the *poe teh kahirupan* ('the light or the sun') as the source of life. Indeed, the place to live in, the food resources, and even the work place as well as the animals in the community have always been associated with *poe teh kahirupan* ('the light or the sun'). Meanwhile, the health concept is often associated with the source of the disease. According to the Sundanese perspective, the source of a disease is generally an ordinary cause due to the weather and biological factors, and extraordinary events which are evoked by the unseen, or by other humans through *tenenung/teluh* ('magic'), *dedemit* ('supernatural beings') or *kasambet* ('being possessed' or 'in trance').

The Sundanese language is the mother tongue or local language, while *Bahasa Indonesia* is the national language. The traditional communication in Sukamiskin can be classified into several types, namely interpersonal communication, small group, public use of direct and indirect ways. Direct interpersonal communication is documented as performed by conversation orally or by gesture. Furthermore, interpersonal communication occurs between parents and children, parents with parents, husband and wife and others. At a greater distance than usual, communication is carried out between grandmothers and grandparents to their grandchildren, and also between neighbours.

Moreover, the use of non-verbal communication is described as more dominant in the Sundanese community which is expressed in the Sundanese concept called *PANCACURIGA*. The indicators of this type of communication are *Silih Asih*, *Silih Asah* and *Silih Asuh*. *Pancacuriga* refer to five devices (knowledge), where each device has its own meaning which can be represented in a letter, a word, a picture (icon, symbol, logo, sign, herald), body movement, thing, ceremony, ritual form or even in the whole cultural elements (*cf.* Suryalaga 2010 a). Moreover, communication channels in a wider range typically utilise communication media. Some of the information media is the *kohkol* (bamboo percussion) and the *lisung or tutunggulan kohkol, bedog, iket, and tektek ngeyeuk sereuh*. The set of tools is referred to as traditional communication tools because it can provide meaning through symbols which are comprehended by the Sundanese people.

Sixthly, the documentation of the indigenous knowledge and the indigenous classification of Medicinal, Aromatic and Cosmetic (MAC) plants used for *lalab* and *ubar kampung* by the people of Sukamiskin are also presented in Chapter VI. A number of elements in the traditional health care system are rooted in the Sundanese culture which is noticeable in the field of Medicinal, Aromatic and Cosmetic (MAC) plants and related herbal dietary ingredients.

In this chapter, specifically collected information of indigenous medicinal plants is presented in a list representing the local classification of these medicinal plants of which certain parts are used as components of *ubar kampung* ('traditional medicine') in the research area. As an illustration, a selection of photographs of these indigenous medicinal plants is presented in Illustration 6.3 of Chapter VI.

It is shown that the centuries-old use of these MAC plants in Sukamiskin has also contributed to the government programme launched in 1983, known as *Tanaman Obat Keluarga (TOGA)*, ('Family Garden with Medicinal Plants'), as part of the *Pemberdayaan Kelompok Keluarga (PKK)* ('Empowerment of Family Welfare Movement'), documented by Slikkerveer & Slikkerveer (1995).

Additionally, the *pamali* is described as one of the Sundanese's traditional communication forms which oblige the people not to violate the community prohibitions. In the Indonesian language, *pamali* or prohibition is also called taboo and is a cultural norm that does not allow people to do, use or talk about a particular thing as people find it offensive. In the health sector, *pamali* found in the Sundanese communities is quite effective in the preventive efforts against various diseases, and is also easily understood by the public since it uses the local language. Through a simple sentence of *pamali*, the society may become aware of the importance of health.

The chapter concludes with a description of the Islamic influence on the concepts of health promotion, disease prevention and treatment. In order to provide a guideline on health for its adherents, Islam has taken precautions against diseases as stated in one of the sayings of the Prophet Muhammad (*hadith*). Actually, preventive efforts are an essential component of the *Perilaku Hidup Bersih dan Sehat (PHBS)* ('Clean and Healthy Life Patterns Programme') for the people and their environment. In this context, the local peoples' efforts to cure an illness in accordance with the teaching of Islam is presented, while other types of therapies available outside the area of Sukamiskin are also described, such as the use of bee stings, white rice grains, leeches and acupuncture.

Seventhly, the Modern Health Information & Communication System (MHICS) in the community of Sukamiskin is described in Chapter VII. It starts with a description of the related modern health facilities available in Sukamiskin: *Pusat Kesehatan Masyarakat (Puskesmas)* ('Community Health Centre'), *Pos Pelayanan Terpadu (Posyandu)* ('Integrated Health Post'), clinics, and the pharmacies and drugstores. Thereafter, it also explains about the dissemination of health information through the utilisation of the printed media (newspapers, magazines, tabloids,

books kept in libraries), the public media (posters, ballyhoos, fliers, and other), the electronic media (television, radio) and the digital media (e-book, e-news, e-TV and other) including social media. Additionally, several health information technology programmes in Bandung are listed, ranging from the Smart City to the Bandung Health Card. Also, the availability of information institutions disseminating modern health information is described, including the Bandung TV (Television), a Community Library or Community Reading Corner (TBM), Community Radio, newspapers and magazines kiosks. Similarly, the roles of schools, boarding schools, sport centres, health centres, *Pos Pelayanan Terpadu (Posyandu)* ('Integrated Health Post'), *polindes*, the *Pendidikan Anak Usia Dini (PAUD)* ('Pre-School'), the *Pemberdayaan Kelompok Keluarga (PKK)* ('Empowerment of Family Welfare Movement'), village pharmacies, and other institutions are also documented so as to convey health information and educate the members of the community about public health. The *Pusat Kesehatan Masyarakat (Puskesmas)* ('Community Health Centre') located in Arcamanik has performed promotional activities about health information through three phases, namely: advocacy, community empowerment and community development.

The targets of health information are the individuals, families, groups and organisations located in the *kelurahan* environment. The material provided can be the health programmes of Bandung or the national health programme or particular topics according to the health situation in Sukamiskin. For example: information about the Avian Influenza is presented in Sukamiskin and is carried out through the hamlet (RW) in the form of meetings or by distributing leaflets around the village. The Health Information Systems are also using different partnerships in Health Information & Communication, and there are several institutions which are involved in these rather important partnerships, such as:

- 1 *POSYANDU (Pos Pelayanan Terpadu)* ('Integrated Health Post');
- 2 *POD* ('the Village Medical Post');
Post UKK (the Occupational Health Post);
- 3 *LSM* (the Civil Society Organisations);
- 4 Private Organisations/Non-Governmental Organisations (hospital, maternity hospital, maternal and child health centre, treatment centre, 24-hour clinic, pharmacy);
- 5 Funds (PKMD Funds, Rural Public Health Development), Health School Unit Funds, Funds of Islamic Boarding School Health Pattern, Funds of Local Village Cooperative *Koperasi Unit Desa (KUD)* Health Pattern, Funds from NGOs and other Civil Society Organisations, Health Insurance, Workers' Health Insurance, and Private Health Insurance; and
- 6 Other forms: the Friday-Service Clean Movement, Cleanup Movement, Exterminating Mosquito Nests, *Pemberantas an Sarang Nyamuk (PSN)*, Free Services Movement, Cross-subsidy, and private sector participation in a particular programme.

In Sukamiskin, the exchange within the Modern Health Information & Communication System (MHICS) also occurs between several institutions, not only between doctors, nurses, midwives and apothecaries and patients, but also in organisations, universities, the *Pusat Kesehatan Masyarakat (Puskesmas)* ('Community Health Centre'), the *Pemberdayaan Kelompok Keluarga (PKK)* ('Empowerment of Family Welfare Movement'), the *Pendidikan Anak Usia Dini (PAUD)* ('Pre-School'), and the *Taman Bacaan Masyarakat (TBM)* ('Community Reading Corner'). Related forms of Health Education are performed in a number of activities involving the health education programme in its role to stimulate preventive and promotional efforts which involve both personnel and institutions active in health information and communication in the research area.

Finally, new channels of modern health information and communication are indicated, in which the progress of digitisation in radio, TV, newspapers and the internet in Indonesia is playing an increasingly important role.

Eighthly, the results of the stepwise bivariate, the mutual relations, the multivariate and the multiple regression analyses of the quantitative data from the household surveys are presented in Chapter VIII. The results show and explain the differential relationship of significant independent and intervening factors in relation to the local peoples' reported utilisation of the Plural Health Information & Communications System (PHICS) in Sukamiskin, sub-divided in the Traditional and Modern Health Information & Communications System (T & MHICS) in the research area.

As the analyses are focusing on the utilisation of the local peoples' utilisation patterns of on the one hand, the Traditional Health Information & Communication System (THICS), and on the other hand, the Modern Health Information & Communication System (MHICS), an empirical basis is provided for the determination of significant factors influencing such behaviour by the implementation of the analytical model. The implementation of the model developed by Slikkerveer (1990; 1995) shows the results of the various levels of significance – or no significance – of the correlation between the independent and intervening variables in relation to the dependent variables. The conclusion of these results include the following:

Independent Variables

Block 1: Predisposing Socio-Demographic Variables:

Age of respondents in the MHICS: 'strongly significant'

Profession of respondents in the THICS: 'weakly significant'

Block 2: Predisposing Psycho-Social Variables

Level in the Modern Medicine of respondents in the THICS: 'most strongly significant'

Knowledge Level on Traditional Medicine of respondents in the THICS: 'very strongly significant'

Knowledge Level on Traditional Medicine of respondents in the MHICS: 'weakly significant'

Knowledge Level on Modern Medicine in the MHICS: 'very strongly significant'

Knowledge of Availability of Libraries of respondents in the MHICS: 'strongly significant'

Knowledge of Availability of Libraries of respondents in the THICS: 'weakly significant'

Belief in Power of the Printed Word of respondents in the MHICS : 'weakly significant'

Block 3: Enabling Variables

Socio-Economic Status (SES) of respondents in the MHICS: 'strongly significant'

Socio-Economic Status (SES) of respondents in the THICS : 'weakly significant'

Block 4: Perceived Need of Health Information Variables

Need Modern Health Information of respondents in the THICS: 'most strongly significant'

Need Modern Health Information of respondents in the MHICS: 'most strongly significant'

Block 5: Institutional Variables

Member Health Information Institution of respondents in the THICS: 'strongly significant'

Intervening Variables

Block 6: Intervening Variables

Exposure to Electronic Media of respondents in the MHICS: 'most strongly significant'

Exposure to Electronic Media of respondents in the THICS: 'very strongly significant'

Exposure to Printed Media of respondents in the MHICS: 'very strongly significant'

Awareness of Epidemics of respondents in the MHICS: 'very strongly significant'

Exposure to Printed Media of respondents in the THICS: 'strongly significant'

Awareness of Epidemics of respondents in the THICS: 'strongly significant'

The subsequent Mutual Relations Analysis shows the dominating influence of the block of the psycho-social variables (8) on the dependent variables, followed by the block of the intervening variables (6), while the other blocks of respectively socio-demographic variables (2), enabling variables (2), perceived information variables (2) and institutional variables are showing significance in equal numbers of two variables per block.

The results of the Canonical Correlation Analysis underscore that the predisposing psycho-socio variables contribute most to the dependent variables. The intervening variables consisting of 'Exposure to Electronic Media', 'Exposure to Printed Media' and 'Awareness of Epidemics' also show a rather strong influence on the dependent variables of utilisation both in the Traditional and in the Modern Health Information & Communication Systems.

This result is explained, on the one hand, by the society using the printed media as a source of information, comprising newspapers, magazines, books, posters, ballyhoos, leaflets, and brochures. On the other hand, information is also found in its electronic form through the radio, television, and the Internet as a health portal and news. In addition, information is also acquired through communication via facebook, twitter, and other social media. However, it is the health problem of the household heads which mostly triggers them to utilise both the available Traditional and Modern Health Information & Communication Systems.

Among the categories or blocks of variables, the independent socio-demographic variables are significant, meaning that 'age' and 'profession' are playing an important role. The utilisation of the Traditional Health Information & Communication System is predominantly reported by household heads aged between 36 to 60 years. Based on their age-span, they are very active in seeking Health Information & Communication as the result of health problems of members of their household. The professions reported include domestic servants, civil servants, teachers, religious leaders, entrepreneurs, woman labourers in the private sector, and retired people. Education, however, does not apparently play a significant role for those respondents who are not educated or for those who have a higher or university education in the utilisation of THICS and the utilisation of MHICS.

The analysis further confirms that the psycho-social variables are dominating the significant correlations with the utilisation of THICS, *i.e.* the level of knowledge on traditional medicine, knowledge on modern medicine, and knowledge of availability of libraries. The knowlegde of traditional and modern medicine is usually transferred locally from generation to generation among the Sundanese people.

Presently, traditional health information can be easily obtained from various resources of information in printed or recorded form, available in libraries, the Internet, and radio and television programmes. Furthermore, the correlation of the socio-economic status (SES) of the household heads with the utilisation of MHICS is very strong in comparison to the utilisation of THICS, since the modern medical system is still considered expensive by most members of the community, while the utilisation of MHICS also requires the availability of costly computers or smart phones to access the Internet.

Another independent variable, the 'perceived need of health information', is significant in both the utilisation of THICS and the utilisation of MHICS, especially the 'perceived need of modern health information' which reveals a strong correlation. On the other hand, there is no correlation of perceived need and utilisation of THICS. Currently, the utilisation of MHICS is considered less important by the respondents than the utilisation of THICS, whereas in the institutional variables only the 'Member Health Information Institution' is significant in the utilisation of THICS.

The multivariate analysis further underscores the strongly significant correlation between the intervening variables and the utilisation of both the THICS and the MHICS compared to the other variables. Likewise, 'Exposure to electronic media', 'Exposure to printed media', and 'Awareness of Epidemics' are showing a further substantiation of the very strongly and most strongly significant correlations. In their daily life, the respondents have been exposed to a lot of health information through various media: television, newspapers, magazines, brochures, banners, ballyhoos and posters. As mentioned before, the Bandung TV station is located in Sukamiskin and has a special programme on health information. Similarly, the city of Bandung facilitates its citizens with ample access to the Internet and to radio health programmes. In this context, the village also owns several public libraries called 'reading rooms/corners' which facilitate the access and utilisation of printed information from newspapers, magazines and books about health.

The multiple regression analysis which implements the OVERALS technique is used to assess not only the correlation between variables, but also the correlation between the different blocks of variables identified in the model, *i.e.* the interaction between the blocks of independent, intervening and the dependent variables. These calculated correlations show the relative value of interaction between the blocks hereby highlighting the validity of the multivariate model.

Finally, the last part of Chapter VIII (Paragraph 8.6) provides a more detailed interpretation of the above-mentioned conclusions of the results of the stepwise analyses, seeking an explanation of the various levels of significance among the independent, intervening and dependent variables in the model which can be regarded as determinants of the utilisation of the Traditional Health Information & Communication System (THICS) and the Modern Health Information & Communication System (MHICS) in the community of Sukamiskin.

In conclusion, the subsequent steps in the analysis all confirm that the general distribution of levels of utilisation of the Traditional Health Information & Communication System (THICS), ranging between 'Very low', 'Low', 'Average', 'High' and 'Very high' over the various significant independent and intervening variables of the analysis amounts to respectively 68.0%, 12.0%, 3, 2%, 2.4% to 14.4%. These findings indicate that while leaving average utilisation (3.2%) out of the calculation, there is, on the one hand, a generally very low to low level of utilisation rate of 80.0%, that is four-fifths, of almost all scores as reported by respondents, while on the other hand a generally high to very high level of utilisation of 16.8%, which is less than one-fifth of almost all scores as reported by respondents, is reported for THICS. This distribution justifies the overall interpretation that there is a net rate of 63.2%, that is more than three-fifths under-utilisation of the THICS as reported by respondents in the research area.

Similarly, the general distribution of levels of utilisation of the Modern Health Information & Communication System (MHICS), ranging between 'Very low', 'Low', 'Average', 'High' and 'Very high' over the various significant independent and intervening variables of the analysis amounts to respectively 60.8%, 15.2%, 6.4%, 5.6% to 12.0%.

These results indicate that while leaving average utilisation (6.4%) out of the calculation, there is, on the one hand, a generally very low level of utilisation of 76.0%, that is three-quarters of almost all scores as reported by respondents, while on the other hand a generally high to very high level of utilisation of 17.6%, which is less than one-quarter of almost all scores as reported by respondents, for the Modern Health Information & Communication System (MHICS). This distribution justifies the overall interpretation that there is a net rate of 58.4%, that is more than two-quarters under-utilisation of the MHICS as reported by respondents in the research area.

These results regarding the various levels of significance between and among all individual variables, grouped into the various categories of variables, are well-reflected in the mutual relations analysis among the blocks of variables, and further substantiated by the results of the

multivariate analysis, while the multiple regression analysis underscores the similar levels of significance between and among all eight blocks of variables in the analytical model, expressed in correlation coefficients.

Ninthly, the theoretical and practical implications of the study are presented in the next Paragraphs, and finalised with the development of a strategic model of an Integrated Health Information & Communication System (IHICS) as a planning tool in order to provide a contribution to the improvement of the local people's level of health literacy, and as such to 'Information Society Indonesia' (2003) within the context of public health development in the near future.

9.2 Implications

In addition to the conclusions mentioned above, the major implications on a theoretical, methodological and practical level are presented below as this study's contribution to the body of knowledge in health information and communication science from the ethno-communication perspective of the local peoples in the community of Sukamiskin.

9.2.1 Theoretical Implications

Most theories associated with Health Information & Communication Systems (HICS) are related to studies carried out within the context of the providers of health information through Modern Health Information & Communication Systems (MHICS), in which the recent electronic developments of the media and the internet are dominating. Similarly, most studies are dealing with the health information providers, including medical doctors, nurses and administrative staff focused on building electronic data bases of patients, treatments and medicines with a view to improving the modern health institutions and their medical services.

However, less attention has been paid to the situation and perspectives of the consumers of health information through traditional health services, particularly with regard to the local people and their utilisation of their Traditional Health Information & Communication Systems (THICS), functional at the community level. Such community-based research is most important to identify and improve the level of the local peoples' health information literacy.

In this context, the results of the study in Sukamiskin also strengthen the theoretical functionality of Parrott (2004) regarding the multiple discourse approach to health information and communication in three 'spheres of influence', i.e. the societal discourse, expert discourse, and lay discourse.

The focus of this research on the domain of the lay discourse concerning health information and communication among local participants has further strengthened the understanding of the utilisation of indigenous knowledge sources and experiential information regarding health and disease in the community.

Furthermore, this study has also shown that such a 'bottom-up' approach has direct relevance for health education as an instrument to inform and communicate with local people on changes in their behaviour for health improvement. The process of the provision of health information is associated with a series of theories and principles of health communication, including persuasive communication, behavioural communication, risk communication, media advocacy, entertainment education, interactive health communication, development communication, and participatory communication. In those activities, health promotion and disease prevention have become important elements.

The implementation of the distinction between the Traditional and Modern Health Information & Communication System (T&MHICS) further implies the support for the comparative approach needed for the development of ethno-communication as a discipline which is based on a culturally-relativistic orientation, *i.e.* treating each culture or sub-culture on the basis of its own system of values, norms and traditions [1].

The study of *Iber Kesehatan* from such an ethno-communication perspective on Health Information & Communication Systems (HICS) in Sukamiskin also implies improved understanding and explanation of various factors related to health promotion, disease prevention and treatment at the community level. Such a body of knowledge of the participants refers to the concept of health information literacy comprising the individual's ability to meet the need of health information, to determine the source of information, and to understand the indigenous medical knowledge and practice.

The implications for the further development of *Literasi Informasi Ilmiah dan Pengetahuan Lokal* ('Scientific Information Literacy and Local Knowledge Model') include the adaptation of the Big 6, Scconnul, and ALA's Literacy Information Model to the particular condition of Indonesia's multicultural society and its wealth of local knowledge and practices, used by Padjadjaran University (UNPAD) in the training of literacy information for new students in 2015-2016.

In addition to the above-mentioned implications of the study for the improvement of the health information literacy level, another interesting implication refers to the seeking behaviour for health information and communication by members of the community. Seeking such forms of information is described by Willson (1981) and operationalised in the reported search for information in libraries. The study in Sukamiskin also found that among the independent variables, the perceived need of health information factors and institutional factors of reading corners, the *Pemberdayaan Kelompok Keluarga* (PKK) ('Empowerment of Family Welfare Movement'), and mosques constitute variables which affect the utilisation of the Plural Health Information & Communication System (PHICS). Although the research in Sukamiskin implemented a comparative approach towards the two distinct Rational and Modern Health Information and Communication Systems (T&MHICS), the reported differential distribution of the utilisation patterns of both systems shows a rather similar picture of dominance of very low and low scores, providing a base for comparison between and within both systems.

In addition to the above-mentioned theoretical implications, a few methodological implications of the study in Sukamiskin also deserve special attention.

The first methodological selection of the ethno-science methodology, developed in the 'Leiden Ethnosystems Approach', has shown its efficacy and functionality of understanding and explaining relevant local phenomena, which implies the indispensable implementation of this approach in similar studies on indigenous peoples' knowledge, beliefs and practices as in this case of health information and communication at the community level. Furthermore, the functionality of the conceptual model of transcultural utilisation behaviour of respondents – developed by Slikkerveer (1990; 1995) – selected for the study and analysis in Sukamiskin, has shown impressive achievements in terms of the actual measurement of the spread of relevant factors and variables which are showing various levels of significance in the subsequent stepwise analyses of collected data from the household surveys. Although the study has been carried out within the context of two distinct Traditional and Modern Health Information and Communication Systems (T&MHICS) in the Sundanese region of West Java, the comparative approach of both qualitative and quantitative research components has contributed to a better understanding and explanation of local peoples' utilisation behaviour of the two systems at the community level in the research area.

The usefulness of the related stepwise analyses in terms of the bivariate, multiple relations, multivariate and multiple regression analyses is supported by the interesting results, which show direct relevance to not only the local people of the community of Sukamiskin, but also to the situation of Plural Health Information and Communication Systems (PHICS) elsewhere in Indonesia. In this way, the methodological orientation and results of this research link up well with the tradition of similar LEAD Studies recently carried out in East Africa, Indonesia and the Mediterranean Region (*cf.* Anak Agung Gde Agung 2005; Ibui 2007; Leurs 2010; Djen Amar 2010; Ambaretnani 2012; Chirangi 2013; Aiglsperger 2014).

9.2.2 Practical Implications

Since health promotion and disease prevention are generally regarded as the main basis for the development of a healthy society in Indonesia, the adequate selection of available sources of related health information and communication has – as mentioned above – direct relevance for the local peoples' level of health information literacy, and in turn, for their health and well-being. In particular, the participation of the community members is required not only to gain an adequate understanding of health and disease, but also to make use of existing local associations and institutions for acquiring such information, such as the *Arisan* and TOGA of local women's associations and councils. Also, the *Taman Bacaan Masyarakat* (TBM) ('Community Reading Corner'), established as a form of a public library by the citizens themselves, are generally supported as a trusted source of health information.

The practical implications of the study concern both the Traditional and Modern Health Information & Communication Systems (T&MHICS) in Sukamiskin, and can further be elaborated as follows.

As regards the Traditional Health Information & Communication System (THICS), an important implication of the study refers to the active support for the related traditional media, which operate at the local community but which also tend to be used by the current modern media. As it is found that the utilisation of the Traditional Health Information and Communication Systems (THICS) have proven their effectiveness in the delivery of significant forms of health information, special attention should be given to the provision of practical information about the prevention and dangers of local diseases and healthy lifestyles through these traditional information systems. Such systems also include the puppet performances of *lisung* and *kohkol* which are still very popular among the local people, and as such deserve special attention by the government. Puppet performances have shown to be rather effective in informing the public on matters of family planning, special treatment of epidemics and the proper utilisation of medicines.

The general practical implication of the positive function of the Traditional Health Information and Communication Systems (THICS) in the research area as part of the Sundanese tradition needs to be preserved and strengthened in the society in general, and especially in Sukamiskin, so that the communication system using traditional tools is not lost due to the recent processes of globalisation and modernisation.

As regards the Modern Health Information & Communication System (MHICS), the practical implication of the study is that an answer should be developed to the specific need among the respondents that the Ministry of Education and Culture of Indonesia, which is managing the *Taman Bacaan Masyarakat* (TBM) ('Community Reading Corner'), should also be actually involved in the development and management of these libraries in the field of health and disease as an extension of the related government health programmes.

In addition, the utilisation of Information & Communication Technology (ICT) in both available Health Information & Communication Systems (HICS) has also been found as a practical means for the respondents to gain a proper understanding of various issues of health and disease in the community. As a practical implication, it should be applied at the local level of the community, such as in traditional institutions of the *Pemberdayaan Kelompok Keluarga* (PKK) ('Empowerment of Family Welfare Movement'), the *arisan*, and the *pengajian* or *karang taruna*. A partnership between the various institutions is required to develop and utilise health information and communication more adequately in order to realise the goal of a healthy society.

The Regional Commission for Broadcasting of West Java is the gatekeeper for the content of health information disseminated through electronic and printed channels, including the provision of the clarification of the information and promotion services and health products. In addition, the Ministry of Communication and Informatics provides the facilities and networking technologies for the benefit of the acquisition and dissemination of health information. The *Taman Bacaan Masyarakat* (TBM) ('Community Reading Corner'), which has been established by the Sukamiskin community, is equipped with a more complete source of health information for the health workers of health centres in Sukamiskin in various activities, and as such should also receive support from the ministry and other agencies in the provision of traditional health information about home remedies, *jamu* ('herbal medicine') and indigenous healers and healing practices, a policy also supported by the World Health Organisation.

Another practical implication refers to the local health education activities which should not only be directed to women since the understanding of health problems involves issues of both men and women. Indeed, health information and communication are shown to be the concern of all members of the community, from various backgrounds. Moreover, the Sundanese people tend to follow the matrilineal law, where men are expected to hold responsibility and take decisions for all members of the family, including decisions about health and healing.

Furthermore, the practical implications for the design and development of modern health policies refer to a general need by the local population for relevant and adequate Health Information & Communication Systems (HICS), which also includes the utilisation and development of Information and Communication Technology (ICT) in the rural areas. Since the government has enforced the regulations on health advertising which involves the community health workers in order to control such information systems, a health information literacy programme should be developed in collaboration with various stakeholders in order to educate the local people in important matters of health and disease. The study also shows that the decentralised government institutions should take into account the prevailing level of health information by understanding the problems which exist in the local communities, since the study also implies that local understanding of health and healing is crucial for the decision-making process by respondents in the communities.

Since health information literacy is also confirmed as an important step towards the education of the public as early as possible on the recent process of globalisation of health information, it can be improved through practical health education, especially in the field of health information to the public through both traditional and modern institutions. An important implication is that the further involvement of local institutions in the dissemination of health information as crucial for improving the information literacy of the local population should be encouraged by the government. The improvement of the level of health information literacy should also include preventive activities in health, where individuals who possess advanced knowledge about health tend to have the ability to search, access, and utilise health information appropriately for guiding their health and illness behaviour.

Since the provision of health information on the Internet and through the *Sistem Penilaian Informasi Kesehatan Online* (SPIKO) ('Online Health Information Searching System') has recently expanded, they also have to become practical tools in health information literacy activities in order to select and monitor the accuracy of the various forms of health information. Hence, the *SPIKO* software needs to be developed further so that it can be used by more people in the communities.

Similarly, the two-step flow of communication as a strategy to achieve a literate society should further focus on Information Literacy Training of the cadres of the *Pemberdayaan Kelompok Keluarga* (PKK) ('Empowerment of Family Welfare Movement'), so that the acquired information can be disseminated to the other members of the community. The study also implies that when health literacy education can be performed in cooperation with various related institutions, including universities, it will be more attuned to the practical problems of the population, and as such be more effective. In this context, the Faculty of Medicine and the Department of Information Science of the Faculty of Communication provide an example where such institutional support is specifically examining the library information literacy, resulting in the provision of positive results in improving the health literacy level of the local people.

Furthermore, the study implies that it is essential that in Indonesia the Health Information Literacy Standards are formulated and standardised in the same manner as the standard of indicators on the information literacy skills of individuals has been developed by the Ministry of Health and the Ministry of Communications and Informatics (*Menkominfo*). Such standardisation aims at measuring the information literacy skills acquired by the community through the standardisation of a medium-term and long-term strategic plan of various programmes in the field of health. It also means that the programmes formulated by the government should be in accordance with the practical needs of the health information and communication of the community.

Additionally, the modern media have also been used for various forms of public health information, while sharing of knowledge is largely carried out by individuals using information technology as one of the forms of public education. Additionally, newspaper rubrics and citizen journalism using the printed and electronic media have provided public space for sharing information on health and disease. The ease of access and low cost to access to information in the field of health require the standardisation of the contents of information which are conveyed through the modern media/new media, in order to prevent privacy violations of the *Informasi dan Transaksi Elektronik* (ITE) ('Electronic Transaction and Information Law the Freedom of Information Act') enforced in Indonesia. Hence, the supervision of various parties involved in the field of information and communication should develop into the spearhead in the control of dissemination of health information.

In order to gain a common understanding of the interpretation regarding the ethics and regulations in the field of communication and information, various professional associations including the 'Indonesian Broadcasting Commission' should play the role of modern media gatekeeper. Meanwhile, the traditional media are frequently integrated as a medium to convey information of modern health information, such as the puppet shows which are also broadcast on television, radio, or via the Internet on Youtube, so that more people can take notice at relatively low cost.

The concepts of local health promotion and disease prevention are reflecting the values of indigenous knowledge of the Sundanese people, which have recently been revitalised in regional development in the field of health care, farming, housing, tree planting, and animal husbandry patterns at present.

Since the study amply shows that the indigenous medical knowledge and practices reflect the rich heritage of the Sundanese people, the practical implication of the study is to further study, document and operationalise these indigenous knowledge systems with a view to integrating them into sustainable systems in the near future.

Since the further understanding of local systems of health information can also clarify the linkage relationships between the concepts of health, illness and the local philosophy in the community, the source of information itself should be protected, preserved and functionalised for the overall improvement of the health and well-being of the local population.

Furthermore, as the concepts of health promotion and disease prevention as part of both the Traditional and Modern Health Information & Communication Systems (THICS) cover the entire human life cycle from conception in the womb until death, more attention should be given to their role in the various health education programmes of the government in order to contribute to the improvement of people's health and well-being throughout the country.

Finally, as the health of the population is a shared responsibility of many stakeholders at various levels of the society, the multidisciplinary approach towards the various aspects, factors and processes operational in the Plural Health Information & Communication Systems (PHICS) in Sukamiskin has developed into a trans-disciplinary study which pertains to various theoretical and practical implications which are not only contributive to the sustainable development of the community of Sukamiskin in West Java, but also to the achievement of the general aim of 'Healthy Indonesia' in the near future.

The overall implications, however, embark on the research findings that in a relative perspective, both the Traditional and Modern Health Information & Communication Systems (T&MHICS) seem to be largely utilised below the medium available level, which implies a concerted effort from all stakeholders concerned to render both systems more accessible and relevant to the provision of adequate information and communication on health and disease as a means to improve the health and well-being of the population.

9.3 Towards a Model of an Integrated Health Information & Communication System (IHICS)

Following the *eighth specific objective* of this study, as mentioned in the Introduction in Chapter I, to present the conclusions and the theoretical and practical implications of the study, with special attention for the development of a strategic model of an Integrated Health Information & Communication System (IHICS), this Paragraph further elaborates on the design of such a model as a planning tool in order to provide a contribution to the improvement of the local people's level of health literacy in Sukamiskin.

Among the major findings of the research is the fact that although there are two distinct systems, *i.e.* the Traditional and the Modern Health Information & Communication Systems (HICS) operational in the study area, while the local people tend to identify and refer to both systems as originating from different historical origins, each with its special body of knowledge and practices, the subject matter of the concepts of health and disease provides to a certain extent a common base for both systems for equal comparison and selection in the case that respondents need to call upon specific information and communication, such as in health and disease.

Interestingly, however, is the overall result that respondents tend to know what type of health information and communication system has to be consulted and utilised in order to find the most effective solution to their health-related problems in terms of appropriate health and illness behaviour in order to cope adequately with their perceived or diagnosed morbidity. At the same time, the study found that respondents who were used to consulting the Traditional Health

Information & Communication System (THICS) in some exceptional cases tend to utilise both systems, particularly where the experience of symptoms seems to be caused by 'modern' diseases, such as *Diabetes Mellitus*, *Cardiovascular Disease*, *Hypertension* and *Stress*, where the Modern Health Information & Communication System (MHICS) appears to provide more advanced disease-related information.

Another important consideration concerning the sporadically reported utilisation of both systems refers to the multiple discourse approach to health information and communication concerning the separation between the three domains of influence, i.e. the societal discourse, expert discourse, and lay discourse, introduced by Parrot (2004), where this study focuses on the domain of the lay discourse operational at the community level. The research in Sukamiskin indicates that in the exceptional cases where respondents report their utilisation of both the Traditional and Modern Health Information & Communication System (T&MHICS) for the same perceived morbidity, the information from one traditional system was not able to provide sufficient health-related knowledge to reach a solution, by the result of which the other modern system was utilised. In these cases, there was a transition reported from the traditional to the modern system, albeit still conceptualised in the terms of Parrot (2004) as still functioning within the domain of the 'lay discourse'. In a few cases, however, the opposite pattern has been reported where a transition has been reported from the modern to the traditional system, where modern medicines and treatment were not effective in providing an appropriate treatment for the illness. In these cases, the experience of symptoms seems to be caused by 'traditional' diseases, such as Common Cold, Mental Disorders, Headache and Lucoderma, where the Traditional Health Information & Communication System (THICS) appears to provide rather effective illness-related information. Furthermore, it has become clear that a general need exists among the local people of additional, up-to-date health information and communication, largely related to 'common' diseases' emerging within the households. Moreover, since such common diseases are mostly covered by the Traditional Health Information & Communication System (THICS), the population has lately become aware of the serious impact of 'new' diseases such as HIV and AIDS, which are mostly dealt with by the Modern Health Information & Communication System (MHICS). By consequence, from the consumers' perspective of the local population, it is in some cases rather difficult to exactly identify the morbidity symptoms and make the right choice as to what system to refer to in order to find the appropriate health information and communication.

The same situation is found in the follow-up behaviour of people after identifying the illness or disorder and selecting the course of action for treatment when it comes to the actual utilisation of the various traditional and modern medical systems in the area. As regards the utilisation of traditional medical systems, the World Health Organization (1999; 2002a; 2002b) has designed an advanced strategy for governments, especially in developing countries, to integrate traditional medicine and modern medicine in order to increase the access and utilisation of both medical systems, pertaining to the general improvement of the health of the population.

In view of, on the one hand, the sporadic interchangeable utilisation of both the Traditional and Modern Health Information & Communication Systems (T&MHICS), reported in Sukamiskin, and on the other hand, the already functioning integration of Traditional Medicine and Modern Medicine in Indonesia, promoted by the government, a similar approach should be designed and implemented regarding the integration of the Traditional and Modern Health Information & Communication Systems (T&MHICS). Following the information-oriented integration approach promoted and successfully implemented in Finland by Mykkänen *et al.* (2004), the integration process in the research area of Sukamiskin is equally based on the information exchange and set-up of a relevant database, with a focus on reaching a common definition of perceived and

diagnosed morbidity documented for both systems in the research area.,As regards the differentiation between a ‘top-down’ or a ‘bottom-up’ process for the definition of the integration solution in Sukamiskin, elaborated by Mykkänen *et al.* (2004), the ‘bottom-up’ process is chosen as it is based on the initiation from the practical high-priority needs of the population of different forms of traditional and modern health information and communication operational in the community. The information-oriented approach towards ‘horizontal integration’ between the two systems would not only extend the possibilities for the people to access and acquire appropriate information and communication concerning a wide range of illnesses prevailing in the research area, but it would also increase the opportunities to identify and use effective medicines and treatment as provided by the two systems.

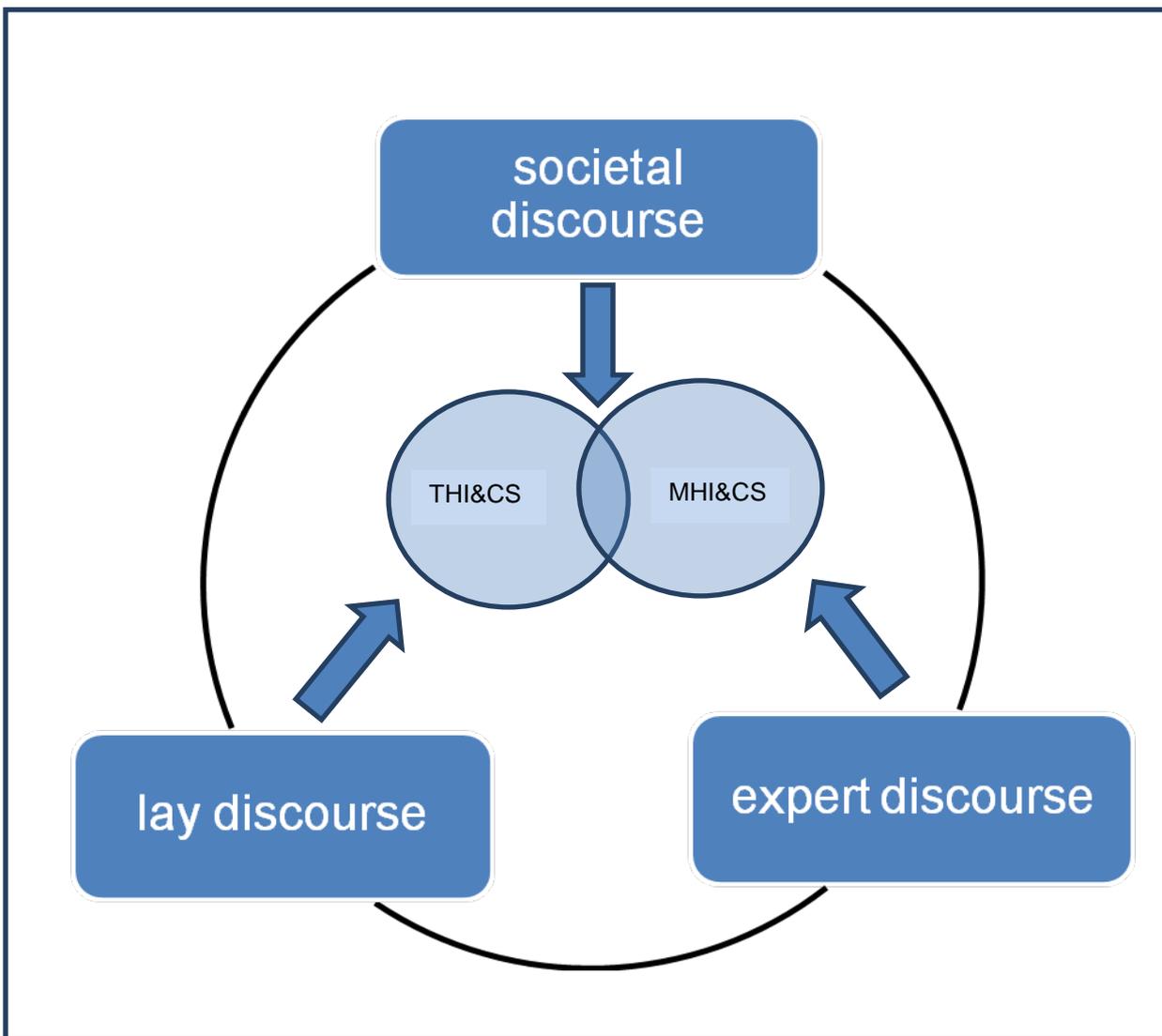


Figure 9.1 Schematic Representation of the Model of an Integrated Health Information & Communication System (IHICS)
 Source: Adapted from the Model of Integrated Local and Global Knowledge Systems of Slikkerveer (2018).

Figure 9.1 shows a schematic representation of the proposed Model of an Integrated Health Information & Communication Systems (IHICS) against the background of the three domains of the societal discourse, the lay discourse and the expert discourse, operational in the research area of Sukamiskin. The input from these three domains into the new model is reflected in the three arrows, each of which is directed to the Model of an Integrated Health Information & Communication Systems (IHICS), represented by the two overlapping circles in the middle.

In this model, an integrated and multidimensional approach is represented towards the interactive development of the societal, lay and expert discourses with a view to designing and implementing a hybrid system of traditional and modern health information and communication pertaining to the improvement of the health literacy level of the local population. Figure 9.1 at page 202.

As mentioned above, the proposed integration would not only extend the possibilities for the people to access and acquire appropriate information and communication concerning a wide range of illnesses prevailing in the research area, but it would also facilitate the process of local decision-making regarding the people's health and illness behaviour, and eventually, their health care utilisation behaviour.

Eventually, the ethnoscience study, particularly the ethno-communication study in Sukamiskin, has paved the way for the merger of both systems into one hybrid system which links up very well with the Sundanese culture of the local people. Indeed, since information on health and healing has always been a dynamic integral part of Indonesia's cultural diversity; the understanding of different forms of traditional and modern health information has become important for the people.

Since the understanding of the participants' view on health and illness is central to the ethnoscience study of the consumers' perspective on indigenous and modern health information and communication, ethnoscience may become one domain of analysis that should be represented in information science in similar research.

It is hoped that the above-mentioned strategic model of an Integrated Health Information & Communication System (IHICS) as a planning tool could be developed with a view to providing a contribution to the improvement of the local people's level of health literacy, and as such to 'Information Society Indonesia' (2003) within the context of public health development in the near future.