Yiatrosofia yia ton Anthropo: Indigenous Knowledge of Medicinal, Aromatic and Cosmetic (MAC) Plants in the Utilisation of the Plural Medical System in Pirgos and Praitoria for Community Health Development in Rural Crete, Greece

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Chapter VIII PATTERNS OF TRANSCULTURAL HEALTH CARE UTILISATION BEHAVIOUR

On the basis of the foregoing chapter, which offers an overview on patterns of transcultural health care utilisation behaviour shown by all household members of the sample, the present chapter presents a more detailed analysis of the behavioural patterns of respondents of the sample. In particular, the data, which have been collected for the different variables identified as determinants of patterns of transcultural health care utilisation behaviour in the multivariate model, are presented in relation to the statistical programme for data analysis used in this study. In this respect, any process of data manipulation, to which certain variables have been subjected prior to running a statistical analysis, is highlighted and described in detail. As Gifi (1990: 61) explains: '*The main safeguard is that in reporting the analysis we should also report and motivate our deletions and other manipulations*'. The present chapter proceeds with a brief description of the processes and variables involved in a bivariate and mutual relations analysis, which are presented thereafter. Although a bivariate analysis generally offers a good overview on the significance value of the different determinants of people's transcultural health care utilisation behaviour, all variables are subsequently subjected to a multivariate analysis.

This chapter not only describes the techniques, processes and variables involved in the multivariate analysis, but it also highlights to which extent each variable, notably in interaction with all other variables in the model determines local patterns of health care utilisation behaviour. Hereafter, the processes and variables involved in the multiple regression analysis are highlighted, which explains the overall explanatory value of the multivariate mode. By means of a multiple regression analysis, it is possible to construct and eventually present the final model of transcultural health care utilisation for the sample population of Pirgos and Praitoria. In the light of previous research conducted in Crete and beyond, the results, which have been gained from statistical analysis, are hereafter summarised and interpreted. In general, the present chapter seeks to link any explanation of specific patterns of behaviour, which have been developed by the sample population, to the quantitative and qualitative collected data and presented in the previous chapters. In this way, Chapter VIII also paves the way for the concluding Chapter IX, in which the general aim and specific objectives of the present study are highlighted and discussed in relation to the qualitative and quantitative analysis of data gathered in the course of this research.

8.1 Preparation of the Data Set

8.1.1 Factors and Variables

By means of two quantitative household surveys conducted in the research area, it is possible to collect an extensive amount of data on the perceived morbidity, namely the experience of illness, and patterns of health care utilisation reported by all household members of the sample. In addition to this information, as it is presented in Chapter VII, data have been collected on a number of other factors, which have been identified as determinants of people's illness behaviour. Information is gathered on the basis of the multivariate model of transcultural health care utilisation in a way to substantiate the individual blocks of factors within the model, which are distinguished as determinants of local patterns of transcultural health care utilisation behaviour (*cf.* Paragraph 3.1.2). Overall, data on the blocks of factors identified within the model have been collected for all household members of the sample. Consequently, the preparation of data for the subsequent statistical analysis of patterns of health care utilisation behaviour is based on the number of utilisation rates of all household members identified as 'patients' (N=452). As noticed by the identification of utilisation rates for all 'patients' of the sample, as it is explained in Paragraph 7.2.2, Table 7.5 illustrates to what extent the 'patients' of the sample (N=338) account for a total of 452 utilisation rates. The data, which have been collected on each block of

factors identified within the model, have been gathered for a total of 452 cases, namely for the rates of utilisation of the plural medical system maintained by all household members identified as 'action patients' of the sample. In order to prepare the information collected for the subsequent statistical analysis of behavioural patterns, each block of factors, as it is composed of real-life data, is translated into a number of variables, which are inserted into the conceptual model of transcultural health care utilisation (*cf*. Ambaretnani 2012). In general, the data, which have been gathered for each household member, are too extensive to be translated directly into variables within the conceptual model. For this reason, the different blocks of factors are transformed into measurable variables and are adapted to the categories and values, which have been identified during the process of operationalisation of the conceptual model (*cf*. Paragraph 3.1.3). In an effort to define the different variables, the raw answers, which have been provided by the respondents during the household surveys, are cleaned and corrected for misspellings and inconsistencies. Subsequently, the answers are organised according to the categories and values of each variable, whereby numerical codes are assigned to the answer categories. Since a number of variables have been measured with more than one question, multiple answers are coded in an effort to comply with the pre-defined categories and values. Hereafter, rank orders of answers are arranged from 'little' to 'much' and from 'negative' to 'positive' as well as from 'difficult' to 'easy'. Data are eventually inserted into the statistical programme for data analysis, in which variables are labelled and organised in accordance with the respective block of variables identified within the multivariate model. Concurrently, the level of measurement is indicated for each variable within the model.

Overall, variables are measured at the highest possible level, whereby the variables within the analysis are measured either at the nominal or at the ordinal level. A nominal level of measurement refers to a variable with two or more categories, which are not brought into a rank order, whereas an ordinal level of measurement relates to a variable with two or more categories, which follow a rank order. Since the categories of both nominal and ordinal variables are mutually exclusive, whereby an answer can belong to only one category, the types of variables are known as 'categorical variables' (*cf*. Bernard 2002; Field 2009). In this way, the numbers, which are assigned to the categories of nominal and ordinal variables, form denominations rather than quantities. Although the categories of ordinal variables are brought into a rank order, it has not been possible to establish the exact difference between categories and as such to create an equally distributed distance between the categories, notably a characteristic of variables measured at the interval level. In other words, none of the variables, which have been assessed within the multivariate model, are measured on an interval level, as equal intervals between categories could not be assumed. Consequently, the ordinal level of measurement forms the highest level of measurement of the variables identified within the model (*cf*. Bernard 2002; Leurs 2010). Following the first data entry, all cases are verified for further inconsistencies, that is for outliers and missing values, by means of showing the frequency distribution of each variable in the model. While no significant outliers have been detected among the cases in the data set, missing values have primarily been treated as such and have been distinguished with a numerical code unique for each variable. In view of a substantial amount of missing information, seven households had to be excluded from the data set, reducing the original target of 300 to 293 households (*cf*. Bernard 2002; Leurs 2010; Bryman & Cramer 2011; Ambaretnani 2012).

On the basis of the frequency distribution of all variables in the model, variables, which needed additional coding in order to match the predefined categories and values, have been identified and subjected to data manipulation. As Action & Miller (2009: 101) state: '*In many cases, data manipulation forms an essential preliminary step in the overall process of data analysis*'. In general, the majority of variables within the model are measured with a single question, whereby the answering options match the predefined categories and values identified for each variable and forestall a recalculation of codes. Nevertheless, a number of variables are measured with more than one question and thus required a recalculation or manipulation of answer categories in order to achieve a consensus with the predefined codes.

Table 8.1 Block of Factors, Names and Labels of all 30 Variables identified within the Multivariate Model of Transcultural Health Care Utilisation.

Block of Factors	Name of Variable	Label
Socio-Demographic Factors	Community	*NamCom*
	Household Size	*HouseMem*
	Household Composition	*Relatio*
	Gender	*Gender*
	Age	*Age*
	Place of Birth	*PlaoB*
	Nationality	*Natio*
	Religion	*RelAff*
	Education	*LevEduc*
	Marital Status	*MariStat*
	Occupation	*Occupat*
Psycho-Social Factors	Knowledge of the Traditional Medical System	*KnowTrad*
	Knowledge of the Transitional Medical System	*KnowTran*
	Knowledge of the Modern Medical System	*KnowMod*
	Opinion on the Traditional Medical System	*OpiTrad*
	Opinion on the Transitional Medical System	*OpiTran*
	Opinion on the Modern Medical System	*OpiMod*
Enabling Factors	Annual Income	*AnnInco*
	Annual Expenses for Health Care	*AnnExp*
	Insurance	*Insuran*
	Socio-Economic Status	*SES*
Perceived Morbidity Factors	Health Status	*HeaStat*
	Reported Disease	*RepDis*
	Severity of the Reported Disease	*SevRepDis*
	Duration of the Reported Disease	*DurRepDis*
Institutional Factors	Accessibility of Institutions of the Traditional Medical System	*AccTrad*
	Accessibility of Institutions of the Transitional Medical System	*AccTran*
	Accessibility of Institutions of the Modern Medical System	*AccMod*
Intervening Factors	Impact of the Current Economic Situation	*EcoSit*
Health Care Utilisation Factors	Utilisation of the Plural Medical System	*HeaCare*

In this way, the answer categories are subjected to processes of recoding and mathematical computations, which are effectuated through the statistical programme for data analysis. Processes of recoding allow for an assignation of new codes to the answer categories, notably without changing the values of the variable. Consequently, recoding facilitates the merging of answer categories into larger aggregates, as it is applied to variables, which contain a considerable number of answer categories and consequently produce a statistically insufficient number of cases in each category (*cf.* Acton & Miller 2009). Mathematical computations, on the other hand, enable the combination of sets of questions, as they have been used for the measurement of certain variables. In an effort to incorporate all questions into one variable, answer categories are counted, thereby offering a scale of codes, in which the lowest and highest values are determined by the sample population rather than by theoretical determinants and allow

as such a fairly realistic assessment of the variable. In case that answer categories are measured on the same level, values are either counted within cases, notably in an attempt to assess the number of 'yes' or 'no' answers, or are computed by means of mathematical techniques, whereby the number of each code is treated as quantity (*cf.* Acton & Miller 2009; Leurs 2010). In view of the variables within the multivariate model of transcultural health care utilisation, values have been counted in order to assess the respondent's level of knowledge, while mathematical techniques have been applied in a way to address the respondent's opinion and perceived accessibility of institutions of the plural medical system.

Following the processes of calculation and recalculation of codes, the data set, which is based on the rates of utilisation of the plural medical system reported by all household members, are identified as 'action patients' of the sample (N=452), and comprise information on a total of 30 variables. Table 8.1 presents a list of all variables in the model and illustrates the block of factors, to which the respective variables belong, as well as the particular label, which is assigned to each variable within the statistical programme for data analysis. Paragraph 8.1.2 offers more detailed information on each independent variable in the model, namely on processes of initial coding and recoding, levels of measurement and the final answer categories. Hereafter, Paragraph 8.1.3 describes the rather complex procedures involved in identifying the 3 dependent variables, which are identified as 'Utilisation of the Traditional Medical System', 'Utilisation of the Transitional Medical System' and 'Utilisation of the Modern Medical System'. In this way, the variables provide a sound basis for the subsequent statistical analyses, which are performed on the data in the set in an effort to highlight the determinants of patterns of transcultural health care utilisation behaviour shown by the population of Pirgos and Praitoria.

8.1.2 Independent and Intervening Variables

Following the preparation of the data set of utilisation rates maintained by all household members distinguished as 'action patients' of the sample, a number of independent variables have been identified as determinants of local patterns of health care utilisation behaviour. The data set encompasses the following predisposing, notably socio-demographic and psycho-social, enabling, perceived morbidity, institutional and intervening variables:

Community
The variable 'Community' contains a direct reference to the names of the two research communities in the Municipality of Arkhanes-Asterousia, which had been chosen as the setting for the household surveys. The variable is measured at the nominal level, whereby the initial answer categories 'Pirgos' and 'Praitoria' are not subjected to processes of recalculation.

Household Size
The concept of 'Household Size' addresses the number of members living in the household at the time of the surveys. The variable is assessed with an open question, of which the original answers are grouped into the predefined categories of '1 member', '2 members', '3 members', '4 members' and '5 and more members', thereby generating an ordinal level of measurement.

Household Composition
In addition to the household size, the variable 'Household Composition', namely the relationship of each household member to the household head, is determined with a single question on a nominal level. On the basis of the identification of the household head, respondents have been asked to indicate the nature of the relationship of each household member to the household head. Hereafter, the original answering options were reduced to the following seven categories: household head; partner; son/daughter; grandchild; parent; brother/sister; and parent-in-law.

Gender
Measured at the nominal level, the answer categories of the variable 'Gender', namely 'male' and 'female', did not require any form of recalculation.

Age
The variable 'Age' is measured at the ordinal level on the basis of two questions, which serve the control of the reported answers, as well as the prevention of inconsistencies. The first question relates to the reported age of each respondent on the last birthday expressed in number of years alive, while the second question assesses the date of birth of each respondent. The reported answers have been arranged among the age groups of '<7', '7-13', '14-20', '21-27', '28-34', '35-41', '42-48', '49-55', '56-62', '63-69', '70-76', '77-83', '84-90' and '>90' years.

Place of Birth
Measured at the nominal level, 'Place of Birth' determines the geographical location of the community, in which the respondent is born. In this way, respondents could choose between the following answering options: 'this community', referring to either Pirgos or Praitoria; 'this municipality', namely the Municipality of Arkhanes-Asterousia; 'somewhere else in Crete'; 'somewhere else in Greece'; and 'other', which refers to any place of birth outside Greece. In order to establish the extension of migration within the Municipality of Arkhanes-Asterousia and to assess the bonds between the research and surrounding communities, respondents, who had selected 'this municipality' as their answer, have been asked to name the community, in which they were born. All reported names have subsequently been compared to the official data available on the Municipality of Arkhanes-Asterousia in a way to confirm the respondents' answers and to check for inconsistencies. Apart from verifying the reported answers, the answer categories of 'Place of Birth' have not been subjected to processes of recalculation.

Nationality
The variable 'Nationality' is measured at the nominal level and is addressed with a single question, which includes a closed and open answer category allowing respondents to choose between 'Greek' and a different type of nationality. Following a recalculation of open answers, the variable eventually offered four categories, namely 'Greek', 'Albanian', 'Bulgarian' and 'Rumanian'. The frequency distribution of the variable 'Nationality', however, shows that a vast majority of respondents (98.2%, n=444) assume the Greek nationality, thereby generating a fairly asymmetric distribution, which is positively skewed. Since the degree of skewness of the distribution exceeds the minimum threshold and would consequently cause undue effects on any correlation involving the variable 'Nationality', the variable is excluded from the subsequent statistical analysis (*cf.* De Vaus 2002) (8.1).

Religion
Similar to 'Nationality', the variable 'Religion', which is measured at the nominal level, offers an open and a closed answer category, whereby respondents are able to choose between 'Greek Orthodox' and any other form of religious affiliation. Hereafter, open answers have been organised into aggregates whereupon the variable eventually comes to incorporate the following five answer categories: 'Greek Orthodox'; 'Bulgarian Orthodox'; 'Rumanian Orthodox', 'non-Orthodox Christian'; and 'non-Christian'. Comparable to the variable 'Nationality', the vast majority of respondents (98.0%, n=443) follow the Greek Orthodox religion and as such produce a frequency distribution, which is positively skewed with values of skewness above the chosen limit. In order to avoid a distortion of results during the subsequent statistical analyses, as it can be caused by a high degree of skewness, the variable 'Religion' is dropped from the set of variables.

Education
Measured at the ordinal level, 'Education' addresses the level of formal education completed by each respondent. In line with the educational system operating in Greece, the answering options of the variable comprise the categories 'no formal education', 'primary school', 'middle school to high school', 'university' and 'other'. While answers falling into the category of 'other' have been recalculated, and the different names of schools, which have been occasionally reported by the respondents, have been verified in accordance with the official data and inserted into the appropriate category. Hereafter, the categories 'no formal education', 'primary education', 'secondary education' and 'post-secondary education' have been assigned to the variable 'Education'.

Marital Status
The variable 'Marital Status', which is measured at the nominal level, originally incorporated the answering options 'single', 'co-habiting', 'married', 'separated', 'divorced' and 'widowed'. Because of the rather limited number of respondents, who are 'co-habiting' or 'separated', these categories have been collapsed into larger aggregates and have been merged, notably on the basis of similarity, with the categories of 'married' and 'divorced'. In this way, the variable 'Marital Status' comes to include four answer categories, namely 'single', 'married/co-habiting', 'divorced/separated' and 'widowed'.

Occupation
Measured at the nominal level, the variable 'Occupation' addresses the main occupation of each household member and is addressed by a single question, which includes three closed and one open answer categories. Respondents have been able to choose between the close categories of 'unemployed', 'non-paid/student' and 'homemaker' or could select the open category, as it accommodates any other type of occupation. Answers falling into the open category have been rather abundant and have hereafter been merged into larger aggregates. In this respect, the reported occupations have been categorised among the predefined groups of professions, which were adapted from the 'International Standard Industrial Classification of All Economic Activities (ISIC) Rev. 4', developed by the Statistics Division of the United Nations (*cf*. United Nations 2013). Although the predefined answer categories follow the main industrial sectors listed within the classification to a considerable extent, the categories have to a certain degree been adapted to the characteristics of the research area. In particular, industrial sectors, such as 'Mining and Quarrying' or 'Real Estate Activities', for example, are rather inexistent in the research area and have been consequently omitted from the list of occupations. Concurrently, other professions, such as the occupation of priest, which bears considerable relevance in the research area, have been accentuated accordingly. Since the initial list of industrial sectors available in the research area, however, became rather extensive, a number of categories have been combined, as denoted by '/', in an effort to avoid statistically insufficient numbers of cases within categories. As a result, the variable 'Occupation' eventually came to include a total of 17 categories, that is: 'student/non-paid'; 'homemaker'; '(stock) farmer'; 'manufacturer'; 'construction worker'; 'retailer'; 'provider of food, beverage, accommodation'; 'insurance agent'; 'head officer/researcher'; 'servant to building'; 'public administrator/defence personnel'; 'educator'; 'human health, social worker'; 'artist/entertainer'; 'priest/personal servant'; 'employee of the private sector'; and 'unemployed/retired'. On the basis of the occupational profile of the wider study population, as it is presented in Paragraph 5.2.3, it could be assumed that a state of retirement corresponds to a state of unemployment rather than actual retirement from a profession.

Knowledge of the Traditional Medical System
'Knowledge of the Traditional Medical System' is assessed on the basis of asking the respondent a series of questions. In particular, respondents have been asked to identify different components

of the traditional medical system, namely to describe a number of phenomena, which are related to MAC plants and other traditional home remedies as well as to religious and spiritual forms of medicine. In case that the respondents have been able to describe the respective element, their answer is distinguished with 'yes', while any inability to specify the component is marked with 'no', thereby generating a set of 'yes' and 'no' codes. Answers of 'don't know', which suggest that the respondent is unable to identify the component, have been treated as 'no'-answers. In an effort to estimate the respondents' knowledge of the traditional medical system, the 'yes'-codes have been counted by means of running a mathematical computation, which eventually offered a scale indicating the knowledge of all respondents of the sample. Following the categorisation of 'yes'-values across larger aggregates, the variable 'Knowledge of the Traditional Medical System', which is measured at the ordinal level, came to include three answer categories, which ranked from 'little knowledge' to 'average knowledge' and 'much knowledge'. The variable is rather positively skewed, as a considerable majority of respondents (91.2%, n=412) demonstrate much knowledge of the traditional medical system and thus generate a frequency distribution with values of skewness above the threshold. Since 'Knowledge of the Traditional Medical System' is, however, fairly essential to the analysis of patterns of health care utilisation behaviour, the variable is included in the subsequent statistical analyses.

Knowledge of the Transitional Medical System
Similar to 'Knowledge of the Traditional Medical System', the variable 'Knowledge of the Transitional Medical System' is measured with a series of questions. In this respect, respondents have been urged to directly provide a 'yes' or 'no' answer to questions related to different components of the transitional medical system, such as the distribution and sale of pharmaceutical medicines. Positive answers have been subsequently computed into a scale, which addresses the respondents' level of knowledge of the transitional medical system. Measured at the ordinal level, the variable is comprised of three answer categories, namely 'little knowledge', 'average knowledge' and 'much knowledge'.

Knowledge of the Modern Medical System
In order to address the respondents' level of knowledge of the modern medical system, respondents have been asked to similarly answer a series of 'yes'- and 'no'-questions, which have been linked to components of the modern medical system, namely practices of prescribing and the provision of modern health care. Positive answers have been counted and computed into a scale whereupon the final variable 'Knowledge of the Modern Medical System', as it is measured at the ordinal level, came to comprise the following answer categories: 'little knowledge'; 'average knowledge'; and 'much knowledge'.

Opinion on the Traditional Medical System
The variable 'Opinion on Traditional Medical System' is measured with two questions assessing both, the pleasantness and effectiveness of the traditional medical system as perceived by the respondent. In this way, respondents have been asked to indicate their perception of pleasantness and effectiveness on scales ranking from 1, 'very unpleasant' or 'very ineffective' to 5, 'very pleasant' to 'very effective'. Concurrently, both scales offered an answering option of 0, 'no answer provided', which allowed respondents to abstain from indicating the pleasantness and effectiveness of the traditional medical system and is treated as missing value. By means of a mathematical computation, the values of both scales, as they formed quantities, have been added and arranged into a scale, which eventually included a missing value of 0 and ranked from a minimum value of 2 to a maximum value of 10. In an effort to avoid small numbers of cases within categories, the scale is later regrouped into four categories, namely 'negative opinion', 'neutral opinion', 'positive opinion' and 'no opinion'. Because of the answer category of 'no opinion', which indicates a missing value, the variable is measured at the nominal rather than the ordinal level.

Opinion on the Transitional Medical System
As noticed by the coding of the variable 'Opinion on the Traditional Medical System', the same methods of calculation and recalculation of values have been applied to the variable 'Opinion on the Transitional Medical System', which is similarly measured at the nominal level and came to include the following answer categories: 'negative opinion'; 'neutral opinion'; 'positive opinion'; and 'no opinion'.

Opinion on the Modern Medical System
In the same fashion, the processes of calculation and recalculation of values, which are applied to the variables 'Opinion on the Traditional Medical System' and 'Opinion on the Transitional Medical System', are used to assess the variable 'Opinion on the Modern Medical System'. Measured at the nominal level, the answer categories 'negative opinion', 'neutral opinion', 'positive opinion' and 'no opinion' have been assigned to the variable.

Annual Income
The variable 'Annual Income' addresses the average amount of the household's annual income in Euro as reported by the respondent. In view of the fairly sensitive nature of the variable, the answering options available formed to closed categories and allowed respondents to indicate the estimated annual income on a scale, which, notably covering equal intervals, ranked from the minimum values of '<10.000 Euro' and '11.000-20.000 Euro' to the maximum values of '91.000-100.000 Euro' and '>100.000 Euro'. Respondents could furthermore refrain from giving an answer, thereby choosing the answer category 'no income reported', which is treated as missing value. Following an initial calculation of values, it became evident that respondents rarely reported an annual income above 40.000 Euro whereupon the income scale is resized into a total of five categories. Measured at the nominal level, notably because of missing value-category, the variable 'Annual Income' incorporates the following answer categories: '<10.000'; '10.000-20.000'; '21.000-30.000'; '31.000-40.000'; '>40.000'; and 'no income reported'.

Annual Expenses for Health Care
In addition to an assessment of the household's annual income, the variable 'Annual Expenses for Health Care' estimates the average amount of expenses for health care in Euro, which each household meets over the course of one year. The variable is measured with a single open question asking the respondent to indicate the approximate amount of money spent annually on health care. On the basis of reported answers, a scale of values is constructed, which is ultimately divided into groups of answer categories. Furthermore, respondents have been able to select the answering option 'no expenses reported', which gave respondents the opportunity to abstain from giving an answer and is subsequently treated as missing value. The variable 'Annual Expenses for Health Care' is measured at the nominal level and includes six answer categories, namely '<250', '250-500', '501-750', '751-1.000', '>1.000' and 'no expenses reported'.

Insurance
Following an estimation of the average amount of the household's annual expenses for health care, respondents have been subsequently asked to provide an indication of the means of coverage of their health care expenses. For this reason, the respondents have been first invited to answer a general question on the means of cost recovery and to hereby choose one of the following answering options: 'private funds'; 'public funds'; 'insurance'; and 'other'. Hereafter, an initial calculation of answers revealed that the sample population is extensively covered by social insurance. In a second question, which eventually formed the basis for the construction of the variable 'Insurance', respondents have been consequently asked to name their insurance company. Following a first assessment of answers received, the results demonstrated that a considerable number of respondents are covered by one out of three major social insurance funds available in Greece. Accounting for the, albeit limited, number of respondents, who are not

covered by insurance, the variable, which is measured at the nominal level, ultimately included five answer categories, namely 'IKA', 'OGA', 'OPAD', 'other' and 'no insurance'. While the category 'other' comprises any type of social insurance other than the three major funds listed, the category 'no insurance' indicates a lack of coverage and is treated as missing value.

Socio-Economic Status (SES)
The variable 'Socio-Economic Status' is measured with two questions, of which the first is answered by the respondent and the second is answered by the researcher. Respondents were asked to indicate their perceived level of their socio-economic status on a scale offering the categories 1 'very poor', 2 'poor', 3 'average', 4 'rich' and 5 'very rich'. Concurrently, respondents have been able to refrain from providing an answer by choosing the category 'no answer provided'. In order to reach a level of comparison between the subjective answers to the perceived level of socio-economic status, the researcher provided an additional indication of the subject's socio-economic status, notably by using the same scale. The researcher's indication is mainly based on a personal impression of the quantity of possessions and the extension of additional assets ownership of each household as well as the size and state of the house. Following this somewhat external perception of the socio-economic status of the respondents, the answers, which have been provided by the respondents, could be compared and eventually brought on a similar level. Hereafter, the variable 'Socio-Economic Status' is measured at the ordinal level and incorporates the answer categories of 'poor', 'average' and 'rich'.

Health Status
Similar to the variable 'Socio-Economic Status', respondents have been invited to indicate their perceived level of general health status on a scale comprising the categories 1 'very poor', 2 'poor', 3 'average', 4 'well' and 5 'very well'. After an initial calculation of answers, the scale is collapsed into larger aggregates in an effort to avoid small numbers of cases within categories. The variable 'Health Status', which is measured at the ordinal level, eventually came to include three answer categories, namely 'poor', 'average' and 'well'.

Reported Disease
During the quantitative household surveys, the variable 'Reported Disease' determined the number of respondents, who had experienced an episode of illness over a recall period of 12 months preceding the surveys. In this way, the variable distinguishes the 'patients' from the 'non-patients' of the sample and hereby provides the basis for establishing the rates of utilisation of the plural medical system maintained by all 'patients' of the sample. In order to gather information on the number of 'patients' of the sample and on the particular illness episode experienced, respondents have been asked to indicate whether they had suffered from a disease during the recall period by means of choosing 'yes' or 'no' as well as 'no answer provided'. In case that the respondent chose the first category, two subsequent open questions assessed the type and accompanying symptoms of the main illness episode, which the respondent experienced. At this point, the respondents have been given the opportunity to refrain from describing the nature of the disease, as it may at times evoke uncomfortable feelings among the respondents. Hereafter, a limited number of respondents, who have been subsequently distinguished as 'non-patients', chose to abstain from providing an answer. Nevertheless, the positive answers to the type and symptoms of illness episodes generated a considerable amount of information, which is later organised among a number of disease categories. The categories have been created and ordered on the basis of local data and the specific disease categories, which have been designed by the World Health Organisation (WHO) in its 10th revision of the International Classification of Diseases (ICD) (*cf.* WHO 2014b). The disease categories, which had to be merged in a way to avoid statistically insufficient numbers of cases within categories, ultimately formed the basis for constructing the variable 'Reported Disease'. Measured at the nominal level, the answer categories of the variable reflect a locally specific classification of

illnesses and amount to a total of 20 groups of diseases, including: ‘neoplasm’; ‘disorder of the thyroid gland or metabolic disorder’; ‘mental and/or behavioural disorder’; ‘disease of the nervous system’; ‘disease of the eye and/or adnexa’, ‘ischemic or other form of heart disease’; ‘essential (primary) hypertension or other disease of the circulatory system’; ‘the common cold’; ‘other disease of the respiratory system’; ‘disease of the digestive system’; ‘disease of the skin and/or subcutaneous tissue’; ‘disease of the muscoskeletal system and connective tissue’; ‘disease of the genitourinary system’; ‘congenital malformation’; ‘symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified’; ‘elevated blood glucose level’; ‘abdominal and/or pelvic pain’; ‘accident’; ‘the evil eye’; and ‘unspecified/unknown’. The last category refers to illness episodes, which have not been included in any of the listed categories or remained unknown.

Severity of the Reported Disease
Based on the variable ‘Reported Disease’, ‘Severity of the Reported Disease’ assesses the level severity of the reported illness episode, as perceived by the respondent. Measured at the ordinal level, respondents have been invited to specify the perceived level of severity on a scale ranking from 1 to 4 and to hereby choose between one of the following categories: ‘not severe’; ‘mildly severe’; ‘moderately severe’; and ‘highly severe’. The answer categories have not been subjected to any process of recalculation.

Duration of the Reported Disease
In order to further determine the characteristics of the reported illness episode, respondents have been subsequently asked provide an indication of the perceived duration of the disease. The duration of the disease is measured with an open question, which allowed respondents to report any particular period of time, during which they suffered from the reported illness. Hereafter, answer have been recalculated in a way to distinguish between illness episodes, which lasted up to one month and are hereafter specified as acute, and illness episodes, which lasted longer than one month and are thus identified as chronic. The final variable ‘Duration of the Reported Disease’ is measured at the nominal level and eventually came to comprise the answer categories of ‘acute’ and ‘chronic’.

Accessibility of Institutions of the Traditional Medical System
The variable ‘Accessibility of Institutions of the Traditional Medical System’ determines the perceived geographical accessibility of any institution linked to the traditional medical system. In this way, the respondents have been invited to estimate the perceived geographical accessibility of the respective institutions on a scale comprising the categories 1 ‘very difficult’, 2 ‘difficult’, 3 ‘average’, 4 ‘easy’ and 5 ‘very easy’. Simultaneously, respondents have been able to select the answering option ‘no institutions reported’, which implies a perceived absence of institutions of the traditional medical system and is treated as missing value. In view of the missing value-category, the variable is measured at the nominal level. Hereafter, the variable came to include six answer categories, namely ‘very difficult accessibility’, ‘difficult accessibility’, ‘average accessibility’, ‘easy accessibility’, ‘very easy accessibility’ and ‘no institutions reported’.

Accessibility of Institutions of the Transitional Medical System
Similar to ‘Accessibility of Local Institutions of the Traditional Medical System’, the variable ‘Accessibility of Institutions of the Transitional Medical System’ assesses the geographical accessibility of any institution linked to the transitional medical system, as perceived by the respondent. Likewise, the variable is measured at the nominal level and offers the following answer categories: ‘very difficult accessibility’; ‘difficult accessibility’; ‘average accessibility’; ‘easy accessibility’; ‘very easy accessibility’; and ‘no institutions reported’. The last category refers to the absence of institutions, as perceived by the household head, and is treated as missing value.

Accessibility of Institutions of the Modern Medical System
Calculation of the variable 'Accessibility of Institutions of the Modern Medical System', which assesses the geographical accessibility of institutions of the modern medical system, similarly resulted in the construction of the answer categories 'very difficult accessibility', 'difficult accessibility', 'average accessibility', 'easy accessibility', 'very easy accessibility' and 'no institutions reported'. Since the last category, which suggests a general absence of institutions, is treated as missing value, the variable is measured at the nominal level.

Impact of the Current Economic Situation
The intervening variable 'Impact of the Current Economic Situation' assesses the level of impact, which the current economic situation in Greece has on patterns of health care utilisation behaviour, as perceived by the respondent. In particular, respondents have been invited to indicate to which extent they disagree or agree with the fact that the current economic situation has an impact on local patterns of health care utilisation behaviour. In this way, the respondents have been asked to highlight their answer on a scale, which comprises the categories 1 'completely disagree', 2 'disagree', 3 'neutral', 4 'agree' and 5 'completely agree'. In addition to the five categories, respondents have been able to select the answering option 'no impact reported', which implies that the respondents generally disprove the assumption about how the current economic situation has an impact on people's health care utilisation behaviour. In an attempt to adjust the answers to the predefined categories, the values on the scale are renamed accordingly, while the category 'no impact reported', which is treated as missing value, is added to the scale. In view of the missing value-category, the final variable is measured at the nominal level and offers the following categories: 'very low impact'; 'low impact'; 'average impact'; 'high impact'; 'very high impact'; and 'no impact reported'.

8.1.3 Dependent Variables

In addition to the independent and intervening variables presented above, the data set of utilisation rates, which are reported by all household members identified as 'patients' of the sample, includes the 3 dependent variables: 'Utilisation of the Traditional Medical System', 'Utilisation of the Transitional Medical System' and 'Utilisation of the Modern Medical System'. In general, the dependent variables determine the number of contacts between 'patients' and the three medical systems available in the research area to enable 'patients' to seek treatment for their reported illness. On the basis of the independent variable 'Reported Disease', it is possible to distinguish the 'patients' from the 'non-patients' of the sample and to subsequently measure the extent of the dependent variables among 'patients' rather than all household members. In this way, the calculation of the dependent variables directly follows the calculation of variables, which are included in the block of perceived morbidity factors. A slight majority of household members (51.5%, n=338) provided a positive answer to the question as to whether they had experienced an illness episode over the recall period of time and have hereafter been specified as 'patients'. In order to estimate the rates of utilisation of the plural medical system, 'patients' have been asked to indicate in which way treatment is sought for the reported illness. Overall, 4.1% (n=14) of 'patients', hereafter identified as 'non-action patients', refrained from taking any action in order to seek treatment and have consequently been excluded from the process of calculation of the dependent variables. The remaining number of 'patients' of the sample amounts to a total of 324 respondents, who reportedly contacted the plural medical system in a way to seek treatment for the reported illness.

On the whole, the remaining 'patients' of the sample not only admitted to taking action in a way to seek treatment for the reported illness episode, but also gave an indication as to which medical system they contacted. In accordance with the plural medical system available in the research area, respondents were invited to choose one of the following answer categories: 'traditional medical system'; 'transitional medical system'; or 'modern medical system'. The

answers, which have at this point been provided by the respondents, illustrate the extension of the first steps taken by the 'patients' of the sample in a way to seek treatment. Since patterns of health care utilisation behaviour, however, may include multiple contacts between 'patients' and the plural medical system, respondents have also been asked to indicate whether they had taken a second step in the process of seeking treatment. Accordingly, respondents have been invited to select one out of four answer categories, namely 'traditional medical system', 'transitional medical system', 'modern medical system' or 'no further step taken'.

The number of 'patients', who chose the last category, reveals the quantity of respondents, who reportedly took only one step within the process of health care utilisation. In the same fashion, all respondents, who took two steps, have subsequently been asked to report whether they had taken a third step in order to seek treatment. Likewise, respondents had to select an answer from the categories 'traditional medical system', 'transitional medical system', 'modern medical system' or 'no further step taken'. The number of 'patients', who chose to take no further step, highlights the quantity of respondents, who took two steps within the process of seeking treatment, while all remaining 'patients' have been categorised as respondents, who took three steps in a way to receive treatment. Since respondents could take a maximum of three steps, notably conforming to the number of medical systems available in the research area, no further questions have been asked.

In order to elaborate the dependent variables, the different steps, during which the 'patients' contacted the plural medical system, have been translated into an overall rate of utilisation (*cf.* Table 7.5). Thereafter, the dependent variables have been calculated on the basis of the utilisation rates reported by all 'patients' of the sample. Since the requirements of the subsequent statistical bivariate and multivariate analyses differ to a considerable extent, the final dependent variables have been constructed in two different ways. The dependent variables, which are used in the bivariate analysis of patterns of health care utilisation behaviour have been incorporated in the overall variable 'Utilisation of the Plural Medical System'. The variable is measured at the nominal level and eventually came to comprise the following answer categories: 'utilisation of the traditional medical system'; 'utilisation of the transitional medical system'; and 'utilisation of the modern medical system'. However, in order to meet the requirements of the multivariate analysis of data, which demands dependent variables with no more than two categories, the dependent variables are arranged into three separate variables with two answer categories, namely into 'Utilisation of the Traditional Medical System', 'Utilisation of the Transitional Medical System' and 'Utilisation of the Modern Medical System'. Each of the variables is measured at the nominal level and includes the answer categories 'yes' and 'no', whereby 'yes' denotes the actual utilisation of the respective medical system and 'no' implies that a medical system other than the one in question is contacted.

In general, 45.8% (n=207) of the utilisation rates refer to a single contact with the plural medical system, 46.9% (n=212) of the utilisation rates imply a double contact with the plural medical system and 7.3% (n=33) of the utilisation rates relate to the number of 'patients', who have taken three steps in order to seek treatment. Furthermore, the majority of the utilisation rates reported by the household members (46.0%, n=208) refers to contacts with the transitional medical system, rendering the transitional medical system the most commonly used medical system in the research area. In this respect, a slightly smaller percentage of utilisation rates (44.7%, n=202) highlights the extent, to which 'patients' contacted the traditional medical system. Accordingly, only 9.3% (n=42) of contacts between 'patients' and the plural medical system relate to patterns of utilisation of the modern medical system, which hereby forms the least frequently contacted medical system in the research area.

8.2 Quantitative Data Analysis

8.2.1 Bivariate and Mutual Relations Analysis

In general, a bivariate analysis tests the relationship between two variables by means of explaining the strength, direction and shape of the correlation. The results of a bivariate analysis, however, give no indication of the direction of causality, namely of which variable causes the other to change, not at least because the results could be affected by other measured or unmeasured variables. Consequently, any interpretation of results, which a bivariate analysis produces, requires considerable caution (*cf.* Field 2009). Based on the calculation and recalculation of variables identified in the multivariate model of transcultural health care utilisation, as presented in the previous paragraphs, the following variables have been selected for the subsequent bivariate analysis:

Independent Variables:

1. Predisposing Socio-Demographic Variables: 'Community', 'Household Size', 'Household Composition', 'Gender', 'Age', 'Place of Birth', 'Education', 'Marital Status', 'Occupation';
2. Predisposing Psycho-Social Variables: 'Knowledge of the Traditional Medical System', 'Knowledge of the Transitional Medical System', 'Knowledge of the Modern Medical System', 'Opinion on the Traditional Medical System', 'Opinion on the Transitional Medical System', 'Opinion on the Modern Medical System';
3. Enabling Variables: 'Annual Income', 'Annual Expenses for Health Care', 'Insurance', 'Socio-Economic Status';
4. Perceived Morbidity Variables: 'Health Status', 'Reported Disease', 'Severity of the Reported Disease', 'Duration of the Reported Disease';
5. Institutional Variables: 'Accessibility of Institutions of the Traditional Medical System', 'Accessibility of Institutions of the Transitional Medical System', 'Accessibility of Institutions of the Modern Medical System';

Intervening Variables:

6. Intervening Variable: 'Impact of the Current Economic Situation';

Dependent Variables:

7. Health Care Utilisation Variable: 'Utilisation of the Traditional Medical System', 'Utilisation of the Transitional Medical System', 'Utilisation of the Traditional Medical System'.

On the whole, a bivariate analysis forms the point of embarkation for performing a quantitative analysis on the data set of utilisation rates reported by all household heads identified as 'patients' in the sample. In this respect, a bivariate analysis displays the relative influence each independent and intervening variable, which are included in the multivariate model of transcultural health care utilisation, has on the dependent variables. Since methods of bivariate analysis generally depend on the level of measurement, which is assigned to the variables, the present data set demands a technique, which is applicable to categorical, namely nominal and ordinal, variables. While a bivariate analysis of categorical data usually employs a measurement of frequencies, the technique of 'cross-tabulation' is selected as an appropriate method to perform a bivariate analysis on the present data. The method of cross-tabulation arranges the distribution of two categorical variables by means of displaying frequencies, which hereafter illustrate the total number of elements in each combination of categories (*cf.* Field 2009; Leurs 2012). Literally, cross-tabulation refers to a frequency table, in which the number of categories of variables is reflected in the number of rows and columns of the table. In this way, the method of cross-tabulation is used to analyse the relationship each independent variable identified in the model maintains with the dependent variables.

In order to further explain the relationship between two categorical variables, namely the association the independent variables maintain with the dependent variables, the Pearson's chi-square test (χ^2) is applied to each cross-tabulation. On the whole, the Pearson's chi-square test analyses the relationship between two categorical variables on the basis of comparing the frequencies observed in certain categories to the frequencies, which are expected to occur by chance. In other words, the test calculates the degree of probability, to which the relationship between the variables occurs by chance. Accordingly, the more significant the results of the chi-square test are, the less likely it is that the relationship between variables occurs by chance (*cf*. Bernard 2002). The significance values of the Pearson's chi-square test are arranged along the following scale:

χ^2>.15 'non-significant';
χ^2=.15-.10 'indication of significance';
χ^2=.10-.05 'weakly significant';
χ^2=.05-.01'strongly significant';
χ^2=.01-.001 'very strongly significant';
χ^2<.001 'most strongly significant'
(*cf*. Agung 2005; Leurs 2010; Djen Amar 2010; Ambaretnani 2012; Chirangi 2013).

Following the assumptions of the chi-square test, each respondent of the sample contributes to only one cell within the cross-tabulation. Furthermore, the majority of expected frequencies per cross-tabulation are either all above 1 or, provided that the number of respective frequencies remain below 20%, above 5. If the variables identified in the model fail to meet the second assumption, an exact test is applied to the cross-tabulation. On the basis of Pearson's chi-square test, the strength of each significant association between variables is further explored with Cramer's V. The values of Cramer's V range from 0 to 1, whereby 0 implies that no relationship exists between variables and 1 indicates that variables are perfectly associated (*cf*. De Vaus 2002; Field 2009; Ambaretnani 2011; Bryman & Cramer 2011).

The results of the overall bivariate analysis of the present data are presented in Tables 8.2 to 8.7, which are ordered in accordance with the different blocks of variables identified in the model. The tables show the relationship, which each independent variable included in the respective block of variables maintains with the dependent variables. In particular, the names of the independent variables in each block are shown on the left side of the table. The dependent variables are organised along the columns of the cross-tabulation, as indicated at the top of each table. The significance values of the Pearson's chi-square test (χ^2) are displayed below the name of each independent variable. The information presented between brackets indicates, whether the value refers to an asymptotic significance value ('Asymp. Sig.'), or to an exact significance value ('Monte Carlo Sig.'), whereby the latter implies that an exact test has been applied to the data in the cross-tabulation. Moreover, the information explains that the chi-square test is two-sided ('2-sided') and abstains from providing any indication of the direction of causality. In case that the values of the chi-square test are significant, the distribution of each pair of variables is extended in a way to illustrate the cross-tabulation of data. In particular, the categories of the independent variable are arranged accordingly among the rows underneath the name of the variable, while the total extension of the dependent variables is highlighted in the last cell of each column. Hereafter, the values of Cramer's V (V) are displayed next to the, notably significant, Pearson's χ^2-values. Furthermore, the observed frequencies and percentages of each distribution are presented, whereby percentages are provided for each row, which generates a row total for each cell. The results of the bivariate analysis are subsequently discussed for each significant relationship between variables below the respective table. Since percentages are better suitable than frequencies to detect variations in the data, they are used in the discussion of the results (*cf*. Field 2009). The row percentages within each column of the table are compared to the total number of utilisation rates of the plural medical system, as they are indicated in the last

cell of each column. Since the total values indicate the average distribution of utilisation rates, variations in the data can be detected in the extent, to which cell percentages deviate from the total distribution of values. On the whole, the more cell percentages differ from the total values, notably above and below, the stronger the relationship between variables appears to be. Overall, it is, however, the Pearson's χ^2-value rather than degree of deviation between cell percentages and total values, which provides an indication of significance. Statistically significant associations between variables can *de facto* occur despite proportionally small differences in cell frequencies (*cf*. Field 2009).

Bivariate Analysis of Socio-Demographic Variables and Dependent Variables (Table 8.2)

Table 8.2 Distribution of the Socio-Demographic Variables of Respondents of the Sample over the Dependent Variables (N=452).

Variable	Utilisation of the Plural Medical System						Total	
	Traditional Medical System		Transitional Medical System		Modern Medical System			
	N	%	N	%	N	%	N	%
Community								
Pearson's χ^2 (Asympt. Sig., 2-sided) = .643								
Household Size								
	N	%	N	%	N	%	N	%
1 Member	30	29.4	58	56.9	14	13.7	102	100.0
2 Members	81	41.8	95	49.0	18	9.3	194	100.0
3 Members	20	39.2	26	51.0	5	9.8	51	100.0
4 Members	36	65.5	16	29.1	3	5.5	55	100.0
5 and more Members	35	70.0	13	26.0	2	4.0	50	100.0
Total	202	44.7	208	46.0	42	9.3	452	100.0
Pearson's χ^2 (Asympt. Sig., 2-sided) = .000 / Cramer's V = .194								
Household Composition								
	N	%	N	%	N	%	N	%
Household head	104	40.2	130	50.2	25	9.7	259	100.0
Partner	49	41.2	56	47.1	14	11.8	119	100.0
Son/Daughter	45	73.8	14	23.0	2	3.3	61	100.0
Grandchild	1	100.0	0	0.0	0	0.0	1	100.0
Parent	3	33.3	5	55.6	1	11.1	9	100.0
Brother/Sister	0	0.0	1	100.0	0	0.0	1	100.0
Parent-in-law	0	0.0	1	100.0	0	0.0	1	100.0
Total	202	44.7	208	46.0	42	9.3	452	100.0
Pearson's χ^2 (Monte Carlo Sig., 2-sided) = .007 / Cramer's V = .181								

Within the block of socio-demographic factors, the distribution of the variable 'Household Size' (χ^2 = .000) over the dependent variables demonstrates a most strongly significant relationship. The value of Cramer's V (V=.194) reveals that there is a weak association between the variables. On the whole, the majority of respondents, who live in a household composed of 5 and more members (70.0%, n=35), contact the traditional medical system more frequently than average, *i.e.* above the average of 44.7%. In the same fashion, 65.5% (n=36) of respondents, who live in a 4 member-household, seek treatment from the traditional medical system more frequently than average. On the contrary, the results of cross-tabulation indicate a trend among 'patients', who

contact the transitional medical system in a way to receive treatment. Respondents, who live in a 1 member-household (56.9%, n=58), use the transitional medical system more frequently than average, *i.e.* above the average of 46.0%. Hereafter, the variables in the table indicate that the more members a household has the less frequently respondents contact the transitional medical system. In particular, respondents, who live in households composed of four members (29.1%, n=16), use the transitional medical system less frequently than average, *i.e.* below the average of 46.0%. In the same fashion, members of households with 5 and more members (26.0%, n=13) seek treatment from the transitional medical system less frequently than average. Concurrently, a considerable number of respondents, who live in a 1 member-household (13.7%, n=14), contact the modern medical system more frequently than average, *i.e.* above the average of 9.3%. In this respect, a rather low number of respondents, who live in a household composed of 5 and more members (4.0%, n=2), seek treatment from the modern medical system. In addition to the size of the household, the distribution of the variable 'Household Composition' (χ^2 = .007) over the dependent variables, which is measured with an exact test, reveals a very strongly significant relationship. The value of Cramer's V (V=.181) similarly indicates that the variables are weakly associated. On the whole, the distribution shows that household members, whose nature of relationship to the household head refers to grandchild (100.0%, n=1) as well as to son or daughter (73.8%, n=45), use the traditional medical system more frequently than average, *i.e.* above the average of 44.7%. Respondents, who are related to the household head as a parent (33.3%, n=3), however, contact the traditional medical system less frequently than average. Accordingly, the majority of household members, whose nature of relationship to the household head refers to parent (55.6%, n=5), use the transitional medical system more frequently than average, *i.e.* above the average of 46.0%. Hereafter, respondents, who are related to the household head as son or daughter (23.0%, n=14), contact the transitional medical system less frequently than average. Although the relationship between the household head and his or her partner is rather evenly distributed over the dependent variables, a slight majority of partners (11.8%, n=14) use the modern medical system more frequently than average, *i.e.* above the average of 9.3%.

Gender
Pearson's χ^2 (Asympt. Sig., 2-sided) = .668

Age

	N	%	N	%	N	%	N	%
<7	18	81.8	3	13.6	1	4.5	22	100.0
7-13	12	75.0	3	18.8	1	6.2	16	100.0
14-20	5	100.0	0	0.0	0	0.0	5	100.0
21-27	16	45.7	15	42.9	4	11.4	35	100.0
28-34	13	61.9	8	38.1	0	0.0	21	100.0
35-41	10	58.8	6	35.3	1	5.9	17	100.0
42-48	13	46.4	12	42.9	3	10.7	28	100.0
49-55	15	42.9	15	42.9	5	14.3	35	100.0
56-62	10	25.0	22	55.0	8	20.0	40	100.0
63-69	22	40.0	29	52.7	4	7.3	55	100.0
70-76	31	44.3	35	50.0	4	5.7	70	100.0
77-83	29	37.2	43	55.1	6	7.7	78	100.0
84-90	6	28.6	12	57.1	3	14.3	21	100.0
>90	2	22.2	5	55.6	2	22.2	9	100.0
Total	202	44.7	208	46.0	42	9.3	452	100.0

Pearson's χ^2 (Monte Carlo Sig., 2-sided) = .003 / Cramer's V = .236
Place of Birth
Pearson's χ^2 (Asympt. Sig., 2-sided) = .254

Education
Pearson's χ^2 (Asympt. Sig., 2-sided) = .523

Marital Status

	N	%	N	%	N	%	N	%
Single	54	60.7	28	31.5	7	7.9	89	100.0
Married/Co-habiting	122	43.9	129	46.4	27	9.7	278	100.0
Divorced/Separated	1	33.3	1	33.3	1	33.3	3	100.0
Widowed	25	30.5	50	61.0	7	8.5	82	100.0
Total	202	44.7	208	46.0	42	9.3	452	100.0

Pearson's χ^2 (Monte Carlo Sig., 2-sided) = .006 / Cramer's V = .146

Occupation

	N	%	N	%	N	%	N	%
Not in labour force	14	77.8	3	16.7	1	5.6	18	100.0
Student/non-paid	23	76.7	6	20.0	1	3.3	30	100.0
Self-employed	2	66.7	1	33.3	0	0.0	3	100.0
Homemaker	33	41.8	39	49.4	7	8.9	79	100.0
(Stock) Farmer	83	40.7	104	51.0	17	8.3	204	100.0
Manufacturer	5	41.7	6	50.0	1	8.3	12	100.0
Construction worker	3	50.0	2	33.3	1	16.7	6	100.0
Retailer	12	48.0	8	32.0	5	20.0	25	100.0
Driver/Carrier	0	0.0	3	75.0	1	25.0	4	100.0
Provider of food, beverage, accomm.	4	80.0	1	20.0	0	0.0	5	100.0
Insurance agent	1	100.0	0	0.0	0	0.0	1	100.0
Head officer/Res.	3	75.0	1	25.0	0	0.0	4	100.0
Servant to building	1	33.3	2	66.7	0	0.0	3	100.0
Public adm./Defence	6	37.5	8	50.0	2	12.5	16	100.0
Educator	4	25.0	8	50.0	4	25.0	16	100.0
Health/Social worker	1	16.7	5	83.3	0	0.0	6	100.0
Artist/Entertainer	2	100.0	0	0.0	0	0.0	2	100.0
Priest/Personal servant	1	33.3	2	66.7	0	0.0	3	100.0
Employee private sect.	4	57.1	3	42.9	0	0.0	7	100.0
Unemployed/Retired	0	0.0	6	75.0	2	25.0	8	100.0
Total	202	44.7	208	46.0	42	9.3	452	100.0

Pearson's χ^2 (Monte Carlo Sig., 2-sided) = .021 / Cramer's V = .255

The distribution of the variable 'Age' (χ^2 = .003) over the dependent variables is measured with an exact test and reveals a very strongly significant relationship between the two variables. The value of Cramer's V (V=.236) shows a moderately strong association. In particular, a considerable majority of respondents, who are found in the age groups of <7 (81.8%, n=18), 7-13 (75.0%, n=12) and 14-20 (100.0%, n=5) as well as 28-34 (61.9%, n=13), seek treatment from the traditional medical system more frequently than average, *i.e.* above the average of 44.7%. Furthermore, respondent aged 55 and below use the transitional medical system less frequently than average, *i.e.* below the average of 46.0%, while respondents aged 56 above contact the transitional medical system more frequently than average. Concurrently, household members, who are found in the age groups of 49-55 (14.3%, n=5), 56-62 (20.0%, n=8), 84-90 (14.3%, n=3) and >90 (22.2%, n=2), seek treatment from the modern medical system more frequently than average, *i.e.* above the average of 9.3%.

The cross-tabulation of 'Marital Status' (χ^2 = .006) and the dependent variables, to which an exact test is applied, shows a very strongly significant relationship. In addition to the chi-value,

the value of Cramer's V (V=.146) indicates an association between the variables. In general, single respondents (60.7%, n=54) use the traditional medical system more frequently than average, *i.e.* above the average of 44.7%. Hereafter, respondents, who are widowed (30.5%, n=25), seek treatment from the traditional medical system less frequently than average. On the other hand, single respondents (31.5%, n=28) contact the transitional medical system less frequently than average, *i.e.* below the average of 46.0%, while widowed respondents (61.0%, n=50) use the transitional medical system more frequently than average. Furthermore, respondents, who are single (7.9%, n=7), contact the modern medical system less frequently than average, *i.e.* below the average of 9.3%.

The distribution of the variable 'Occupation' (χ^2 = .021) over the dependent variables indicates a strongly significant relationship. In line with these results, the value of Cramer's V (V=.255) shows that the variables are moderately strongly associated. Overall, the distribution illustrates that respondents, who are employed as artists or entertainers (100.0%, n=2), insurance agents (100.0%, n=1), providers of food, beverage or accommodation (80.0%, n=4) as well as head officers or researchers (75.0%, n=3), seek treatment from the traditional medical system more frequently than average, *i.e.* above the average of 44.7%. Likewise, respondents, who are not in labour force (77.8%, n=14), are active as students or non-paid labourers (76.7%, n=23), are self-employed (66.7%, n=2) or are employed in the private sector (57.1%, n=4), contact the traditional medical system more frequently than average. On the other hand, respondents, who practice the profession of a human health and social worker (16.7%, n=1), educator (25.0%, n=4), servant to building (33.3%, n=1) as well as priest or personal servant (33.3%, n=1), use the traditional medical system less frequently than average. Hereafter, respondents, who follow the occupation of a human health and social worker (83.3%, n=5), driver or carrier (75.0%, n=3), servant to building (66.7%, n=2) as well as priest or personal servant (66.7%, n=2), seek treatment from the transitional medical system more frequently than average, *i.e.* above the average of 46.0%. Respondents, who are not in labour force (16.7%, n=3), are active as students or non-paid labourers (20.0%, n=6), are employed as head officers or researchers (25.0%, n=1), retailers (32.0, n=8) as well as construction workers (33.3%, n=2) or are self-employed (33.3%, n=1), however, contact the transitional medical system less frequently than average. Furthermore, respondents, who are employed as drivers or carriers (25.0%, n=1), educators (25.0%, n=4), retailers (20.0%, n=5) as well as construction workers (16.7%, n=1) use the modern medical system more frequently than average, *i.e.* above the average of 9.3%. Concurrently, respondents, who are active as students or non-paid labourers (3.3%, n=1) or are not in labour force (5.6%, n=1), seek treatment from the modern medical system less frequently than average. Finally, community members, who are unemployed or retired, widely abstained from using the traditional medical system (0.0%, n=0) but appear to contact the transitional (75.0%, n=6) and the modern (25.0%, n=2) medical system more frequently than average.

Within the block of psycho-social variables, the distribution of the variable 'Knowledge of the Traditional Medical System' (χ^2 = .022) over the dependent variables, which is measured with an exact test, shows a strongly significant relationship. The value of Cramer's V (V=.148) indicates an association between the variables. Since an overwhelming majority of respondents demonstrate much knowledge of the traditional medical system, the distribution is positively skewed and is calculated with an exact test. Although the results are consequently based on a generally low number of cases within the categories of little and average knowledge, the variable holds considerable significance for the present study and is thereupon subject to statistical analysis. In general, respondents, who show little knowledge of the traditional medical system (29.4%, n=5), contact the traditional medical system less frequently than average, *i.e.* below the average of 44.7%. Accordingly, respondents, who have little knowledge of the traditional medical system (58.8%, n=10), use the transitional medical system more frequently than average, *i.e.* above the average of 46.0%.

Nevertheless, respondents, who have average knowledge of the traditional medical system (39.1%, n=9), use the transitional medical system less frequently than average. Respondents demonstrating little (11.8%, n=2) or average (13.0%, n=3) knowledge of the traditional medical system furthermore contact the modern medical system more frequently than average, *i.e.* above the average of 9.3%.

Bivariate Analysis of Psycho-Social Variables and Dependent Variables (Table 8.3)

Table 8.3 Distribution of the Psycho-Social Variables of Respondents of the Sample over the Dependent Variables (N=452).

Variable	Utilisation of the Plural Medical System						Total	
	Traditional Medical System		Transitional Medical System		Modern Medical System			
	N	%	N	%	N	%	N	%
Knowledge of the Traditional Medical System								
	N	%	N	%	N	%	N	%
Little knowledge	5	29.4	10	58.8	2	11.8	17	100.0
Average knowledge	11	47.8	9	39.1	3	13.0	23	100.0
Much knowledge	186	45.1	189	45.9	37	9.0	412	100.0
Total	202	44.7	208	46.0	42	9.3	452	100.0

Pearson's χ^2 (Monte Carlo Sig., 2-sided) = .022 / Cramer's V = .148

Knowledge of the Transitional Medical System
Pearson's χ^2 (Asympt. Sig., 2-sided) = .589

Knowledge of the Modern Medical System

	N	%	N	%	N	%	N	%
Little knowledge	45	37.5	61	50.8	14	11.7	120	100.0
Average knowledge	64	49.2	53	40.8	13	10.0	130	100.0
Much knowledge	93	46.0	94	46.5	15	7.4	202	100.0
Total	202	44.7	208	46.0	42	9.3	452	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) = .036 / Cramer's V = .141

Opinion on the Traditional Medical System
Pearson's χ^2 (Monte Carlo Sig., 2-sided) = .761

Opinion on the Transitional Medical System

	N	%	N	%	N	%	N	%
Negative opinion	2	50.0	2	50.0	0	0.0	4	100.0
Neutral opinion	189	46.7	179	44.2	37	9.1	405	100.0
Positive opinion	10	25.0	25	62.5	5	12.5	40	100.0
No opinion	1	33.3	2	66.7	0	0.0	3	100.0
Total	202	44.7	208	46.0	42	9.3	452	100.0

Pearson's χ^2 (Monte Carlo Sig., 2-sided) = .073 / Cramer's V = .152

Opinion on the Modern Medical System
Pearson's χ^2 (Monte Carlo Sig., 2-sided) = .726

The distribution of the variable 'Knowledge of the Modern Medical System' (χ^2 = 0.36) over the dependent variables similarly reveals a strongly significant relationship. The value of Cramer's V (V=.141) indicates an association between the two variables. In contrast to the previous distribution, respondents, who have little knowledge of the modern medical system (11.7%, n=14), contact the modern medical system more frequently than average, *i.e.* above the average of 9.3%. Concurrently, respondents showing much knowledge of the modern medical system (7.4%, n=15) use the modern medical system less frequently than average. Respondents, who demonstrate little knowledge of the modern medical system (37.5%, n=45), moreover contact the traditional medical system less frequently than average, *i.e.* below the average of 44.7%.

Among the variables measuring the respondent's opinion on the plural medical system, only the distribution of the variable 'Opinion on the Transitional Medical System' (χ^2 = .073) over the dependent variables, which is assessed with an exact test, is weakly significant. The value of Cramer's V (V=.152) indicates that a weak association exists between both variables. Overall, respondents, who have a positive opinion on the transitional medical system (62.5%, n=25), use the transitional medical system more frequently than average, *i.e.* above the average of 46.0%. Furthermore, respondents, who have a negative opinion on the transitional medical system (50.0%, n=2), contact the traditional medical system more frequently than average, *i.e.* above the average of 44.7%. In line with these results, respondents, who share a positive opinion on the transitional medical system (25.0%, n=10), use the traditional medical system less frequently than average. On the other hand, respondents, who have a positive opinion on the transitional medical system (12.5%, n=5), contact the modern medical system more frequently than average, *i.e.* above the average of 9.3%.

Bivariate Analysis of Enabling Variables and Dependent Variables (Table 8.4)

Table 8.4 Distribution of the Enabling Variables of Respondents of the Sample over the Dependent Variables (N=452).

Variable	Utilisation of the Plural Medical System						Total	
	Traditional Medical System		Transitional Medical System		Modern Medical System			
	N	%	N	%	N	%	N	%
Annual Income								
	N	%	N	%	N	%	N	%
<10.000	40	33.1	68	56.2	13	10.7	121	100.0
10.000-20.000	85	49.1	76	43.9	12	6.9	173	100.0
21.000-30.000	34	43.6	38	48.7	6	7.7	78	100.0
31.000-40.000	13	52.0	9	36.0	3	12.0	25	100.0
>40.000	3	42.9	3	42.9	1	14.3	7	100.0
No income reported	27	56.2	14	29.2	7	14.6	48	100.0
Total	202	44.7	208	46.0	42	9.3	452	100.0

Pearson's χ^2 (Monte Carlo Sig., 2-sided) = .094 / Cramer's V = .133

The results of Table 8.4 show that the distribution of the variable 'Annual Income' (χ^2 = .094) over the dependent variables, which is measured with an exact test, is weakly significant. The value of Cramer's V (V=.133) indicates an association between the two variables. Respondents, who report an annual household-income below 10.000 Euro (33.1%, n=40), contact the traditional medical system less frequently than average, *i.e.* below the average of 44.7%. Accordingly, respondents, who reportedly have an annual household-income between within the range of 31.000 to 40.000 Euro (52.0%, n=13), use the traditional medical system more frequently than average. Furthermore, 36.0% (n=9) of survey respondents, who have an annual household-income between 31.000 and 40.000 Euro, contact the transitional medical system less

frequently than average, *i.e.* below the average of 46.0%. Furthermore, respondents, who report an annual household-income below 10.000 Euro (56.2%, n=68), use the transitional medical system more frequently than average. Hereafter, respondents, who reportedly have an annual household-income within the range of 10.000 to 20.000 Euro (6.9%, n=12), contact the modern medical less frequently than average, *i.e.* below the average of 9.3%. Concurrently, respondents with an annual household-income above 40.000 Euro (14.3%, n=1), as well as between 31.000 and 40.000 Euro (12.0%, n=3), use the modern medical system more frequently than average. The 'patients' of the sample, who have an annual household income of less than 10.000 Euro (10.7%, n=13), similarly contact the modern medical system more frequently than average.

Annual Expenses for Health Care

	N	%	N	%	N	%	N	%
<250	71	48.6	67	45.9	8	5.5	146	100.0
250-500	19	32.8	31	53.4	8	13.8	58	100.0
501-750	13	36.1	19	52.8	4	11.1	36	100.0
751-1.000	11	47.8	7	30.4	5	21.7	23	100.0
>1.000	8	38.1	12	57.1	1	4.8	21	100.0
No expenses reported	80	47.6	72	42.9	16	9.5	168	100.0
Total	202	44.7	208	46.0	42	9.3	452	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) = .143 / Cramer's V = .128

Insurance
Pearson's χ^2 (Monte Carlo Sig., 2-sided) = .410

Socio-Economic Status (SES
Pearson's χ^2 (Monte Carlo Sig., 2-sided) = .492

The distribution of the variable 'Annual Expenses for Health Care' (χ^2=.143) over the dependent variables provides an indication of significance. The value of Cramer's V (V=.128) similarly indicates an association between the variables. Overall, respondents, whose annual expenses for health care are below 250 Euro (48.6%, n=71), contact the traditional medical system more frequently than average, *i.e.* above the average of 44.7%. Hereafter, respondents, whose annual expenses for health care range between 250 and 500 Euro (32.8%, n=19), contact the traditional medical system less frequently than average. In line with these results, the 'patients' of the sample, whose annual expenses are above 1.000 Euro (57.1%, n=12), use the transitional medical system more frequently than average, *i.e.* above the average of 46.0%. Survey respondents, who have annual expenses for health care within the range of 751 and 1.000 Euro (30.4%, n=7), however, seek treatment from the transitional medical system less frequently than average. Respondents with annual expenses for health care within the same range (21.7%, n=5) contact the modern medical system more frequently than average, *i.e.* above the average of 9.3%. Hereafter, community members, whose annual expenses for health care are above 1.000 Euro (4.8%, n=1), contact the modern medical system less frequently than average.

The distributions of the variables within the block of the perceived morbidity factors all reveal most strongly significant results. The distribution of the variable 'Health Status' (χ^2 = .000) over the dependent variables is most strongly significant. The value of Cramer's V (V=.170) shows a weak association between the variables. Respondents, who report a generally poor (28.9%, n=26) or average (36.3%, n=41) health status, contact the traditional medical system less frequently than average, *i.e.* below the average of 44.7%. Accordingly, respondents, who enjoy a good health status (54.2%, n=135), contact the traditional medical system more frequently than average. On the other hand, survey respondents, who reportedly have a generally poor (54.4%, n=49) or average (56.6, n=64) health status, use the transitional medical system more frequently than average, *i.e.* above the average of 46.0%. In this way, respondents, who enjoy a generally

good health status (38.2%, n=95), contact the transitional medical system more frequently than average. In the same fashion, the 'patients' of the sample, who reported a generally poor (16.7%, n=15) health status, use the modern medical system more frequently than average, *i.e.* above the average of 9.3%. Hereafter, respondents, whose health status is average (7.1%, n=8) or well (7.6%, n=19), contact the modern medical system less frequently than average.

Bivariate Analysis of Perceived Morbidity Variables and Dependent Variables (Table 8.5)

Table 8.5 Distribution of the Perceived Morbidity Variables of Respondents of the Sample over the Dependent Variables (N=452).

Variable	Utilisation of the Plural Medical System						Total	
	Traditional Medical System		Transitional Medical System		Modern Medical System			
	N	%	N	%	N	%	N	%
Health Status								
	N	%	N	%	N	%	N	%
Poor	26	28.9	49	54.4	15	16.7	90	100.0
Average	41	36.3	64	56.6	8	7.1	113	100.0
Well	135	54.2	95	38.2	19	7.6	249	100.0
Total	202	44.7	208	46.0	42	9.3	452	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) = .000 / Cramer's V = .170

The distribution of the variable 'Reported Disease' (χ^2 = .000) over the dependent variables, which is calculated with an exact test, is most strongly significant. In addition to the chi-value, Cramer's V (V=.358) demonstrates that there is a very strong association between the variables. Overall, respondents, who reportedly suffered from the 'evil eye' (100.0%, n=2), a disease of the skin and/or subcutaneous tissue (80.0%, n=4), the common cold (79.1%, n=72), a certain infectious or parasitic disease (66.7%, n=2), abdominal and/or pelvic pain (58.5%, n=10) or a disease of the digestive system (57.9, n=11) during the recall period, contact the traditional medical system more frequently than average, *i.e.* above the average of 44.7%. Furthermore, respondents, who experienced a disease of the ear (20.0%, n=1), a disorder of the thyroid gland or metabolic disorder (21.4%, n=6), a disease of the nervous system (25.0%, n=3), a disease of the eye and/or adnexa (25.0%, n=1), an elevated blood glucose level (25.0%, n=4), an ischemic or other form of heart disease (31.6%, n=12) or a disease of the muscoskeletal system and connective tissue (34.4, n=22), seek treatment from the traditional medical system less frequently than average.

The 'patients' of the sample, who suffered from a mental and/or behavioural disorder (100.0%, n=4), a congenital malformation (100.0%, n=1), an elevated blood glucose level (75.0%, n=12), essential (primary) hypertension or another disease of the circulatory system (68.3%, n=41), a disorder of the thyroid gland or metabolic disorder (64.3%, n=18), a disease of the ear (60.0%, n=3) or a disease of the genitourinary system (60.0%, n=6), use the transitional medical system more frequently than average, *i.e.* above the average of 46.0%. Accordingly, survey respondents, who experienced an episode of the common cold (19.8%, n=18), a disease of the skin and/or subcutaneous tissue (20.0%, n=1), a disease of the digestive system (26.3%, n=5) or an accident (25.0%, n=1), contact the transitional medical system less frequently than average. Community members, who suffered from a neoplasm (33.3%, n=1), a disease of the eye and/or adnexa (25.0%, n=1), an accident (25.0%, n=1), symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified (25.0%, n=2) or a disease of the ear (20.0%, n=1), seek treatment from the modern medical system more frequently than average, *i.e.* above the average of 9.3%. Likewise, 'patients' suffering from a disease of the muscoskeletal tissue

and connective tissue (17.2%, n=11) or a disease of the respiratory system other than the common cold (10.7%, n=3) contact the modern medical system more frequently than average. Hereafter, respondents, who experienced an episode of the common cold (1.1%, n=1) or abdominal and/or pelvic pain (5.9%, n=1), use the modern medical system less frequently than average.

Reported Disease

	N	%	N	%	N	%	N	%
Certain infectious or parasitic disease	2	66.7	1	33.3	0	0.0	2	100.0
Neoplasm	1	33.3	1	33.3	1	33.3	3	100.0
Disorder of the thyroid gland or metabolic disorder	6	21.4	18	64.3	4	14.3	28	100.0
Mental and/or behavioural disorder	0	0.0	4	100.0	0	0.0	2	100.0
Disease of the nervous system	3	25.0	7	58.3	2	16.7	12	100.0
Disease of the eye and/or adnexa	1	25.0	2	50.0	1	25.0	4	100.0
Disease of the ear	1	20.0	3	60.0	1	20.0	5	100.0
Ischaemic or other form of heart disease	12	31.6	19	50.0	7	18.4	38	100.0
Primary hypertension or other disease of the circulatory system	19	31.7	41	68.3	0	0.0	60	100.0
The common cold	72	79.1	18	19.8	1	1.1	91	100.0
Other disease of the respiratory system	12	42.9	13	46.4	3	10.7	28	100.0
Disease of the digestive system	11	57.9	5	26.3	3	15.8	19	100.0
Disease of the skin and / or subcutaneous tissue	4	80.0	1	20.0	0	0.0	5	100.0
Disease of the musco-skeletal system	22	34.4	31	48.4	11	17.2	64	100.0
Disease of the genitourinary system	3	30.0	6	60.0	1	10.0	10	100.0
Congenital malformation	0	0.0	1	100.0	0	0.0	1	100.0
Abnormal clinical and laboratory findings, not elsewhere classified	3	37.5	3	37.5	2	25.0	8	100.0
Elevated blood glucose level	4	25.0	12	75.0	0	0.0	16	100.0
Abdominal/pelvic pain	10	58.5	6	35.3	1	5.9	17	100.0
Accident	2	50.0	1	25.0	1	25.0	4	100.0
The evil eye	2	100.0	0	0.0	0	0.0	1	100.0
Unspecified/Unknown	10	40.0	12	48.0	3	12.0	25	100.0
Total	202	44.7	208	46.0	42	9.3	452	100.0

Pearson's χ^2 (Monte Carlo Sig., 2-sided) = .000 / Cramer's V = .358

Severity of the Reported Disease

	N	%	N	%	N	%	N	%
Not severe	108	60.3	63	35.2	8	4.5	179	100.0
Mildly severe	35	43.2	39	48.1	7	8.6	81	100.0
Moderately severe	30	31.6	54	56.8	11	11.6	95	100.0
Highly severe	29	29.9	52	53.6	16	16.5	97	100.0
Total	202	44.7	208	46.0	42	9.3	452	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) = .000 / Cramer's V = .202

Duration of the Reported Disease

	N	%	N	%	N	%	N	%
Acute	115	69.3	40	24.1	11	6.6	166	100.0
Chronic	87	30.4	168	58.7	31	10.8	286	100.0
Total	202	44.7	208	46.0	42	9.3	452	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) = .000 / Cramer's V = .379

The distribution of the variable 'Severity of the Reported Disease' (χ^2 = .000) over the dependent variables is similarly most strongly significant. The value of Cramer's V (V=.202) indicates that the variables are moderately associated. In general, respondents, who indicated that the reported illness is not severe (60.3%, n=108), contact the traditional medical system more frequently than average, *i.e.* above the average of 44.7%. Hereafter, the more severe respondents perceived the illness episode to be the less frequently they appear to make use of the traditional medical system. In comparison, the 'patients' of the sample, who noted that the reported illness episode is not severe (35.2%, n=63), contact the transitional medical system less frequently than average, *i.e.* below the average of 46.0%. In this respect, respondents, who experienced a mildly severe (48.1%, n=39), moderately severe (56.8%, n=54) or highly severe (53.6%, n=52) illness episode, use the transitional medical system more frequently than average. In the same fashion, respondents suffering from an illness episode, which is perceived to be non-severe (4.5%, n=8), contact the modern medical system less frequently than average, *i.e.* below the average of 9.3%. Respondents, who, however, experienced a moderately (11.6%, n=11) or highly (16.5%, n=16) severe illness episode, use the modern medical system more frequently than average.

The distribution of the variable 'Duration of the Reported Disease' (χ^2 = .000) over the dependent variables is most strongly significant. Likewise, the value of Cramer's V (V=.379) indicates that the variables are very strongly associated. The 'patients' of the sample, who experienced an acute illness (69.3%, n=115), use the traditional medical system more frequently than average, *i.e.* above the average of 44.7%. Owing to this result, the respondents, who suffered from a chronic disease (30.4%, n=87), contact the traditional medical system less frequently than average. In contrast to these findings, respondents, who reportedly experienced an acute episode of illness (24.1%, n=40), use the transitional medical system less frequently than average, *i.e.* below the average of 46.0%. Accordingly, respondents suffering from a chronic disease (58.7%, n=168) contact the transitional medical system more frequently than average. Likewise, the 'patients' of the sample, who suffered from an acute condition (6.6%, n=11), use the modern medical system less frequently than average, *i.e.* below the average of 9.3%. Respondents, who, however, experienced a chronic disease (10.8%, n=31), contact the modern medical system more frequently than average.

Bivariate Analysis of the Institutional Variables and the Dependent Variables (Table 8.6)

The distribution of the variable 'Accessibility of Institutions of the Traditional Medical System' (χ^2 = .011) over the dependent variables, which is assessed with an exact test, is strongly significant. The value of Cramer's V (V=.161) shows that the variables are weakly associated. Overall, respondents, who perceive the accessibility of institutions of the traditional medical

system to be very difficult (28.6%, n=2) or difficult (9.1%, n=1), contact the traditional medical system less frequently than average, *i.e.* below the average of 44.7%. In this way, respondents, who report that the accessibility of institutions of the traditional medical system is difficult (63.6%, n=7), use the transitional medical system more frequently than average, *i.e.* above the average of 46.0%. In line with these results, respondents, who perceive the accessibility of institutions of the traditional medical system to be very difficult (28.6%, n=2) or difficult (27.3%, n=3), contact the modern medical system more frequently than average, *i.e.* above the average of 9.3%. Respondents, who report that the accessibility of institutions of the traditional medical system is easy, use the traditional medical system (47.9%, n=148) more frequently than average but contact the modern medical system (6.8%, n=21) less frequently than average.

Table 8.6 Distribution of the Institutional Variables of Respondents of the Sample over the Dependent Variables (N=452).

Variable	Utilisation of the Plural Medical System						Total	
	Traditional Medical System		Transitional Medical System		Modern Medical System			
	N	%	N	%	N	%	N	%
Accessibility of Institutions of the Traditional Medical System								
	N	%	N	%	N	%	N	%
Very difficult accessibility	2	28.6	3	42.9	2	28.6	7	100.0
Difficult accessibility	1	9.1	7	63.6	3	27.3	11	100.0
Average accessibility	3	50.0	3	50.0	0	0.0	6	100.0
Easy accessibility	148	47.9	140	45.3	21	6.8	309	100.0
Very easy accessibility	25	37.3	29	43.3	13	19.4	67	100.0
No institutions reported	23	44.2	26	50.0	3	5.8	52	100.0
Total	202	44.7	208	46.0	42	9.3	452	100.0
Pearson's χ^2 (Monte Carlo Sig., 2-sided) = .011 / Cramer's V = .161								
Accessibility of Institutions of the Transitional Medical System								
	N	%	N	%	N	%	N	%
Very difficult accessibility	1	33.3	2	66.7	0	0.0	3	100.0
Difficult accessibility	7	30.4	13	56.5	3	13.0	23	100.0
Average accessibility	9	34.6	16	61.5	1	3.8	26	100.0
Easy accessibility	152	45.5	155	46.4	27	8.1	334	100.0
Very easy accessibility	33	50.0	22	33.3	11	16.7	66	100.0
No institutions reported	0	0.0	0	0.0	0	0.0	0	100.0
Total	202	44.7	208	46.0	42	9.3	452	100.0
Pearson's χ^2 (Monte Carlo Sig., 2-sided) = .124 / Cramer's V = .118								
Accessibility of Institutions of the Modern Medical System								
Pearson's χ^2 (Monte Carlo Sig., 2-sided) = .158								

The distribution of the variable 'Accessibility of Institutions of the Transitional Medical System' (χ^2 = .124) over the dependent variables, which is similarly calculated with an exact test, provides an indication of significance. Nevertheless, the value of Cramer's V (V=.118) illustrates that no association exists between the variables. Overall, it appears, however, that the 'patients' of the sample, who consider the accessibility of institutions of the transitional medical system to

be very difficult (33.3%, n=1) or difficult (30.4%, n=7), contact the traditional medical system less frequently than average, *i.e.* below the average of 44.7%. Consequently, respondents, who report that the accessibility of institutions of the transitional medical system is very easy (50.0%, n=33), use the traditional medical system more frequently than average. In line with these results, respondents, who consider the accessibility of institutions of the transitional medical system to be very difficult (66.7%, n=2), difficult (56.5%, n=13) or average (61.5%, n=16), contact the transitional medical system more frequently than average, *i.e.* above the average of 46.0%. Concurrently, survey respondents, who report that the accessibility of institutions of the transitional medical system is very easy (33.3%, n=22), use the transitional medical system less frequently than average. Respondents, who perceive the accessibility of institutions of the transitional medical system to be average (3.8%, n=1), contact the modern medical system less frequently than average, *i.e.* below the average of 9.3%. Hereafter, respondents, who report that the accessibility of institutions of the transitional medical system is very easy (16.7%, n=11), use the modern medical system more frequently than average. In contrast, however, respondents, who perceive the accessibility of institutions of the transitional medical system to be difficult (13.0%, n=3), similarly seek treatment from the modern medical system more frequently than average.

Bivariate Analysis of the Intervening Variable and the Dependent Variables (Table 8.7)

Table 8.7 Distribution of the Intervening Variable of the Respondents of the Sample over the Dependent Variables (N=452).

Variable	Utilisation of the Plural Medical System						Total	
	Traditional Medical System		Transitional Medical System		Modern Medical System			
	N	%	N	%	N	%	N	%
Impact of the Current Economic Situation								
	N	%	N	%	N	%	N	%
Very low impact	97	45.1	97	45.1	21	9.8	215	100.0
Low impact	29	59.2	17	34.7	3	6.1	49	100.0
Average impact	11	64.7	4	23.5	2	11.8	17	100.0
High impact	26	37.1	38	54.3	6	8.6	70	100.0
Very high impact	9	60.0	4	26.7	2	13.3	15	100.0
No impact reported	30	34.9	48	55.8	8	9.3	86	100.0
Total	202	44.7	208	46.0	42	9.3	452	100.0

Pearson's χ^2 (Asympt. Sig., 2-sided) = .109 / Cramer's V = .132

The distribution of the intervening variable 'Impact of the Current Economic Situation' (χ^2 = .109) over the dependent variables is weakly significant. The value of Cramer's V (V=.132), however, shows that no association exists between the variables. Nevertheless, the results of the cross-tabulation indicate that respondents, who perceived the impact of the current economic situation on local patterns of health care utilisation behaviour to be average (64.7%, n=11) or very high (60.0%, n=9), contact the traditional medical system more frequently than average, *i.e.* above the average of 44.7%. Hereafter, survey respondents, who reportedly perceived the impact of the current economic situation as average (23.5%, n=4) or very high (26.7%, n=4), use the transitional medical system less frequently than average, *i.e.* below the average of 46.0%. Community members, who, however, report that the impact of the current economic situation is high (54.3%, n=38), contact the transitional medical system more frequently than average. On the other hand, community members, who perceived the impact of the current economic situation to be very high (13.3%, n=2) or average (11.8%, n=2), seek treatment from the modern medical system more frequently than average, *i.e.* above the average of 9.3%. Furthermore, respondents

reporting a low impact of the current economic situation (6.1%, n=3) contact the modern medical system less frequently than average. Finally, respondents, who stated that the current economic situation has no impact on local patterns of health care utilisation behaviour, use the traditional medical system (34.9%, n=30) less frequently than average and contact the transitional medical system (55.8%, n=48) more frequently than average.

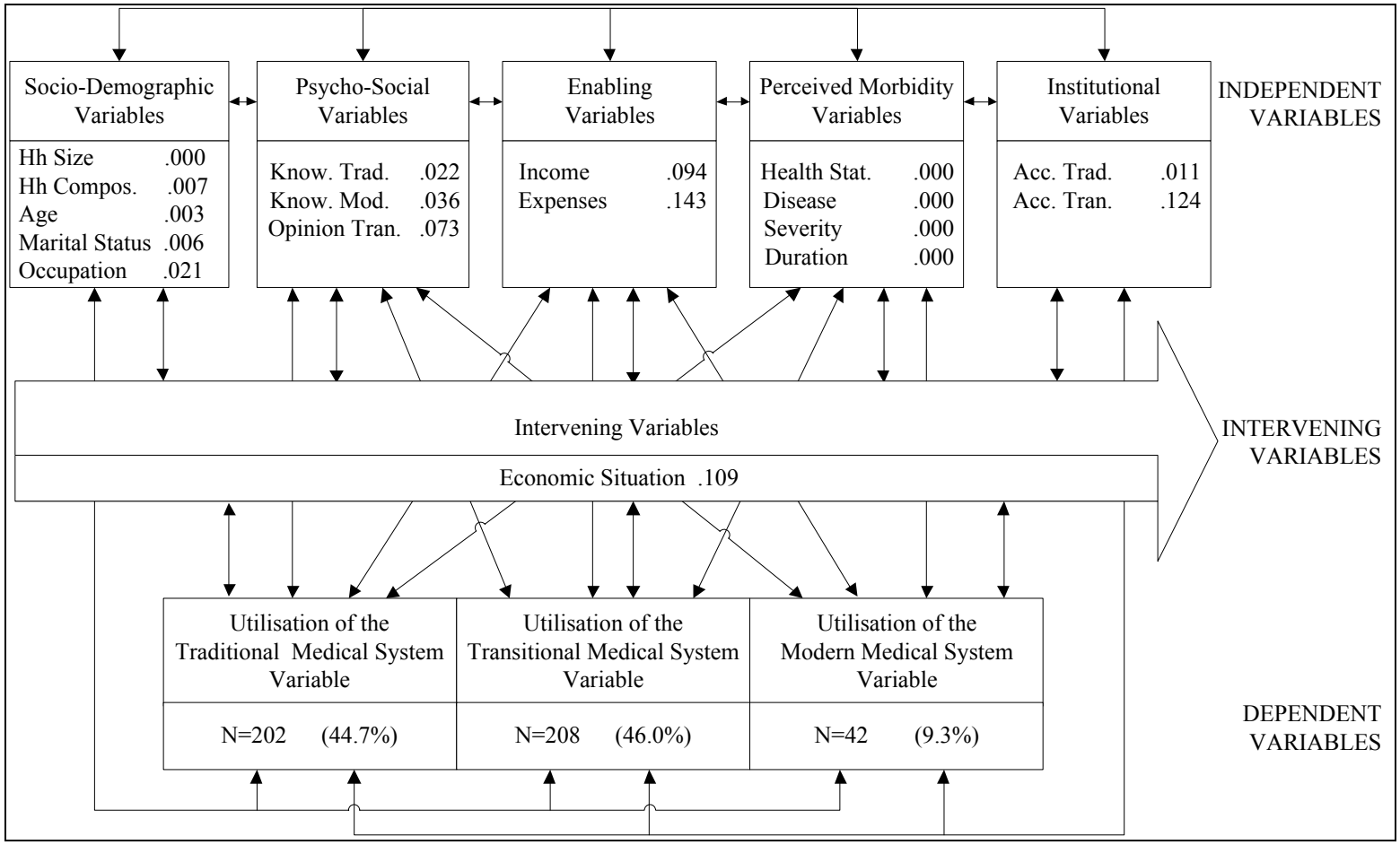
In an attempt to summarise the results of the bivariate analysis and to present the findings in relation to the different blocks of factors within the multivariate model of transcultural health care utilisation, Figure 8.1 shows the statistically significant mutual relations between variables within the model.

The independent variables, for which a statistically significant distribution over the dependent variables is calculated, are displayed in the respective block of factors under reference of the chi-value. The significant mutual relations displayed in Figure 8.1 anticipate the complexity of a multivariate analysis of data, in which all variables identified in the model are included, notably irrespective of their significance value revealed within the bivariate analysis. In general, a bivariate analysis provides a basic overview on the significance of the relationships the independent variables maintain with the dependent variables. Nevertheless, additional data are required in a way to assess the overall extension of determinants of people's patterns of transcultural health care utilisation behaviour.

8.2.2 Nonlinear Canonical Correlation Analysis: OVERALS

In order to gain a more detailed insight into the determinants of the 'patients' illness behaviour, a multivariate analysis extends the focus of a bivariate analysis and assesses the interrelationships and interactions between all variables, which have been defined as determinants of behavioural patterns. On the whole, the multivariate model of transcultural health care utilisation presented in Paragraph 3.1.2 shows that the variables in the model are grouped in different, notably interacting, blocks of variables. In this respect, an extended analysis of determinants of people's transcultural health care utilisation behaviour not only assesses the relationship of each independent and intervening variable with the dependent variables, but also evaluates the interaction between variables of the same block of variables as well as between variables of different blocks of variables. Since a bivariate analysis of all possible correlations of variables would result in a vast series of tables, the technique of multivariate analysis, as it forms an extension of bivariate procedures, offers an appropriate method for studying complicated data sets, while using a single form of analysis (*cf.* Tabachnick & Fidell 2001). In order to meet the requirements of the present data, the multivariate statistical method applied to this study refers to a type of nonlinear canonical correlation analysis, known as 'OVERALS'. The OVERALS algorithm is defined by Gifi (1990), Van der Burg *et al*. (1984; 1988), Van der Burg (1988) and Van der Burg *et al*. (1994) as 'overall' or 'master programme', of which the previously developed methods of CANALS and PRINCALS form specific branches (*cf.* Gifi 1990). In particular, the OVERALS programme is designed specifically to meet the requirements of an analysis of different sets of variables at once, as well as of categorical variables, and as such forms a method of multivariate data analysis, which is appropriate for the present research.

OVERALS manages sets of variables, which differ in number and definition, and hereafter treats all sets of variables symmetrically rather than hierarchically (*cf.* Van de Geer 1993b; Van der Burg *et al*. 1994). Following the initial univariate analysis of all variables, which have been identified within the multivariate model of transcultural health care utilisation, one set of independent and intervening, and one set of dependent variables have been distinguished among the present data. The independent and intervening, as well as dependent set include six and three different blocks of factors respectively.



Legenda:

Hh Size	Household Size	Opinion Tran.	Opinion on the Transitional Medical System
Hh Compos.	Household Composition	Health Stat.	Health Status
Know. Trad.	Knowledge of the Traditional Medical System	Acc. Trad.	Accessibility of Institutions of the Traditional Medical System
Know. Mod.	Knowledge of the Modern Medical System	Acc. Tran.	Accessibility of Institutions of the Transitional Medical System

Figure 8.1 Model of the Mutual Relation Analysis of the Blocks of Variables.

The variables within each block of factors have been labelled and operationalised as follows:

Set of Independent and Intervening Variables
1. Predisposing Socio-Demographic Variables: 'NamCom', 'HouseMem', 'Relatio', 'Gender', 'Age', 'PlaceoB', 'LevEduc', 'MariStat', 'Occupat';
2. Predisposing Psycho-Social Variables: 'KnowTrad', 'KnowTran', 'KnowMod', 'OpiTrad', 'OpiTran', 'OpiMod';
3. Enabling Variables: 'AnnInco', 'AnnExp', 'Insuran', 'SES';
4. Perceived-Morbidity Variables: 'HeaStat', RepDis', 'SevRepDis', 'DurRepDis';
5. Institutional Variables: 'AccTrad', 'AccTran', 'AccMod';
6. Intervening Variable: 'EcoSit';

Set of Dependent Variables
7. Utilisation of the Traditional Medical System Variable: 'TradCare'
8. Utilisation of the Transitional Medical System Variable: 'TranCare'
9. Utilisation of the Modern Medical System Variable: 'ModCare'

In addition to assessing different sets of variables at once, the OVERALS method expects variables to be discrete and hereby evaluates variables, which can assume only certain values, mostly whole numbers (*cf*. Field 2009). Concurrently, the programme allows variables to be measured at the nominal, ordinal or interval level but requires variables to have positive integers, namely no negative or zero values (*cf*. Van der Burg 1994).

Following the theories of generalized canonical analysis, OVERALS selects weights for each set of variables in a way to maximise the canonical correlation between variables. Hereafter, a weighted sum vector, a so-called 'canonical variate', is extracted from each set of variables (*cf*. Van de Geer 1993b). Since sets of variables generally produce an array of possible correlations between variables, the method of analysis compares the variates to an orthogonal representation of objects known as 'object scores'. In other words, OVERALS requires variables to be as similar as possible to the object scores. In this respect, the analysis is run on the same number of dimensions, on which the maximally correlated canonical variates can be distinguished (*cf*. Van der Burg 1988). OVERALS furthermore produces the eigenvalue for each dimension, which is defined as the sum of squared correlations between the object scores and the weighted sum vectors and describes the total 'fit' of the overall model to the data (*cf*. Van de Geer 1993b).

In addition to assessing the correlation between sets of variables, OVERALS evaluates the correlations between the canonical variates and the original variables, which are known as 'canonical' or 'component loadings'. The component loadings indicate to which extent each variable contributes to the variance within the canonical variate, thereby estimating the significance of each variable in the overall model. In order to optimize correlation, the variables are assigned optimal weights and quantifications. As Van de Geer (1993b: 6) notes '[…] *relations among variables may show to better advantage after an optimal quantification of their categories*'. OVERALS employs the technique of optimal scaling, which applies a nonlinear transformation to each variable, hereafter treating variables as continuous variables, in order the maximize correlation. The nonlinear transformations depend on the original level of measurement of each variable, whereby categories are retained when transforming nominal variables and the order of categories is taken into account when transforming ordinal variables. Based on the number of dimensions chosen, OVERALS allows nominal variables to have the level of measurement fixed separately for each dimension, which results in multiple transformations hereafter referred to as multiple nominal quantifications (*cf*. Van der Burg 1988). Overall, the technique of optimal scaling highlights to which extent it is crucial to accordingly indicate the number of dimensions as well as the measurement level and the number of categories of each variable prior to running the OVERALS analysis (*cf*. Van der Burg *et al*. 1988; Van der Burg *et al*. 1994; Agung 2005; Leurs 2010).

Once variables are entered into the statistical programme for data analysis, notably in accordance with the sets of variables defined previously, OVERALS will on request deliver an extensive output. Since the present study, however, aims at verifying the significance of each variable identified within the multivariate model, the results of the multivariate analysis presented below focus on the correlation of each variable with the other variables in the model. In this way, Table 8.8 presents the results of the OVERALS analysis in terms of component loadings of the two sets of variables for which two dimensions have been chosen, as they frequently suffice to give a fairly clear indication of significant effects in the data (*cf*. Gifi 1990). The left column in the table illustrates the number of the set of variables. Hereafter, the variables are listed in the middle column, whereby the optimal scaling level and the characteristics of the projection of each variable on the object space are indicated after each label and are explained at the bottom of the table.

On the basis of the results gained from a bivariate analysis, one variable is assigned a multiple nominal rather than a single nominal level. In this way, the variable, which is measured on a multiple nominal level, has a different quantification on each dimension and hereby produces four instead of two component loadings. Hereafter, the variable moreover shows an additional column at the centre of the table in which the dimensions are indicated. In general, the choice of the measurement level is based on the value of significance, which is estimated during the bivariate analysis. In view of its most strongly significant chi-value as well as its overall significance for the present study, the variable 'Reported Disease' is measured on a multiple nominal level, thereby producing two dimensions of measurement. Finally, the two columns to the right display the component loadings of each variable on both dimensions. In general, the higher the component loading of the single variable the more significant is the variable's contribution to the overall model of transcultural health care utilisation. In this respect, positive and negative values of ± .3 reveal a medium effect, while positive and negative values of ± .5 indicate a large effect in the variable. The strong and medium independent and intervening variables are highlighted in a descending order for each dimension, whereby the rank of each variable is indicated with a number in brackets after the component loading.

In addition to Table 8.8, Figure 8.2 presents a graphical representation of the OVERALS solution, in which dimension 1 is presented horizontally and dimension 2 is presented vertically. The component loadings serve as coordinates of the vectors, which constitute each variable, and are projections of each variable's correlations with all other variables in the canonical space. The distance between the vector points and the origin of the scatter plot illustrates the significance of each variable within the overall model. In order to highlight the effects of the dependent variables in the model, the distance between the vector points of the three dependent variables and the origin have been marked in the graph with a straight line. In this way, Figure 8.2 may give a clearer impression of the complex relationships between the selected variables, which have been arranged between two sets of variables and have been spread over two dimensions, as groups of variables and underlying dimensions within the model may be easier to detect (*cf*. Van der Burg *et al*. 1984; Gifi 1990; Ambaretnani 2012). On the whole, OVERALS produces the eigenvalue for each dimension and hereby evaluates the 'fit' of the overall model to the collected data. In particular, the eigenvalue for the first dimension is .781 and the eigenvalue for the second dimension is .705, which results in a total fit of 1.486. Since the maximum eigenvalue equals the number of dimensions chosen, the results indicate a fairly strong correlation between the first and second set of variables and a relatively good 'fit' of the model to the data (*cf*. Van der Burg 1994).

Table 8.8 Component Loadings of the two Sets of Variables with a Total of 30 Variables on two Dimensions (N=452).

Set	Variable		Dimension 1	Dimension 2
1	NamCom (a, b)		.042	.072
	HouseMem (b, c)		-.371 (4)	.087
	Relatio (a, b)		.286 (6)	-.143
	Gender (a, b)		.039	-.070
	Age (b, c)		.323 (5)	-.241
	PlaoB (a, b)		-.054	-.083
	LevEduc (b, c)		.034	.083
	MariStat (a, b)		.011	-.117
	Occupat (a, b)		.232	.044
	KnowTrad (b, c)		-.070	-.017
	KnowTran (b, c)		-.159	.013
	KnowMod (b, c)		-.063	-.087
	OpiTrad (a, b)		.084	-.122
	OpiTran (a, b)		.124	-.035
	OpiMod (a, b)		.033	.179
	AnnInco (a, b)		-.062	.025
	AnnExp (a, b)		.087	.251
	Insuran (a, b)		-.089	.157
	SES (b, c)		-.071	.087
	HeaStat (b, c)		-.279 (7)	-.061
	RepDis (d, e)	Dimension 1	.608 (1)	-.204
		Dimension 2	-.091	.530 (1)
	SevRepDis (b, c)		.436 (3)	-.010
	DurRepDis (a, b)		.541 (2)	-.322 (2)
	AccTrad (b, c)		-.275 (8)	-.254 (4)
	AccTran (b, c)		-.039	.295 (3)
	AccMod (b, c)		.077	.084
	EcoSit (a, b)		.164	-.128
2	TradCare (a, b)		.838	-.267
	TranCare (a, b)		-.539	.666
	ModCare (a, b)		-.510	-.686

a = Optimal Scaling Level: Single Nominal
b = Projections of the Single Quantified Variables in the Object Space
c = Optimal Scaling Level: Ordinal
d = Optimal Scaling Level: Multiple Nominal
e = Projections of the Multiple Quantified Variables in the Object Space

Hereafter, the following eight variables, which are marked in a descending order in Table 8.8, have a large or medium effect on the first dimension of the OVERALS solution: 'RepDis'; 'DurRepDis'; 'SevRepDis'; 'HouseMem'; 'Age'; 'Relatio; 'HeaStat' and 'AccTrad'. On the second dimension, the variables 'RepDis', 'DurRepDis', 'AccTran' and 'AccTrad' show a medium to large effect. Across both dimensions, the strongest variables, which thus have a component loading above .3, highlight the medical dimension of the present study indicated by the results of the bivariate analysis. The variable 'Reported Disease', which is measured on a multiple nominal level and produces a component loading of .608 on the first dimension and a component loading of .530 on the second dimension, has the largest effect among the variables identified within the multivariate model of transcultural health care utilisation. Hereafter, the variable 'Duration of the Reported Disease', which has a component loading of .541 on the first dimension and a component loading of -.322 on the second dimension, forms the second

strongest variable in the model. On the first dimension, the variable 'Severity of the Reported Disease' (SevRep: .436) moreover demonstrates a medium effect. In addition to the variables within the block of perceived morbidity factors, the variables 'Household Size' (HouseMem: -.371) and 'Age' (Age: .323) show a medium effect on the first dimension. Hereafter, the variables 'Household Composition' (Relatio: .286) and 'Health Status' (HeaStat: -.279) similarly have a medium effect on the first dimension. The variable 'Accessibility of Institutions of the Traditional Medical System' reveals a medium effect on the first (AccTrad: -.275) and the second (AccTrad: -.254) dimension. Furthermore, 'Accessibility of Institutions Of the Transitional Medical System' (AccTran: .295) has a medium effect on the second dimension. On the whole, the results support the findings of the bivariate analysis, in which the distribution of the variables 'HouseMem', 'Age', 'Relatio', 'HeaStat' and 'AccTrad' over the dependent variables is significant and the distribution of the variable 'AccTran' over the dependent variables provides an indication of significance.

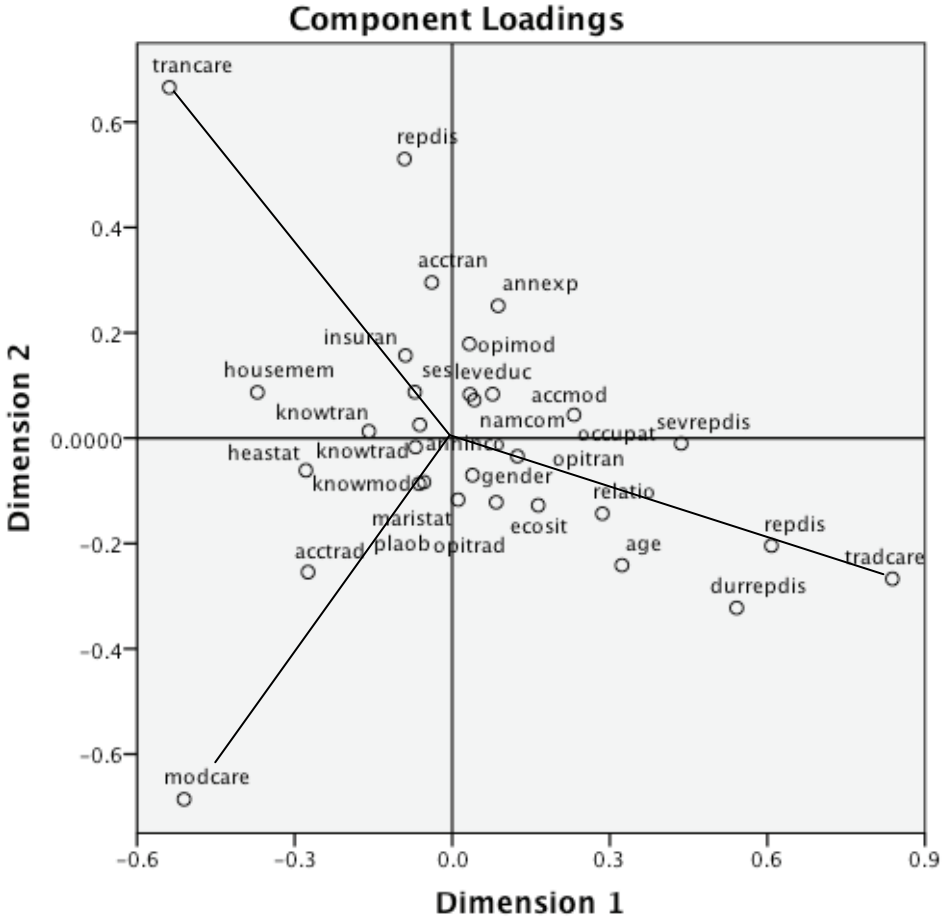


Figure 8.2 Graphic Representation of the Projection of the Component Loadings of the two Sets of Variables onto the Canonical Space with a Total of 30 Variables on two Dimensions (N=452).

Within the OVERALS solution, the strongest component loadings are, however, found among the set of dependent variables, thereby indicating a strong correlation among the dependent variables as well as between both sets of variables. The variable 'Utilisation of the Traditional Medical System' reveals the largest effect among all variables on the first dimension (TradCare: .838) and has a medium effect on the second dimension (TradCare: -.267). The variable 'Utilisation of the Transitional Medical System' demonstrates a large effect on the first (TranCare: -.539) and second dimension (TranCare: .666).

In the same fashion, the variable 'Utilisation of the Modern Medical System' shows a large effect on the first (ModCare: -.510) and the second dimension (ModCare: -.686). In line with the values of the component loadings of the dependent variables, Figure 8.2 demonstrates that the variable 'TradCare' dominates the first dimension. The Figure furthermore shows that the second dimension is largely dominated by the variables 'TranCare' and 'ModCare'. On the whole, the vector points of the dependent variables are to a considerable extent opposing each other and hereby illustrate patterns of exclusive utilisation of one medical system at the time. In addition to the dependent variables, the variable 'RepDis' hereafter forms the most dominant of all independent variables on both the first and second dimension. The variable 'DurRepDis' similarly scores significantly high on the first as well as the second dimension, while the variable 'SevRepDis' shows a strong loading on the first dimension.

As illustrated in Figure 8.2, the variables 'RepDis' on the first dimension, 'DurRepDis' and 'SevRepDis' relate to the dependent variable 'TradCare' in strength and direction, thereby suggesting that these variables are significant determinants of the patient's contact with the traditional medical system. In view of the results gained from a bivariate analysis, it appears that treatment for certain diseases, such as the common cold or abdominal and pelvic pain, is primarily sought from the traditional medical system. Concurrently, illness episodes, which are perceived to be acute and not severe, are to a considerable extent treated with components of the traditional medical system. In addition to the variables within the block of perceived morbidity factors, Figure 8.2 indicates that the variables 'Age' and 'Relatio' relate to the dependent variable 'TradCare'. Overall, it appears that younger 'patients' contact the traditional medical system more frequently than older 'patients'. Furthermore, 'patients', whose nature of relationship to the household head is that of a grandchild or child, use the traditional medical system rather frequently.

Hereafter, the variable 'RepDis' appears to relate, notably on the second dimension, to the dependent variable 'TranCare' in both strength and direction. Following the results of the bivariate analysis, the 'patients' of the sample seek treatment from the transitional medical system for a number of specific diseases, including elevated blood glucose levels as well as essential (primary) hypertension and other diseases of the circulatory system. In addition to the variable 'RepDis', Figure 8.2 indicates that the variable 'HouseMem' as well as the variable 'AccTran' relate to the dependent variable 'TranCare' on the first and second dimension respectively. In general, it appears that community members, who live in 1-member households, make extensive use of the transitional medical system. Furthermore, inhabitants, who find the accessibility of institutions of the transitional medical system rather difficult, contact the transitional medical system rather frequently.

Following the results displayed in Figure 8.2, it moreover becomes clear that the variables 'HeaStat' and 'AccTrad' relate to the dependent variable 'ModCare' in strength and direction. It can be assumed that 'patients', who have a generally poor health status, seek treatment from the modern medical system rather frequently. Hereafter, community members, who find the accessibility of institutions of the traditional medical system rather difficult, similarly make extensive use of the modern medical system.

In general, the OVERALS solution not only reveals which variables play a significant role as determinants of people's behaviour within the multivariate model of transcultural health care utilisation, but it also indicates which variables cluster together in a rather meaningful way. In this way, the multivariate analysis identified certain patterns of behaviour, which highlight people's contact with the plural medical system available in the research area but go beyond a mere interpretation of distributions of the independent variables over the dependent variables. In this way, the clusters of variables in the OVERALS solution make an indirect reference to the different blocks of factors, which have been identified in the multivariate model and which can be used to assess the overall validity of the model for the present study.

8.2.3 Multiple Regression Analysis

In general, the multivariate analysis can be extended to develop an explanatory, analytical model of transcultural health care utilisation by means of assessing the correlation between the different blocks of factors identified in the model. While bivariate and multivariate analyses have so far illustrated the relationship between different variables in the model, this paragraph seeks to calculate the maximum correlation between blocks of factors (*cf*. Agung 2005; Leurs 2010). The relationship between different blocks of factors is assessed by means of a multiple regression analysis, as it forms a most appropriate method for calculating the correlation between observed values and the values predicted by the model. In other words, a multiple regression analysis estimates the significance of the overall model by means of comparing observed to predicted values and hereafter expressing each association between blocks of factors with a multiple correlation coefficient (ρ), notably for each dimension. Following the operationalisation of the multivariate model as well as an initial univariate analysis of all variables, the following nine blocks of factors have been specified for the multiple regression analysis:

Blocks of Independent and Intervening Variables

1. the Block of Predisposing Socio-Demographic Factors including the Variables: 'NamCom', 'HouseMem', 'Relatio', 'Gender', 'Age', 'PlaceoB', 'LevEduc', 'MariStat', 'Occupat';
2. the Block of Predisposing Psycho-Social Factors including the Variables: 'KnowTrad', 'KnowTran', 'KnowMod', 'OpiTrad', 'OpiTran', 'OpiMod';
3. the Block of Enabling Factors including the Variables: 'AnnInco', 'AnnExp', 'Insuran', 'SES';
4. the Block of Perceived Morbidity Factors including the Variables: 'HeaStat', 'RepDis', 'SevRepDis', 'DurRepDis';
5. the Block of Institutional Factors including the Variables: 'AccTrad', 'AccTran', 'AccMod';
6. the Block of Intervening Factors including the Variable: 'EcoSit';

Blocks of Dependent Variables

7. the Block of Utilisation of the Traditional Medical System Factors including the Variable: 'TradCare'
8. the Block of Utilisation of the Transitional Medical System Factors including the Variable: 'TranCare'
9. the Block of Utilisation of the Modern Medical System Factors including the Variable: 'ModCare'

In order to calculate all possible correlations between blocks of factors and to hereafter distinguish the maximum association, a multiple regression analysis uses the eigenvalue (E) of each correlation, which is derived from running an individual OVERALS analysis on all possible combinations of blocks of factors. On the whole, OVERALS produces an eigenvalue for each dimensions (E_d) of the solution, which hereby forms the basis for the subsequent calculation of the multiple correlation coefficient (ρ_d) for each dimension. The formula, which is applied to the calculation of the multiple correlation coefficient using the eigenvalue, reads: '$\rho_d = 2 \times E_d - 1$' (*cf*. Van der Burg 1988; Agung 2005; Ibui 2007; Leurs 2010; Djen Amar 2010; Ambaretnani 2012).

Table 8.9 presents a list of all multiple correlation coefficients, which have been calculated separately for all possible combinations of blocks of factors for each dimension. Overall, a stepwise manner of running a multiple regression analysis allows for a close assessment of the overall distribution of the blocks of factors and, more specifically, of the distribution of the different blocks of independent factors over the blocks of dependent factors. The first column of Table 8.9 to the left highlights the numbers of the respective blocks of factors, to which an OVERALS analysis is applied. Hereafter second column indicates the dimension of the solution,

for which the multiple correlation coefficient is calculated. The formula used to calculate the multiple correlation coefficient is presented in the third column from the left and is reconstructed for each correlation using the corresponding eigenvalues. Finally, the values of ρ are presented for each dimension in the last column to the right, whereby values of ρ = .10 reveal a weak correlation, values of ρ = .30 reveal a moderate correlation and values of ρ = .50 reveal a strong correlation (*cf*. Field 2009).

Table 8.9 List of Multiple Correlation Coefficients (ρ) calculated by means of a Multiple Regression Analysis of the Nine Blocks of Factors on two Dimensions (N=452).

Block←→Block	Dimension	Calculation[a] ($\rho_d = 2 \times E_d - 1$)	Multiple Correlation Coefficient (ρ)
1←→2	1	2 x 0.809 - 1 =	0.618
	2	2 x 0.791 - 1 =	0.582
1←→3	1	2 x 0.879 - 1 =	0.758
	2	2 x 0.868 - 1 =	0.736
1←→4	1	2 x 0.884 - 1 =	0.768
	2	2 x 0.807 - 1 =	0.614
1←→5	1	2 x 0.799 - 1 =	0.598
	2	2 x 0.794 - 1 =	0.588
1←→6	1	2 x 0.836 - 1 =	0.672
1←→7	1	2 x 0.696 - 1 =	0.392
1←→8	1	2 x 0.646 - 1 =	0.292
1←→9	1	2 x 0.636 - 1 =	0.272
2←→3	1	2 x 0.796 - 1 =	0.592
	2	2 x 0.735 - 1 =	0.470
2←→4	1	2 x 0.745 - 1 =	0.490
	2	2 x 0.719 - 1 =	0.438
2←→5	1	2 x 0.952 - 1 =	0.904
	2	2 x 0.773 - 1 =	0.546
2←→6	1	2 x 0.745 - 1 =	0.490
2←→7	1	2 x 0.602 - 1 =	0.204
2←→8	1	2 x 0.584 - 1 =	0.168
2←→9	1	2 x 0.581 - 1 =	0.162
3←→4	1	2 x 0.793 - 1 =	0.586
	2	2 x 0.753 - 1 =	0.506
3←→5	1	2 x 0.720 - 1 =	0.440
	2	2 x 0.666 - 1 =	0.332
3←→6	1	2 x 0.786 - 1 =	0.572
3←→7	1	2 x 0.614 - 1 =	0.228
3←→8	1	2 x 0.610 - 1 =	0.220
3←→9	1	2 x 0.600 - 1 =	0.200
4←→5	1	2 x 0.770 - 1 =	0.540
	2	2 x 0.719 - 1 =	0.438
4←→6	1	2 x 0.764 - 1 =	0.528
4←→7	1	2 x 0.728 - 1 =	0.456
4←→8	1	2 x 0.705 - 1 =	0.410
4←→9	1	2 x 0.647 - 1 =	0.294
5←→6	1	2 x 0.771 - 1 =	0.542
5←→7	1	2 x 0.593 - 1 =	0.186
5←→8	1	2 x 0.577 - 1 =	0.154
5←→9	1	2 x 0.612 - 1 =	0.224
6←→7	1	2 x 0.554 - 1 =	0.108
6←→8	1	2 x 0.587 - 1 =	0.174
6←→9	1	2 x 0.503 - 1 =	0.006

[a] = The values in the formula are the eigenvalues for each dimension.

On the whole, the eigenvalues show, for each dimension, to which extent the correlation between two blocks of factors can be explained by the model as opposed to having occurred by chance. In

this respect, the sum of the eigenvalues on both dimensions of each correlation refers to the total 'fit' of the model to the respective variables, whereby a perfect 'fit' equals the number of dimensions chosen (*cf*. Van der Burg 1994; Leurs 2010). Table 8.9 refrains from providing any indication on the relationship between Block 7, Block 8 and Block 9, namely the blocks of the dependent variables, as these correlations are out of the scope of the multivariate model. Although not presented in Table 8.9, the correlation between Block 7 'Utilisation of the Traditional Medical System Factors' and Block 8 'Utilisation of the Transitional Medical System Factors' is very strong ($\rho_1 = 0.915$), which reflects the tendency of the majority of 'patients', who took two steps within the process of health care utilisation, to seek treatment in the form of a combined contact with the traditional and the transitional medical system.

The relationship between Block 1 'Predisposing Socio-Demographic Factors' and Block 3 'Enabling Factors' produces the highest sum of eigenvalues and strong correlation coefficients on both the first ($\rho_1 = .758$) and the second ($\rho_2 = .736$) dimension. Hereafter, an OVERALS analysis of the relationship between Block 1 'Predisposing Socio-Demographic Factors' and Block 4 'Perceived Morbidity Factors' generates the second highest sum of eigenvalues and reveals similarly strong correlation coefficients for the first ($\rho_1 = .768$) and the second dimension ($\rho_2 = .614$). Overall, these findings support the results gained from a bivariate as well as multivariate analysis, which illustrate a strong association between perceived morbidity and the patient's choice of treatment. The relationship between Block 1 and Block 2 'Predisposing Psycho-Social Variables' produces the third highest sum of eigenvalues as well as strong correlation coefficients on the first ($\rho_1 = .618$) and the second ($\rho_2 = .582$) dimension.

The correlation between Block 2 and Block 5 'Institutional Factors' generates the strongest correlation coefficient on the first dimension ($\rho_1 = .904$) as well as a strong correlation coefficient on the second dimension ($\rho_2 = .546$). Block 2 and Block 3 similarly correlate strongly on the first ($\rho_1 = .592$) and the second ($\rho_2 = .470$) dimension , whereas a strong correlation is moreover found between Block 2 and Block 4 on the first ($\rho_1 = .490$) and the second ($\rho_2 = .438$) dimension supporting the medical dimension of the present study. Furthermore, a strong correlation exists between Block 2 and Block 6 'Intervening Factors' on the first ($\rho_1 = .490$) dimension.

Following Block 2, Block 3 and Block 4 are strongly correlated on the first ($\rho_1 = .586$) and the second dimension ($\rho_2 = .506$), while Block 3 and Block 5 appear to be moderately correlated on the first ($\rho_1 = .440$) and the second dimension ($\rho_2 = .332$). Hereafter, a strong correlation exists between Block 3 and Block 6 on the first dimension ($\rho_1 = .572$). The correlation between Block 4 and Block 5 shows a strong effect on the first dimension ($\rho_1 = .540$) as well as a moderate to strong effect on the second dimension ($\rho_2 = .438$). Likewise, Block 4 and Block 6 correlate strongly on the first dimension ($\rho_1 = .528$). Block 6 furthermore correlates strongly with Block 6 on the first dimension ($\rho_1 = .542$). In general, the correlations between the different blocks of independent factors indicate a strong coherence between the variables of the respective blocks and support the overall distinction between the different blocks of factors in the model.

In view of the correlations between the blocks of independent factors and the blocks of the dependent factors, the results of the multiple regression analysis show that the strongest correlation is found between Block 4 and Block 7 ($\rho_1 = .456$), whereby the variable 'Reported Disease' is dominant. Similarly, a moderate to strong correlation exists between Block 4 and Block 8 ($\rho_1 = .410$) in which Block 4 is dominated by the variable 'Reported Disease'. In line with these results Block 4, as it is dominated by the variable 'Reported Disease', and Block 9 'Utilisation of the Modern Medical System Factors' correlate moderately ($\rho_1 = .294$). Overall, these findings support the medical dimension of the present study, which is identified during the previous bivariate and multivariate analysis.

In addition the block of the perceived morbidity factors, the OVERALS solution reveals a moderate correlation between Block 1 and Block 7 ($\rho_1 = .392$), whereby the block of the predisposing socio-demographic factors is largely dominated by the variables 'Age', 'Occupation' and 'Household Size'. In the same fashion, a moderate correlation exists between

Block 1 and Block 8 (ρ_1 = .292) in which Block 1 is dominated by the variables 'Age' and 'Household Size'. Furthermore, Block 1 and Block 9 (ρ_1 = .272) correlate moderately , whereas Block 1 is dominated by the variables 'Household Size', 'Occupation', 'Marital Status', 'Age' and 'Household Composition'. The results of the analysis moreover demonstrate a moderate correlation between Block 3 and Block 7 (ρ_1 = .228) in which the block of the enabling factors is dominated by the variable 'Annual Income'. In the same fashion, a moderate correlation exists between Block 3 and Block 8 (ρ_1 = .220), whereby the block of the enabling factors is largely dominated by the variables 'Annual Income' and 'Insurance'. Block 3, as it is dominated by the variables 'Annual Expenses for Health Care' and 'Insurance', moreover correlates moderately with Block 9 (ρ_1 = .200). In addition to Block 3, Block 2 correlates moderately with Block 7 (ρ_1 = .204), whereby Block 2 is largely dominated by the variables 'Opinion on the Transitional Medical System'. Finally, a moderate correlation exists between Block 5, which is dominated by the variable 'Accessibility of Institutions of the Traditional Medical System', and Block 9 (ρ_1 = .224).

On the whole, the results of the multiple regression analysis show that the block of the perceived morbidity factors and the block of the predisposing socio-demographic factors correlate strongly with all blocks of independent factors and moderately with all blocks of dependent factors. Furthermore, the block of the intervening factors, which includes the variable 'Impact of the Current Economic Situation', correlates rather strongly with all blocks of independent factors. Likewise, the block of the predisposing psycho-social factors correlates strongly with the blocks of independent factors. On the basis of the results gained from a multiple regression analysis, Figure 8.3 presents the final analytical model of transcultural health care utilisation behaviour. The groups of variables, which have been identified as determinants of patterns of behaviour, are shown in the respective block of factors and the correlations (r) between the different blocks of factors, which have been identified during the multiple regression analysis, are illustrated accordingly. In this way, the correlations displayed in the model highlight the validity of the multivariate model, which is applied to the present data, and hereby produce the final, explanatory model of transcultural health care utilisation behaviour for the sample population of Pirgos and Praitoria in rural Crete. In addition to illustrating the generally strong coherence between blocks of independent factors, Figure 8.3 moreover highlights the predictive value of the different blocks of independent factors on the blocks of dependent factors, namely on people's behaviour of transcultural health care utilisation.

8.3 Results of the Analysis and Interpretation of Findings

8.3.1 The Differential Utilisation of the Plural Medical System

On the whole, the results gained from the quantitative analysis of the data collected during the household surveys show that the 'patients' of the sample contact the transitional medical system more frequently than the traditional or the modern medical system. The findings are supported by a study conducted elsewhere in rural Crete, which similarly revealed that commercial pharmaceutical medicines provides the form of medical treatment most frequently used by the local population. In the same fashion, Slikkerveer (1990) observed that patterns of health care utilisation behaviour developed by the population in the Horn of Africa show a tendency towards under-utilisation of the traditional medical system and towards over-utilisation of the transitional and the modern medical system. Since patterns of utilisation of the transitional medical system involve both the use of prescribed as well as non-prescribed medicines, the administration of commercial pharmaceutical medicines to a considerable extent involves an initial consultation with a modern health care provider, that is with the modern medical system, who issues the prescription.

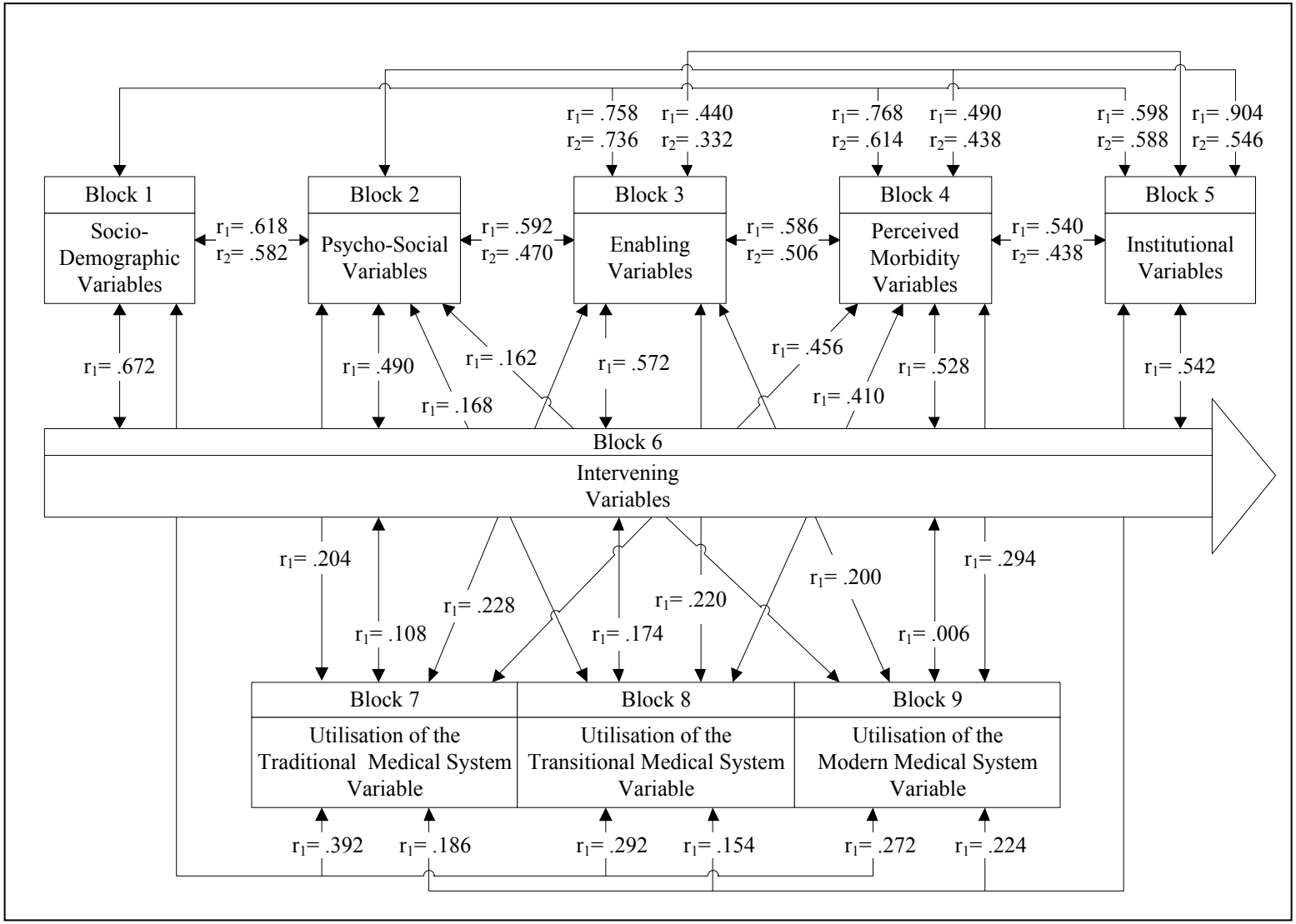


Figure 8.3 The Final Model of Transcultural Health Care Utilisation indicating the Strength of the Correlations between the Blocks of Variables.

Although the focal point of consultation, notably from a community perspective, remains with the transitional health care provider, who eventually distributes the medicine to the client, this research indicates that the transitional and the modern medical system available in the research area are closely intertwined. As Blum & Blum (1965: 177) elaborate: '*The decreased use of priests as healers is no doubt associated with the availability of physicians and the opportunity to use the hospitals and clinics* […]'. Furthermore, the prescription of medicines appears to be a fairly common choice of treatment among modern health care providers across Crete and Greece at large. As Antonakis *et al*. (2006: 2) observe: '*Drug therapy is the most commonly used method of any disease treatment in general practice*'.

The fact that prescription medicine has throughout this study been defined as component of the transitional rather than the modern medical system may hereby foster patterns of over-utilisation of the transitional medical system and patterns of under-utilisation of the modern medical system in the research area. Nevertheless, a comparative study of patterns of use of primary health care in Spili, Crete, and Dalby, Sweden, highlights that the inhabitants of Crete generally contact the local health centre less frequently than the patients in Sweden (*cf*. Koutis *et al*. 1991).

In contrast to the substantial overlap between the transitional and the modern medical system, the traditional medical system only shares a marginal affinity with the transitional and the modern medical system available in the research area. In particular, examples of overlap, in which components of the traditional medical system are purchased and hereby qualify as components of the transitional medical system or in which modern health care providers recommend treatment in the form of traditional medicine, have remained rare. In the research area, utilisation of the traditional medical system primarily involves patterns of self-care. In this way, is may be possible to characterise the traditional medical system as a somewhat more individual medical system, which stands in opposition and only in marginal relation to the, notably closely intertwined, transitional and modern medical systems. The traditional medical system moreover forms the second most frequently contacted medical system in the research area, whereby the difference of utilisation between the transitional and the traditional medical system is rather minimal. The number of 'patients', who contact the transitional medical system, exceeds the number of 'patients', who seek treatment from the traditional medical system, by 1.2% (n=6) (*cf*. Table 7.7). Hereafter, the rather individual character of the traditional medical system, adds significance to the overall rate of utilisation of the traditional medical system in the research area. In line with the results of the present study, Blum & Blum (1965) highlight that the population of rural Greece uses MAC plants and other traditional home remedies as well as religious and spiritual forms of medicine, notably in the form of self-care, more frequently than components of the modern medical system. In particular, patterns of utilisation of the traditional medical system exceed practices of consultation with the local physician, consultation with a modern health care provider in Athens and hospitalisation in Athens as well as consultation with a traditional health care provider.

8.3.2 Determinants of Health Care Utilisation Behaviour

In addition to illustrating the general patterns of health care utilisation developed by the sample population of Pirgos and Praitoria, an analysis of the present data sheds light on a number of determinants, which influence people's decision-making behaviour towards seeking treatment. The results of the statistical analysis show that patterns of health care utilisation developed by the sample population are strongly influenced by the number of members of each household, that is by the household size. On the whole, the results of this study indicate that the more members a household has the more frequently household members make use of the traditional medical system. Since the majority of 'patients', who contact the traditional medical system, resort to practices of self-care, it is likely that patterns of utilisation of the traditional medical system follow an exchange of knowledge between members of the same household. Concurrently,

statistical analysis reveals that the less members a household has the more frequently household members contact the transitional medical system. Furthermore, only a minor number of 'patients', who live in a household composed of 5 and more members, use the modern medical system. In contrast to patterns of utilisation of the traditional medical system, these findings suggest that the choice of seeking treatment from the transitional and the modern medical system is the result of individual decision-making. Following the household size, the composition of each household appears to significantly influence local patterns of health care utilisation behaviour. In general, households with children or grandchildren make considerable use of the traditional medical system. To some extent, these findings are in line with the differences in household size, as households with 4 or more members are likely to be constituted by parents and their children.

Although gender has not been identified as a significant determinant of local patterns of health care utilisation behaviour among the study population, the statistical results are in line with earlier research conducted elsewhere in Crete and Greece, which demonstrated that more women than men seek treatment from the transitional medical system (*cf*. Arnold 1986; Legel 1998; Tzimis & Kafatos 1999; Sleath *et al*. 2001; Geitona *et al*. 2007).

In contrast to gender, people's age is identified as a strongly significant determinant of patterns of health care utilisation behaviour across the sample population. The results of this research show that younger inhabitants contact the traditional medical system more frequently than inhabitants aged 56 and more. To some extent, these findings may be a natural consequence of the recent trend among young people towards moving or returning to rural areas, not at least in order to live with family members, which is reinforced by economic instability and growing rates of unemployment among the younger population. Hereafter, younger community members may develop a new interest in traditional, locally available and more affordable, forms of medical treatment. In this respect, a previous study conducted in Kastellos in the Prefecture of Rethymnon similarly indicated that young inhabitants make substantial use of MAC plants, thereby relating these findings to the increasing number of young people living in rural areas and to a renewed interest in MAC plants among young people (*cf*. De Vries 2007).

Hereafter, the present study moreover demonstrates that inhabitants aged 56 and more contact the transitional medical system more frequently than younger inhabitants (*cf*. Sleath *et al*. 2001). The findings are in line with the results of a recent study conducted in rural Crete on patterns of prescribing, which revealed that patients aged 72 and more generally use a higher number of medicines on prescription than younger patients (*cf*. Antonakis *et al*. 2006) (8.2). Likewise, research carried in Crete on practices of medicine utilisation showed that around one-third of medicines are prescribed to older individuals (*cf*. Tzimis & Kafatos 1999). To some extent, Antonakis *et al*. (2006: 6) related the increased use of prescribed medicines among older patients to '*different attitudes towards drug therapy, both among doctors and patients*'.

The diverse patterns of health care utilisation behaviour developed by the study population across age groups are somewhat in line with the differences in household size and household composition (*cf*. Van den Akker 2002). Households with four and more members, as they make substantial use of the traditional medical system, are likely to be constituted by parents and their children. Furthermore, household members, whose nature of relationship to the household head is that of a grandchild or child, appear to contact the traditional medical system rather frequently. On the other hand, survey respondents, whose nature of relationship to the household head refers to parent, contact the transitional medical system rather frequently.

In contrast to the rates of utilisation of the traditional and the transitional medical system, contacts with the modern medical system are rather evenly distributed among age groups of the sample. Earlier research conducted elsewhere in rural Crete and Greece similarly produced rather ambiguous results regarding the influence of age on people's use of the modern medical system. On the one hand, these studies reported that young people widely consider MAC plants as old-fashioned and hereafter contact modern health care facilities more frequently than older inhabitants, who continue to seek treatment primarily in the form of components of the

traditional medical system. Concurrently, the studies furthermore highlighted that certain, notably locally available, MAC plants are, nevertheless, used by both older and younger inhabitants. On the other hand, previous research indicated that older, particularly female, community members visit modern health care institutions more frequently than younger inhabitants, who seek treatment from the modern medical system only for particular diseases. Hereafter, the studies moreover explained that older inhabitants widely appreciate the vicinity of the rural health post and hereby seek treatment from the modern medical system more regularly than younger community members (*cf*. Koutis *et al*. 1991; Van Bommel 1993; Hagoort 1998; Dijkstra 2005; De Vries 2007; Geitona *et al*. 2007). Overall, the determining effect people's age has on patterns of health care utilisation behaviour can be related to differences in morbidity among age groups. In this respect, the frequent use of prescription medicines by older patients, which is reported in a recent study carried out in Crete, is explained with the experience of multiple and more severe diseases among older inhabitants (*cf*. Antonakis *et al*. 2006).

In general, people's level of education has not been identified as a significant determinant of patterns of health care utilisation behaviour among the sample population (*cf*. Van den Akker 2002; Palstra 2003). Nevertheless, an earlier study conducted in Kastellos in the Prefecture of Rethymnon revealed that inhabitants, who completed a higher level of education, make substantial use of MAC plants (*cf*. De Vries 2007). In the research area, respondents, who completed a level of secondary education, contact the traditional medical system more frequently than respondents, who received only primary education or no formal education at all. The present study moreover shows that 'patients', who have not entered a level of formal education or have completed a level of primary education, contact the transitional medical system more frequently than 'patients', who have completed a level of secondary or post-secondary education. Likewise, a considerable number of 'patients', who did not receive any formal education, use the modern medical system (*cf*. Van Beelen 1990). Hereafter, the present analysis links up with earlier research carried out elsewhere in rural Crete, which demonstrated that community members, who did not complete primary education, contact the modern medical system and particularly private health care facilities rather frequently. Overall, these findings suggest that patterns of utilisation of the traditional medical system involve higher levels of education among 'patients' than patterns of contact with the transitional and the modern medical system.

The statistical analysis of the present data distinguishes the marital status of the respondents as a significant determinant of patterns of health care utilisation behaviour. In particular, 'patients', who are married or co-habiting, appear to contact the traditional medical system more frequently than respondents, who are single or widowed. On the other hand, single or widowed community members use the transitional and the modern medical system more regularly than inhabitants, who are married or co-habiting. In line with the determining effect of the household size, these results suggest that patterns of use of the traditional medical system follow an exchange of knowledge between spouses or domestic partners, while patterns of contact with the transitional and the modern medical system are the result of individual decision-making. Overall, the identification of household size, household composition, age and marital status as significant determinants of people's behaviour indicates that 'patients', who live with their partners and children, seek treatment primarily from the traditional medical system. In this way, the choice of treatment may be affected by financial circumstances, whereby the components of the traditional medical system are generally more affordable and hereafter favoured by the members of multi-member households.

Finally, this research demonstrates that people's occupation has a significant influence on patterns of health care utilisation behaviour. In view of the differences in household size, household composition, age and marital status, it can be understood that a considerable number of 'patients', who are not in labour force or are students, use the traditional medical system rather frequently. The different types of professions, which provoke contacts with the traditional medical system among the community members, furthermore appear to link up with differences in the level of education. It can be assumed that the occupation of insurance agent as well as

head officer or researcher involves a higher level of education, which results in the increased use of the traditional medical system. Furthermore, providers of food, beverage and accommodation to some extent rely on natural products and may consequently be more likely to seek treatment from the traditional medical system. The overall patterns of health care utilisation behaviour developed by study population, whereby 'patients' seek treatment from the transitional medical system more frequently than from the traditional or the modern medical system moreover support the finding that human health and social workers contact the transitional medical system rather frequently.

Following the different determinants of people's health care utilisation behaviour, which have been identified in the block of socio-demographic factors, the quantitative analysis of the present data moreover reveals that people's knowledge of the traditional medical system to a considerable extent influences the choice of treatment. In general, an overwhelming majority of 'patients' of the sample demonstrate much knowledge of the traditional medical system. In this respect, 'patients', who have considerable knowledge of the traditional medical system, contact the traditional medical system more frequently than 'patients', who hold little or average knowledge of the traditional medical system (*cf*. De Vries 2007). On the whole, the results suggest that patterns of utilisation of the traditional medical system are embedded in people's knowledge and understanding of the different components of the traditional medical system. In this way, 'patients', who use the traditional medical system, appear to rely primarily on their own knowledge of the different forms of treatment available within the traditional medical system (*cf*. Van de Kerk 1993). The statistical analysis moreover highlights that 'patients', who demonstrate little knowledge of the traditional medical system contact the transitional medical system more frequently than 'patients', who have much knowledge of the traditional medical system. Hereafter, it can be assumed that a limited knowledge of the traditional medical system advances patterns of utilisation of the transitional medical system (*cf*. Van den Akker 2002).

Apart from people's knowledge of the traditional medical system, the results of the analysis indicate that people's knowledge of the modern medical system similarly influences patterns of health care utilisation behaviour. Nevertheless, the findings show that 'patients', who have much knowledge of the modern medical system, contact the modern medical system less frequently than 'patients', who demonstrate average or little knowledge of the modern medical system. In contrast to patterns of utilisation of the traditional medical system, these results imply that patterns of utilisation of the modern medical system are not directly related to people's knowledge of the different forms of treatment available within the modern medical system. In other words, contacts with the modern medical system appear to be somewhat disconnected from the individual and communal understanding of the different components of the modern medical system.

In addition to the extension of knowledge of the traditional as well as the modern medical system, people's opinion on the transitional medical system is identified as a weakly significant determinant of patterns of health care utilisation. Overall, 'patients', who have a positive opinion on the transitional medical system, contact the transitional medical system more frequently than 'patients', who hold a negative opinion on the transitional medical system. In general, these findings show that patterns of utilisation of the transitional medical system to a certain extent follow people's positive attitude towards the different forms of treatment available within the transitional medical system. In other words, it appears that the use of commercial pharmaceutical medicines, rather than of components of the traditional and the modern medical system, appeals to people's opinion on the different forms of treatment available. Hereafter, the extensive use of the transitional medical system may follow people's trust in the healing power of pharmaceutical medicines. In this respect, an earlier study conducted in Crete indicated that local inhabitants to some extent share the belief that treatment in the form of pharmaceutical medicines is less erroneous than treatment provided by a health care provider (*cf*. Arnold 1986). In contrast to people's opinion on the transitional medical system, people's opinion on the traditional and the modern medical system have no influence on the choice of treatment among the study

population. In this way, the present research is in line with a study on people's use of alternative medicine carried out in the United States, which similarly highlighted that negative attitudes towards modern forms of medicine do not influence patterns of use of alternative forms of medicine (*cf*. Astin 1998).

In addition to the determinants of patterns health care utilisation behaviour, which have been specified in the block of psycho-social factors, statistical analysis indicates that people's behaviour is moreover influenced by the amount of annual income of each household. On the whole, 'patients', who have an annual household-income of 10.000 Euro or less, contact the traditional medical system less frequently than 'patients', who have an annual household-income between 31.000 and 40.000 Euro. Accordingly, 'patients' with an annual household-income between 31.000 and 40.000 Euro use the transitional medical system less frequently than 'patients' with a lower income. Overall, these findings demonstrate that contacts with the traditional medical system, as it is generally more affordable, are not necessarily linked to a low annual household-income. Concurrently, 'patients' with an annual household-income of less than 10.000 Euro use the modern medical system rather frequently. Hereafter, this research is line with a study conducted in Greece, which revealed that low-income individuals visit primary health care facilities' rather regularly (*cf*. Geitona *et al*. 2007). Nevertheless, 'patients', who have an annual household-income between 31.000 and 40.000 Euro as well as above 40.000 Euro, similarly contact the modern medical system more frequently than 'patients' with a lower annual household-income. The results indicate that 'patients' with a higher annual household-income tend to seek treatment from the modern medical system, thereby suggesting that 'patients' need to have the financial means to contact the modern medical system. In this way, the present study links up with an earlier study carried out in Crete similarly demonstrated that patterns of consultation with medical specialists are more common among higher income groups (*cf*. Davaki & Mossialos 2005). Overall, it is, however, highly likely that the overwhelming number of 'patients' of the sample, who are covered by health insurance, overshadows differences in the annual household-income across the sample population.

In addition to the annual income of each household, the amount of annual expenses for health care of each household appears to somewhat influence patterns of health care utilisation behaviour among the sample population. In line with the findings related to the annual household-income, the quantitative data show that there is no linear trend among the distribution of the amount of annual expenses for health care over the choice of treatment. In this respect, it can be assumed that the overwhelming number of 'patients' of the sample, who are covered by health insurance, similarly overshadows differences in the amount of annual expenses for health care. Nevertheless, the results of the statistical analysis of the present data moreover highlight that 'patients', whose annual expenses for health care are within the range of 751 and 1.000 Euro, contact the modern medical system more frequently than 'patients', whose annual expenses for health care remain below 250 Euro. Hereafter, this study follows previous research conducted in rural Greece and Crete, which showed that patients would refrain from contacting the modern medical system in order to avoid great expenses (*cf*. Blum & Blum 1965; Arnold 1986; Clark 2002).

Although the type of health insurance has not been identified as a significant determinant of people's health care utilisation behaviour, the distribution of variables indicates that 'patients', who are insured with OGA, contact the traditional medical system more frequently than 'patients', who are insured with IKA or OPAD. Since OGA covers mostly employees of the agricultural sector, these findings point out that contacts with the traditional medical system are more common among 'patients', who are familiar with the natural environment and its resources. Hereafter, the 'patients' of the sample, who are not covered by insurance, make considerable use of the transitional medical system. The findings suggest that individuals, who have to pay for their medical treatment, do not automatically resort to seeking treatment from the more affordable traditional medical system. In this way, this research follows a previous study conducted in Greece, which highlighted that individuals, who are not covered by health

insurance, visit secondary modern health care facilities rather frequently (*cf*. Geitona *et al*. 2007). Since the present study has found no significant association between people's socio-economic status and the choice of treatment, it links up with earlier research carried out in Spili and Kastellos in the Prefecture of Rethymnon, which similarly showed that patterns of utilisation are largely independent from people's SES (*cf*. Van den Akker 2002; De Vries 2007).

Following the block of enabling factors, the block of perceived morbidity factors is identified as offering rather strongly significant determinants of patterns of health care utilisation among the study population. In particular, the self-reported health status of each patient influences patterns of behaviour in a way that 'patients', who report a good health status, contact the traditional medical system more frequently than 'patients', who reportedly have an average or poor health status. Since the quality of medical treatment received from the traditional medical system is perceived to fairly positive, these findings are in line with the results of a study conducted in Greece, which found that people's self-rated health status is positively related to satisfaction with treatment (*cf*. Geitona *et al*. 2008). Accordingly, 'patients', who report a poor or average health status, use the transitional or the modern medical system more frequently than 'patients', who have a good health status. In this way, the present research links up with previous studies conducted in Crete and Greece, which indicated that the use of the modern medical system correlates with people's self-reported health status. In particular, the results of research carried out in Greece similarly indicated that individuals, who reportedly have a good health status, are less likely to visit modern health care facilities (*cf*. Al-Windi *et al*. 2000; Davaki & Mossialos 2005; Geitona *et al*. 2007). In general, the results of the present analysis suggest that contacts with the traditional medical system follow a somewhat 'holistic' approach to disease treatment, as it centres on people's health rather than on a state of ill-health. Since patterns of utilisation of the traditional medical system involve mainly practices of self-care, the findings moreover indicate that a good general health status to some extent forms a prerequisite for applying forms of self-treatment. On the other hand, 'patients' with a generally poor or average health status are more likely to consult a health care provider, notably a representative of the transitional or the modern medical system.

In addition to people's health status, the category of the disease, which was reported by the patient, strongly determines people's choice of treatment, thereby revealing that certain types of diseases are exclusively treated by one particular medical system. Patients, who experienced an episode of the 'evil eye', a disease of the skin and/or subcutaneous tissue, the common cold, a certain infectious or parasitic disease, abdominal and/or pelvic pain or a disease of the digestive system, contact the traditional medical system more frequently than 'patients' suffering from diseases such as heart diseases, diseases of the nervous system or neoplasms (*cf*. Eisenberg *et al*. 1993; Balick & Cox 1996). In this respect, earlier studies carried out elsewhere in rural Crete similarly reported that conditions such as the common cold, abdominal pain, skin infections, abnormal symptoms, including throat ache and headache, as well as the 'evil eye' are primarily treated with components of the traditional medical system (*cf*. Arnold 1986; Van Beelen 1990; Van der Hoeven 1992; Van de Kerk 1993; Van den Akker 2002; De Vries 2007). Since patterns of utilisation of the traditional medical system appear to be embedded in local systems of knowledge and understanding, the findings of the analysis indicate that patients contact the traditional medical system upon the experience of illness episodes, which knowingly can be treated with components of the traditional medical system. Conditions such as the common cold or abdominal and/or pelvic pain, for example, are among the most commonly reported illnesss in the research area, thereby suggesting that community members are fairly regularly confronted and hereby familiar with the conditions. Hereafter, the traditional medical system is commonly contacted upon the experience of illnesses and symptoms, which are locally specified, such as skin diseases and the 'evil eye'. In this respect, Blum & Blum (1965) similarly observe that patients refrain from consulting modern health care providers, who largely deny folk traditions, when suffering from diseases, which are classified on the basis of local concepts of health and illness. In contrast to these findings, it, however, appears that the 'patients' of the sample contact

the traditional medical system in a way to seek treatment for symptoms, signs or abnormal clinical or laboratory findings not elsewhere classified, such as vertigo, diarrhoea and vomiting. The results imply that 'patients' have a certain confidence in the traditional medical system and hereby use its components when suffering from symptoms or signs, which are not specified.

Concurrently, 'patients', who suffered from a mental and/or behavioural disorder, a congenital malformation, an elevated blood glucose level, essential (primary) hypertension or another disease of the circulatory system, a disorder of the thyroid gland or metabolic disorder, a disease of the ear or a disease of the genitourinary system, use the transitional medical system more frequently than 'patients', who experienced a common cold or abdominal and/or pelvic pain, for example (*cf*. Van de Kerk 1993; Geitona *et al*. 2008). In line with these findings, previous research conducted in Spili, Crete, demonstrated that patients commonly contact the transitional medical system in order to receive treatment for episodes of high blood pressure and soft tissue disorders (*cf*. Van Beelen 1990; Van den Akker 2002). In the research area, 'patients', who experienced a neoplasm, a disease of the eye and/or adnexa, an accident, symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified, a disease of the ear, a disease of the muscoskeletal system and connective tissue or a disease of the respiratory system other than the common cold, contact the modern medical system more frequently than 'patients' suffering from conditions such as the common cold or an elevated blood glucose level (*cf*. Kontarakis *et al*. 2011). The findings link up with studies conducted in Spili and Sellia, Crete, which showed that diseases of the respiratory system, such as influenza, or diseases of the muscoskeletal system and connective tissue, including arthritis and rheumatism, are mainly treated with components of the modern medical system (*cf*. Van Beelen 1990; Van der Hoeven 1992; Van de Kerk 1993; Van den Akker 2002). Likewise, research conducted in Greece demonstrated that patients visit rural health centres when experiencing cough or other conditions related to smoking as well as diseases of the muscoskeletal system and connective tissue, which are the result of heavy work (*cf*. Mariolis *et al*. 2008).

In addition to the category of the reported illness, the severity of the illness episodes, which is reported by the 'patients', acts as a strongly significant determinant of patterns of health care utilisation in the research area (*cf*. Dijkstra 2005). In particular, 'patients', who reportedly suffered from a non-severe illness episode, contact the traditional medical system more frequently than 'patients', who experienced a mildly, moderately or highly severe illness episode. In this way, the present study follows previous research carried out elsewhere in rural Crete, which showed that illnesses, which are treated with components of the traditional medical system, are generally perceived to be not severe (*cf*. Van der Hoeven 1992; Van de Kerk 1993; Van den Akker 2002; De Vries 2007). On the basis of these findings, it can be assumed that 'patients' use components of the traditional medical system in a way to not only treat non-severe illness episodes, but also to promote health and prevent disease in general (*cf*. Eisenberg *et al*. 1993; Al-Windi *et al*. 2000; Sleath *et al*. 2001). On the contrary, 'patients', who suffered from an illness episode, which was perceived to be moderately or highly severe, use the transitional and the modern medical system more frequently than 'patients' experiencing a non-severe illness episode. Likewise, the findings are in line with earlier studies conducted elsewhere in rural Crete, which highlighted that contacts with the transitional and the modern medical system largely follow the experience of diseases, which are perceived to be rather severe (*cf*. Van der Hoeven 1992; Van de Kerk 1993; Legel 1998; Molenaar 1999; Dijkstra 2005; De Vries 2007). In this respect, a previous study conducted elsewhere in rural Crete explained that patients are to some extent afraid of treating non-severe conditions with pharmaceutical medicines, which are regarded as an appropriate method of treatment of rather severe illness episodes. Hereafter, Slikkerveer (1990) elaborates that the patients' habit of contacting the modern medical system in order to receive treatment for illnesses, which are perceived to be rather severe, adds significance to local classifications of illness.

The results of the present data analysis moreover show that the duration of the reported illness episode forms a strongly significant determinant of local patterns of health care utilisation. In this respect, 'patients', who reportedly suffered an acute illness episode, use the traditional medical system more frequently than 'patients' experiencing a chronic disease. Earlier research, which was conducted elsewhere in rural Crete, similarly demonstrated that the traditional medical system is commonly contacted upon the experience of acute diseases (*cf*. Van Beelen 1990; Van der Hoeven 1992; Van de Kerk 1993; Van den Akker 2002; De Vries 2007). To some extent, the fact that 'patients' contact the traditional medical system in a way to receive treatment for primarily acute rather than chronic illness episodes supports the notion of confidence, which community members appear to have in the traditional medical system. On the other hand, 'patients' experiencing a chronic illness episode contact the transitional and the modern medical system more regularly than 'patients', who suffered from an acute disease. The findings are similarly supported by previous studies carried out in Greece and elsewhere in rural Crete, which revealed that chronic diseases are primarily treated with components of the transitional or the modern medical system (*cf*. Legel 1998; Van den Akker 2002; De Vries 2007; Geitona *et al*. 2008). Overall, the considerable number of significant determinants of patterns of health care utilisation behaviour, which have been identified in the block of perceived morbidity factors, highlight that the present study has a strong medical dimension. In other words, the choice of treatment is strongly influenced by the general health status of the patient as well as by the type, severity and duration of the reported illness experienced by the patient.

In addition to the block of perceived morbidity factors, the accessibility of institutions of the traditional as well as to the transitional medical system within the block of institutional factors acts as significant determinant of people's health care utilisation behaviour. In particular, 'patients', who perceive the accessibility of institutions of the traditional medical system to be either very difficult or difficult, contact the traditional medical system less frequently than 'patients', who consider the accessibility of institutions of the traditional medical system to be easy. In general, the results show that a number of community members may encounter difficulties in accessing institutions of the traditional medical system and choose to seek treatment from the transitional or the modern medical system instead. In this respect, it is probable that difficulty in accessing the institutions in based on factors of distance, transportation and general availability of institutions of the traditional medical system, as it is rather scarce. Furthermore, it is likely that the absence of clear trend among the results is related to the substantial number of 'patients' of the sample, who reported that there are no institutions of the traditional medical system.

Hereafter, the 'patients' of the sample, who reported that the accessibility of institutions of the transitional medical system is rather difficult, tend to contact the transitional medical system less frequently than inhabitants, who perceive the accessibility of institutions of the transitional medical system to be very easy. Concurrently, community members, who report that the accessibility of institutions of the transitional medical system is very easy, seek treatment from the traditional or the modern medical system rather frequently. On the whole, the results indicate that certain factors related to the institutional availability of the transitional medical system other than the geographical accessibility of its institutions may influence the patients' decision to seek treatment from the transitional medical system. The perceived general availability and easy accessibility of institutions of the transitional medical system in the research area may, for example, limit the local inhabitants' interest in commercial pharmaceutical medicines. Furthermore, the patterns of behaviour may be a result of people's lack of familiarisation with institutions of the transitional medical system, which have only recently been established in rural Crete (*cf*. Koutis *et al*. 1991). In this respect, a previous study conducted elsewhere in rural Crete demonstrated that the curative quality of MAC plants is particularly valued among older generations, as they had to cope with a fairly limited access to modern health care facilities. Although the accessibility of institutions of the modern medical system has not been identified as a significant determinant of people's health care utilisation behaviour, previous studies

conducted in Crete and Greece showed that accessibility, availability and distance of institutions of the modern medical system as well as difficulties in transportation and travelling, particularly in mountainous regions, present possible reasons for patterns of under-utilisation of the modern medical system (*cf*. Koutis *et al*. 1991; Hanepen 1997; Hagoort 1998; Clark 2002; Dijkstra 2005; Trigoni *et al*. 2008; Oikonomidou *et al*. 2011).

Within the block of intervening factors, the perceived impact of the current economic situation on local patterns of health care utilisation behaviour is identified as a significant determinant of local behavioural patterns. In other words, the findings of the present analysis indicate that the everyday life of community members is to a considerable extent influenced by current economic developments in the research area and beyond. The 'patients' of the sample, who perceived the impact of the current economic situation to be rather high, use the traditional medical system more frequently than the transitional medical system. The current economic situation may, for example, have an impact on the amount of annual household-income and expenses for health care and hereby on the interest of local inhabitants in more affordable forms of medical treatment. Furthermore, economic developments may alter the composition of households, as inhabitants of urban areas return to rural areas to stay with their parents, and may hereafter moreover influence local distributions of age, education and occupation. The results of the analysis have shown that 'patients', who live in multi-numbered households, are of younger age, have completed a level of higher education and practice a profession, which requires a higher level of education, contact the traditional medical system fairly extensively. Likewise, the current economic situation may have an impact on the availability and accessibility of, particularly modern and transitional, health care institutions, thereby provoking community members to contact the traditional medical system. Nevertheless, the findings of the present analysis moreover demonstrate that 'patients', who perceive the impact of the current economic situation to be high, use the transitional medical system fairly regularly. Concurrently, it appears that community members, who report that the impact of the current economic situation is very high, rather frequently seek treatment from the modern medical system. In this respect, it can be assumed that economic developments influence the general health status of the population, whereby people experiencing a poor health status contact the transitional and the modern medical system more frequently than people enjoying a good health status. Furthermore, it is likely that economic instability has an impact on the prevalence of certain diseases in the research area, such as mental and/or behavioural disorders, as they are exclusively treated with components of the transitional medical system.

8.3.3 Influence of Qualitative Factors on Behavioural Patterns

In addition to the different determinants of patterns of health care utilisation behaviour developed by the sample population, which have been identified by means of quantitative data analysis, the qualitative data collected in the course of this study offer a number of additional explanations for behavioural patterns. While qualitative research served the identification of possible determinants of people's behaviour during the initial stages of this study, the results of the statistical analysis hereby support the qualitative findings, including the identification of factors as determinants.

Although people's opinion on the traditional medical system is largely positive, patterns of under-utilisation of the traditional medical system, for example, can be interpreted as a result of a underlying lack of confidence in the traditional medical system, as it is believed to be largely old fashioned. In this way, the transitional and modern medical system are considered to be superior to the traditional medical system, whereby highly educated health care providers and newest forms of medical equipment are believed to reveal better results in medical treatment than the components of the traditional medical system (*cf*. Arnold 1986). Patterns of over-utilisation of the transitional medical system can be explained on the basis of local customs, such as: (1) visits to the modern health care provider for the sole purpose of receiving a prescription; and (2)

provisions of medicines through the mediation of a third person. As Lionis & Philalithis (2008: 320) elaborate: *'This custom and the dispensation of drugs over-the-counter encourage overuse of medication, as evidenced by the high proportion of outpatient antibiotic consumption in Greece*'.

On the other hand, the overall under-utilisation of the modern medical system can be related to demands of the social network, which appears to play a significant role in the everyday life of community members in rural Crete. In this way, patients are likely to refrain from visiting modern health care institutions because of feelings of embarrassment or in order to avoid feelings of envy and competition among fellow community members (*cf*. Blum & Blum 1965; Van de Kerk 1993; Hagoort 1998; Trigoni *et al*. 2008; Oikonomou *et al*. 2011). As highlighted previously, a number of factors other than the geographical accessibility of institutions of the modern medical system, which are related to the institutional availability of the modern medical system, may moreover influence patterns of under-utilisation. Earlier studies conducted in Greece and Crete indicated that such factors may refer to: a shortage of medical personnel, equipment and supplies, particularly at rural health posts; long waiting hours; inconvenience; feelings of fear or mistrust experienced by the patients; as well as the patients' perception of the behaviour, reputation, kinship ties and religious and moral conduct of the modern health care provider (*cf*. Blum & Blum 1965; Clark 2002; Oikonomidou *et al*. 2011).

Notes

(8.1) In view of the fairly large size of the sample, the symmetry of the frequency distribution is assessed through its absolute values of skewness and kurtosis. In this way, a skew value of 2 and a kurtosis value of 7 have been chosen as upper thresholds for the variables included in the analysis. Consequently, any frequency distribution, which demonstrates values of skewness larger than 2 and values of kurtosis above 7, is identified as having a potentially adverse effect on variable correlations (*cf*. Field 2009).

(8.2) In line with these results, a study on the relationship between age, gender, well-being, symptoms of disease and the use of plant-based and pharmaceutical medicines as well as self-care products, which was carried out in a Swedish municipality, confirmed that patterns of use of prescribed medicine increase significantly with age, as these types of medicines are generally administered during the treatment of diseases affecting primarily older people (*cf*. Al-Windi *et al*. 2000).