

4. methodology

In this chapter, the research methodology will be discussed. The primary purpose of this study is to analyze the extent in which the preparation stage has any influence on the success of implementation of the strategic framework.

According to Jick (1979) qualitative and quantitative methods should be viewed as complementary rather than as two rivals. The use of multiple methods is called convergent methodology, convergent validation or triangulation (Jick, 1979). In other words, it is the combination of methodologies in the study of the same phenomenon. This makes the study more valid because two or more methods are used to exclude congruent data, so the findings will be more valid (Jick, 1979). Furthermore, triangulation is not only used for the validation of data, but it is also for a better understanding of the situation, because qualitative and quantitative findings can differ and so the combination of these two is necessary (Jick, 1979). According to Jick, often triangulation is used in studies but mostly only the quantitative data are highlighted.

For this thesis, data was collected over 3 months by having interviews and sending out questionnaires. The quantitative data of the questionnaire are described in chapter 5. The questionnaire became more meaningful, because the output of the interviews has helped and served partly as the basis of the questionnaire. The combination of qualitative and quantitative data allows more insightful results.

4.1 Research method

For the design of the questionnaire I have used the guideline of Hargie & Tourish (2000). The first step according to this guideline is to investigate the organizational aspects, because knowledge about the organization is essential for the design of a useful research questionnaire. The results of the first step can be found in the theoretical framework (chapter 2). The second step of this guideline is to define the research goals. According to Hargie and Tourish (2000), for each goal you can use different types of research or methodology. The aim of this study is to investigate the impact of the preparation stage on the success of the implementation of the strategic framework. The third step of this guideline of Hargie and Tourish is to define the appropriate measure instrument for this study. There are two options, you can either use an instrument that already exists or you can develop your own instrument. For this study I have chosen to develop two instruments, the semi-structured interview and the questionnaire. The reason for this is because I believe there are no standard questionnaires to measure the impact of the preparation stage on the success of the implementation, because each organization is comprised of unique characteristics. The advantage of developing your own instruments is that you will be able to modify the questions specifically to the characteristics that are relevant to your organization; in this case it will be the Department of Health. The final step of this guideline is to establish your measure instrument (Hargie & Tourish, 2000). Now it is time to use and launch the instrument to gather data.

To understand what have been the particular effects of the preparation stage on the success of implementation, a single case study research design will be used. In this case, the focus will be on the Department of Health, and the implementation of the strategic framework in controlling and preventing non-communicable diseases. The reason for choosing a single case study design will be explained below.

A single case design (or small-N) is a research design that is used for developing and evaluating public policies (Yin, 2003). It is also used for developing explanations for and testing theories of political phenomena (Yin, 2003 & Johnson and Reynolds, 2008). As Johnson and Reynolds has mentioned in their article, it is important to create a deeper understanding of causal processes of public policies and one of the major advantage of a single case study is that it may be useful to assess the statistical correlation between the dependent and independent variables. Furthermore the causal relationship between those could be analyzed (Johnson and Reynolds, 2008: 151). Another advantage is that less data is needed compared to a Large-N research design. Also, doing such a study can solve the black box of causality problem (Johnson and Reynolds, 2008).

However, doing a single case study brings some disadvantages, because of the generalization of the research. Many have criticized the external validity as problematic for such a research design (Golafshani, 2003). However, doing this study from the Chinese perspective, and only focussing on the Department of Health, generalization will be not a big issue, because the findings still can be useful for other health policies develop in Asia.

Thus, the overall objective of the thesis was to develop an instrument based on the preparation stage constructs in order to test the hypothesis that these constructs explain the success or barriers to policy implementation. Based on the literature review, a structured interview guide and questionnaire were developed, that aimed to identify the core constructs as critical determinants of the success of policy implementation.

A questionnaire was developed to capture organizational aspects as well as of implementation aspects. Questions were included about:

- Policy development process, such as who was involved and to what extent (e.g., were men and women equally involved in policy discussions, technical review teams, and policy leadership roles?)
- Knowledge of the intention of the policy
- Knowledge of the lead implementing organization and its capacity to implement the policy
- Availability of guidelines and other information needed for implementation
- Source and adequacy of funding to support implementation
- Determination of monitoring—ascertaining whether the policy/program was being monitored and, if so, by which organization
- Level of cooperation with other organizations (from high to low)
- The effectiveness with which the lead organization communicated with implementing organizations and the public
- Actions taken by key actors to affect the policy/program's implementation

As mentioned in the introduction of this chapter, in order to get an in-depth and reliable insight I have used data triangulation (Yin, 2003). For this study, three basic techniques have been used, namely the written documentation (analysis of literature); semi-structured interviews; and the questionnaire. The literature analysis specifically concerns government information of the Department of Health. The focus is especially on the strategic framework in implementing and controlling non-communicable diseases and the analysis concerns literature of the policy cycle theory, implementation theory and the organization theory.

To sum up, three basic techniques were used in data collection:

Written documentation to measure the level of implementation.

According to Campbell, this type of information been used as an "unbiased" measure of implementation. It is the so called objective information, and it is immune to error or misinterpretation (Campbell, 1966:53).

Seek the subjective evaluations of informants.

Those who are responsible for the development and implementation of the strategic framework. One disadvantage is that the data retrieved by using semi-structured interviews are clearly subjective and generally represent the "perceptions" of the respondents who are providing the information (Yin, 2003).

Properly constructed written questionnaire.

A questionnaire can be very accurate in measuring performance/outcome (in this case implementation). When using such an approach, more accurate assessments of organizations can be obtained by integrating and understanding the perspectives of those at the top, middle, and bottom of the organization (Schellens, Klaassen & de Vries, 2002). It is a data-collection manner that focuses on facts or opinions of the respondents.

The semi-structured interviews

Several interviews were conducted after the literature analysis. That is how it was possible to provide a detailed analysis of the process of implementation taking into account the perceptions of the interviewed participants. It is therefore important for the researcher to know the subject well and remain flexible in the situation. According to Valenzuela and Shrivastava, in-depth interviews are particularly useful for getting the story behind a participant's experiences. The interviewer can pursue in-depth information around the topic (Valenzuela & Shrivastava).

To help structure the interviews, a simple interview schedule was used. The personal interviews are semi-structured. This means it allows content to change depending on the individual being interviewed, and the nature of the issue (Eman, 1990). All interviews were not recorded on tape, in respect to the wish of the respondents. All respondents could choose to stay anonymous if they wished. Consistency is achieved by using some of the same questions in all interviews on the same issue. The questions of the semi-structured interview focus on the implementation of the strategic framework, background information of health care and political issues. It was not necessary to fully transcribe and then code the interviews.

In total, 14 interviews were held (See appendix 2). All the respondents were interviewed for at least 45 minutes, often longer. The findings on the interviews were used on a collective level.

The general gathering of data for this study was carried out in the months June and July 2009. Data gathering ceased in August 2009.

Questionnaire

A questionnaire was distributed per email among members of the organization. According to Hargie & Tourish (2000) this is the most used and cheapest way of collecting a lot of data in a short period. All respondents have had the same procedure. All of them were approached by email. A cover sheet on the questionnaire briefly explained the purpose of the survey and gave general instructions for completing it. Specifically, 5 indicators were included to measure organizational aspects. The items were scaled on the basis of five point Likert-scales asking policymakers to what degree a statement was definitely true or not true at all. Nearly all the questions in the questionnaire were structured so the respondents had to select one answer from a five point scale, in order to reduce bias in the statistics developed. Questions are ordered and formulated in a way that does not influence the answer of the respondents to subsequent questions. Respondents were given an opportunity to write additional comments if they chose.

SPSS for Windows, a statistical and data management programme for analysts and research was used for the entire analytical process. All data was generated quickly using powerful statistics tests. Furthermore, this programme has a high-quality tabular and graphical output, so that the results will be presented very clearly. The

results from the data analysis have enabled me to make smarter conclusions, more quickly by uncovering key facts, patterns and relations (SPSS)

4.2 Research Operationalization

After the extensive literature study the right instruments for this study have been chosen. Inventarization was done of which factors could possibly have an effect on the success of the implementation. Now it is time to make it all measurable, the operationalization. The following research question of this study is:

How crucial is the preparation stage for the success of policy implementation of the Strategic Framework in controlling and preventing Non-Communicable Diseases in Hong Kong?

The next step is to operationalize the constructs of the questionnaire, and I did so by formulating several questions (items) that have a connection with the concerning construct. As stated before, all items were scaled with the Likert-scale, and respondents could rate each item from 1 (to a low degree) – 5 (to a high degree). I have also added a section with background information, but not all respondents wanted to give their personal information, due to Chinese cultural differences. Some women did not want to give their age, and a few respondents wanted to stay anonymous, or I was only allowed to use their last names in this report. The complete questionnaire can be found in appendix 2.

The hypotheses were tested using a statistical program SPSS. Other statistical analyses are explained in chapter 5.

4.3 CREDIBILITY AND QUALITY OF RESEARCH FINDINGS

In this section the credibility and quality of the research findings will be presented. For qualitative and quantitative researches there are different meanings for validity and reliability. Both will be discussed in this section.

Validity and reliability in quantitative research

Reliability can be defined as the consistency of the measurement, or the degree to which an instrument measures the same way each time it is used under the same condition with the same subjects. In short you can say when you repeat the research, then the scores must be similar the second time. So the results must be consistent over time and the total population under this study must be represented accurately and when using the same methodology, the same results need to be reproduced, and then the reliability of the research instrument can be estimated (van Thiel, 2007).

Validity research was conducted on the basis of confirmatory factor analysis. This form of analysis examines whether the established constructs are reflected in the data. Items that reflected on other constructs or items that do not belong to the certain constructs will be removed. Before the factor analysis can be used, I have to check whether the data are suitable for the factor analysis by using the Kaiser Meyer Olin measure of sampling adequacy. A score of 1 indicates that a factor analysis can be useful for analyzing the data. A score of 0.50 or less indicates

that a factor analysis will not be very useful (UCLA Academic Technology Services, 2008). The results of these tests are described in chapter 5.

Another way is measuring the items with Cronbach's Alpha. Cronbach's alpha scores were computed with SPSS 16, and scores of at least 0.70 were regarded as evidence of reliability.

Threats to validity are (Yin, 2003):

- Respondents may choose socially desirable answers and report different relationships than they actually have
- The respondents may forget to mention certain exchange relations (forgetfulness may be systematic and produce bias)
- Wrong evaluation
- Wrong interpretation of the questions
- Interviewer effects

Feasibility:

- Efficiency of the method is an important advantage
- It is not very time consuming
- Large sample of the respondents can be included
- Tedious task (because hundreds of colleagues are involved)

One disadvantage of using triangulation, as mentioned before, is that it is hard to replicate such a study, because it is impossible to use the same mixed method package. So the external validity is a drawback of doing such a study. Also, triangulation may not be suitable for all research purposes and it can produce high time costs. But according to Jick (1979) it can stimulate to better define and analyze problems in organizational research.

5. Empirical Results

This chapter provides the empirical results of the statistical analysis that are executed in order to examine whether the four hypotheses can be confirmed or disproved. In this chapter, the results will be presented according to the structure of the questionnaire. In this study the main goal was to retrieve the data correctly. Second, it is important to test the data on consistency (Cronbach's Alpha). Third, with the KMO en Bartlett's test I could do a factor analysis in order to confirm 6 determinants. Whereupon I can do correlation and regression analyses to test the hypotheses.

In this thesis, the main objective is to prove that the preparation stage guarantee an appropriate implementation and that often 'obstacles' in the preparation stage causes the failure of achieving the initiated goals. With the conceptual model defined criteria has been defined by myself (several variables and their significance) for successful implementation of the strategic framework in controlling and preventing non-communicable diseases.

5.1 Reliability and validity

First, a detailed description of the respondents in this study will be given. Whereupon, the reliability and validity of this study will be discussed. Subsequently, a description of all variables used for the empirical analyses are given. Followed with a section of how the variables are correlated to each other, examined with the regression analyses of SPSS.

Respondents

This research was focused on a small population of Asian people in Hong Kong, namely the staff of the Department of Health. Due to the small amount of respondents, I was not able to generalize the results (van Thiel, 2007). The approach of the respondents went by email and phone-calls. The reason for choosing the email-approach is because its accessibility and the easy way of getting in touch with people. I have also chosen to phone the respondents to make an appointment because this is a direct way, which will get you immediate response. While conducting the research, one must keep in mind that not everyone is willing to cooperate to help you with the research. For this reason it was difficult for me to get a lot of respondents. The other reason for having a small amount of respondents is because the staff did not consist of many members. Therefore this study has 15 respondents, which are not enough to do statistical analyses with, and difficult to generalize. So one must keep in mind that the conclusions are just an indication and that only preliminary recommendations are given. Be cautious with the statements made in this thesis.

To get an insight of the demographic profile of the respondents, a frequency table (table 7) is made.

Variable	N (Respondents)	%
Sex		
- Men	7	46.7 %
- Female	8	53.3 %
Age		
- 16 – 25 year	0	0 %
- 26 – 35 year	9	60 %
- 36 – 45 year	3	20 %
- 46 – 55 year	2	13.3 %
- 56 year and older	1	6.7 %
Total	15	100 %

Table 7: Description of the respondents (n=15)

In table 7 you can see that the amount of men and women are almost equal. So you can see that 46.7% are men and 53.3% women. The majority of the respondents are in the age category of 26 – 35 years. The functions of the respondents are not included in the table, because of the inconsistency. When filling in the questionnaire, every respondent gave the wrong interpretation of the variable 'function'. Therefore different answers were given, which cannot be categorized.

One remarkable thing that has to be mentioned is that not every respondent, especially women, are willing to tell you the age. I have asked for the reason or this, and it is due to cultural differences that woman in Asia want to keep their age a secret. Therefore, I have used an age category to identify in which category they belong.

So now we can move on to the validity and reliability of this study. The population validity is important because it refers to the extent to which the findings of this study could be generalized to other populations of people. To do valid statements, a larger sample of respondents is required. So actually, the forthcoming analyses with SPSS (factor analysis, correlation and regression analysis) are technically not a good choice, because of the small sample size (n=15). Selecting the right respondents has a high impact on the results of this study. It is a valid way of understanding who the respondents are, and whether the respondents are representative. This could influence the findings.

The reason for preceding the statistical analyses with a small sample size is because of my motive in wanting to investigate the relationships how they possibly could be, in a larger group. I believe, a small sample size might be workable, as long as the survey is representative. Therefore a small sample size is adequate to work with in this study. But in general, the more respondents one has, the better it is for the research findings.

Reliability and validity

The validity of the instrument was tested with the factor analysis of SPSS. Validation with the factor analysis can be done in two ways: explorative and confirmative validity (van Thiel, 2007). By explorative validity, the defined constructs will be empirically analyzed whether these can be found in the data. The data tells us something about the variables and their relationship with each other. Items that do not belong to any construct or do belong to two or more constructs will be deleted. By confirmative factor analysis you put all the items in SPSS and then you get the factors. This is the output of the factor analysis (van Thiel, 2007). However, before doing a factor analysis,

the data must be applicable for factor analysis. I have used the Kaiser Meyer Olkin Measur of Sampling Adequacy in SPSS for checking the relevancy of the data. It gives an indication whether it is possible to divide the variables in factors. A score of 1 indicates that a factor analysis can be useful. A score of 0.50 or lower means that a factor analysis is not useful (van Thiel, 2007).

Reliability

Construct:	Items	Cronbach's Alpha	Reliable
Objectives	4	0.62	Average
Structure	7	0.78	Good
Communication	6	0.74	Good
Participation	7	0.81	Good
Coordination	9	0.78	Good
Desired outcome	2	0.69	Average

Table 3: Reliability of the 6 constructs: objectives, structure, communication, participation, coordination and desired outcome.

Looking at table 3, I can conclude that the instrument is reliable enough. The Cronbach's Alpha measures whether the items fit the current construct, by measuring whether the answers of the respondents are consistent or not. The rule is, when a construct has a score of 0.6 or higher, then it is reliable (van Thiel, 2007).

Validity

KMO and Bartlett test:

KMO measure of Sampling Adequacy	0.741
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Table 4: KMO en Bartlett's validity test of the measuring instrument

According to table 4 I can conclude that a factor analysis will be useful because the score of the KMO of sampling adequacy was higher than 0.5 (SPSS, 2004). Now a factor analysis could be executed with SPSS.

Confirmative factor analysis

As stated before, by confirmative analysis the question is asked whether the structure of the measuring is as supposed. In short you can ask, if you put all the items in the factor analysis, will you get the 6 parts as expected? The assumption that there will be six factors is confirmed by the factor analysis referring to the component matrix table 5.

	Component					
	1	2	3	4	5	6
Precise goals	,673					
Proper targets	,825					
Definition vision and goal	,642					

Clearness vision and goal	,738				
Importance variables	,517				
Initiative			,610	,609	,479
Employees			,674		
Routines			,509		
Clear rules/regulations			,510		
Instructions			,666		
Competence	,404		,514		
Involvement			,678		
Level of agreement		,572			
Apprehension		,619			
Support		,676			
Participation		,569			
Cooperation	,568	,539			
Reflection		,709			
Hierarchy communication		,463		,714	,488
Frequency				,642	,438
Rank				,382	
Communication medium				,722	
Planned communication				,643	
Resources				,621	
Influence				,622	
Reliability				,781	
Dependence on others					,654
Authority					,801
Orders					,632
Leadership				,431	,765
Flexibility					,741
Institutional context				,419	,698
Procedures					,579

Key activities							,688
Evaluation							,744

Table 5: Component Matrix of the factor analysis

Factor	% variance explained	Cumulative
1	7.87	7.87
2	16.43	24.30
3	11.97	36.27
4	9.95	46.22
5	35.13	81.35
6	6.98	88.33

Table 6: Factor analysis: % variance explained by the items

Furthermore, the results are satisfying, because it do consist of 6 parts and 6 factors which came out as a result. Therefore 88.3% of variance is explained (see table 6). So still 11.7% are not explained by the factors, but other factors that are not mentioned in this study might have declarative value for those unexplained factors. The table shows that 6 factors are confirmed, as have been expected before, so now we can move on with the 6 factors to do other analyses.

5.2 Descriptive statistics

In this section the descriptive results are described of the six factors: objectives, communication, structure, coordination, participation and desired outcome.

The hypotheses of this thesis are:

H1: The preparation stage that is in theory considered important for the success of the implementation will be seen as important in the actual implementation process.

H2: Coordination is the most important aspect of the implementation and has a significant effect on the success of implementation.

H3: There is a positive relationship between the variables participation and communication.

H4: There is a positive relationship between the variables structure and coordination.

Table 8: Descriptive statistics per item: construct Objective

Objective	N	Minimum	Maximum	Mean	Std. Deviation
Precise goals	15	2	4	3.42	0.61
Proper targets	15	1	2	1.91	0.76
Definition vision and goal	15	2	4	2.64	0.78
Clearness vision and goal	15	2	4	3.97	0.88

In table 8 you see the descriptive statistics of the construct objective. Here you can see how the respondents have answered the items of the construct objective. Precise goals (M=3.42) means that the respondents have rated the preciseness of the goals in the framework good. Targets that were set during the implementation (M=1.91) were proper according to the respondents, because they have rated this high. However, the definition of the vision and goals were lower than expected (M=2.64), but have been rated average by the respondents. The clearness of the vision and goal are very clear to the respondents, with a mean of 3.97.

In table 9 the descriptive results of the construct structure are given. Here you can see how the respondents have rated the items of the construct structure (see appendix 2, table 9). The initiative came mostly from the manager or higher level of direction (M=2.87). According to the respondents, there were clear rules and regulations for the implementation of the framework (M=1.84) and good instructions are given by the leaders (M=1.55).

In table 10, the descriptive statistics of the construct participation are given (see appendix 2, table 10). A question was asked about the involvement of the staff when developing the framework and they have rated this with M=3.33. This means the involvement was average, and this was not what I have expected, because the involvement should be rated higher. However, the level of agreement with the framework of the respondents are very high (M=4.50). This means they strongly agree with the content of the framework. The participation of the respondents are high (M=3.53). This means that most of the respondents are participating actively to implement the framework.

In table 11 (see appendix 2) the descriptive statistics of the construct communication are given. The internal communication has been rated well by the respondents. They have been asked about the frequency of communication with other colleagues and this have been rated with M=3.12. This means that they communicate with each other 1 to 3 times in a week. The medium mostly used by the respondents is rated with M=4.54. This means they regularly have meetings and discussions with each other.

In table 12 (see appendix 2) the descriptive statistics of the construct coordination are given. Respondents have indicated the reliability on other people with M=3.22. This means that they sometimes are dependent on others

to fulfill their tasks. The authority to make decisions is lower than I have expected (M=3.26). This means that the authority of respondents is average. They do not have the authority to decide. Remarkable is that leadership scored very high (M=3.93). This means that leadership plays a crucial role when implementing the framework.

In table 13 (see appendix 2) the descriptive statistics of the construct desired outcome are given. The key activities, as described in the framework are not fully implemented at the moment. With an M=3.17 it means that some key activities have been carried out during the implementation process. The evaluation of whether the activities are accomplished or not have been rated with M=1.89. This means that evaluation is important, and do occur in practice.

Hypothesis 2:

Based on their own experience in policy-making, the employees are asked to rate the elements of the preparation stage according to the ideal model on a 5-point Likert scale ranging from not very important to very extremely important (see table 8). The element *Coordination* (3.42) was considered most important in pre-departure training. *Participation* (3.22) came second and *internal communication* (3.11) came third in importance. The other elements ranged from somewhat important to important, with *Structure organization* (1.88) as the least important element from the list.

<i>Important elements of the preparation stage</i>	N	Mean	Std. Deviation
Clarity and coherence objectives	21	2.64	0.773
Internal Communication	21	3.11	0.724
Coordination	21	3.42	0.611
Structure organization	21	1.88	0.765
Participation	21	3.22	0.726
Desired outcome	21	2.00	0.615

Table 14: Descriptive statistics: importance of the factors objectives, communication, coordination, structure, participation, desired outcome.

According to table 14, hypothesis 2 can be confirmed, that coordination has been rated as the most important element of the preparation stage.

The literature stresses the importance of the formal structure of the organization. The formal structure of the organization is the single most important key to its functioning (Perrow, 1986). As described in chapter 2, Hill and Hupe stated that coordination and motivation are highly related to policy implementation. This also holds true for internal communication that came third in importance. According to Comtois Rodrigue & Slack, 2009, coordination and communication of the employees must be on the same distance in order to have a successful implementation. Therefore, the hypothesis can be accepted that *Coordination* will be considered the most important element in the preparation stage.

5.3 Regression model

Regression analysis is a method to investigate a linear relationship between declaring variable Y and one or more explanatory variables X (Moore & McCabe, 2005). To see whether there is a relationship between the two constructs regression analysis is performed with the statistical programme called SPSS. With the General Linear Model (regression analysis) I have tried to investigate whether there is a significant relationship between the constructs. Correlations between the variables were checked with SPSS looking at the Pearson's Correlation coefficients. The correlation coefficients significance at the 0.01 level are identified with a single asterisk (*), and those significant at the 0.05 level are identified with two asterisks (**).

Multiple regressions

It is important that the independent variables cannot strongly correlate with each other. If they do so then there is multicollinearity. In short this means that the independent variables measure the same so it is impossible to measure the effect of each variable separately. This threatens the validity of the research. Therefore I have made a correlation matrix to discover the strong correlations (SPSS, 2004).

Table 15: correlation matrix of the variables objective, communication, participation, structure, coordination and desired outcome.

	Objective	Communication	Participation	Structure	Coordination	Outcome
Objective	1					
Communication	0.134 0.225	1				
Participation	-0.113* 0.013	0.378* 0.014	1			
Structure	0.114 0.217	0.334* 0.024	0.521** 0.000	1		
Coordination	0.359* 0.021	0.398* 0.012	0.431** 0.001	0.445** 0.002	1	
Outcome	0.151 0.382	0.139 0.311	0.112 0.278	0.127 0.325	0.332** 0.025	1

* 0.01, ** 0.05

The correlation is the highest between the variables "structure" and "participation" with $r=0.521$. This means, when structure increases with 1 then participation also increases, but then with 0.521. There is no causal relationship, so this means that when the structure of the organization is well structured, then this do not necessarily lead to a more actively participation of the respondents. The variable "coordination" correlates high with all variables. Remarkable is that the variable "outcome" has a low Pearson's correlation, and that the scores are not significant also. The exception is that it does correlate with the variable "coordination", and that it is significant. This means that the coordination of the whole process has a significant and positive influence on the outcome of the implementation.

The Pearson's correlation between the variable communication and participation is $r = 0.378$. So communication has a positive and significant influence on the participation of the respondents. The findings also show that when the score of coordination increases, the communication between the respondents also increases ($r=0.398$).

A negative correlation ($r= -0.113$) between objective and participation means the better and clear the objectives are described in the framework and are made clear during the process, that this will lead to less participation. So an increase in the variable objective leads to a decrease of the variable participation. Remarkable is that I have expected the opposite, that when the better the objectives are, the higher the participation level will be. Though the negative Pearson's correlation is significant, the results may be biased due to the fact that there were only 15 respondents. So the answers could be biased. The variable "objective" also correlates low with other variables, except with the variable "coordination" where it has a Pearson's correlation of $r=0.359$ and it is significant. This means that the better the objectives are described; a more positive influence on the coordination will be established.

Now the correlations between the variables are measured, the next step is to do regression analysis. The difference between correlation and regression is that regression assumes a causal relationship between the variables. This means, it measures whether the independent variables causes the effect of the dependent variable. Pearson's correlation only shows us whether there is a positive or negative relationship between the variables.

The formula for the regression model is:

$$Y = \beta_0 + \beta_1 X_1 + \dots + \beta_6 X_4 + \epsilon,$$

with Y = Implementation success and X_1, \dots, X_4 = communication, participation, structure, coordination

To estimate this model it is needed to regress the data on the dependent variable. In this section I will do several regression analyses to confirm or reject the hypotheses.

In table 16 you see the results of the first regression analysis. With Y = Implementation Success and X = communication, participation, coordination and structure.

The R^2 indicates the amount of variance in the variable Y that is accounted for by the variation in the predictor variable X . In the multiple regression analysis, the set of predictor variables X_1, X_2, \dots is used to explain variability of the criterion variable Y (SPSS, 2004). It is important that the coefficients of the independent variables are significant in order to conclude that there is a significant influence on the dependent variable. The expectation is that the p-value will be smaller than 0.05. Because a p-value higher than 0.05 means that the x (independent variable) brings no contribution to declare the y (dependent variable).

Table 16 Results of the regression of Implementation Success on the independent variables Structure, Participation, Coordination and Communication. Significance levels at 1%, 5% and 10% are denoted by *, **, ***, respectively.

	Coefficients	Standard Error	Significance
Constant	1.645 (B)	0.46	0.002
Structure	0.56** (Beta)	0.12	0.029
Participation	0.52* (Beta)	0.20	0.004
Coordination	0.63** (Beta)	0.23	0.037
Communication	0.27 (Beta)	0.21	0.164
R ²	0.73		
F-stat	4.89		
P-value sig. f	0.00		

The significance shows which variables have significant influence on the dependent variable implementation success. With a significance level of 0.05, we see that the variables participation, structure and coordination are significant in this model. The variable communication is not significant with a p-value of 0.164. The three variables structure, participation and coordination explain 73% of the variance of the variable implementation success. This means that 27% of the model remains unexplained. The standard errors are included in the table because they are important. They reflect how much sampling fluctuation a statistic will show. The standard error depends on the sample size. The sample size in this study is n=15, so the standard error is 2.832. In general, when the sample size is larger, then the standard error is smaller.

The coefficients are all positive. This means, for example when structure increase with 1, then the implementation success increases with 0.56. So structure has a positive relationship with implementation success and it is significant. The variable communication has a p-value higher than 0.05. This means that it is not significant, so it has no effect on the variable implementation success. It brings no contribution to the success of implementation.

The r² shows how good the fit of the regression model is. It is the fraction of the variability in the response that is fitted by the model. Therefore I can conclude from the table that the variables participation, coordination and structure have a significant positive effect on the variable implementation success. The F-statistic (4.89) shows the whole significance level of the regression model. The p-value belongs to the F-statistic. The p-value is p=0.00, and therefore I can conclude that I have a significant and useful model and therefore hypothesis 1 can be confirmed, because all of the predictor variables are statistically significant.

Another regression is done with SPSS to answer hypothesis 3.

H3: There is a positive relationship between the variables participation and communication.

Table 17: Results of the regression of participation on the independent variable communication (n=15).

	R (Pearson's Correlation)
Communication	0.378
R ²	0.143
F-stat	2.803
P-value sig. f	0.006

The R² is 0.143, so this means that 14.3% of the variance of the participation of the respondents is explained by the communication. This is not much because 85.7% remains unexplained by the model. However, the p-value of 0.006, F = 2.803 shows that the model is valid. ANOVA means analysis of variance. But the most important is the significance of the R-square. The findings shows that the R² is significance because the p-value is lower than 0.05.

Conclusion:

Hypothesis 3 can be confirmed.

For answering hypothesis 4, another regression analysis has been done with SPSS

H4: There is a positive relationship between the variables structure and coordination

Table 18: Results of the regression of coordination on the independent variable structure (n=15).

	R (Pearson's Correlation)
Structure	0.445
R ²	0.198
F-stat	3.0552
P-value sig. f	0.328

The R² is 0.198, means that 19.8% of the variance of coordination is explained by the structure of the organization. The score is rather low, because this means that 80 % of the model remains unexplained. The significance p-level is 0.328 and this is too high to accept the model. This may be explained by the fact that the n-amount of respondents is very small (n=15). Therefore I have chosen to discuss the model, but no valid conclusions can be withdrawn from the model. The model shows that when the structure of the organization is well organized, then the better the coordination of the implementation process will be (r=0.445). This assumption is acceptable because when the structure of the organization is clear to people, people will know what tasks should be executed. This leads to better coordination, which will result in better implemented policy. Therefore, hypothesis 4 can be confirmed.

Because it is unlikely to put all the variables in one model to test the relationship of the variables with the y: implementation success, I will do three more regression analysis of the variables separately.