Assessment of Factors Influencing Business Process Harmonization
A Case Study in an Industrial Company

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Abstract: While process harmonization is increasingly mentioned and unanimously associated with several benefits, there is a need for more understanding of how it contributes to business process redesign and improvement. This paper presents the application, in an industrial case study, of a conceptual harmonization model on the relationship between drivers and effects of process harmonization. The drivers are called contextual factors which influence harmonization. Assessment of these contextual factors in a particular business domain, clarifies the extent of harmonization that can be achieved, or that should be strived at. From both qualitative, as well as some quantitative, assessment results, insights are being discussed on the extent of harmonization that can be achieved, and on action plans regarding business (process) harmonization and (IT) integration.

1 INTRODUCTION

The interest in process harmonization by researchers and practitioners has increased in the last years (Fernandez and Bhat, 2010), (Romero, 2014). The process of harmonization is considered as the elimination of differences and inconsistencies among processes in order to make them uniform or mutually compatible (Pardo et al, 2012). Harmonization of processes will lead to effective robust business processes (Siviy et al, 2008), cycle-time reduction and overall operational efficiency (Kumar and Harms, 2004). With process harmonization different business process domains can be integrated, their efficiency and performance can be improved. E.g. the reduction in the number of process variants decreases the costs of process maintenance and increases the agility towards process changes (Manrodt and Vitasek, 2004). However, recognizing similarities and differences between processes and identifying harmonization opportunities is difficult, in particular when dealing with processes in a multi-model environment. Therefore, a trade-off has to be distinguished between the costs and the benefits of striving at totally harmonized business process domains or allowing the business domains, and their processes, to have local relevant variations (Tregear,

2010). In (Romero, 2014) a conceptual harmonization model is presented on the relationship between drivers and effects of process harmonization. These drivers are called contextual factors. Assessment in a particular business domain, clarifies the extent of harmonization of business processes that can be achieved. This paper presents the application of the mentioned harmonization model in a case study in industrial practice, i.e. at DEKRA, an international certification body in The Netherlands. DEKRA is confronted with challenges regarding performance problems and inefficiencies in their testing and certification services. In conformance with their international business strategy, standardization, integration, and improvement are key strategic terms on the higher management levels of the multi-national company. Currently, one of the main questions is to what extent business process domains can, or should be, harmonized. Improvement projects in the recent past have shown that company-wide or even process domain-wide, improvement projects are time-consuming and limited regarding their effectiveness. The objective of the case study is three-fold: first, to investigate whether the conceptual harmonization model can be made operational in an industrial case study; second, to assess the contextual factors, which influence the extent of harmonization that can be achieved in the particular situation; and third, to

derive so-called focus areas for business (process) improvement. The structure of this paper is as follows. Section 2 introduces the conceptual harmonization model. In Section 3 the case study characteristics will be addressed. Section 4 presents the application and the validation of the conceptual harmonization model. Sections 5 and 6, i.e. lessons learned and discussion, finalize the paper.

2 THE CONCEPTUAL MODEL

The first part of the model, see Figure 1, distinguishes three different levels in the organizational context: external, internal and immediate. Each level includes a set of contextual factors. The second part presents six aspects of process harmonization which can be differentiated when evaluating the level of harmonization of business processes. These aspects have been derived from a set of indicators, as described in literature to measure the level of harmonization. Their interrelations with the contextual factors have been empirically investigated in case studies. The conceptual model suggests that when analyzing the effect of contextual factors, one should not only consider harmonization of a process as a whole, but also consider harmonization of particular aspects of a process. The third part concerns the elements of business performance that are affected by changes in the level of process harmonization, but this part is out of scope of this paper. See for more details on this part (Romero, 2014).
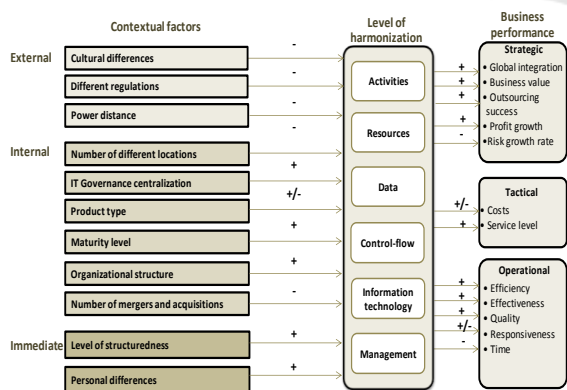

Figure 1: A conceptual model on process harmonization.

In this paper, our focus is on the first and second part of the model, which concerns the effect of contextual factors on different aspects of process harmonization. The external factors characterize the business network in which the organization operates

and that are beyond the control of an individual organization. Three external factors were identified: cultural differences, different regulations and power distance. (Ang and Massingham, 2007) discussed the greater the 'cultural differences', the greater the difficulty in knowledge transfer across cultures. There are mandatory and unavoidable variations that come from 'differences in regulations' such as financial regulations, taxation regimes, import/export regulations and employment practices (Tregear, 2010). 'Power distance' refers to differences in the relationship among firms in inter-firm collaborations. Organizations with low power distance have a higher level of integration, i.e. harmonization, of their business practices, while those with medium and high power distance had a low level of integration. Internal factors describe the internal environment of an organization. Seven internal factors are included in our model. It is expected in literature that a higher 'number of locations' decreases the level of process harmonization. However, the effect of multiple locations is not straightforward because it is mixed with other factors, such as 'legal requirements', 'personal differences' among individuals performing the same tasks in different locations and 'cultural differences' (Tregear, 2010). The second internal factor is 'IT governance centralization'. This factor leads to a higher level of harmonization, but in some cases the initial investment needed to centralize, e.g. IT infrastructure, is too high, and savings that can be achieved through process harmonization do not balance this investment (Buchta et al, 2007). 'Product type': more differences in products and services may require variation in the processes that create, deliver and maintain them (Tregear, 2010), suggesting a decrease in the expected level of process harmonization. 'Maturity level': it has been observed that organizations which perform better in their harmonization initiatives, have at least a moderate level of process maturity (Rosenkranz et al, 2010). 'Organizational structure' was also identified as an internal factor that exerts an influence in the level of harmonization (Girod and Bellin, 2011). Regarding the factor 'organizational structure', two dimensions have been identified from literature, respectively centralization and formalization (Romero, 2014). The aspects of centralization include: personal participation in decision making, hierarchy of authority, and departmental participation in decision making. Regarding organizational structure formalization four aspects are identified, including: job codification, job specificity, rule observation and written communication. The last internal factor is the number of 'mergers and acquisitions' that have taken

place in the organization. This factor definitely decreases the level of harmonization of business processes, by increasing the number of process variants that coexists. The harmonization of these variants consolidates processing volumes and allows the organization to exploit economies of scale. Finally, the immediate factors define the process under study, including: level of structuredness and personal differences. "Non routine processes are less applicable to harmonization than routine processes" (Rosenkranz et al, 2010). An argument to support this statement is that different parts of a process need to be open for creative decision making, while others have to meet legal requirements of different countries. There are also unstructured, unmeasured and unrepeatable processes that can lead to a low level of harmonization (Lillrank, 2003). The potential of a process to be successfully harmonized also depends on personal differences such as level of experience and knowledge of the people involved in the process. The lack of interpretative assessment via employees during a process suggests that harmonizing this process is possible and leads to a successful harmonization process. Regarding the six main harmonization aspects of business processes: activities refer to the level of harmonization of specific steps in the process. Control-flow measures the level of harmonization of the sequence of activities. Data measures the level of harmonization of input and output data used in the process. Information technology refers to the level of harmonization of IT systems. Management measures the harmonization of the process assessment, and resources refer to the level of harmonization of human resources involved in the process (Tregear, 2010).

3 CASE STUDY

3.1 Case Study Characteristics

Within the DEKRA business unit of Industrial Services, DEKRA Certification is active in three business domains, respectively Product Testing & Certification (e.g. certification of medical devices, consumer goods), Systems Certification (e.g. work safety, environmental and quality management systems), and Certification of Persons (which focuses on the independent testing and certification of technical and management staff in various business areas. The scope of the case study is on the business process domains of Systems Certification (SC), and the Certification of Persons (CP). The main business process within the SC domain includes order preparation, planning, auditing, corrective ac-tions and invoicing. These are carried out for the following SC services, respectively: (initial) certification, surveillance, recertification and decertification. The SC services result e.g. in certification of management systems (ISO9001 certificates), certification of quality management in hospitals (Dutch HKZ certificates) and certification of guidelines for construction companies (BRL certificates). CP has on a high abstraction level, i.e. the main business process, similar activities as SC, but is oriented on different types of services. In the CP domain the subjects to be tested and certified are not quality management systems, but technical and management staff in various technical business domains. These technical experts need to be assessed periodically, with respect to their skills and knowledge on work safety, e.g. in the energy supply domain. The basis for certification in the CP domain is the independent, reliable and fair examination of persons. The examinations are based on so-called certification schemes which reflect (international) criteria for certification. Although DEKRA Certification is responsible for the examination, these processes are being outsourced to independent examination institutes. In the CP domain the services include on the one hand the quality insurance of the examinations, the knowledge, expertise and behavior of examiners, the examination locations, and on the other hand the analysis of examination results, and the certification of persons. Over the last years the number of certified persons in the CP domain has increased rapidly, largely due to the energy market where safety is becoming an issue of increasing importance. Various certification processes for persons have been developed under time pressure and often independently from each other. Part of the CP processes is currently separately managed by different product experts and certification managers. Although there are similarities between the SC and the CP process domains, and also within both domains, the differences are increasing. In order to investigate directions for improvement, it was decided to assess the extent of harmonization that can be achieved, or that should be strived at, in the particular business domains.

3.2 Case Study Methodology

The case study distinguishes a preparation phase, a data collection phase and a data analysis phase. In the preparation phase the case study scope has been determined (i.e. SC and CP), the processes and their

differences and similarities have been investigated and the information sources have been defined. The objective of the preparation is to understand the existing processes. Due to the fact that the process descriptions of SC and CP differ, it was needed to model the current processes into a similar (BPMN) format to get a consistent reference frame for the interviews. Regarding data collection two types of information sources have been used: documents and interviews. The documentation included business presentations and process descriptions of the SC and CP business processes. Interviews have the benefit to specifically focus on the case study topic. The interviews were conducted using a pre-defined questionnaire (Romero, 2014). The questionnaire consists of three parts, respectively questions on organizational characteristics, questions to assess the contextual factors under study and questions to assess the process structuredness. The first part is on characteristics such as company type, size and age. This information can be used for comparison of data from previous or subsequent case studies. The second part of the interview assesses the contextual factors. Appendix 1 presents as an example the specific close-ended questions regarding the organizational structure (centralization and formalization) that were used to assess this factor and the Likert scales used, (Romero, 2014). The Appendix shows also the calculation of the assessment results of the factor organizational structure. The close-ended questions facilitate the comparability of data and of the data with previous literature. Also combined questions have been used, i.e. questions that start with a close-ended part and based on the choice made, additional explanations in an open-ended format are asked. The use of semi-structured interviews in this case study is motivated by the fact that this type of inquiry is exploratory and the interviews should allow for unexpected information, e.g. on assessment factor interpretations of the interviewees. While choosing the right type of interview is crucial, also the selection of the proper interviewees is critical. Considering the case study's research questions, we selected as key informants respectively experienced managers of the certification processes (i.e. product/service managers) and experienced operational certification experts (i.e. lead auditors). In the data analysis phase the assessment results have been analyzed and subsequently discussed and validated in workshop sessions with the four interviewees. In this phase also propositions, from previous case studies (Romero, 2014), on the interrelations between contextual factors and harmonization aspects have been used to derive conclusions. Subsequently per contextual factor, improvement actions have been defined and presented to the general management at DEKRA Certification. In the next section the case study results are presented and discussed.

4 THE CASE STUDY RESULTS

First we will reflect on the business process investigation which preceded the assessment of the contextual factors influencing harmonization. Then we will present the results of the application of the harmonization model. Subsequently we will address how actions for business process improvement have been defined.

4.1 Investigation of the Business Processes

The SC and CP processes have been analyzed, e.g. regarding the modeling languages used, the types of documents and their formats. The similarities and differences, have been discussed and validated with experienced managers in the particular DEKRA business domain. In the context of this case study we point to the following findings from the investigation. In the SC domain, certification services are carried out that are slightly different from each other, i.e. the different types of quality management system certifications (e.g. ISO, HKZ). However, the CP domain has emerged over the last five years with many new certification services which show many differences, both in structure and language. Although there exist on a high level of abstraction one main process model for certification (with defined activities), the SC and CP processes differ with respect to modeling language used, levels of detail in process elaborations, and document formats (i.e. work instructions, procedures). SC and CP also have different monitoring and control units. In SC monitoring and control is highly centralized (in a so-called Project Office). In CP this is different with many decentralized control units for the distinct certification services. Regarding the monitoring and control in the SC domain a 'Plan board' application is being used. However, this application system does not support the processes of the CP domain. Further, only the SC processes are modeled and visualized by process flows in the Quality Management System (QMS), an information system that serves as a support for the various certification experts (auditors, product experts and certification managers). The CP domain lacks visualized processes and the QMS only

contains CP standard document formats, procedures and work instructions. These findings from the process investigations were considered as a useful process reference framework for the execution of the semi-structured interviews.

4.2 Assessment of the Factors

Four semi-structured interviews have been carried out, i.e. two interviews with product/service managers and two with lead auditors. In the following we will, for each of the contextual factors, present and discuss the results of the assessment. To illustrate the analysis and the way we came to our conclusions, we will refer in the following for one of the internal contextual factors, i.e. organizational structure, in more detail to the collection of data and the calculation of the results from the close-ended interview questions.

Regarding the external contextual factors, 'Cultural differences' are considered as a factor which is of importance in case the scope of harmonization covers more countries or regions. However, this case study focuses at the particular SC and CP domains at DEKRA Certification. Both domains are monitored and controlled from one central management level at DEKRA Certification. Knowledge transfer on systems certification and certification of persons mainly takes place within the company in The Netherlands. As a consequence the contextual factor 'Cultural differences' does not influence the extent of harmonization that can be achieved. Regarding the factor 'Different regulations', the DEKRA domains SC and CP should meet different types of standards and requirements, e.g. as specified by the Dutch Council for Accreditation. For example, the processes of CP should meet the requirements defined in ISO/IEC 17024:2012, such as the security of examination data and the independability of examination processes. SC should meet other ISO/IEC standards, such as ISO9001 with respect to the quality monitoring and control of business processes and management systems. As a consequence the SC and CP processes show differences, both between and within the domains, and there is a danger of ending up with multiple variations of both SC and CP certification processes. Therefore, the factor 'Different regulations' influences negatively the extent of harmonization that can be achieved.

Regarding 'Power distance' both the SC and CP process domains are, at the highest management level, being monitored and controlled by the same management team. However with respect to the management of the SC certification processes the differences in customer relations cause differences in planning and control. In the SC domain particular customer types are allowed, to some extent, to determine the planning and the scheduling of the certification projects. Auditing and certification, in particular the timing aspects, are here to a large extent tailored to the needs and the wishes of the customer. However in the CP domain, auditing and certification processes are planned and scheduled only by the management team. These kinds of differences in 'Power distance' influence negatively the extent of harmonization that can be achieved at DEKRA Certification.

Regarding the internal contextual factors, both the SC and CP process domain are located at the same industrial area in The Netherlands. So, the factor 'Number of different locations' is 'low'. It also appeared that both domains are able to exchange auditors for particular types of auditing projects. Regarding the factor 'IT governance centralization' it became clear that although decision making regarding IT alignment at DEKRA is formally centralized, the IT landscape shows a rather scattered picture. The SC and CP process domains are partly supported by different systems, even in similar functional areas. This causes that, although IT-governance is formally centralized, there is a negative influence, from the scattered IT-landscape, on the extent of harmonization that can be achieved. Regarding the factor 'Product type', the domains SC and CP have different products (i.e. services) and customers in different market segments. E.g. certification of business systems only makes use of a restricted set of certification schemes, while for the certification of persons many (i.e. >50) certification schemes are being used. Also product/service innovation has different characteristics in both the SC (e.g. long-term, generic) and CP domain (e.g. mid-term, specific). It was concluded that different roles in both the SC and the CP domain are not yet sufficiently defined and implemented. As a consequence the factor 'Product type' influences negatively the extent of harmonization that can be achieved. The 'Maturity level', led to different scores for the SC and the CP domain. In the SC domain a process maturity level 3 was reached, e.g. based on the formal and stable system certification procedures in this domain. However in the CP domain, the process maturity reached is between level 1 and 2. This is caused by the fast growth of the domain over the last five years, and the large diversity of new certification schemes developed. As a consequence it was concluded that the restricted 'Maturity levels'

influence negatively the extent of harmonization that can be achieved. Regarding the factor 'Organizational structure', and its two dimensions centralization and formalization, the Appendix reflects some detailed assessment results to illustrate the close-ended questions as well as the calculation of the scores. The factor has been assessed on the basis of 11 sub-questions on centralization and 14 sub-questions on formalization. The 5-point Likert scale scores and the 4-point Likert scale scores, both derived from literature, are normalized in the Appendix. The score for centralization is 0.47, which is moderate. It could be concluded that there is an average hierarchical network that does not influence negatively the extent of harmonization. Looking at the score for formalization, i.e. 0.59, it was concluded that formalization could be classified as above average. In total, based on the assessment results of both centralization and formalization, the influence of Organizational structure centralization on the extent of harmonization that can be achieved was concluded to be positive. Regarding the factor 'Number of mergers and acquisitions' DEKRA Certification can be considered as a company that has a restricted activity in this type of managerial practices. Over the last five years, only one small and medium sized enterprise has been acquired and merged. This indicates that the number of new and different process variants, and IT systems, that had to be integrated or implemented is limited. Based on the IT governance centralization analysis in the foregoing, it was concluded that the factor 'Number of mergers and acquisitions' doesn't influence the extent of harmonization that can be achieved.

Regarding the immediate contextual factors, the 'Level of structuredness' is based on process aspects such as the repeatability of processes and creativity needed in decision making. In particular the SC domain the processes are, to an above average level, standardized. The DEKRA main process model acts for SC as a generic model from which specific repetitive processes can be derived. The Level of structuredness in the SC domain influences positively the harmonization of processes. However in the CP domain the situation is different. The various domains of certification, the variety of certification schemes, and the fast increase of certification schemes over the last years has led to a rather low 'Level of structuredness'. Because of the quite large differences in the two process domains SC and CP it was concluded that overall the factor negatively influences the extent of harmonization. Regarding 'Personal differences', DEKRA can be considered as a company with differences in audit and certification

experiences and knowledge. In particular in the CP domain a particular knowledge regarding the examination and certification of persons is required. Also the quality assurance of automated examination systems requires a specific expertise and qualification of the auditors. In the SC domain the required expertise and knowledge is oriented at quality management and business systems. These 'Personal Differences' lead to the conclusion that this factor negatively influences the extent of harmonization. Table 1 gives a summary of the foregoing discussion.

Table 1: Influences of factors on harmonization.

Contextual factor	Influence
Cultural differences	None
Different regulations	Negative
Power distance	Negative
Number of locations	None
ITG centralization	Negative
Product type	Negative
Maturity level	Negative
Organizational structure	Positive
# Mergers and acquisitions	None
Level of structuredness	Negative
Personal differences	Negative

4.3 Assessment

In this section we will summarize the discussed assessment results for each of the factor categories and we will present briefly the harmonization actions that have been defined at DEKRA Certification, both on processes as a whole, as on particular aspects (i.e. Activities, Resources, Data, Control-flow, Information technology and Management). From the interviews it appeared that the external contextual factor 'Different regulations' has a negative effect on the extent of harmonization that can be achieved. For DEKRA Certification these standards have to be taken as given, and they cannot be adapted or tailored by a certification body. In particular the periodically upgrade of standards by International Standardization Organizations requires extra effort from certification bodies to stay compliant. The assessment results lead to decisions for two harmonization aspects, respectively: Resources and Management. It was decided to define a harmonization project in that resources, i.e. lead auditors from both the SC and the CP domain will start collaboration on the interpretation, the implementation and the maintenance of the various international certification stand-ards. Further, it was decided that in particular the management of knowledge sharing and standardization of certification activities would be implemented to strive towards a more harmonized

business situation. From the assessment results on the internal contextual factors, the factors 'Maturity level' and 'IT Governance centralization' show clear negative influences. Harmonization actions defined pointed to the harmonization aspects of respectively 'Information technology' and 'Management'. A project has been defined on the integration and standardization of the various IT applications in the SC and CP domain, as well as the monitoring and control (i.e. management) on the IT Governance level. The internal contextual factor 'Organizational structure', respectively centralization and formalization, shows a positive influence regarding the extent of harmonization that can be achieved. However, the internal contextual factor 'Product type' influences harmonization negatively and leads to warnings regarding a too high ambition level. Harmonization actions defined point to the harmonization aspects 'Activities' and 'Resources'. Based on this a joint-project has been defined in the SC and CP domain, to identify criteria for the adoption and development of new services, i.e. the implementation of new certification schemes. The project should lead to a limitation in the variety of the certification activities and the skills and knowledge that is needed, as well as an improvement of the coherence in the resources and the certification activities.

The immediate contextual factors 'Levels of structuredness' and 'Personal differences', internally and directly related to the SC and CP processes under study, show both negative influences on the extent of harmonization that can be achieved. The SC and the CP process domains have independently been managed and have different growth curves with respect to standardization of processes. In particular in the CP domain the fast business growth and increase in certification schemes, has led to an unstructured variety in processes, procedures and work-instructions. Harmonization actions defined, pointed clearly to the harmonization aspects 'Activities', 'Control-flow' and 'Data'. Consequently a project has been defined to cover these aspects. First, the development of so-called Project Office activities in the CP process domain has been defined. Project Office activities bundle the expertise and streamlines the planning and control-flows of the certification services. These process improvements will reduce the throughput time, as auditors are supported by a Project Office and can focus on their job. Next to these new activities in the process models, the procedures and the documents of CP are also rewritten into the same data format as for SC. Advantages include a higher consistency in the

quality of the process out-comes, e.g. customer reports.

5 LESSONS LEARNED

The conceptual model on contextual factors and harmonization aspects can be made operational in an industrial environment, and can be used as a valuable assessment tool. An operationalization of this conceptual model led to interesting assessment results. The influences of the factors on harmonization became clear, in particular in the discussions with the selected involved practitioners. Consequently, agreements with respect to different types of improvement actions, in terms of concrete projects on different harmonization aspects (e.g. resources, activities, etc.), could be defined. Thus, the application of the conceptual harmonization model has resulted in consensus in the company on a concrete action plan, e.g. with respect to information systems integration and has proven its value in the particular business situation. Further, the understanding of the factors influencing harmonization, could be used as a valuable input for trade-off decisions.

6 CONCLUSIONS

A single qualitative case study methodology was adopted in this study to identify relations between contextual factors and the level of harmonization. Although interesting and important, the emergent findings are idiosyncratic or related to this single case study. To strengthen the propositions, it is strongly recommended to apply a multiple case study methodology. Such a methodology enables comparisons between, preferably more quantitative, case study results and can identify consistencies in factor-harmonization aspect relationships. Although the paper points to IT project development the implementation of systems are out of scope of this paper, since these will only become available on the mid- and long-term. However, the implementation actions have already become part of the DEKRA business development plan and will be evaluated periodically.

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APPENDIX

Centralization	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Averages
Index of participation in decision making (5-point Likert-scale)					
How frequently do you usually participate in the decision to hire new staff?	0,50	1,00	0,00	0,25	0,44
How frequently do you usually participate in decisions on the promotion of any of the professional staff?	0,00	1,00	0,00	0,00	0,25
How frequently do you participate in decisions on the adoption of new policies?	0,25	0,75	0,50	0,75	0,56
How frequently do you participate in the decisions on the adoption of new programs?	0,75	0,50	0,00	0,25	0,38
					0,41
Index of hierarchy of authority (4-point Likert-scale)					
There can be little action taken here until a supervisor approves a decision.	0,67	0,67	0,67	0,33	0,58
A person who wants to make his own decisions would be quickly discouraged here.	0,67	0,33	0,33	0,33	0,42
Even small matters have to be referred to someone higher up for a final answer.	0,67	0,33	0,33	0,33	0,42
I have to ask my boss before I do almost anything.	0,33	0,00	0,33	0,33	0,25
Any decision I make has to have my boss's approval.	0,33	0,33	0,67	0,33	0,42
					0,42
Departmental participation in decision making (5-point Likert-scale)					
Employees participate in decisions involving your work.	0,75	0,25	0,75	0,50	0,56
Employees participate in decisions involving their work environment.	0,75	0,75	0,75	0,25	0,63
					0,59
Group average Centralization	**0,47**				
Formalization					
Index of Job codification (4-point Likert-scale)					
I feel that I am my own boss in most matters.	1,00	0,33	0,33	0,67	0,58
A person can make his own decisions without checking with anybody else.	0,33	0,67	0,00	0,67	0,42
How things are done here is left up to the person doing the work.	0,33	0,33	1,00	0,33	0,50
People here are allowed to do almost as they please.	0,33	0,33	0,67	0,33	0,42
People here make their own rules on the job.	0,00	0,67	0,67	0,33	0,42
					0,47
Index of rule observation (4-point Likert-scale)					
The employees are constantly being checked on for rule violations.	0,67	0,33	0,33	0,67	0,50
People here feel as though they are constantly being watched to see that they obey all the rules.	1,00	0,67	0,33	0,33	0,58
					0,54
Index of Specificity of job (4-point Likert-scale)					
Whatever situation arises, we have procedures to follow in dealing with it.	0,67	0,33	0,67	0,67	0,58
Everyone has a specific job to do.	0,67	0,67	0,67	0,67	0,67
Going through the proper channels is constantly stressed	1,00	0,67	0,67	0,67	0,75
The organization keeps a written record of everyone's job performance.	0,67	0,67	0,67	0,67	0,67
We are to follow strict operating procedures at all times.	0,67	0,67	0,67	0,67	0,67
Whenever we have a problem, we are supposed to go to the same person for an answer.	0,67	0,67	0,67	0,67	0,67
					0,67
Written communication (5-point Likert-scale)					
The frequency of written communication in your organization is high.	0,75	0,75	0,75	0,50	0,69
					0,69
Group average Formalization	**0,59**				

Some Detailed Assessment Results