

Adaptive Communication as a Means toward better Performance

Can fit for purpose communication capability building activities help organizations in communicating to deliver strategy and to improve performance?

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Executive Summary

The focus on the success factors for excellent performance has been growing in the last decades. One of the factors that is generally believed to have a positive relationship with organizational performance, is the internal communication process. Even though many practitioners and academics believe that there is a relationship between internal communication and organizational performance, there is little scientific evidence supporting this relationship. This study attempted to fill this gap in literature, by providing a definition on the concept of communication capability building and by empirically testing the existence of a relationship between communication capability building and organizational performance.

For the full text of this master thesis refer to the following webpage:
<http://hdl.handle.net/2105/5446>.

1. Introduction

1.1 Context

Nowadays we live in a world with extreme competitiveness, globalization, rapid technological developments, improved accessibility worldwide, economic liberalization, more and bigger acquisitions, and clients and citizens who have become increasingly demanding. Organizations are facing a tough world, though managers are still expected to deliver excellent results. They have to deal with trends and developments in a flexible manner, gain money out of it, while at the same time control costs, increase quality and service and satisfy stakeholders. Due to these developments, managers are keen to find

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out more about the characteristics that could lead their organization to better performance than their peer groups (De Waal, 2007).

Several authors have tried to identify factors that have a relationship with organizational performance. The influence of one of the aspects of management control systems that has not been examined very often is the impact of internal communication on performance. This seems extraordinary since the role of communication within in any organization cannot be overemphasized. A lot of organizational problems and conflicts arise from a lack of communication (Ogunsanwo, 1991). Internal communication is vital for the performance of any organization (Richmond, McCroskey & McCroskey, 2005), especially in the last decades, where managing communication has become increasingly complex due to technological changes and changed social practices.

1.2 Research Question

This research is an exploratory study to the influence of communication capability building on organizational performance. The study examines which aspects of internal communication, if at all, contribute to organizational performance. To this end, the following research question is formulated:

‘Do the organizational communication capability building activities have a positive relation with organizational performance?’

Although there is no excess supply of literature on the process of communication capability building, there are some studies which provide evidence for a positive relationship between effective internal communication and organizational performance. The Watson Wyatt Worldwide Reports (2007/2008) revealed that effective organizational communication leads to superior financial performance. For that reason, I expect that the organizational communication capability building activities do have a positive relationship with organizational performance. This study attempts to provide evidence on which communication capability building aspects contribute to organizational performance. It is aiming at building knowledge, for the provision of knowledge to both academics and practitioners.

1.3 Outline

The remainder of this paper is organized as follows. The second chapter gives a brief overview of the theoretical framework used to structure this study, the Resourced Based View of the Firm. Also the two concepts of interest, communication capability building and organizational performance, will be discussed within this chapter. Chapter three contains the research design, followed by the results in chapter four. Finally, chapter five contains the conclusions for this study, limitations and suggestions for further research.

2. Prior literature

2.1 Resource Based View of the Firm

A possible framework that can be used for augmenting the conceptual analyses of communication capability effects on organizational performance is the Resource Based

View (RBV) of the firm. The RBV of the firm belongs to the research stream that believes that the fit of organizational characteristics with the environment determines organizational success. The organizational research paradigm suggests that managers of an organization can influence their employees in a positive way, and thus increase organizational performance, by taken into account factors as the formal and informal structure, planning, control, information systems, skills and the relation of these factors to the environment (Hansen & Wernerfelt, 1989).

Within the RBV, the organization is seen as a bundle of valuable resources, or in other words, a bundle of strengths and weaknesses (Wernerfelt, 1984). Caves (1980) defined resources more formally as the tangible and intangible assets which are tied semi-permanently to the organization. The RBV is relevant in the scope of this thesis because it offers an explanation for excellent organizational performance, by attributing superior performance to the organization's attributes and resources (Barney, 2001). Resources that are valuable, rare, hard to imitate and not-substitutable, can generate sustainable competitive advantage for organizations (Barney, 2001). Resources can include assets, knowledge, organizational processes and capabilities (Bharadwaj, 2000). Grant (1991) differentiates between resources and capabilities, Figure 1.

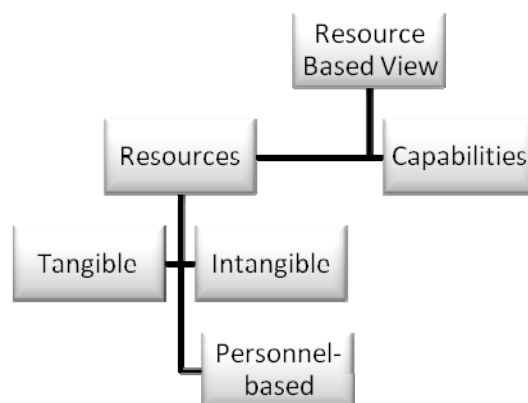


Figure 1 - Grant's differentiation between resources and capabilities.

By assembling the resources that work together to build organizational capabilities, organizations can create competitive advantage (Grant, 1991; Bharadwaj, 2000). Capabilities are defined in this setting as the ability of organizations to assemble, integrate and deploy valued resources, generally in combination of co-presence (Amit & Schoemaker, 1993; Schendel, 1994; Russo & Fouts, 1997; Bharadwaj, 2000). Valued resources refers in this context to 'the resources that are valued by the firm for their potential to contribute to competitive advantage' (Oliver, 1997, p. 701). Capabilities include organizational competencies which are embedded in the business processes and routines (Prahalad & Hamal, 1990). According to Grant (1991), capabilities are related to the capacity for a team of resources to perform certain tasks or activities. These capabilities 'involve complex patterns of coordination and cooperation between people, and between people and resources' (Grant, 1991, pp. 122). It is obvious that people are of main importance in communication processes.

Organizational communication is a process by which people stimulate meaning in the minds of other people in the formal context of an organization (Richmond, McCroskey

& McCroskey, 2005). Communication processes fit the definition of organizational capabilities of Grant, since communication involves coordination and cooperation between people and people and resources. Therefore the communication capability building process can be qualified as part of the organization’s attributes and resources. When the organizational communication capability building activities increase the value of communicational attributes and resources, they should be able to attribute to organizational performance as well.

2.2 Organizational Performance

Organizations distinguish themselves from other systems by the primary orientation on goal attainment (Parsons, 1956). Usually the objectives of the organization are equal to the objectives of the owners of the organization (Zimmerman, 2006). For-profit organizations usually have the common objective of maximizing owner’s equity, that is maximizing total profits.

Performance measurement models provide value for all the contracting individuals within the boundaries of an organization: owners, employees, suppliers, consumers and the community as a whole - figure 2. These models provide a framework against which the contracting parties can understand and evaluate their contributions and expectations (Atkinson, Waterhouse & Wells, 1997).

User	Purpose
Manager	Learning & Self-Improving
Lateral partners	Dynamic coordination of actions and continuous improvement
Supervisors	Create aggregated or corporate wide measures Monitoring subordinates Feeding reward system
All actors within an organization	Establishing a ‘sense of belonging’ Feed discussions for continuous improvement
External Stakeholders Shareholders Customers Suppliers The community Financial Institutions Regulatory Agencies	Desire to know how well the organization is doing and how well the organization is likely to perform in the future

Figure 2 - Organizational Stakeholders according to Lebas (1995, p.24)

‘Performance measurement is intended to produce objective and relevant information on program or organizational performance, that can be used to strengthen management and inform decision making, achieve results and improve overall performance, and increase accountability’ (Poister, 2003, pp.4). The need for performance measurement is pointed out by an analogy to sport by Hatry (1978, pp. 28): ‘Unless you are keeping score, it is difficult to know whether you are winning or losing’. Measuring performance makes it

possible to compare the organization's performance with its peer groups and it provides information with respect to the effectiveness of the organization's operations. Additionally it makes it possible to separate between 'success' and 'failure' which is necessary for the rewarding of 'success' and correction of 'failure' (Osborne & Gaebler, 1992).

Organizational performance can be measured by a broad variety of measures. Within this study, organizational performance is measured by 2 variables, Return On Assets [ROA] and the Ratio of Revenues to Expenses [RRE]. Both variables are financial ratio's. Financial ratios are frequently used for analyzing purposes for their ability to control for the effects of size differences over time and across different organizations (Foster, 1986). Since a broad variety of organizations have participated in this study, it was important to choose two variables who could give a reliable reflection of organizational performance in all kind of organizations. The measures should be able to reflect performance of both profit and nonprofit organizations.

The first measure, ROA, is a measure of actual financial performance. This popular measure for performance is related to the economic aspects of organizational performance (Ansoff, 1965; Bourgeois, 1980; Gale, 1972; Dess & Robinson, 1984). Hax et al. (1984), found similar results, ROA is most widely used in profitability analyses. ROA indicates how profitable an organization is relative to its total assets. It provides information with respect to the effectiveness of management's use of invested capital - assets - in order to generate profits. Even though non-profit organizations do not have profit-related objectives, ROA still can be used to assess performance in these organizations (Barros & Nunes, 2007).

ROA is calculated as the ratio of earnings before interest and taxes to total assets. (Core et al., 1999; Barros & Nunes, 2007)

$$\text{ROA} = \frac{\text{Earnings Before Interest and Taxes}}{\text{Total Assets}} \times 100 \%$$

The second variable for organizational performance is most often used in nonprofit organizations, but is applicable to profit organizations as well. RRE is calculated as total revenue divided by total expenditures (Siciliano, 1996, 1997; Brown, 2005).

$$\text{RRE} = \frac{\text{Total Revenues}}{\text{Total Expenditures}} \times 100\%$$

The second measure for organizational performance, RRE, is chosen for balancing reasons. ROA is a measure often applied in profit organizations, RRE is a measure often applied in non-profit organizations.

2.3 Organizational Communication

Organizational communication can be defined as:

{...} organizational communication [is] the process by which individuals stimulate meaning in the minds of other individuals by means of verbal or nonverbal messages in the context of a formal organization.' (Richmond, McCroskey & McCroskey, 2005, p.20)

Organizational communication can be divided in external and internal communication. The focus in this study will be on the internal communication processes, communication within the organization. Internal communication is the two-way communication that takes place within a company and flows into two directions, horizontal and vertical (Richmond, McCroskey & McCroskey, 2005). Vertical communication takes place between hierarchical positioned people, and involves both upward and downward information flows (Baker, 2002). Horizontal, or lateral communication, involves communication between people who do not stand in a hierarchical relation with each other (Baker, 2002).

Organizational communication has become increasingly important for overall organizational functioning and performance (Baker, 2002). One of the reasons for this is the direct contribution of organizational communication to organizational and employee learning, which is qualified as an critical factor for competitive advantage (Gargiulo, 2005). Due to the enormous challenges offered by worldwide competition, there is an increasing mandate to reduce the barriers of understanding for managing these enormous challenges (Jackson, 1993; Porter, 1990; Thurow, 1992; Tyson, 1992). Organizational communication can decrease barriers of understanding, so that knowledge can flow throughout the organization. Knowledge establishes the basis for efficiencies and competitive advantage (Tucker, Meyer & Westerman, 1996).

Organizations are also confronted with changes that made organizational communication both more complex and more important to the overall performance of organizations. Work has become increasingly complex and requires more interaction and coordination among employees. Additionally, the pace of work has become faster and workers are more distributed.

Another major change that is observable in organizations is that organizations have become more multicultural. That implies that organizations are more diverse in terms of gender, race, ethnicity and nationality than in the past (Cox, 1991). Part of this development generates substantial potential benefits for organizations, such as more creativity and innovation, improved decision making, and more flourishing marketing to different groups of customers. However, there are also potential costs involved with multicultural organizations, like interpersonal conflicts and communication breakdowns (Cox, 1991). Research found evidence for a negative relation between demographic diversity and communication effectiveness (Triandis, 1960; Lincoln & Miller, 1979). This implies that when the members of organizations become more dissimilar, the communication process becomes more complex.

2.4 Communication Capability Building

Organizational capabilities are the collective abilities of an organization to execute its strategy. In other words, the things a business has to do very well (Shaffer, 2008). Communication management is also a capability and it refers to the entire organization's capability to manage the communication system. Organizations should create the space,

opportunity and capability needed for people across the organization to make meaningful connections with each other, small or large.

Communication Capability Building is a rather new concept, there still is a lack of literature on this subject. For that reason, there is no clear definition on this concept available from literature. Together with Lindsay Uittenbogaart, president elect of de Dutch branch of the International Association for Business Communicators, I propose the following definition: ‘Organizational Communication Capability Building is the creation of a ‘connectivity support framework’, consisting out of 10 inter-woven aspects:

- 1: Value and priority of communication
- 2: Organizational communication learning resources
- 3: Commitment of onboard staff to learning resources
- 4: Single fit-for-purpose knowledge sharing tools
- 5: Single fit-for-purpose content feedback methods
- 6: Collaborative team-working tools and practices
- 7: Social Media strategy
- 8: Recognition and encouraging of parallel communication role concept
- 9: Reward and recognition incentives
- 10: Regular ‘cascade routine’.

A formative model is used to operationalize the concept of organizational communication capability building - figure 3.

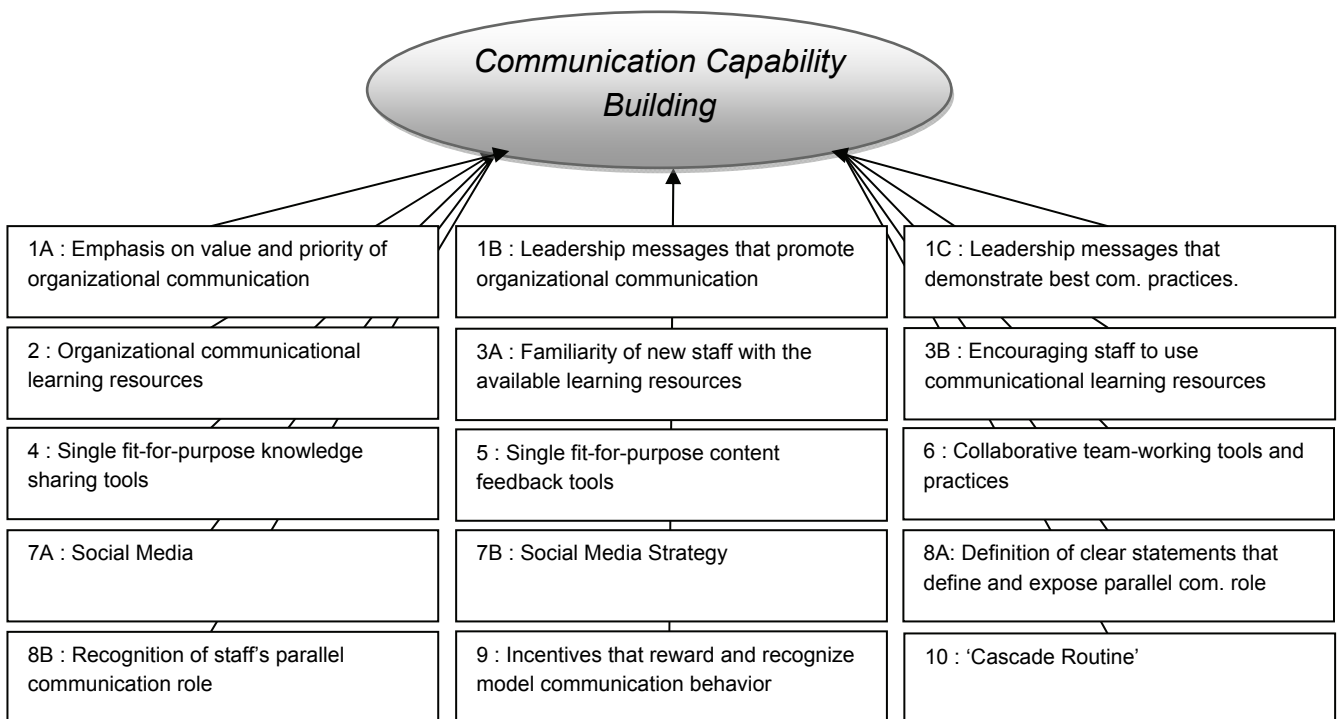


Figure 3 - Formative Model Communication Capability Building

Formative models are causal indicator models (Bollen, 1989; Bollen & Lennox, 1991). This implies that the direction of causality is from the different aspects to the construct of communication capability building. These aspects, which are indicators of the construct, define the characteristics of communication capability building. The observable indicators A1A - A10, are separate aspects that define the unobservable construct communication capability building. When there is a change in the indicators, a change in the construct itself will be caused as well.

3. Hypotheses setting and research design

3.1 Hypotheses

Tucker, Meyer & Westerman (1996) argue that organizational communication systems have a direct relation to financial performance and competitive advantage. The Watson Wyatt Worldwide Rapport: 'Secrets of Top Performers: How companies with highly effective employee communication differentiate themselves (January, 2008), found similar results; organizations that communicate effectively are four times as likely to report high levels of employee engagement in comparison with organizations that communicate less effectively. The same report showed a direct relation between communication and performance as well. One of the key findings of this rapport is that effective employee communication is a leading indicator for financial performance. The study amongst 264 participants worldwide revealed that a significant improvement in communication effectiveness is associated with a 15.7% increase in market value.

To test empirically whether the identified communication capabilities have a relationship with performance as well, several hypotheses are formulated - figure 4.

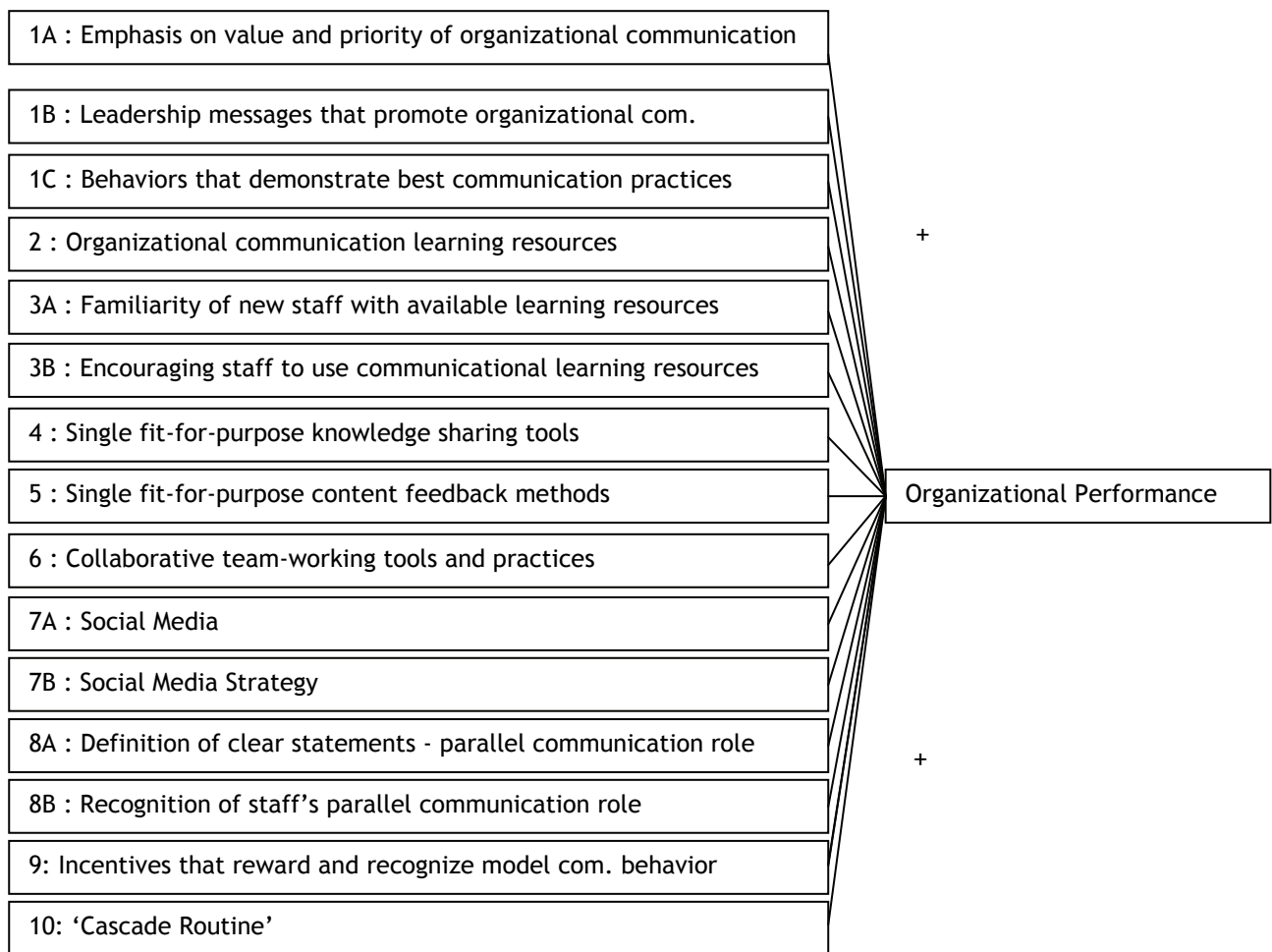


Figure 4 - Hypotheses

Because it is believed that communication has a positive influence on performance, I expect that the different communication capabilities, presented in Chapter 2 as valuable resources of organizations, are positively related to performance.

3.2 Research Design

This study can be qualified as a theory building, exploratory study on the relationship between communication capability building and organizational performance. The objective of this study is providing evidence on this not very often studied subject, by empirically testing this relationship.

Libby's Predictive Validity Framework for describing hypotheses testing processes and for explaining the determinants of internal and external validity of a research design is used to present the constructs of this study (Libby et al., 2002) - figure 5. The top part of this figure shows the conceptual level in which theory identifies the constructs of communication capability building and organizational performance. Link 1 represents the relationship between the two constructs and is the specification of the research question of this paper.

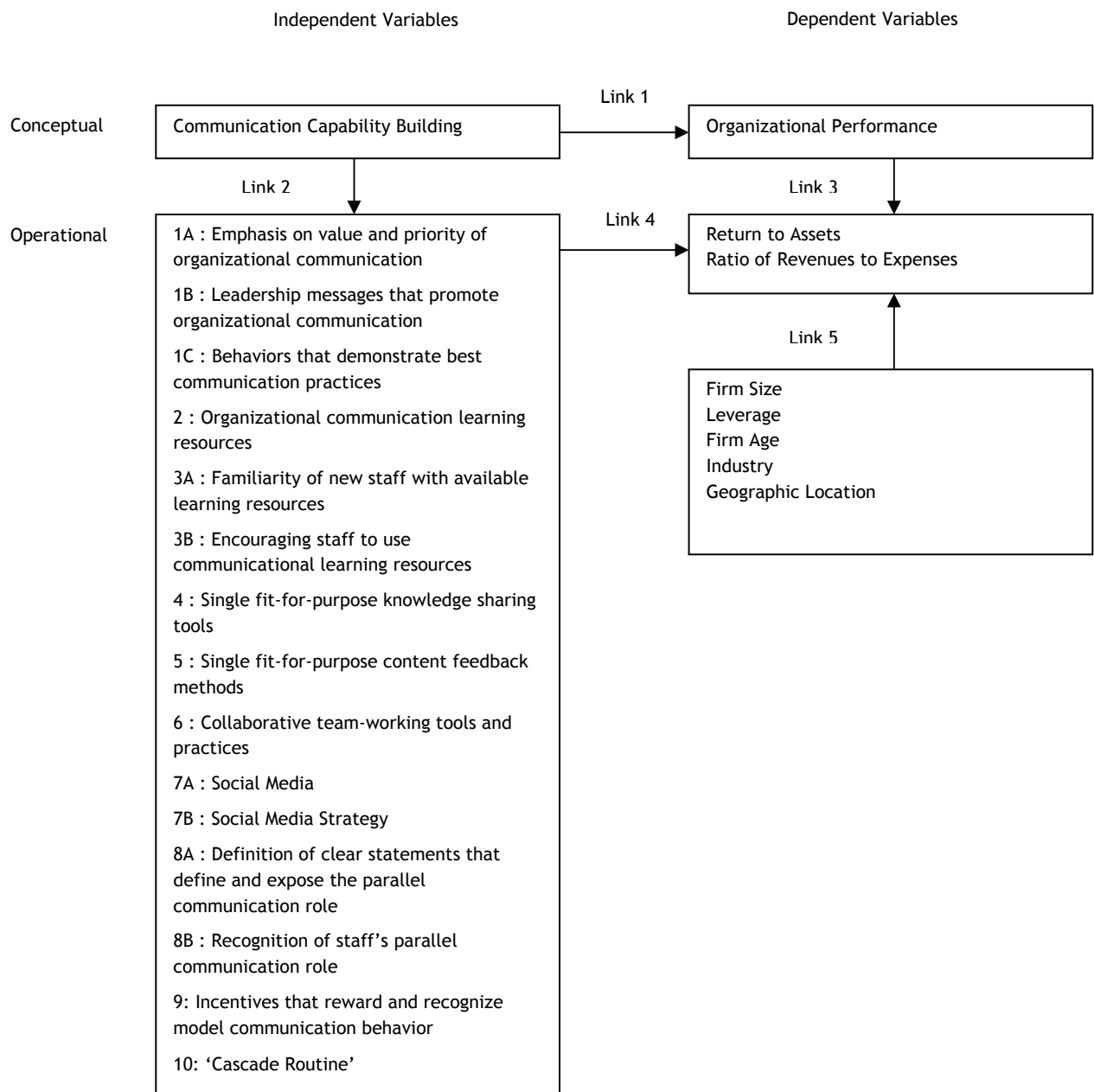


Figure 5 - Predictive Validity Framework

The research moves from the conceptual to the operational level by the translation of the constructs into operational variables that measure the variability that is associated with the constructs of the research (Bisbe et al., 2007). Link 2 relates the construct communication capability building to the independent operational variables, the communication capabilities. Link 3 relates organizational performance to the dependent operational variables, ROA and RRE. The theory will indirectly be tested by the collection of data that will be subjected to statistical methods. Link 4 tests the consistency of the data with the predicted relationships between the 2 constructs by performing a multiple regression on the variables.

However, there are also other factors which might affect the dependent variable besides the explanatory variables (link 5), for this reason there will be controlled for 5

control variables. The control variables will be included in the regression equation as independent variables. The control variables industry and geographic location are dummy variables. The variable industry represents the different types of organizations included in this study: financial institution, manufacturing organization, service organization, commercial organization, foundation, association and governmental organization. Since the participating organizations were located in different countries, a broad separation was made by dividing them into the categories: Africa, Australia, Canada, Europe and United States of America, to control for the influence of geographic location on organizational performance.

The research method applied in this study is a survey, which employs a standardized approach for the collection of information from organizations to make inferences for the entire population (Birnberg et al., 1990). This empirical research method is applied because it can assist in gathering evidence in exploratory studies and because of the potential of a big response group, which can increase the generalizability of this research.

The data is gathered by sending questionnaires randomly to members of the International Association for Business Communicators (IABC). I used the survey-tool of the IABC for the support it can offer in the collection of enough data. The IABC consists out of a network of almost 16.000 business communicators in over 70 countries. This implies that all of the respondents are not only interested in communication, they also have functions that are highly related to communication. Additional knowledge on communication related subjects is an advantage, since some of the concepts on communication capability building are rather complex, and hard to understand for employees who are not interested in communications.

This anonymous questionnaire includes questions on the presence of communication capabilities, organizational performance and some control variables. The presence of the communication capability building aspects within organizations will be measured by the use of a graphic continuous line segment from 0,0 to 100,0 (Russel & Bobko, 1992).

0 100

Respondents must indicate how much they agree with the statements by imagining a mark and translating that mark on the line into a percentage. When they think that their answer is in the middle, they should score approximately 50%, while when they feel that their answer falls mainly on the right hand side of the line, they could fill in 73%, 81% and so on.

3.3 Research model

To test the hypotheses formulated in 3.1, a multiple regression model will be applied.

$$Y_i \{ROA / RRE\} = \alpha_0 + \beta_1 \text{Aspect1A}_i + \beta_2 \text{Aspect1B}_i + \beta_3 \text{Aspect1C}_i + \beta_4 \text{Aspect2}_i + \beta_5 \text{Aspect3A}_i + \beta_6 \text{Aspect3B}_i + \beta_7 \text{Aspect4}_i + \beta_8 \text{Aspect5}_i + \beta_9 \text{Aspect6}_i + \beta_{10} \text{Aspect7A}_i + \beta_{11} \text{Aspect7B}_i + \beta_{12} \text{Aspect8A}_i + \beta_{13} \text{Aspect8B}_i + \beta_{14} \text{Aspect9}_i + \beta_{15} \text{Aspect10}_i + \beta_{16} \text{SIZE}_i + \beta_{17} \text{LEV}_i + \beta_{18} \text{AGE}_i + \beta_{19} \text{FIN} + \beta_{20} \text{MANU} + \beta_{21} \text{SERV} + \beta_{22} \text{COMM} + \beta_{23} \text{FOUND} + \beta_{24} \text{GOV} + \beta_{25} \text{AFR} + \beta_{26} \text{AUS} + \beta_{27} \text{CAN} + \beta_{28} \text{EUR} + \beta_{29} \text{USA} + \epsilon_i$$

Independent Variables:

Aspect x = Aspect x for organization i, measured by the score on a continuous line segment from 0,0 to 100,0.

Control Variables:

SIZE_i = The size of organization i, measured by the natural logarithm of total assets.

LEV_i = Debt leverage of organization i, measured as the ratio of long term debt to total assets.

AGE_i = The age of organization i, measured by the natural logarithm of the number of years since the organization's interception.

Industry

FIN = Dummy Variable: Organization i is a financial institution = 1, otherwise 0.

MANN = Dummy Variable: Organization i is a manufacturing organization = 1, otherwise 0.

SERV = Dummy Variable: Organization i is a service organization = 1, otherwise 0.

COMM = Dummy Variable: Organization i is a commercial organization = 1, otherwise 0.

FOUND = Dummy Variable: Organization i is a foundation or association = 1, otherwise 0.

GOV = Dummy Variable: Organization i is a governmental organization = 1, otherwise 0.

Geographical Location

AFR = Dummy Variable: Organization i is located in Africa = 1, otherwise 0.

AUS = Dummy Variable: Organization i is located in Africa = 1, otherwise 0.

CAN = Dummy Variable: Organization i is located in Canada = 1, otherwise 0.

EUR = Dummy Variable: Organization i is located in Europe = 1, otherwise 0.

USA = Dummy Variable: Organization i is located in United State = 1, otherwise 0.

ϵ_i = Error Term

4. Results

4.1 Average score on communication capability building aspects.

Before I could run the regression I first had to check whether I had to omit some of the variables out of the research model. The first test I applied to the data was the calculation of the average score on the communication capability building aspects. If there were aspects that scored a value of zero on average, they should be omitted since they clearly wouldn't reflect the communication behavior of organizations. Figure 6 summarizes the average scores

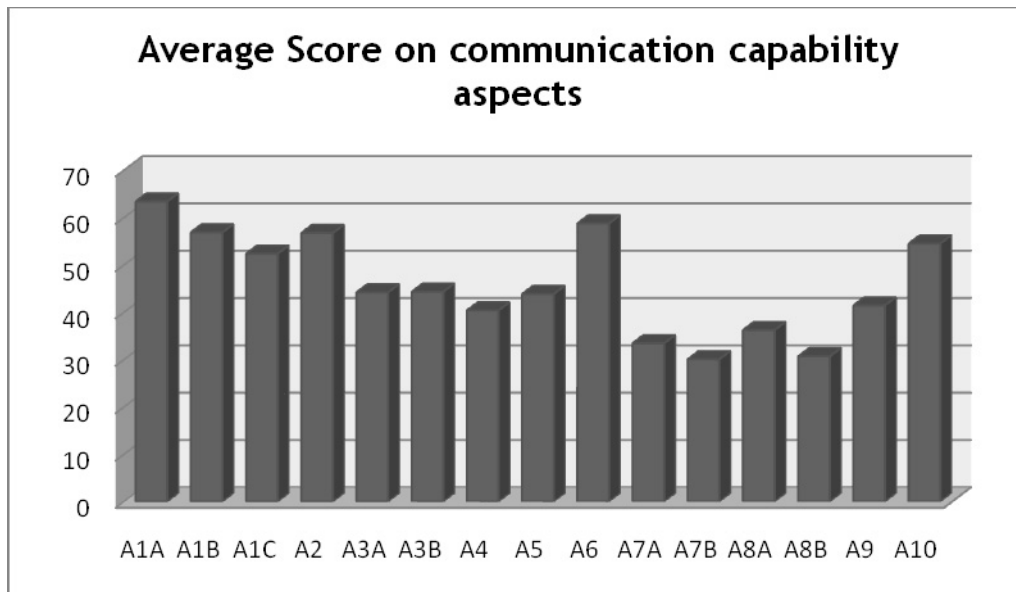


Figure 6 - Average score on communication capability building aspects

The mean scores on the aspects are all above zero. The smallest score is the score on the aspect related to the social media strategy, with an average score of 30,08. These results indicate that there is no reason to omit one of the communication capability building aspects of the research model.

4.2 Difference in score between profit and nonprofit organizations

Since there were both profit and nonprofit organizations included in the sample group for this study, it is relevant to test whether there is a significant difference in the mean scores on the communication capabilities between the profit and nonprofit organizations.

Aspect	Content	Profit	Nonprofit
1A	Value and priority of communication;	65,91	57,84
1B	Leadership messages that promote best practice communication;	60, 68	48,45
1C	Leaders demonstrating best practice communication behaviors;	55,52	45,32
2	Learning Resources;	55.30	60,00
3A	Familiarity of new staff with available communicational learning resources;	42,43	48,16
3B	Encouraging staff to use the communicational learning resources	44,49	43,97
4	Single fit-for-purpose knowledge sharing tools	41,42	38,13
5	Fit-for-purpose feedback methods	47,10	36,68
6	Collaborative team-working tools and practices	58,59	59,16
7A	Social Media	34,78	30,51
7B	Social Media Strategy	32,22	25,32
8A	Staff recognizes their parallel communication role	36,78	35,06
8B	Presence of clear statements that define and expose the parallel communication concept	32,77	26,06
9	Reward and recognition of model communication behavior	42,28	39,61
10	Regular 'cascade-routine'	58,42	45,81

Table 1 - Average score on communication capabilities profit and non-profit organizations.

As visible in the table, the average scores for profit and non-profit organizations seem to be more or less equal. Furthermore, it seems that profit organizations score a bit higher on the aspects, since profit organizations score higher on 12 out of 15 aspects. Remarkable are the aspects 1A, 1B, 1C and 10, there is a significant difference between the scores on these aspects. For that reason I applied an additional test by comparing the means on the two independent groups (profit and non-profit) statistically. Levene's test for equality of variance and an independent sample t-test revealed that there is a significant indication that profit and non-profit organizations score the same on most aspects of communication capability building. The results were significant, except for the aspects 1B and 1C. These results however can only give an indication, since the response group of 100 used in this test is rather small, and since the distribution of profit and non-profit organizations in the response group is not equal, respectively 69 and 31.

Even though it is still possible to conclude that at least there is an indication of equality between the scores of profits and nonprofits. I conclude that there is a significant indication that the mean score on aspects 1A and 2 till 10 is equal for profit and nonprofit organizations, and that the mean score on aspects 1B and 1C is not equal for these two groups.

4.3 Difference in scores on ROA and RRE

I also had to test whether the profit and non-profit organizations scored differently on the two performance indicators used within this study - ROA and RRE. The results of Levene's test for equality of variances and an independent sample t-test indicated that there is a difference in score on the organizational performance indicators. The control variable industry controlled for these differences by including two categories, governmental organizations and foundations / associations, who made up 97% of the total amount of nonprofit organizations included in the sample.

4.4 Multicollinearity

After an extensive correlation and multicollinearity analysis I had to conclude that the statistical phenomenon of multicollinearity was present within this model. Multicollinearity is a special case of correlation. A high correlation between the independent variables in a multiple regression makes the identification of the individual contribution of each variable in predicting the dependent variable difficult. In the case of multicollinearity the independent variables predict the same variance in the dependent variable. When multicollinearity increases, the standard errors for the independent variables become larger. As a consequence of this, the overall p-value for the model may be significant while the p-values for the predictor variables are not significant. The presence of multicollinearity does not imply that the model is useless, since the assumptions of ordinary least squares are not violated by multicollinearity.

I applied a correlation analysis, a tolerance and VIF value analysis and an analysis of the eigenvalues to detect the presence of multicollinearity. After these tests it was clear that the model had to be adjusted. Multicollinearity seemed to be present within the following couples of aspects: 1A-1B-1C, 3A-3B, 7A-7B, 8A-8B. Therefore I combined the aspects into the variables 1, 3, 7 and 8. Before the three sub aspects could be transformed into one

index variable, first it had to be determined whether the sub aspects measure the same aspect. Items can only form one scale when they measure more or less the same thing, the items should be highly correlated with each other (Bland & Altman, 1997). A coefficient for addressing the internal consistency between items is Cronbach's alpha. Cronbach's alpha is an index for reliability that determines the internal consistency of the items applied in a questionnaire for research purposes. The value of Cronbach's α indicates the degree in which the items measure the same concept. The coefficient of Chronbach's alpha was high for al the couples of aspects, so I could combine them into the following 4 index variables:

Variable 1 : Recognition of and emphasis on the value and priority of organizational communication has a positive relationship with organizational performance.

Variable 3: Commitment of all onboard staff to the available communicational learning resources has a positive relationship with organizational performance.

Variable 7: The use of social media has a positive relationship with organizational performance.

Variable 8: Staffs' recognition of their parallel communication role has a positive relationship with organizational performance.

The last adjustment that had to be made to this research model was the elimination of the control variable SIZE. When SIZE would have been included in the model, the constant in the regression equation would mainly be determined by this control variable. The results of a new multicollinearity analysis revealed that there was no indication for multicollinearity after the adjustments were made to the model.

4.5 Multiple Regression

4.5.1 Assumptions

A multiple linear regression can only be applied when the assumptions inherent to this regression are not harmed. This assumptions are: linearity, normality, homoscedasticity and reliability. The first assumption is that the relationship between communication capability building and organizational performance is linear. Although it is not possible to confirm this assumption in the real world, it is possible to produce a scatter plot to make sure that an evident curvature in the data is absent. One of the methods to detect non-linearity is examination of the residual plots (Pedhazur, 1997). In SPSS a plot is made of the standardized residuals as a function of the standardized predicted values. The plots for ROA and RRE suggest that it is admissible to assume a linear relationship between the independent variables of the model and organizational performance. The second assumption of multiple linear regression is the assumption of normal distributions of the variables included in the model (Moore et al., 2003). Variables that are non-normally distributed can cause distortions in relationships and significance tests. To check whether the variables are normally distributed, Q-Q plots were made for each variable included in the research model. Non of the Q-Q plots gave reasons to doubt the applicability of the linear regression model. The assumption of homoscedasticity refers to the variance of errors. The variance of errors should be the same for all levels of the independent variables. According to Tabachnick and Fidell (1996), small heteroscedasticity does not have a serious impact on significance tests. Remarkable heteroscedasticity however can

lead to serious distortions in the findings of the regression. To examine whether the assumption of homoscedasticity is valid in this context, a plot of the standardized residuals (*ZRESID) against the standardized predicted values (*ZPRED) is made. The residuals in the plots made to test homoscedasticity seem to be completely random, so the assumption of homoscedasticity was applicable to this research model. The last assumption is reliability. The model must be reliable, which means that the model must be consistent. The regression equation must give similar results for the same organizations over time. Cronbach's alpha determines the reliability of the independent variables included in this model. The tests indicated that the reliability assumption for multiple linear regression was also satisfied.

4.5.2 Hypotheses

To test whether there is a relationship between the communication capability building aspects and organizational performance, the following null hypothesis is tested:

H0 : There is no relationship between the independent variables and organizational performance.

The null hypothesis states that the fit of the observed values of the dependent variable to those predicted by the multiple regression is not better than could have been expected by chance.

The null hypotheses above can be separated into two hypotheses, since there are two dependent variables measuring the concept of organizational performance, ROA and RRE.

H01 : There is no relationship between the independent variables and ROA.

H02 : There is no relationship between the independent variables and RRE.

Next to the null hypotheses concerning the entire regression equation, there are also null hypotheses for each independent variable. These null hypotheses state that adding the independent variable does not improve the fit of the regression equation to any further extent than would have been expected by chance.

H0 i : Variable i does not explain the variations in organizational performance beyond the variation explained by the other variables included in the model.

With i = independent variables included in the model.

4.5.3 Results of the regression

The results of the regression equation indicated that at best it is possible to say that there is a slight indication for a relationship between communication capability building and organizational performance, since the overall regression equation of the independent variables with ROA was significant. The individual contribution of the communication capabilities and the sign of the relationship with organizational performance can not be determined since the parameters reported for these independent variables all lacked significance. The insignificant results on the independent variables are most likely caused by multicollinearity problems, which imply that all the results should be interpreted with

vigilance. The regression on RRE indicated that there is no relationship between communication capabilities and organizational performance at all, since the overall significance of the regression equation and the independent variables relating to communication capability building were all highly insignificant. The different conclusions for the regression analysis with ROA and RRE point out that the results are also subject to the choice of the dependent variables measuring the concept of organizational performance. The overall conclusion is that there is an indication of a relationship between communication capability building and organizational performance, but that the results indicate that this relationship is very weak. Also the contribution of the individual aspects is undetermined, since they all were negative. This would imply that they do not contribute at all, but since the overall regression equation with ROA was significant, it is possible to conclude that the independent variables might contribute, but how and how strong these relationships are can not be revealed by this study.

5. Conclusions

The results of the multiple linear regression analysis are used to formulate an answer on the research question:

‘Do the organizational communication capability building activities have a positive relation with organizational performance?’

The regression with ROA indicated that there is a slight significant relationship between the total concept of communication capability building and organizational performance, since the adjusted R-square amounted approximately 16%. This result however should be interpreted with caution since the contribution of the individual communication capability building aspects to this relationship cannot be determined since they are all highly insignificant. The results on the regression with RRE revealed no relationship at all. The answer on the research question of this study would be:

‘No, there is no relationship between the communication capability building activities and organizational performance’.

Based on the regression with ROA there is some indication that there might be a relationship between overall organizational communication capability building and organizational performance, but the direction and the strength of the relationship with the individual communication capability building activities are undetermined.

Combining the results from the two regressions leads to the conclusion that the results should be interpreted with great caution, since the two performance measures gave different results. The overall model with ROA was significant, except for the individual contributions of the communication capabilities, while both the overall model with RRE as the individual contributions of the communication capabilities were insignificant. This relationship must be studied more in dept to draw any valuable conclusions.

The answer on the research question however might also be influenced by the limitations of this study. First the research does not include the relationship between communication

capabilities and organizational performance for a period of years. As a consequence, results may be biased because of extraordinary performances of organizations. Especially in these times, where the global economic crisis is affecting the results of all organizations.

Another important shortcoming is related to the multicollinearity problem. The presence of multicollinearity after the adjustments is assumed since the overall regression equation for the relationship between the communication capabilities and organizational performance was significant, while the individual contributions of the variables could not be determined since they lacked significance.

Moreover, the results may be biased as a consequence of the relative small sample group included in the study. Also the sample selection might have impacted the results.

The presence of both profit and nonprofit organizations in the response group might have altered the results of the study as well.

Specification errors with respect to the concept of communication capability building and the performance measures chosen to define the concept of organizational performance might have had an influence on the results.

The unclear results of the regression analysis and the various limitations however do not imply that this study is of no value. The contribution of this thesis to current literature is mainly attention directing. This thesis deals with a topic that currently did not receive attention from academics. This study might perform as a starting point for future research to provide clear answers on the existence of a relationship between the communication capability building activities and organizational performance, as well as on the strength and direction of the relationships with the individual communication capabilities.

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