CORPORATE RESPONSIBILITY IN VARIOUS CULTURAL SETTINGS: AN EMPIRICAL STUDY OF THE PULP AND PAPER INDUSTRY

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ABSTRACT

Many business enterprises have recently integrated the concepts of social responsibility and performance into their policies, but this rapid adoption has meant that the content has remained relatively loose in practice. This paper analyses and structures the concept empirically by quantitative and qualitative methods, employing the acceptability of operations as an indicator. The data were gathered at four mills belonging to a Scandinavian-based pulp and paper company located in four countries: China, Finland, Germany and Portugal. Tentative technical-financial, social and environmental acceptability criteria are used in the quantitative analysis. The qualitative analysis produces an experimental acceptability model covering technical, financial, economic, natural resource, environmental, social, societal, cultural, organisational, institutional and ethical issues. The results are developed further as a proposal for a concept of empirical corporate responsibility having four major elements: economic, environmental, social and organisational responsibility. Comparison of the qualitative and quantitative results demonstrates that although it is difficult to formulate a set of criteria which are simultaneously general, flexible and detailed enough for the purposes of a globally operating company, it is extremely important to define the concept in order to guarantee efficient allocation of resources both in companies and in society at large.

INTRODUCTION

Business enterprises have always had to consider responsibility issues in their relations with the surrounding society, but the content of responsibility has changed, as it inevitably reflects the societal situation and debate in place and time. The economic responsibility of business enterprises was emphasised during the rebuilding era in post-war Europe, for example, while environmental issues took first place in the societal debate in the 1970-80's. Recently, the debate has focussed on corporate social responsibility, one of the major reasons for this trend obviously being the globalisation of corporations, societies and politics.

The willingness of corporations to behave in an ethically acceptable manner and to carry their share of a wider responsibility than just the economic one is increasing. The choice of behaviour that is ethically "right" is problematic, as there is no model that defines how to behave in different operational environments. This problem has arisen especially in the natural resource-based industries such as pulp and paper, as their dependence on natural resources binds them intensively and comprehensively to the local societies wherever they operate.

The world's ten largest pulp and paper companies are located in Asia, North America and Scandinavia (Finnish Forest Industries Federation, 2005). The operations of those in Europe and North America have been criticised constantly since the 1970's (Halme, 1997, Hellström, 2001, Uimonen, 1998), and recent criticism of the large Scandinavian-based companies has been stronger than that of Asian and North American ones, for example. There are two major reasons for this. First, Scandinavian-based pulp and paper companies have truly globalised to other continents, whereas the Asian and North American companies have expanded mainly within their own continents. Secondly, the Scandinavian companies export the majority of their production, so that the Finnish pulp and paper industry exported 90% of its production in 2004 and around 50% of its production capacity was located outside the country (Finnish Forest Industries Federation, 2005), whereas the Asian and North American companies produce mainly for their own continental market.

The above differences explain why the Scandinavian companies can be considered more international or global than other large pulp and paper producers, and why their operating environment is more challenging. It is thus globalisation that has raised the social role of the pulp and paper industry as a topic of debate in Scandinavia recently and has increased the number of stakeholders involved, while no such pressure exists within the Asian and North American-based industries, or the pressure remains at a reasonable level, at least. Despite the increasing need to expand external contacts, the Scandinavian pulp and paper industry placed great emphasis on the importance of stockholders and the target of producing shareholder value in the 1990's. It was within this framework that the research project considered here, concerned with the Acceptability of International Operations in the Pulp and Paper Industries was commenced in 1999. This was devoted to the study of corporate social performance and responsibility through the acceptability concept, employing various methodologies.

The objective of this paper is to outline and define empirical corporate responsibility further by comparing the results of the previous quantitative and qualitative analyses. The theoretical context of stakeholder approach-based corporate responsibility and the operationalisation of the theoretical framework will be summarised in the following, the results of the quantitative and qualitative analyses will be compared and the strengths and challenges of this kind of study will be discussed. Finally, conclusions will be drawn and themes proposed for further studies aimed at supporting the development of corporate responsibility within practical business.

STAKEHOLDER APPROACH-BASED CORPORATE SOCIAL PERFORMANCE

Corporate social responsibility and stakeholder theory are two popular and widely discussed concepts describing the diversified environments in which business enterprises operate, including ethical issues. The first references to stakeholders in an organisation-related context dated back to the 1960's (Freeman, 1984), since when the stakeholder approach has become a commonly used framework within which to broaden management's vision of its roles and responsibilities beyond the profit maximisation function, to include the interests and claims of non-stockholding groups (Mitchell *et al*., 1997). Stakeholder theorists adopt various views of the organisation's stakeholder universe, ranging from broad to narrow. One of the broadest and most frequently referred to definitions is the statement of Freeman (1984) that a stakeholder is any group or individual who can affect or be affected by the achievement of a corporation's purposes.

Carroll (1979, 1995) presented a multidimensional construct of corporate social performance which included an element of responsibility composed of four components: economic, legal, ethical and discretionary. Donaldson and Preston (1995) emphasised that business enterprises that are considering a strategy of corporate social responsibility have to identify the object of their responsible actions. Their stakeholders are commonly considered to represent this objective.

The theoretical concepts of corporate social responsibility and performance were turned into practical ones in the 1990's. The UNCED summit in Rio in 1992 boosted a general consciousness of environmental, social and cultural issues (World Business Council for Sustainable Development, 2005), since when corporate social responsibility has been connected with sustainable development (*e.g.* Welford, 2002, Korhonen, 2003). The programmes of the European Commission concretised corporate social responsibility as a contribution of business to sustainable development (European Commission, Directorate-General for Employment and Social Affairs, 2002), a context in which it has been described as comprising three elements, economic, environmental and social, although a cultural element is also commonly included in it.

STUDYING THE ACCEPTABILITY OF OPERATIONS

The theoretical and conceptual framework

Stakeholder theory was employed as the main theoretical foundation here, as it was reckoned that the various stakeholders in the industry in question could provide a relatively diversified understanding of the acceptability of operations. Other important ideas included a theory of business values and a holistic view of natural resources. The theory of business values refers to judgements, including the process involved in making judgements (Frederick, 1995). According to the holistic view, natural resources can be looked on not only as attributes of the physical environment, but as attributes of the economic, political, social and cultural orders as well (Hellström, 2001). The grounded theory (Glaser and Straus, 1967) was employed for identifying and developing the experimental acceptability model.

The concept of "acceptability of operations" was applied when describing social responsibility and related issues in the Finnish pulp and paper industry in the late 1990's, when this study was launched, even though the academic debate did not recognise this concept. I therefore became interested in the idea that the acceptability of operations could be employed as an indicator of corporate social performance and responsibility. The conceptual framework was outlined as a modification of the acceptability hierarchy (Mikkilä 2003, 2005, Mikkilä *et al.*, 2005), based on Saaty's (1980) hierarchical decision-making process as presented in the form of the analytic hierarchy process (AHP). The idea behind this is that stakeholders should define and assess the acceptability of operations in the pulp and paper industries (Figure 1).

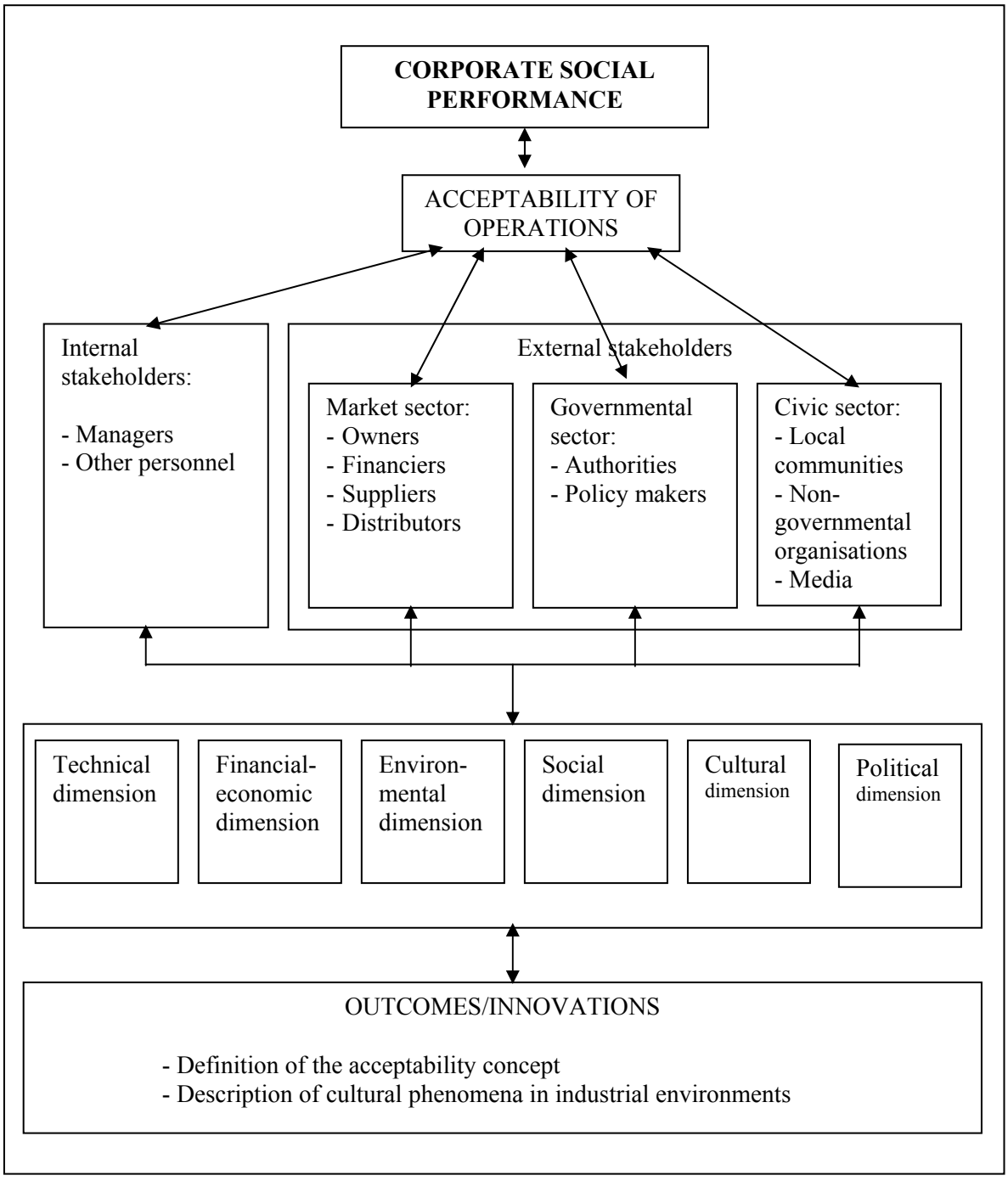

Figure 1. The conceptual framework of the acceptability of operations

Case studies

The empirical material was gathered from four pulp or paper mills in China, Finland, Germany and Portugal belonging to a Scandinavian-based company, Stora Enso, and their operation environments (Table 1).

Table 1. Technical data on the case mills

Characteristics	Case 1: China	Case 2: Finland	Case 3: (Former East) Germany	Case 4: Portugal
Year of foundation	1995/96	1937	1993/94	1965
Number of employees	690	800	350	420
Raw material	Market pulp	Roundwood from natural forests	Recycled paper	Roundwood from plantations
Product	Fine paper	Fine paper	Newsprint	Market pulp
Production capacity, t/a				
- pulp/de-inking plant		370,000	360,000	300,000
- paper	120,000	814,000	300,000	

Stakeholder analysis, based on the stakeholder theory (Freeman, 1984), was employed as a descriptive tool to point to the relevant individuals and groups to be taken into account in the gathering of the basic material for the empirical study. I interviewed the representatives of top management at the headquarters of the company, top and middle management and employees at the case mills, customers, suppliers, authorities, policy makers, non-governmental organisations, local people and associations representing the pulp and paper industry in order to cover the various dimensions of corporate social performance. After each interview, the respondent filled in a questionnaire to assist in prioritising the tentative acceptability criteria. The sample varied from 19 to 41 between the countries, the entire material being composed of 130 taped interviews and completed questionnaires (Table 2).

Table 2. Distribution of interviewees

Stakeholders	**China**	**Finland**	**Germany**	**Portugal**
A. Internal stakeholders				
1. Headquarters		3		
2. Dept. of forest operations		4		6
3. Case mill				
- top and middle management	6	8	7	2
- staff	3	2	12	3
Sub-total	***9***	***17***	***19***	***13***
B. External stakeholders				
1. Customers	2	2	2	-
2. Suppliers	1	4	2	3
3. Authorities	2	2	5	5
4. Policy makers	2	3	5	1
5. Pulp and paper association and research institutes		2	1	1

6. Non-governmental organisations	-	7	3	3
7. Local people	3	4	5	3
Sub-total	***10***	***24***	***23***	***16***
Total sample	**19**	**41**	**41**	**29**

Analytic hierarchy process

The quantitative analysis was based on Saaty's (1980) Analytic Hierarchy Process (AHP), which is a multi-attribute decision analysis method (Mikkilä *et al.*, 2005) that provides a way of quantifying subjective preferences concerning entities or objects (Saaty, 1980). The objective was to study corporate social performance in the pulp and paper industry empirically through a potential indicator, the acceptability of operations, which was partitioned into financial-technical, environmental and social acceptability criteria, each described by four to seven sub-criteria (Table 3).

Table 3. Acceptability criteria

Acceptability criteria	**Definition employed here**
Financial-technical criteria	
1. Short-term profit:	Profit during the first 10-year period.
2. Long-term profit:	Profit during the second 10-year period.
3. Technical competitiveness/utilisation of modern technology:	Application of the latest technology and utilisation of the newest information sources.
4. Good reputation:	Ethically and morally good reputation, which can be achieved through good business operations.
Environmental criteria	
1. Renewable/recurrent raw material:	Natural regeneration of forests or artificial reforestation or afforestation after clear-cutting.
2. Sustainability in the production of raw material (NRM):	Application of environmentally friendly production techniques throughout the production chain, from the procurement of raw material to transport to the mill site.
3. Diversity of surrounding nature and beauty of landscape:	Variety of the flora and fauna in the environment and perception of how pleasant and beautiful the surrounding nature is.
4. Energy efficiency:	Most efficient possible use of energy in the production chain.
5. Recycling:	Recycling of raw materials and final products.
6. Effluents (waste water):	All waste water that accrues in the production process and is discharged into the local river and lake system.
7. Emissions (into the air):	All emissions from a pulp and paper mill into the air.
Social criteria	
1. Health and safety at work:	All health services provided by the employer and safety instructions, rules and measures which guarantee safe working conditions.

2. Earned income:	Wages or salaries.
3. Permanence of employment:	Nature of the employment contract, permanent or fixed-term.
4. Relationship between working and leisure time:	Length of the working day/week and the adequacy of free time.
5. Content of work and quality/content of work:	Employees feel that their contribution is essential to the company, and relationships between management and labour are good.
6. Communication and respect for opinions:	Information flow between the company and its environment and inside the company, and respect of various opinions, leading to the necessary actions and measures.
7. Training and education possibilities:	Professional education in addition to the training needed for the mill's daily operations.

Saaty (1980) suggested in the AHP that scores 1/9, 1/8,…,1/1,2/1,…,8/1,9/1 should be used to elicit relative priorities in pairwise comparisons between entities. Accordingly, each judge in the present investigation was asked to compare all the main criteria and all the sub-criteria in terms of the acceptability of operations, using verbal choices which were converted to this numerical scale.

The local weights for the acceptability criteria and their sub-criteria were calculated on the basis of these pairwise comparisons, which were analysed using a recent Mathematica package, AHP.m, developed by Alho and Kolehmainen at the University of Joensuu, Finland. Alho *et al*. (2001) introduced the method as follows. Let v_i be the value of an entity (main criterion in this application) $i = 1,\ldots, I$ and let $r(i,j,k)$ be the ratio v_i/v_j as perceived by judge $k = 1,\ldots,K$. As all v_i are positive, it can be assumed without loss of generality that $v_i = \exp(\mu + \alpha_i)$, where μ is an intercept term. The theoretical values of v_i/v_j are thus $\exp(\mu + \alpha_i)$, where μ cancels out. Define $y(i,j,k) = \log[r(i,j,k)]$. The regression model for pairwise comparisons of data in the multiple judge case is of the loglinear form

$$r(i,j,k) = \alpha_i - \alpha_j + \varepsilon(i,j,k), \qquad (1)$$

where the error term representing all types of inconsistencies has an expected value $E[\varepsilon(i,j,k)] = 0$. For identifiability, it is assumed that $\alpha_I = 0$, so that α_i measures the value of entity i relative to entity I.

Acceptability was explained in the regression model through three main criteria, the financial-technical, environmental and social acceptability of operations in the international pulp and paper industry. The overall quality of the regressions, described by the explanation of variance, R^2 (Alho *et al*., 2001, p. 248), tends to be reduced by the possible inconsistency of the experts' opinions. The error term in the models includes the effects of internal inconsistency on the part of each judge and of differences between the judges.

Qualitative analysis

The major deficiency affecting the statistical analysis lay in the imperfect coverage of the acceptability criteria. A qualitative analysis was therefore necessary in order to deepen the content of empirical corporate social performance and responsibility (Mikkilä, 2005). For this purpose, thematic interviews (Eskola and Suoranta, 1998) were conducted in the form of guided conversations according to the recommendations of Yin (2003). The Finnish and German interviewees answered in their mother tongue, the Portuguese partly in Portuguese and partly in English, while the Chinese mill differed from the other cases, due to limitations on time and other resources, in that a Chinese person interviewed the stakeholders in Chinese and summarised the main findings.

The interview data were organised separately for each country for further processing. Qualitative data analysis was carried out using the most recent software package devised for this purpose, QSR NVivo, a product of the Australian company QSR International. The program is useful for coding, searching and modelling qualitative data (Luomanen and Räsänen, 2002). The interview material was transcribed and imported into NVivo. The material was coded according to the advice given by Alasuutari (1996) in order to cause as little distortion as possible in the coding. It was hoped that in this way the issues would arise from the material itself rather than the scholar forcing the issues into a predefined grid.

Next, the passages for each code were counted by cases in order to obtain an idea of the cultural and national characteristics of the acceptability concept on the one hand and the common characteristics on the other. After this the stakeholders' understanding of the acceptability concept within the pulp and paper industries and their opinions on the matter were studied in depth. Finally, themes defining the concept were extracted and combined into typologies in the subsequent analysis. Thus, an interpretative explanation of the acceptability phenomenon was given on the basis of the clues produced and hints available.

Further qualitative analysis

The experimental acceptability model was composed of eleven elements; technical, financial, economic, natural resource, environmental, social, societal, cultural, organisational, institutional and ethical. This meant, however, that the outlining of research or business problems through the original model could be complicated because of its numerous elements, thus reducing the applicability of the model in practice. In order to improve applicability, the acceptability model was developed here by combining the eleven elements into four dimensions of corporate responsibility (Figure 2).

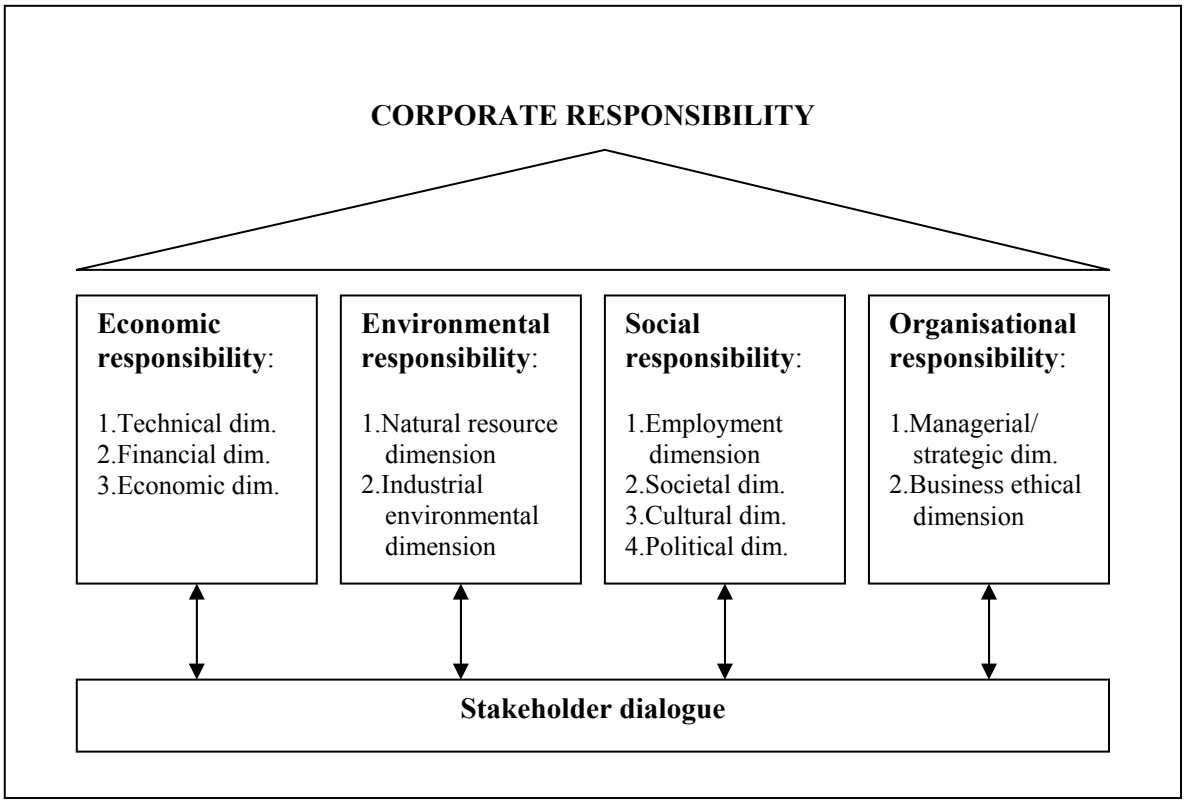

Figure 2. Empirical corporate responsibility

The dimensions of empirical corporate responsibility were defined in terms of content on the basis of the codes provided by the interview material (Table 4.). This framework is applied when comparing the results of the quantitative and qualitative analyses.

Table 4. Content of corporate responsibility

Corporate responsibility	**Content based on the qualitative analysis**
Economic responsibility	
1. Technical dimension	Raw material issues, quality throughout the production chain, efficiency, infrastructure, location of the industry, including transport and logistics.
2. Financial dimension	Profitability, demand, services produced, shareholder value, expected return on capital, influence of environmental requirements on investments.
3. Economic dimension	Role of the industry, monetary policy, sustainable development, globalisation.
Environmental responsibility	

1. Natural resource dimension	Renewability of raw materials, production and origin of raw materials, sustainability in the NRM, diversity of nature, beauty of the landscape, energy sources, land tenure and use, conservation.
2. Industrial environmental dimension	Solid waste, emissions, effluent, noise, climate change, ecological efficiency, including recycling of materials and products, origin of products.
Social responsibility	
1. Employment dimension	Health and safety at work, working conditions, permanence of work, earned income, internal communication, development and training, content of work.
2. Societal dimension	Reputation, image, transparency, communication, public relationships, charity, welfare.
3. Cultural dimension	Company culture, cultural diversity and sustainability.
4. Political dimension	Political participation, democracy in local decision-making, national and international legislation, regulations and agreements, slavery, child labour, discrimination, freedom of speech, human rights, participation in trade unions.
Organisational responsibility	
1. Managerial/strategic dimension	Selected strategies and policies, decision-making, management of operations, research and development, know-how, personal relationships.
2. Business ethical dimension	Morale and values of the company and its employees, honesty in business, ethical investments, respect for national and local values and norms, application of global values.

COMPARISON OF THE RESULTS OF THE QUANTITATIVE AND QUALITATIVE ANALYSES

China

The overall quality of the quantitative analysis, *i.e.* regressions, described by the explanation of variance, R^2 (Alho el al, 2001, p. 248), tends to be reduced by possible inconsistency in the experts' opinions. The Chinese stakeholders generally reached a good R^2 in the assessment of all the criteria (Mikkilä *et al*. 2005), but the comparison between the quantitative and qualitative analysis resulted in some inconsistencies of the opinions.

In the quantitative analysis both the internal and external stakeholders considered environmental criteria to be the most important element in the company's industrial operations and financial-technical criteria mostly occupied second place in the ranking. The qualitative analysis resulted in the prioritisation of economic responsibility by internal and financial stakeholders, and of social responsibility by the political and

social stakeholders. The internal and social stakeholders gave second place to environmental responsibility, but the financial and political stakeholders did not consider this to be an element of corporate responsibility (Table 5).

The content of the environmental and social criteria in the quantitative analysis fitted fairly well with the content of environmental and social responsibility as employed in the qualitative analysis. In other words, similar sub-criteria and elements were assessed as being the most important issues in both analyses. The financial-technical criteria and economic responsibility differed in content to some extent. The sub-criterion "good reputation" was repeated regularly in the statistical analysis, but the stakeholders hardly placed any emphasis at all on reputation, image, business ethics or related issues in the interviews.

Table 5. Ranking and content of acceptability criteria in China

Internal stakeholders	**External stakeholders**			
	Financial stakeh.	**Political stakeh.**	**Environmental st.**	**Social stakeh.**
		Quantitative analysis		
1. Environmental criteria •Emissions •Effluents •Diversity and beauty of nature	**1. Environmental criteria** •Effluents •Emissions •Diversity and beauty of nature	**1. Environmental criteria** •Diversity and beauty of nature •Emissions •Effluents		**1. Environmental criteria** •Emissions •Effluents •Diversity and beauty of nature
2. Fin.-technical criteria •Good reputation •Technical competitiveness	**2. Social criteria** •Content of work •Training and education •Earned incomes	**2. Fin.-technical criteria** •Technical competitiveness •Good reputation		**2. Fin.-technical criteria** •Good reputation •Technical competitiveness
3. Social criteria •Content of work •Communication •Health and safety	**3. Fin.-technical criteria** •Good reputation •Technical competitiveness	**3. Social criteria** •Content of work •Earned incomes •Communication		**3. Social criteria** •Training and education •Health and safety •Communication
		Qualitative analysis		
1. Economic responsibility •Quality of raw material and production •Profitability	**1. Economic responsibility** •Profitability •Quality of raw material and production	**1. Social responsibility** •Communication •Earned income •Public relationships		**1. Social responsibility** •Communication •Reputation and image •Distribution of welfare
2. Environmental responsibility •Effluent •Emissions	**2. Social responsibility** •Communication	**2. Economic responsibility** •Competitiveness		**2. Environmental responsibility** •Effluent •Emissions

3. Organisational responsibility •Selected strategies and policies **4. Social responsibility** •Cultural diversity •Development and training •Public relationships	**3. Organisational responsibility** •Selected strategies and policies	**3. Economic responsibility** •Role of industry in the economy

Finland

The Finnish stakeholders' R^2 remained well below the Chinese level when assessing most of the criteria, although their model of environmental criteria fitted relatively well. The tentative acceptability criteria were modified on the basis of the interviews held in Finland, which may explain the relatively logical emphasis of the acceptability criteria or corporate responsibility elements when applying different methods.

The internal stakeholders emphasised the role of economic issues with both methodologies. The qualitative analysis brought out the importance of organisational issues, which were not taken into account in the quantitative criteria. Generally, external stakeholders ranked the environmental criteria as very important, but they emphasised social issues in the interviews. The external stakeholders considered communication and national legislation more important elements of corporate responsibility than the widely discussed and emphasised environmental issues (Table 6).

The social criteria described only issues related to the working environment, whereas social responsibility took into consideration various social and societal issues related to the industry. The differences in content quite obviously explained the differences in emphasis between the methodologies. The priorities obtained by the two methods nevertheless coincided relatively well if only employment issues were considered. The content of the financial-technical and environmental criteria corresponded relatively well to that given by the interviewees and emphasised in the conversations with them.

Table 6. Ranking and content of acceptability criteria in Finland

Internal stakeholders	**External stakeholders**			
	Financial stakeh.	**Political stakeh.**	**Environmental st.**	**Social stakeh.**
		Quantitative analysis		
1. Fin.-technical criteria •Short-term profitability •Technical	**1. Fin.-technical criteria** •Technical competitiveness •Good reputation	**1. Environmental criteria** •Renewable raw material •Sustainable NRM	**1. Environmental criteria** •Diversity and beauty of nature •Sustainable NRM	**1. Environmental criteria** •Sustainable NRM •Renewable raw material

competitiveness		•Energy efficiency		•Effluents
2. Environmental criteria •Renewable raw material •Sustainable NRM	**2. Environmental criteria** •Renewable raw material •Sustainable NRM •Effluents	**2. Social criteria** •Health and safety •Content of work •Permanence of employment	**2. Social criteria** •Content of work •Health and safety •Training and education	**2. Social criteria** •Health and safety •Permanence of employment •Content of work
3. Social criteria •Content of work •Permanence of employment	**3. Social criteria** •Content of work •Permanence of employment	**3. Fin.-technical criteria** •Good reputation •Technical competitiveness	**3. Fin.-technical criteria** •Good reputation •Technical competitiveness	**3. Fin.-technical criteria** •Technical competitiveness •Short-t. profitab.
		Qualitative analysis		
1. Economic responsibility •Profitability •Quality of production •Availability of raw material	**1. Social responsibility** •Communication •Nat. and intern. legislation and regulations •Social responsib.	**1. Social responsibility** •Communication •Permanence of work •Legislation	**1. Social responsibility** •Communication •Social responsibility •Human rights	**1. Environmental responsibility** •Emissions
2. Organisational responsibility •Selected strategies and policies •Company's morale and values	**2. Economic responsibility** •Quality of production •Profitability •Sustainable development	**2. Environmental responsibility** •Solid waste, emissions, effluent •Prod. and origin of raw materials	**2. Environmental responsibility** •Diversity of nature •Sustainable NRM •Prod. and origin of raw materials	**2. Social responsibility** •Communication •Reputation and image
3. Social responsibility •Communication •Reputation and image •Legislation •Soc. responsibil.	**3. Environmental responsibility** •Prod. and origin of raw materials •Sustainable NRM •Emissions •Effluent	**3. Economic responsibility** •Profitability •Quality of production	**3. Economic responsibility** •Profitability •Quality of production •Role of industry in the economy	**3. Economic responsibility** •Quality of production •Profitability
4. Environmental responsibility •Ecological efficiency •Production and origin of raw materials	**4. Organisational responsibility** •Management of operations •Selected strategies and policies	**4. Organisational responsibility** •Global values •Honesty •Selected strategies and policies	**4. Organisational responsibility** •Nat. and local values and norms •Company's and employees' morale and values	**4. Organisational responsibility** •Selected strategies and policies •Management of operations

Germany

The German stakeholders generally achieved a good R^2 in the assessment of all the criteria except for the environmental ones. The majority of the German respondents considered the financial-technical criterion the most important, except for the

environmental stakeholders, who took the environmental criterion to be the most essential one (Table 7).

The internal stakeholders' opinions were highly congruent in the quantitative and qualitative analysis. The only difference was the emphasis on organisational responsibility in the qualitative analysis. The comparison of the financial and environmental stakeholders' opinions also resulted in a relatively logical order. The political and social stakeholders emphasised social responsibility in the qualitative analysis ahead of environmental responsibility.

The majority of the respondents regarded the permanence of employment and communication as the most important social sub-criteria and the employment issue as essential to social responsibility, although the reputation and image of the mill and company were found to be the most important elements of social responsibility as a whole. Profitability and competitiveness were emphasised among the financial-technical criteria. In addition to these issues, the interviewees saw the economic role of the industry as a matter relevant to the company's economic responsibility. The importance of environmental criteria corresponded to some extent with the issues emphasised in the interviews, as recycling was emphasised with both methodologies. The sustainable management of natural resources was among the most important sub-criteria, although sustainability was seldom mentioned in the interviews.

Table 7. Ranking and content of acceptability criteria in Germany

Internal stakeholders	**External stakeholders**			
	Financial stakeh.	**Political stakeh.**	**Environmental st.**	**Social stakeh.**
		Quantitative analysis		
1. Fin.-technical criteria •Long-term profitability Technical competitiveness	**1. Fin.-technical criteria** •Long-term profitability •Technical competitiveness	**1. Environmental criteria** •Sustainable NRM •Recycling of raw materials and products	**1. Environmental criteria** •Diversity and beauty of nature •Effluents	**1. Fin.-technical criteria** •Technical competitiveness •Good reputation
2. Environmental criteria •Recycling of raw materials and products •Sustainable NRM	**2. Environmental criteria** •Renewable raw material •Recycling of raw materials and products	**2. Fin.-technical criteria** •Technical competitiveness •Long-term profitability	**2. Fin.-technical criteria** •Long-term profitability •Good reputation	**2. Environmental criteria** •Renewable raw material •Recycling of raw materials and products
3. Social criteria •Health and safety •Permanence of employment •Communication	**3. Social criteria** •Permanence of employment •Health and safety •Earned incomes	**3. Social criteria** •Permanence of employment •Health and safety •Earned incomes	**3. Social criteria** •Health and safety •Content of work •Communication	**3. Social criteria** •Permanence of employment •Health and safety •Earned incomes
		Qualitative analysis		
1. Economic responsibility	**1. Economic responsibility**	**1. Social responsibility**	**1. Environmental responsibility**	**1. Social responsibility**

•Quality of production •Profitability •Efficiency •Location of the industry	•Production of raw materials •Location of the industry	•Permanence of work •Legislation •Transparency, reputation and image.	•Prod. and origin of raw materials •Ecological efficiency •Energy sources •Emissions	•Permanence of work •Communication •Reputation and image
2. Organisational responsibility •Selected strategies and policies •Management of operations	**2. Social responsibility** •Communication •Permanence of employment	**2. Environmental responsibility** •Emissions, effluent, noise •Ecological efficiency •Energy sources	**2. Social responsibility** •Reputation and image •Permanence of employment	**2. Environmental responsibility** •Emissions •Effluent •Noise
3. Environmental responsibility •Emissions •Effluent •Recyc. of mat. and products	**3. Environmental responsibility** •Ecological efficiency incl. recycling •Emissions	**3. Economic responsibility** •Profitability •Role of industry in the economy		**3. Economic responsibility** •Profitability •Location of the industry
4. Social responsibility •Cultural diversity •Reputation and image •Communication		**4. Organisational responsibility** •Selected strategies and policies		

Portugal

The Portuguese stakeholders' R^2 corresponded to the Finnish stakeholders' level, *i.e.* the result remained below that for the Chinese and German respondents when assessing the acceptability criteria. Their model for the environmental criteria fitted in relatively well, however, which may indicate that environmental issues are well known in society and/or they are referred to regularly in the media. All the Portuguese stakeholders regarded financial-technical issues as the most important main criterion. Only the financial stakeholders considered the financial-technical and social criteria to be equally important (Table 8).

The comparison of the results of the two methodologies resulted in almost identical preferences among the internal, financial and social stakeholders. The political stakeholders emphasised social responsibility rather than economic issues in the interviews, while the environmental interviewees referred only to corporate environmental and social responsibility.

The financial-technical and environmental criteria corresponded relatively well in content to the descriptions of economic and environmental responsibility obtained in the interviews. To some extent, different employment issues were emphasised depending on the method employed. The most important social criteria were the content of work and health and safety at work, although the qualitative analysis pointed to an

appreciation of the permanence of employment and communication when considering employment issues.

Table 8. Ranking and content of acceptability criteria in Portugal

Internal stakeholders	External stakeholders			
	Financial stakeh.	**Political stakeh.**	**Environmental st.**	**Social stakeh.**
		Quantitative analysis		
1. Fin.-technical criteria •Technical competitiveness •Long-t. profitab.	**1. Fin.-technical criteria** •Technical competitiveness •Short-t. profitab.	**1. Fin.-technical criteria** •Technical competitiveness •Good reputation	**1. Fin.-technical criteria** •Technical competitiveness •Long-t. profitab.	**1. Fin.-technical criteria** •Short- and long-term profitability •Tech. competit.
2. Environmental criteria •Sustainable NRM •Emissions •Effluents	**1. Social criteria** •Content of work •Training and education •Communication	**2. Environmental criteria** •Sustainable NRM •Renewable raw material •Recycling	**2. Environmental criteria** •Energy efficiency •Sustainable NRM •Effluents	**2. Environmental criteria** •Sustainable NRM •Diver. and beauty of nature •Renew. raw mat.
3. Social criteria •Health and safety •Content of work •Earned incomes	**3. Environmental criteria** •Sustainable NRM •Diver. and beauty of nature	**3. Social criteria** •Health and safety •Content of work •Communication	**3. Social criteria** •Training and education •Health and safety	**3. Social criteria** •Health and safety •Content of work •Train. and educ.
		Qualitative analysis		
1. Economic responsibility •Prod. of raw mat. •Efficiency, quality of production •Profitability •Role of industry	**1. Economic responsibility** •Profitability •Quality of production	**1. Social responsibility** •Legislation •Political decision-making •Communication •Social responsibility	**1. Environmental responsibility** •Prod. and origin of raw materials •Sustainable NRM •Diver. and beauty of nature •Land use	**1. Economic responsibility** •Efficiency, quality of production •Profitability •Role of industry
2. Social responsibility •Communication, cultural diversity •Legislation •Health and safety •Distr. of welfare	**2. Social responsibility** •Nat. and intern. legislation and regulations •Reput. and image •Cultural diversity	**2. Economic responsibility** •Profitability •Quality of production •Production of raw materials	**2. Social responsibility** •Nat. and intern. legislation and regulations •Political particip. •Communication	**2. Environmental responsibility** •Solid waste, emissions, effluent •Prod. and origin of raw materials
3. Organisational responsibility •Selected strategies and policies •Values and norms	**3. Organisational responsibility** •Management of operations	**3. Environmental responsibility** •Land use •Sustainable NRM		**3. Social responsibility** •Legislation •Political participation •Social responsib., slavery
4. Environmental responsibility				**4. Organisational responsibility**

•Prod. and origin of raw materials •Sustainable NRM •Land use	•Selected strategies and policies •Company's morale and values

DISCUSSION

Some challenges arose during the research, including questions concerned with the fieldwork, analysing the material, certain cultural matters and the general approach.

Challenges for data acquisition

The various cultures were one of the major challenges that arose. The primary focus was on studying the content of the acceptability concept, but this was also a study of the transferability of western-based concepts and methodologies to the industrial Suzhou area of China and to a transitional area in former East Germany. Although the methodologies were new for the interviewees and the public participation and communication has been limited in these places, the respondents expressed no major inhibitions regarding participation in data gathering sessions of this kind, nor did they find these interviews and questionnaires difficult.

No major inconsistencies were found in the statistical and comparative analyses to indicate gaps in the application of the new methods. On the contrary, the value of R^2 calculated separately for each judge showed the highest internal consistency for the Chinese and German respondents in the statistical analysis. The comparison of the qualitative and quantitative results demonstrated that the interviewees were relatively logical in behaviour between the two methods. These tests do not cover all possible deficiencies in the study, however.

The data acquisition no doubt influenced the nature of the resulting material. First, the formulation of the questions was a challenging stage, as they had to be sufficiently detailed to help the interviewees to start their personal analysis but flexible enough to fit the various cultural settings, and comparison of the answers given to the same questions showed that the respondent's cultural background had influenced their understanding of them. In addition, the interviewers represented the case company at the time of data acquisition. The interview arrangements may also have influenced the respondents' attitudes and answers, although the atmosphere in the interview sessions was an open one.

The above challenges were recognised, but their total influence on the conclusions could not be estimated concretely. Qualitative research is always subjective, however, whether it is implemented in a home culture or in a new environment. Thus, the cultural and other challenges can scarcely be said to detract from the value of the results.

Applicability of the methods

The objective of employing the quantitative method here was to test its applicability to research problems of this kind. Measurement and comparison can at best facilitate the formation of a quick idea on a phenomenon, but they provide only a narrow explanation, as found here. When only the elements of corporate responsibility corresponding to the acceptability criteria were compared with the tentative criteria, the analysis resulted in fairly similar valuations, and this showed that the tentative acceptability criteria were relatively broadly applicable, not only in Finland, where they had been formulated.

The comparisons of the quantitative and qualitative results showed that tentative criteria seldom correspond to people's ideas and understanding of the content of the phenomenon under examination. The interviews brought out local shades of opinion and concepts, which are very difficult to take into consideration in the context of a general set of criteria. The financial-technical and social criteria in particular were evidently too narrow in content, and in addition to the financial and technical issues, economic responsibility also included an element describing the role of the company in the economy. The social criterion described only employment issues, but social responsibility also represented cultural, societal and political elements. The tentative main acceptability criteria corresponded to elements of the corporate social responsibility presented recently on the basis of the sustainability concept, covering economic, environmental and social issues. However, these dimensions were inadequate for covering issues referring to organisational responsibility, an element which was added to the corporate responsibility model.

Validity and reliability

The application of a reliability and validity scheme helped to improve the quality of the work. The values of R^2 calculated separately for each judge, which can be interpreted in the statistical analysis as a measure of internal consistency, varied from 0.01 to 0.62 depending on the criteria evaluated and the group of judges (Mikkilä *et al.* 2005). The arbitrary limit $R^2<0.20$ was used to identify the most inconsistent judges (see also the discussion in Alho *et al.*, 2001, pp. 247-250).

The reliability of the qualitative data was based on saturation of the interview material in the Finnish case, and this experience and the large size of the sample improved the reliability in the other cases, too, although the samples had mainly been defined before starting the interviews. In addition, comprehensive analyses with NVivo program clarified the interpretation of the data.

Validity is the extent to which the research gives correct answers (Silverman 1993). The gathering and analysis of both qualitative and quantitative data was used to improve internal validity, and possible contradictions between the interview and survey answers were checked during and after the interview sessions. The comparative analysis was carried out in order to improve the external validity, the purpose being to identify contradictions between the results and assess the reasons for them. In addition, the comparison helped to specify the content of empirical corporate responsibility and define incoherencies in the judgements expressed.

Adequacy of the approach

As the case company has been considered to be an international enterprise since the later 1990's, a case study seemed a suitable approach, and thus the emergence of corporate responsibility was studied through four case mills. These mills were established systems at the local level, interacting relatively well with the surrounding societies, although some of them had met with extensive criticism in the past. During the fieldwork, the stakeholders expressed little criticism of the mills, but rather they were inclined to assess the global operations of the company critically. This led to a reassessment of the research arrangements and the adequacy of the case approach.

The extensive protests in Seattle, Washington, Geneva, Copenhagen and elsewhere in the late 1990's and early 2000's demonstrated that the focus of civil action has moved from the local to the global level, and a closer look at the interview material also showed this. Current criticism is mainly directed at global-level operations such as logging in indigenous forests around the world or the rights of aboriginal people in relation to the purchasing and establishment of mills in less developed countries. Recent observations within the case company have given an impression that global corporate responsibility is not only the sum of local issues in the various places of operation but that some elements of responsibility arise directly at the global level as a consequence of the globalisation of civic action and values, for example, and of international co-operation between trade unions.

CONCLUSIONS

The operating environments of multinational enterprises are changing and developing rapidly because of the expansion of these enterprises and the economic, social, cultural and environmental developments taking place in the societies concerned. Corporate social responsibility and performance have become popular concepts in the strategic management of industries during the last ten to fifteen years. Many business concepts have been launched very rapidly, and it is therefore not surprising that the content of popular theoretical concepts is not always clear in industrial circles. The fate of the concepts applied describes well the speed of this change, in that the concept "acceptability of operations" was first applied when describing social responsibility and related issues in the Finnish pulp and paper industry in the late 1990's, but five years later the industry is regularly reporting on its corporate social responsibility and presenting its ethical code.

The purpose of this study was to define the empirical content of corporate responsibility by comparing the results of quantitative and qualitative analyses of the operations of a global pulp and paper company. The analysis resulted in a model in which corporate responsibility was composed of four elements: economic, environmental, social and organisational ones. The application of two methodologies was perceived to be useful: a quantitative analysis to support systematic research into a few relevant elements of corporate responsibility through the acceptability concept, and a qualitative analysis to deepen the empirical understanding of corporate responsibility. The analysis showed that the formulation of a set of global criteria is challenging but not impossible, as many issues appear in different places. Locally established criteria are more recommendable for assessing and implementing corporate responsibility than global ones, however, in

order to obtain a profound understanding of local circumstances. A general framework can be applied together with local characteristics studied by means of in-depth interviews with a few representatives of the stakeholders.

Comparison of the qualitative and quantitative results demonstrates that, although it is difficult to formulate a set of criteria which are simultaneously general, flexible and detailed enough for the purposes of a globally operating company, it is extremely important to define the concept in order to guarantee efficient allocation of resources both in companies and in society at large. In addition, the empirical study indicated that global corporate responsibility is not only the sum of local issues arising in the various places of operation, as some responsibility elements are formed directly at the global level. It would therefore be good to study empirical corporate social responsibility and responsibility further, with more emphasis placed on local and global-level interaction between a company and its stakeholders.

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