

## Mid Sweden University

This is an accepted version of a paper published in *International Journal of Quality and Service Sciences*. This paper has been peer-reviewed but does not include the final publisher proof-corrections or journal pagination.

Citation for the published paper:

Bäckström, I., Eriksson, L., Lagrosen, Y. (2012)

"A health-related quality management approach to evaluating health promotion activities"

*International Journal of Quality and Service Sciences*, 4(1): 76-85

URL: <http://dx.doi.org/10.1108/17566691211219742>

Access to the published version may require subscription.

Permanent link to this version:

<http://urn.kb.se/resolve?urn=urn:nbn:se:miun:diva-16070>



<http://miun.diva-portal.org>

# **A health-related Quality Management approach to evaluating health promotion activities**

**Ingela Bäckström**

*Department of Quality Technology and Management, Mid Sweden University,  
Östersund, Sweden*

**Lina Eriksson**

*Department of Psychology, Mid Sweden University, Östersund, Sweden*

**Yvonne Lagrosen**

*Department of Quality Engineering, University West, Trollhättan, Sweden*

## **Abstract**

**Purpose** - The purpose is to describe health promotion activities accomplished within a project and to measure the conditions for sustainable health within the case organizations. The purpose was also to test a previously developed measurement approach, which measures health-related Quality Management.

**Methodology/Approach** - A health promotion project currently being carried out at eight Swedish elementary schools has been studied. In earlier research a measurement approach have been developed to measure health-related Quality Management. The approach was handed out to the co-workers at the eight different schools in the initial stage of the project. The leaders at the schools were informed of the results of their own school and the mean value of all the eight schools. The consistency and reliability of the statements within the approach was tested.

**Findings** - A description of health promotion activities accomplished and planned within the project can be found. The results from the measurement of the health-related Quality Management in the eight schools are presented together with the mean score of all schools. The test of the measurement approach is presented and discussed.

**Value** - A description of health promotion activities can help managers and project leaders to plan and carry out valuable health promotion activities in their striving for both sustainable health among the co-workers and efficient organizations. This measurement approach can help managers and project leaders to measure the effects of the health promotion activities.

**Keywords** Quality Management, health promotion, measurement approach, leadership and sustainable health.

**Category** Research paper

## **1. Introduction and background**

Work-life balance has a major impact not only on business productivity but also on the economy as a whole (Hughes, 2007) and Wolf (2008) maintain that implications for the workplace are enormous as mental disease goes hand in hand with significant productivity losses. According to Janssen *et al.*, (2003) the occurrence and causes of sickness absence are affected by several factors, many of which are work-related and organizational. Examples of the former are work content and work conditions. The latter include, for instance, company size, the existence of health promotion programmes, and absence policies (*ibid*). When implementing corporate health promotion, the responsibility should mainly rest with the management (Plath *et al.*, 2008). Thus health promotion activities are important in order to improve co-worker health and in the long term the efficiency in the organization. Advancing knowledge in the area of leadership for health promotion could make valuable contributions to increasing the health of the population, (Andersson *et al.*, 2005). Vinberg (2006) claims that increased workplace health and performance are connected to a good working environment and work organization.

The salutogenic approach to health, identifying factors that promote good health, (Antonovsky, 1987) instead of identifying and limiting those leading to ill-health has been common in health research. Viewing co-worker health as a resource for corporate quality, success and competitiveness is in line with this approach, (Wreder *et al.*, 2008). Leadership theory research in general has shown that leadership behaviour can be used to predict co-worker health outcomes (Skogstad, 1997). Management strategy based on humanistic core values, supported by Quality Management, has been pointed out as important for co-worker health (Wreder, 2008). Correlations between co-workers' perceptions of their health and values within Quality Management have also been found (Lagrosen, 2004; Lagrosen *et al.*, 2007). A well-developed, structured approach for health-related quality management can be used as a management tool in order to assess and improve employees' well-being, satisfaction and motivation (Lagrosen *et al.*, 2012). Taken all in all, research, knowledge and support to the management within the health promotion area are important.

The purpose of this paper is to describe health promotion activities conducted within a project and to measure the conditions for sustainable health within the case organizations. The purpose is also to test earlier previously developed measurement approach, which measures health-related Quality Management (Lagrosen and Bäckström, 2005 and Lagrosen *et al.*, 2010).

## **2. Health promotion and measuring health-related Quality Management**

Correlations between Quality Management on a company-wide scale and improved co-worker satisfaction and health as well as improved external customer satisfaction and financial results have been found in research, (see for instance, Park Dahlgaard and Dahlgaard, 2003; Dahlgaard and Park Dahlgaard, 2003a; 2003b). Wreder (2008) maintains that one way of working with co-worker health is to strategically and systematically work on creating a culture based on core human values, by choosing methodologies and tools which support the values present within Total Quality Management (TQM). Studying successful organizations, she found that leadership in the form of 'management commitment' was a supporting value and a prerequisite for Quality Management practices such as employee involvement,

delegation and coaching when working with co-worker health. In addition, Bäckström *et al.*, (2009) found that organizations that have achieved healthy co-workers with low sickness absence through their conscious and well-structured work were also working according to Quality Management. Workplace practice includes managers giving guidance and taking their time to coach the employees so that they dare to prioritize and take decisions by themselves; carrying out regular personal development talks with the employees; really listening and trying to find drivers for action; as well as giving everyone the opportunity to be aware of the customer and what their own contribution is: who they are creating value for (*ibid*). This is in line with Lagrosen *et al.*, (2007) and Wreder *et al.*, (2008) who maintain that Quality Management can improve the health status of the co-workers by bringing in more humane and effective practices and at the same time can improve the working conditions. To organize healthier and safer workplaces and achieve excellence in product and service quality the same kind of overarching management system is needed (Warrack and Sinha, 1999). There is also research which describe how Quality Management can be practiced to support sustainable health among co-workers and also what is of most importance within Quality Management to influence co-workers' sustainable health (Bäckström, 2009; Lagrosen *et al.*, 2010). The results show that the value 'Leadership Commitment' and the value 'Participation of Everybody' are important to support sustainable health among co-workers when Quality Management is practiced (Bäckström, 2009, Lagrosen *et al.*, 2012). The underlying dimension of the values 'Leadership Commitment' and 'Participation of Everybody' regarding the relation to co-worker health was examined by (Lagrosen and Bäckström, 2005; and Lagrosen *et al.*, 2010). In that study, it was pointed out that integrity, presence and communication, empathy and continuity are underlying dimensions of 'Leadership Commitment'. Development, being informed and influence were found to be the underlying dimensions of the value 'Participation of Everybody'. These dimensions were also found as established methodologies, values and practices in successful organizations that have achieved good workplace health (Bäckström, 2009).

A measurement approach was developed, with the found underlying dimensions as a base, in order to help managers examine to what extent the values 'Leadership Commitment' and 'Participation of Everybody' permeate the organization (Lagrosen *et al.*, 2012). The measurement approach can be used to point out to what extent the organization is practicing the health-promoting values of Quality Management and in what areas improvement is needed to increase co-worker health (Bäckström, 2009; Lagrosen *et al.*, 2012). The measurement approach can also be used longitudinally to assess before and after carrying through an organizational change (Lagrosen *et al.*, 2012).

### **3. Description of the health-promoting project**

The health promotion project was initiated in 2009 and school leaders and teachers in elementary schools in the county of Jämtland in Sweden were chosen as a target group. This county has a high unhealthy rate in terms of not being able to work due to sick-leave, compared to other counties in Sweden. Elementary schools as organizations were chosen since teachers, as an occupational group, are vulnerable because of increasing demands from society. Investigations from the Swedish Work Environment Authority show in self-report questionnaires where teachers were asked to evaluate their working conditions that more than 60 % of teachers were not planning to work or probably would not manage to work until

pension. In today's society health is critical in the competitive labor market. During elementary school, the teacher is a role model for young children and has a major influence on the process of learning. It is important to create a working environment in which teachers feel physically, mentally, and socially healthy. To be able to investigate their needs a pre-project was conducted with funding from The European Social Fund (ESF). A survey containing 59 questions concerning health-promoting aspects was sent out. The results showed that there were both direct and indirect needs for capacity building. Direct needs were, for example, more knowledge about factors that promote health and indirect needs included aspects concerning the individual's health such as stress management in the working environment. Hence, the outcome of the pre-project showed that there were needs for improvement of qualifications and competence within the health-promoting area. Since there were obvious needs the project management decided to apply for funding from ESF to be able to carry out a health-promoting project.

Eight schools in the municipality of Östersund, and Krokoms were invited to participate in the project, which resulted in a target group of about 185 school leaders and teachers at seven municipal schools and one private school. The project, based on the findings from the pre-project, started in February 2010 with funding from the sport association of Jämtland-Härjedalen (Jämtland-Härjedalens Idrottsförbund), ESF and the county council of Jämtland, and in cooperation with Mid Sweden University. The vision was to energize health promotion and sustainable development of society. The aim of the project was to create good conditions for the target group through capacity building and to give the teachers knowledge and tools to implement a health-promoting approach, both educationally but also in everyday life. Equality and availability are aspects that were fundamental conditions in planning and implementing the health-promoting activities. In the long run this health-promoting intervention will hopefully lead to a more health-promoting work environment and a decrease in the unhealthy rate. The activities conducted in the project are described below.

#### **4. Methodology**

The health-promoting project described above was studied with focus on the health promoting activities that were carried out. The project management informed the researcher about the project; its purpose, the participating schools and the planned activities within health-promoting areas in the initial stage of the project. In December 2010, information concerning changes to the original plan, what sort of health-promoting activities were planned and how they were to be conducted, were provided by the project management. A revised plan for all activities planned for the remaining project time was also provided.

Information on the Quality Management health-related measurement approach was distributed to the co-workers at the eight different schools at the beginning of the project. The target group had been informed about the project and the purpose of the measurement. Totally 141 questionnaires were collected but two were omitted from analysis, as they were not filled in properly. A total of 139 questionnaires were analyzed out of 185 possible co-workers, which gives a response rate of 75%. The questionnaire was developed based on the dimensions of the values 'Leadership Commitment' and 'Participation of Everybody' developed by (Lagrosen *et al.*, 2005; Lagrosen *et al.*, 2012). Each dimension in the questionnaire was constructed by means of three different statements that represent the specific dimensions, (*ibid*). The respondents were asked to mark on a seven-point agreement scale to what extent

they agreed with the statements. This kind of graphical scale is usually considered to be of the interval type (Lekvall and Wahlbin, 1993). The extremities of the scale were “Disagree completely” and “Agree completely”. To test the internal consistency and reliability of the statements within each construct, Cronbach’s alfa analysis was carried out using the SPSS reliability analysis procedure (Malhotra and Birks, 2000). Correlations were then calculated using the Pearson Correlation Coefficient and its corresponding test-statistics. The Cronbach’s alpha coefficient was computed for each dimension in order to test the internal consistency reliability. A value of 0.6 or less is generally considered unsatisfactory (Hair *et al.*, 1998; Malhotra and Birks, 2000) and the coefficient tends to increase with the number of items or statements.

When the results from the measurement approach were analyzed, each school leader was informed about the result at their specific school and the mean value of all the schools in the project. A description of the meaning of each dimension that had been measured was handed out to the leaders. They were also informed of possible methodologies, behaviors and values that could help them to be able to increase sustainable health among the co-workers (Bäckström, 2009).

## **5. Health promotion activities accomplished within the project**

Depending on the needs of the different schools, those involved in the education and the further training were different for different activities. Some of the activities were aimed at the leaders; the headmasters and the headmistresses and some of the activities were aimed at all; both co-workers and leaders within the school. In the first phase, the focus was on preparing the school leaders for what their co-workers would go through during the project. By doing so the project management could be more confident that the main target group would get the right information and resources to follow through. To ensure participation the school leaders were involved in planning the practical aspects of the activities. This enabled customized solutions for every school and their co-workers. The activities for school leaders started in May 2010 and for co-workers in August 2010.

### ***5.1 Activities aimed at the leaders***

The activities for the school leaders were divided up into seven different meetings during the 12 months of the project. Four of these were carried out during 2010 in May, June, September and October and the remaining three in 2011 in January, March and May. The first activity for the school leaders was a one-day lecture about salutogenic leadership and workplace health promotion. The salutogenic approach focuses on the factors that promote health instead of the factors that are detrimental to health. The kickoff for the directorate (group of school leaders) was carried out in June: two days with the purpose of letting the leaders get to know each other and to start the process of capacity building in the health-promoting area. This included lectures on communication and other tools for implementing the health-promoting perspective in the elementary schooling system. In September the leaders got together to summarize the development so far and to discuss the needs of every specific school and their co-workers. In October the school leaders met for a half-day about diet, and physical activity and exercise. In January the group met again to talk about progress made and how and in which way the

project had affected the schools and their co-workers. The sixth activity for the directorate was in the end of March to discuss and plan the future. The last activity was a follow up meeting in May when the directorate revised the plan and supported each other in the process. The reason why the school leaders had separate activities, besides being one step ahead of the main target group, was that when the project ended, they as a group could help and support each other to keep up the health-promoting work. They serve as role models for their co-workers.

### ***5.2 Activities enriched to the co-workers***

The first step in launching the project was to inform all co-workers of the eight schools and outline the project and their participation. This took place in May 2010 and at the same meeting the co-workers were asked to fill in a questionnaire on the measurement approach. During the project there were two meetings where all the 185 participants in the project would be gathered all at the same time. The first time was during the kick-off which took place in August; two days of introduction of the health-promoting perspective, and approach. The second time will be on June 13<sup>th</sup> 2011 when the “starting point” for the future takes place. During two days in September all coworkers were invited to participate at a half-day lecture in diet and physical activity and exercise. In October a series of workshops in communication started and, depending on the needs of each school, the communication activities were followed up and took place in the working environment of each school. There was also a day of different workshops and lectures to learn more about the salutogenic approach and integration of health promotion. During the whole project time the participants were offered personal trainers, students at the sport science program at Mid Sweden University, who they met once a week during a period of five to six months.

The activities in the project were planned to go from general, involving all co-workers, to become more school-specific and individualized. In October the co-workers got a menu of different health-promoting activities to choose from. These activities were: salutogenic leadership as a practical pedagogic, coaching I, coaching II, yoga, mental training, physical activity and exercise, diet, balance in everyday life, movement and mental practice in the classroom, and motorical development as a foundation for learning (MUGI). Each teacher had an amount of hours to spend on one or more of the activities described above. The activities were optional and no one was forced to participate against their will. The aim of these activities was that each individual, regardless of position, could do something that he or she felt was meaningful as a person, not only a teacher.

The project ends with a “starting point” for the future that will take place in June 2011. This day will summarize the whole process and the co-workers’ experiences of being a part of a health-promoting project. At this stage the project management will hand over to the directorate whom together with their co-workers will continue the health-promoting process at each school. During this meeting the participants will fill in the questionnaire on the measurement approach as a way to evaluate if the health-promoting activities have had an effect on the co-workers’ perception of their health and if the permeation of the health-related values within Quality Management have increased.

## 6. Measuring of the starting conditions within the schools

The results of the measuring in the beginning of the project are illustrated in Figure 1, which illustrates the mean value of the dimensions and health status at all schools. The mean value for all schools for all dimensions varies from 4.53 to 5.54. The dimension that varies most between the schools is 'Continuity' which varies from 2.81 to 6.30. The health index is the dimension that varies least between the schools which varies from 5.18 to 6.03 which is rather high on a seven degree scale. These results from the measuring approach show that the conditions for sustainable health vary quite a lot between the schools.

	Empathy	Presence/ Communi- cation	Integrity	Continuity	Develop- ment	Influence	Being informed	Health
School A	5.67	5.93	5.73	6.30	5.80	5.70	4.37	6.03
School B	4.89	4.89	4.82	4.96	4.62	4.81	4.65	5.39
School C	5.83	5.33	5.54	4.88	5.23	5.17	4.35	5.60
School D	5.85	5.74	5.52	4.89	5.00	5.48	5.63	6.26
School E	3.38	3.57	3.33	2.81	3.05	3.24	4.29	5.29
School F	5.26	4.64	5.36	4.43	4.74	4.71	4.45	5.71
School G	5.41	5.51	5.39	4.76	4.71	4.57	4.25	5.18
School H	4.74	4.26	4.56	4.86	3.83	4.30	4.44	5.44
<b>Total</b>	<b>5.09</b>	<b>4.93</b>	<b>5.00</b>	<b>4.82</b>	<b>4.59</b>	<b>4.74</b>	<b>4.53</b>	<b>5.54</b>

Table 1. The results from the measurement in all the schools.

As the leader was informed about their own mean value they could compare their own results with the mean value of all schools. The results gave the leader information about the co-workers' perception of their health, and the co-workers' perception of to what extent the values 'Leadership Commitment' and Participation of Everybody' permeate the schools. It also gave them information as to which areas they as leaders had possibilities to improve.

## 7. The test of the measurement approach

The Cronbach's alpha coefficient was computed for each dimension in order to test the internal consistency reliability. A value of 0.6 or less is generally considered unsatisfactory (Malhotra and Birks, 2000), and the coefficient tends to increase with the number of items or statements (Hair *et al.*, 1998). Six of the dimensions score higher than 0.6. The dimensions 'Influence' and 'Being Informed' score less than 0.6 which can be considered rather low. There is also some variation in the data where 'Continuity' has the highest standard deviation indicating a substantial variation in perception of that dimension among the co-workers. In earlier tests that dimension also had the highest variation. The dimension 'Continuity' also has a high variation.

DIMENSION	MEAN SCORE	ST.DEVIATION	CRONBACH'S ALPHA
Empathy	5.0983	1.11962	0.837
Presence/Communication	4.9257	1.05489	0.637
Integrity	5.0024	1.06284	0.783
Continuity	4.8177	1.34249	0.671
Development	4.5947	1.29583	0.752
Influence	4.7386	1.16079	0.552
Being Informed	4.5276	0.95797	0.535
Health-index	5.5372	1.03832	0.789

Table 2. The results of the internal consistency reliability analysis of the measurement approach.

We also calculated the Pearson correlation between the results on the statements regarding the dimensions and the statements regarding the health index. The results are presented in Table 3.

DIMENSION	PEARSON CORRELATION	SIG.
Empathy	0.206*	0.015
Presence/Communication	0.217 *	0.010
Integrity	0.180 *	0.033
Continuity	0.134	0.115
Development	0.082	0.336
Influence	0.328**	0.000
Being informed	0.238**	0.005

Significance level: \*p<0.05; Significance level: \*\*p<0.01

Table 3. Correlation between the dimensions and the health index

As can be seen in the table, the two dimensions 'influence' and 'being informed' were highly significantly correlated with the health index with a p-value for the first mentioned dimension of only < 0.000. A significant correlation can also be seen between 'integrity', 'presence/communication', 'empathy' and the health index. Thus, we can conclude that most of the dimensions are related to good health among the employees.

## 8. Discussion and Further research

The description of the health promotion activities accomplished within the project can help managers and project leaders to plan and carry out their projects and activities in their striving for sustainable health among the co-workers and for efficient organizations. Before the project is finished the co-workers will be asked to fill in the measurement approach questionnaire once again. Then a comparison between the results in the beginning of the project and the results in the end of the project can be done. That comparison can confirm if the health promotion activities have influenced health among the co-workers. The comparison can also confirm if the underlying dimension to the values 'Leadership commitment' and 'Participation of Everybody' permeates the schools to a higher extent after having conducted all those health promotion activities. It would also be interesting to follow up the schools later maybe after a year and test if the values have permeated to a greater or lesser extent. Another interesting further object of research is to interview the leaders and the co-workers to investigate their experience of the health-promoting activities in the project. In those interviews it could be interesting to investigate if the co-workers think the leaders have changed their leadership after the health-promoting activities and if the leaders think they have changed their own leadership and also if the co-workers think they have changed their way of teaching the children.

Since two of the dimensions had lower Cronbach's alpha than 0.6, a factor analysis would be valuable in order to investigate which the underlying factors are in this material. New dimensions could be found which perhaps can give new insight into correlations with employees' perceptions of their health. In our previous research (Lagrosen *et al.*, 2012) the dimensions 'Development' and 'Influence' had Cronbach's alpha higher than 0.6. However, that research study was carried out in a manufacturing company (Lagrosen *et al.*, 2012). A manufacturing environment is quite different from an elementary school environment. This could be a reason for the different results.

## References

- Andersson, D., Poltnikoff, R.C., Raine, K. and Barret, L. (2005), "Leadership for health promotion. Development of measures of individual leadership for health promotion", *Leadership in Health Services*, Vol. 18 No. 2, pp. 1-12.
- Antonovsky, A. (1987), *Unraveling the mystery of health: how people manage stress and stay well*. Jossey-Bass, San Fransisco.
- Bäckström, I. (2009). *On the relationship between sustainable health and quality management: leadership and organizational behaviours from Swedish organizations*. Doctoral Thesis. Östersund: Department of Engineering and Sustainable Development, Mid Sweden University.
- Bäckström, I., Larsson, J. and Wiklund, H. (2009), "Are healthy and successful organizations working according to Quality Management?" *International Journal of Workplace Health Management*, Vol. 3 No. 2, pp. 245-57.
- Dahlgaard, J.J. and Park Dahlgaard, S.M. (2003a), "The 4p Quality Strategy for Breakthrough And Sustainable Development", *European Quality*, Vol. 10 No. 4, pp. 6-9.
- Dahlgaard, J.J. and Park Dahlgaard, S.M. (2003b), "A Quality Strategy and Self-Assessment Method for Organizational Excellence.", *The Asian Journal on Quality*, Vol. 4 No. 1, pp. 20-39.

- Hair, J. F. Jr., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R.L. (1998), *Multivariate data analysis* (5. ed.). Prentice Hall Inc., New Jersey.
- Hughes, N. (2007), "Is life a balancing act?" *Industrial and commercial training*, Vol. 39 No. 5, pp. 281-84.
- Janssen, N., Kant, I. J., Swaen, G. M. H., Janssen, P. P. M. and Schröer, C. A. P. (2003). "Fatigue as a predictor of sickness absence: results from the Maastricht cohort study on fatigue at work." *Occupational and Environmental Medicine*, Vol. 60 No. 1 (Suppl 1), pp. 71-76.
- Lagrosen, Y. (2004), "Exploring the effects of TQM on employee health", *Journal of Management Systems*, Vol. 16 No. 3, pp. 1-10.
- Lagrosen Y. and Bäckström I. (2005). Values of TQM and employee health: an exploration and comparison of two manufacturing departments. *Proceedings of 8th QMOD International Conference, Quality Management & Organizational Development, June, 2005*, Palermo.
- Lagrosen, Y., Bäckström, I. and Lagrosen, S. (2007), "Quality management and health - a double connection", *International Journal of Quality and Reliability Management*, Vol. 24 No. 1, pp. 49-61.
- Lagrosen, Y., Bäckström, I. and Lagrosen, S. (2010). The relationship between quality management and employee health - exploring the underlying dimensions. *International Journal of Productivity and Quality Management*, Vol. 5, No. 2, pp. 109-123.
- Lagrosen, Y., Bäckström, I. and Wiklund, H. (2012). A proposed approach for measuring health-related quality management. *The TQM Journal*, Vol. 24 No 1.
- Lekvall, P. and Wahlbin, C. (1993), *Information för marknadsföringsbeslut (In Swedish)(Information for marketing decisions)*, IHM, Gothenburg.
- Malhotra, N. K. and Birks, D. (2000), *Marketing research: an applied approach* (European ed.), Pearson Education, Harlow.
- Park Dahlgaard, S.M. and Dahlgaard, J.J. (2003), "Towards a holistic understanding of human motivation: core values—the entrance to people's commitment?", *AI & Society*, Vol. 17 No. 2, pp. 150-80.
- Plath, S.-C., Köhler, T., Krause, H. and Pfaff, H. (2008), "Prevention, health promotion and workplace health management in German banks: Results from a nationwide representative survey", *Journal of Public Health* Vol. 16 No. 3, pp. 195-203.
- Skogstad, A. (1997), *Effects of leadership behavior on job satisfaction, health and efficiency*. University of Bergen, Bergen.
- Vinberg, S. (2006), *Health and performance in small enterprises: studies of organizational determinants and change strategy*, Doctoral Thesis No. 2006:13, Luleå University of Technology, Luleå.
- Warrack, B. and Sinha, M. (1999), "Integrating Safety and Quality: Building to achieve excellence in the workplace", *Total Quality Management*, Vol. 10 No. 4/5, pp. 779-86.
- Wolf, K. (2008), "Health and productivity management in Europe", *International Journal of Workplace Health Management*, Vol. 1 No. 2, pp. 136-44.
- Wreder, Å. (2008), *How leadership and new technology influence the work environment : experiences taken from Swedish organizations*, Doctoral Thesis No. 2008:09, Luleå University of Technology, Luleå.
- Wreder, Å., Gustafsson, M. and Klefsjö, B. (2008), "Management for sustainable health - a TQM-inspired model based on experiences taken from successful Swedish organizations", *International Journal of Quality and Reliability Management*, Vol. 25 No. 6, pp. 561-85.