

Effects of quality circle participation on employee perception and attitude in five Malaysian companies

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This study investigates changes in employee attitude brought about through participation in Quality Circle (QC). Assessment of circle performance was measured by technical aspects, length of participation, training, member feelings about QCs, job satisfaction and job commitment. Study illustrates the impacts of participation on 130 workers from 5 Malaysian companies participated in a survey. Results show that QCs develop positive attitudes among employees who derive job satisfaction when they feel that their companies are a good place to work and consequently, more willing to extend their efforts for their companies.

Keywords: Employee perception, Malaysian companies, Quality circle

Introduction

In the service sector, high cost, decreasing profit margins, inconsistent quality of delivery, and competitors in local markets have encouraged many organizations to focus on ways to increase the contribution of employees to improvements in quality and productivity¹. A typical management favored limited employee involvement in the decision-making process². Most of the new approaches to employee involvement or empowerment require difficult conceptual and behavioral changes for many managers. As a result, partial measures such as Quality Circle (QC), which have worked so well for the Japanese, became a more acceptable approach in some cases because of the more limited impact on traditional decision-making procedures and the recognized short-term benefits of such programs. For other organizations, QC was merely a first or a pro tem step in an evolving program of total quality management.

Outcomes of Quality Circles

QCs are small groups of volunteers from the same work areas who meet regularly to identify, analyze, and solve quality and related problems in their area of responsibility³. QCs revolve around the principles of voluntary participation and collaborative decision-

making¹. For the successful implementation of a QC program, employees have to be interested in the program and believe that their support and participation will benefit themselves as well as the organization, and participants in the QCs must be well trained in group dynamics and problem-solving methods that are part of the QC technology⁴. QCs can result in intangible benefits concerning employee in terms of improved morale, attitudes, communications and job satisfaction, and tangible benefits concerning management such as, cost saving and improved productivity and quality⁵. Moreover, not considering tangible benefits⁶ intangible benefits are more than justifiable. QCs provide improved communication⁷, quality improvement for organization effectiveness⁸, a positive influence on employees' attitudes to the work situation⁹, job satisfaction¹⁰ and employee empowerment¹¹.

Quality Circle Limitations

QCs have been criticized as a limited form of empowerment and a way to keep real decisions and control away from employees⁶. QCs provide real benefits for both management and employees, but have significant limitations¹². Participants have limited power and can solve only certain types of problems in organizations¹³. Because QCs have limited impact on traditional decision-making procedure, ability to involve workers in decision-making is also limited¹. Also, Wood *et al*⁴ claimed that there is very little hard evidence for the claimed

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benefits of QCs. Griffin¹⁴ found significant differences between experimental QC groups and control groups for job satisfaction, organizational commitment, and performance rating. Head *et al*¹⁵ found QC group attitudes to actually decline over time, control group attitudes remaining constant. QCs are not practically effective¹² when it comes to spearheading more participative management approaches in organizations. Reylito¹⁶ suggested that organizations should be able to regroup membership in QCs and try out new programs, like self-work teams, which reward members accordingly and competitively, in order to escape losing the effectiveness of the quality programs. Simmons¹⁷ pointed out that self-directed work teams are not more effective than QCs in helping organizations implement management approaches.

This paper presents that QCs can serve a purpose in developing positive attitudes among employees, and QC concept is still alive and effective. Paper focuses on the Malaysian experience in implementing QCs, highlighting the measures that identify success factors.

Materials and Methods

A questionnaire, with a majority of the questions being of the close-ended type, was mailed to 17 companies in Malaysia on December 2003. Out of 17 companies, only 5 showed willingness to participate. After one-month, out of 300 questionnaires, 130 (43%) filled questionnaires were received. Responses for the questionnaire were gathered from two groups: i) Members of QCs; and ii) Workers in the same organizations but not part of QCs.

Structure of Questionnaire

Questionnaires were designed to examine the level of training received, purpose of QCs participation, successful contributors, suggestions, communication, leadership, job satisfaction, job commitment, and intention to quit. Intention to quit is relevant to this study because QCs require long-term commitment from the staff. Questionnaires were divided into following 5 Parts: I) Technical aspects of QCs; II) QC process; III) Effectiveness of organization and employee contribution to QC; IV) QC and organization; and V) Background of respondents. Five Parts are further divided into sections (A - I). Questionnaire contained multiple-choice and Likert Scale questions. Respondents from QC category were requested to answer all the questions from all 5 Parts

and Sections (A - I). Appendix I shows Parts I to V of the questionnaires.

Data Collection and Analysis

Data collected from questionnaires were analyzed using frequency distribution and cross-tabulation methods. Results were reported according to the headings of the Section. Each survey question was first analyzed individually and subsequently cross-tabulation technique was exercised to look at the independence and interdependence relationship between two or more variables. In the next part of analysis, a one-way ANOVA was done to compare attitude of the QC and non-QC members. ANOVA was done to determine if there was a significant difference in attitude towards the organization of affiliation. Three broad areas, tested between the two groups, were as follows: (i) Company is a good place to work; (ii) Job commitment and willingness expand work effort, and; (iii) Intention to quit. In arriving at these three variables of interests, variables of Section H in questionnaire were grouped together to form the new variables.

Results and Discussion

Out of 130 respondents, 109 (83.8%) were QCs and rest were non-QC members (16.2%). Majority of the employees (57.8%) were participants of technical QC (28.4% in clerical QC, and 13.8% in the shop floor QC). Approx half of the QCs members had less than 2 years experience in QC program, while other half of the members participated in QCs for more than 2 years.

Training Adequacy and QC Effectiveness

Study examines the relationship between adequacy of training (level of training received since joining QC program) and how QC members' opinions reflect on the importance of training in problem solving techniques. A significant relationship between adequacy of training and members' opinions about significance of training in the success of QCs were observed (Table 1).

Perception of Training and Leadership

By using the Pearson Correlation to test the relationship between leadership of QC and perception of adequacy of training after joining a QC, a very weak correlation was found between enjoying being a leader and adequacy of training ($r = 0.144$). This can mean that the training did not significantly gear QC members to become leaders of QCs, as the training received did not significantly change the perception of leadership of QCs.

Table 1— Correlation between adequacy of training and members’ opinions about the significance of training in the success of QCs

		Adequacy of training	Importance of training in solving problems
Adequacy of training	Pearson correlation	1	0.280(**)
	Sig. (2-tailed)		0.003
	N	109	109
Importance of training in solving problems	Pearson correlation	0.280(**)	1
	Sig. (2-tailed)	0.003	
	N	109	109

** Correlation is significant at the 0.01 level (2-tailed)

Feelings about Quality Circle

General feeling of the members towards QC to some extent was positive (Table 2). QC members somewhat agreed that they enjoy being members of QCs and they would join another circle if moved to a new work area. QC members, however, neither disagreed nor agreed that their experience with the circle had not been unpleasant. Positively, it strengthened their relationship among co-workers.

Involvement in QCs also improved communication with the QC members’ supervisor. QC members further agreed that the QC efforts financially contributed to the organization. Consequently, the company appreciated efforts of QC members. Similar feelings about QCs were stated in several studies^{8,18-20}. On the other hand, many studies^{6,21-23} reported different employee perceptions towards the program. And, since half on the respondents in the present study had less than two years experience, it is not surprising to see positive feelings from at least those participants who still comparatively new to the QC program.

Purpose of Quality Circles

Primary purpose of QCs is to increase quality and reduce number of defective parts (Table 3). Increased productivity and good perceptions of management and company were rated jointly as the second most important purpose of QCs. Results indicate that the purpose of QCs is to make employees think that they were important and to increase communication between workers and management. Increased employee participation was found the least important purpose to set up QCs. This contradicts the findings^{16,24-28}, where the most important purpose of setting up QCs program was to increase employee participation and communication between workers and management.

As the increased employee participation was the least important purpose of QCs program, it is not surprising to see that increased quality and productivity and decreased defective parts are the

Table 2— Feelings about QC

	Mean*	SD**
Enjoy being member of Circle	3.9817	0.79328
Willingness to join another Circle	3.8073	0.82189
Recommend friends to join Circle	3.9358	0.73630
Pleasant experience with Circle	3.0826	0.88326
Improved communication with supervisor	3.8532	0.66424
Relationship with workgroup better	4.0459	0.67200
Circle doing important work	4.1284	0.68179
Circle contributed a lot to organization	4.0000	0.79349
Circle efforts profit company	3.9450	0.88018
Company appreciate Circle effort	3.7982	0.76715

*1= strongly disagree, 2= somewhat disagree, 3= have no opinion, 4= somewhat agree, 5= strongly agree; **Standard deviation

most important purpose of creating such program. In the same perspective, Substantive Participation²⁹, in QC, is more likely to enhance performance than participation.

Contribution of Various People in the Organization

Contribution in descending order of importance indicates that QC members consider QC leader as the person contributing the most towards the success of QC (Table 4). Thus, leadership qualities are essential for the success of a QC. This is followed by the individuals’ contribution and the facilitators. Management is ranked fourth among the various people.

Many researchers have observed the importance of QC leader in contributing towards the success of the QC. According to Clark²¹, unless QC leader has extremely good relations with other employees and has natural leadership ability, the program is destined to fail. In addition, leader should be trained and made knowledgeable³⁰ before being assigned to lead a circle.

Table 3—Purpose of QC in order of importance

	Value assigned *					Total score**
	1	2	3	4	5	
Increase quality	0	0	22	48	39	453
Decrease number of defective parts	0	1	16	59	33	451
Increase productivity	0	1	22	51	35	447
Make management and company look good	0	2	23	46	38	447
Make employees think they are important	0	4	20	50	35	443
Increase communication between workers and management	0	1	22	56	30	442
Allow employees to use intelligence expertise and innovative ability	1	1	21	55	31	441
To be competitive in national and world market	0	1	22	57	29	441
Increase employee participation	0	6	20	52	31	435
Improve quality of work life for employees	3	2	18	61	25	430

*1 = extremely unimportant, 2 = somewhat unimportant, 3 = neither unimportant or important, 4 = somewhat important, 5 = extremely important

**Maximum possible score for any item is 545 (109 respondents times a high score of 5)

Implementation of QC Suggestions by Organization

Break-up of QC members feelings is as follows: there has been considerable implementation of their suggestions, 63.3; suggestions were implemented to a great extent, 16.5; every suggestion was implemented, 14.7; and there was no or very little implementation of suggestions made by the QCs, 5.5%. As the largest part of QC members felt that their suggestions have been considerably implemented by their organizations, this indicates that management plays a positive role in stimulating QCs activities by recognizing the contribution of QCs members. Similar results have been conveyed in other studies^{1,3,6,12,13,20,22,31-36}.

Job Satisfaction and Commitment to Organizational Goals and Values

QC members were fairly satisfied (Table 5) with their jobs as they agreed that company was a good place to work (mean =3.8257). QC members also showed willingness to expand their efforts to achieve organizational goals and job commitment (mean = 3.8930). QC members also show, to some extent, no intention to quit the organization (mean = 2.8716). Non-QC members were less satisfied (Table 5) in their jobs as they did not strongly agree that their company is a good place to work (mean = 3.5556). They were also less willing to expand their effort and accept organizational values (mean = 3.6032). Also, they show no great intention to quit (mean = 3.0952). Results also indicate that standard deviation (SD) is

Table 4— Extent to which members of the organization are responsible for QC success

	Value assigned*					Total score**
	1	2	3	4	5	
Circle leader	0	3	19	46	41	452
Yourself	0	0	22	60	27	441
Facilitator	0	3	34	45	27	423
Management	1	7	28	48	25	416
Circle members	0	3	36	58	12	406
Unit supervisor	0	5	41	45	18	403
Steering committee	1	8	32	51	17	402
Union	31	19	30	22	7	282

*1 = No contribution, 2 = Very little contribution, 3 = Moderate contribution, 4 = Considerable contribution, 5 = Tremendous contribution

**Maximum possible score for any item is 545 (109 respondents times a high score of 5).

greater for job commitment and willingness to expand effort (SD = 0.53353) and intention to quit (SD = 0.63371). QC members and non-QC members are significantly different in their perceptions (Table 5) of their companies as a good place to work (F = 4.024) and in their job commitment and willingness to expand effort (F = 5.274). However, there is no significant difference in the two groups' perceptions of their willingness to expand effort for their companies (F=1.714) at 0.05 level of significance.

Table 5— Comparison of results between QC members and non-QC members

	QC members		Non- QC members		F	Sig.
	Mean	SD**	Mean	SD**		
Good place to work (Job satisfaction)	3.8257	0.57663	3.5556	0.49814	4.024	0.047
Job commitment and willingness to expand effort	3.8930	0.52876	3.6032	0.53353	5.274	0.023
Intention to quit	2.8716	0.73129	3.0952	0.63371	1.714	0.193

*1= strongly disagree, 2= somewhat disagree, 3= no opinion, 4= somewhat agree, 5= strongly agree; **Standard deviation

Majority of the QC members perceive that participation in QCs has brought about a positive change in their attitudes. QC members perceive their companies as a good place to work, which is a sign of job satisfaction. They also accept the values of their companies, and show willingness to expand effort to achieve organizational goals and job commitments. Their perceptions in these two areas, however, were significantly different from workers who were not QC members. On the other hand, result was not significantly different for having the intention to quit, though most non-QC members were likely to have no opinion regarding quitting their jobs.

One possible reason for the insignificance of the results for the intention to quit could be that regardless of the absence of the positive impact of QCs among non-QCs members, non-QCs members still want to stay with the organizations and do anything to keep their jobs. Another possible reason may be that the QCs members perceive QCs as more of a platform for increasing quality and decreasing defective parts, which possibly have undermined employee participation in organizational decision-making and quality of work life.

Overall, QCs develop positive attitudes among employees who derive job satisfaction. When they feel that their company is a good place to work, they are also more willing to extend their efforts for their companies. In addition, non-QC members play a vital role in the organization, their relevance cannot be underestimated, and this was clearly brought in the study. Griffin¹⁴ found significant differences between QC groups and non-QC groups for job satisfaction, and organizational commitment. These findings are similar to other studies^{13, 37-40}. Participation in QCs has an overall positive effect on communication effectiveness with supervisors, co-workers, and others. Through the process of QC intervention, participants experience a sense of increased control of the work environment, and perceive increased levels of enrichment and intrinsic motivation.

Conclusions

Participation in QCs has some impact on workers. The training provided in QCs does improve the skills of workers. QCs enable employees to develop skills and contribute in innovative ways. Generally, the more training received, the higher the workers' ability to solve problems. However, QCs are not effective means for employee participation in organizational decision-making. Rather, QCs are meant for increasing quality and decreasing defective parts, indicating improvement. QCs do improve a little rapport between workers and management. This is possible when the management values the suggestions made by QCs members by implementing them. According to experts in QCs, the most important purpose of setting up QCs program is to increase employee participation and communication between workers and management. QC program is also a means through which employee could develop their leadership qualities. Overall, QCs develop positive attitudes among employees who derive job satisfaction when they feel that their companies are a good place to work. Also, they are more willing to extend their efforts for their companies. Thus, QCs concept is still alive and effective.

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APPENDIX I

Part I: Questions about the Technical Aspects of the Circle

Tick (/) the most appropriate answer.

1. To what type of circle do you presently belong?

1. Shop Floor; 2. Clerical/office/white-collar; 3. Technical; 4. Professional; 5. Other (Specify)

2. How often does the circle meet?

1. Daily; 2. More than once a week, but not daily; 3. Once a week; 4. Twice a month; 5. Once a month

3. How often would you like the circle to meet?

1. Daily; 2. More than once a week, but not daily; 3. Once a week; 4. Twice a month; 5. Once a month; 6. When it is necessary

4. Do you think the circle should meet?

1. On the company time; 2. After work but on double-time-pay; 3. After work at regular compensation; 4. After work without compensation

5. For what length of time does the circle meet?

1. < 1 h; 2. approx 1 h; 3. 1-2 h; 4. > 2 h; 5. length of time varies

Part II: Questions about Circle Processes

Following are a number of factors, which determine how successful the circle is able to solve problems. Which of these have been important to your circle?

(Please answer by selecting the correct option according to the scale below)

6. Commitment to and participation in the circle by members

7. Aggressiveness of the members

8. Ability of the members

9. Ability and commitment of the leader

10. Ability and commitment of the facilitator

11. Cooperation among circle teams**12. Training received by members****13. Management recognition of the circle**

1. Extremely unimportant; 2. Somewhat unimportant; 3. Neither unimportant nor important; 4. Somewhat important; 5. Extremely important

Part III: Questions about the Effectiveness of the Circle

How effective the Circle is dependent upon many people. In your opinion, what is the contribution that each of the following make top the success of your circle. Rate each accprding the the scale below:

14. You yourself**15. Other Circle members****16. Circle leader****17. Facilitator****18. Steering committee****19. Unit supervisor****20. Management****21. Union**

1. No contribution; 2. Very little contribution; 3. Moderate contribution; 4. Considerable contribution; 5. Tremendous contribution

Part IV: Questions concerning feelings about the Circle and the Organization

Following are statements that have often been made by employees about the company for which they work. Based on your experience with this company, how strongly do you agree or disagree with each statement (Please answer by selecting the correct option to the scale below)

22. I am happy to put in extra effort for this company**23. I tell my neighbours and friends that this company is an excellent employer****24. This company is important to me****25. I would quit my job tomorrow if I could get an equal or better job****26. I do my best every day for the company****27. The goals and values that I have are similar to those of company management**

1. Strongly disagree; 2. Somewhat disagree; 3. Have no opinion; 4. Somewhat agree; 5. Strongly agree

Part V: Some Questions about you

Please tick (/) the right answer

28. Age

1. < 20 years; 2. 21-40 years; 3. 41 - 60 years; 4. >61 years

29. Gender

1. Male; 2. Female

30. Educational level

1. No formal education; 2. Primary level; 3. Lower Secondary; 4. Upper Secondary; 5. Vocational Schools; 6. Technical College; 7. University

31. Length of employment with company

1. < 6 months; 2. 7-12 months; 3. 1-2 years; 4. 3-5 years; 5. 6-10 years; 6. 11-20 years; 7. > 20 years

32. Your position in this firm is

1. Production worker (hourly pay); 2. Production worker (salaried); 3. Office worker (hourly pay); 4. Office worker (salaried); 5. Supervisor; 6. Management; 7. Technical; 8. Professional; 9. Others (Specify)

33. The department in which you are employee is

1. Production; 2. Sales; 3. Marketing; 4. Finance; 5. Accounting; 6. Purchasing; 7. Personnel/Industrial Relation; 8. Design/R and/or D; 9. Service to other employees; 10. Others (Specify)

34. How long have you participated in a circle or team

1. Not at all; 2. < 6 months; 3. 7-12 months; 4. 13-18 months; 5. 19-24 months; 6. 25-30 months; 7. 31-60 months; 8. > 5 years

35. Do you enjoy being a circle leader?

1. Yes; 2. No; 3. Not a circle leader presently

36. If you are presently a circle leader, would you like to be one?

1. Yes; 2. No; 3. I am a circle leader presently.

37. Indicate the correct option

1. Member of QCs; 2. Not a member of QCs