

# Quality Circle: A Study on Impact of Employee Participation, Team Spirit, Working Environment in Technical Educational Institutional Performance

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**Abstract:** A quality circle is a participatory management technique that enlists the help of employees in solving problems related to their own jobs. Circles are formed of employees working together in an operation who meet at intervals to discuss problems of quality and to devise solutions for improvements. In the belief of employees can able to solve the issues by their own involvement and approach, quality circles are quite implemented in all most all organizations. The present research paper is an attempt to explain at what extent that the Quality Circles implementation can influence institutional performance that has been influenced by Employee Voluntary Participation, Team Spirit, and Working environment. This paper is an empirical research using the sample of Technical Educational Institutions in Chittoor district of Andhra Pradesh and the respondents were selected from these institutions. Proposed Hypotheses were testing using multiple regression analysis (Structural Equation Modeling). The findings show that employee participation and working environment has a positive impact quality circle implementation while team spirit has a negative influence on quality circle implementation.

**Keywords:** Employee voluntary participation, Team spirit, Working conditions, Quality circle and Institutional Performance

## 1. Introduction

Quality circles were originally associated with Japanese management and manufacturing techniques. The introduction of quality circles in Japan in the postwar years was inspired by the lectures of W. Edwards Deming (1900-1993), a statistician for the U.S. government. A quality circle is a participatory management technique that enlists the help of employees in solving problems related to their own jobs. Circles are formed of employees working together in an operation who meet at intervals to discuss problems of quality and to devise solutions for improvements. The common meaning of Quality circle is "a group of people who voluntarily and non-voluntarily together to identify, define, and analyze the issues and solving job-related quality problems and improving performance. Quality circle deeds are anticipated to lead and also to improve the working environment, opportunities for expression and self-development for participating employee aspects of one's own quality of work life and to increase productivity with reduced cost structure. It also enhances the employee experiences and obtains knowledge from different sources and takes personal responsibility for the productive output. Further to increase the productivity from manpower, many workforces have their own demands in a work culture that allow them to make use of their competencies, knowledge and capabilities that meet their expectations which in turn provides satisfactory rewards. The Quality circle program reflects the employee attitude and behaviors because it increases the skills of group involvement and easily engaged in a working environment. This critical emotional state of employees leads to superior outcomes such as high internal work motivation, high quality work performance, and high satisfaction in work and low absenteeism and turnover.

Moreover, employees have more ideas, intentions, views for promoting human talents and best rapport with personnel to achieve institutional efficacy. Hence, with an idea to create a lively environment for interactions, intellectual discussion, continued learning, knowledge improvements of academics and the need for paradigm shift in attitude, Quality circles were formed to address the issues related to Employee Participation, Team Spirit, and Working Environment as key concern to achieve healthier institutional performance.

### Implementing Quality Circle program in Technical Educational Institution

Quality circle comprising of staff members enables them to involve in managerial decisions related to teaching learning. In fact, it is necessary to start discussion of quality in education as a concept among faculty members. To impart quality education to budding technocrats, it is required to develop a culture wherein faculty members will start planning for new projects to contribute towards quality in learning. Quality circles approaches are a specifically structured form and mode of for betterment of the management system. The quality in education system is mainly about the economic development, which depends on quality approaches in innovative teaching methods. The quality education system facilitates the physical, mental, social, emotional and spiritual development. The quality education has become watchword and indeed the corner stone for any higher technical educational system. The concept assumes that people closest to the problem understand well than who maintain the system from outsides. Employees form a group for identifying and solving complex issues at work. It hopes that a group of individuals working together will come up with better solution than one individual working alone. Staff or employees actively participate in quality circle program for

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the achievement of institutional benefit. Institutions also take a forward step to create a healthy working environment for smooth running of teaching and learning process.

## 2. Review of literature

### Employee participation

Employee engagement or employee participation consists of “the gathering of organization members’ nature of their work roles; in participation people contribute and express themselves tangibly, intelligent, and emotionally during role performances” Kahn (1990:694). Organization members combine together to share and express their views on the roles and responsibilities of work. In participation they employ and express themselves physically and psychologically during role performance. The physical characteristic of employee participation concerns the physical dynamism’s exerted by individuals to accomplish their roles. The psychological aspects concerns employee beliefs and how the employee feels about organisational leadership and working conditions Kahn (1990:694).

Engagement means physically and psychologically involves the work role environment. Employee engagement is defined as “the total commitment towards job roles and the efforts for mutual gain” (Baumruk 2004, Richman 2006 and Shaw 2005) (Frank et al 2004).

### Employee participation towards Quality Circles

A small group of people voluntarily meets on a regular basis to discuss, analyze, solve and interpret work related problems in the form of quality circles to increase efficiency as a result it improves working culture initiatives with high opportunities and low that tend to expand workers skills abilities and innovation in working nature. (Lawler, 1975) and (Cole, 1980). Employee engagement in quality circles changes the attitude and behavior of workers to overcome the problems relating to knowledge using rigorous techniques. (Barra, 1983; Schwartz & Comstock 1979). The quality circle program highlighted the employee morale in work nature and work life characteristics in participation like rates of delay in work, absenteeism have been reduced. (Beardsley & Dewar, 1977; Yeager, 1979).

The major objective of quality circle is to provide best solutions to work related problems and enhance the communication channels from high to lower level authorities. Through that group behavior, better approaches to solve problems and better comprehension of the decision are to be guided to implement innovative work culture in every organisation (Maier, 1967) & (Locke & Schweiger, 1979). Quality circle mainly focuses on job design characteristics like; work needs, worker experiences, knowledge at work, values and ethics in work responsibility etc. are the real outcome of the work. These psychological proponents should lead self-motivation, self-satisfaction in work and high turnover and low absenteeism Hackman and Oldham's (1980)

Quality Circle participation act as a guiding factor for increase new intelligence, knowledge and abilities to use one's ideas for growth need satisfaction. Successful

complexities can solve through the contribution of growth need satisfaction has proposed by Wong (1979).

Participation of employee in the quality circle programme expands levels of employee productivity and increase attendances. The frequent meetings of supervisor and workers to discuss and analyze routine issues and solve accordingly that shows scrap and productivity index variables to be incorporated (Rosenberg & Rosenstein, 1980). Job design and Socio-technical techniques rather than of employee participation programmes can bring new changes in work life provided by quality circle participation are connected with improvements in quality rates and employee production and lessening in absenteeism (Conant & Kilbridge, 1965; Stewart (cited in Friedlander & Brown, 1971) & (Hackman & Lawler, 1971). More central to the QC technique, the activities by understanding and identifying relevant work related problems and implement solutions in a systematic and ongoing way through participative activity method to the optimal way for improving employee productivity. Effective employee participation in solving the problems raises in day to day work level are minimized hierarchical disparities between the participants (Athos & Coffey, 1975) & Emery and Thorsrud (1969).

### Quality Circles and Working Environment

According to Cox and Dale (1985:21) Quality circles represent a participative management style and the board and or senior management must be enthusiastic about more employee involvement. Quality circle offers managers and subordinates opportunity to continuously exchange ideas and information and solve work related problems (Dhillon, 1988). Several studies have highlighted the importance of implementing quality circles in organizations (Werther, 1983; Elizur, 1990; Dhillon, 1988; Okpu and Jaja, 2014). It is a means for employees to have a voice in the organization because employees know more about problems in their work than anyone else; and they are in a better place to proffer solutions (Brennan, 1992; Okpu and Jaja 2014). In the same vein, Dasgupta (2014) opine quality circles offers tangible and intangible benefits to organizations.

The tangible benefits are reduction of defects, wastes and quality improvements in products and services. Intangible benefits occur through the promotion of employee participation which improves teamwork and enhance the problem solving capabilities of circle members. In his study Elizur (1990) found that the use of quality circles in organizations enabled employees' to have more influence, autonomy, opportunity to suggest changes and implement them and higher job satisfaction. These benefits notwithstanding, researchers (Brennan 1992; Schonberger, 2007; & Shea, T., & Self, J. 1986) reported quality circles are not actually successful in most firms because middle managers do not believe in the efficacy of quality circle activities and there is lack of support from Unions. Majumbar and Mahohar (2011) highlighted three key areas that limit the success of quality circles as: organizational issues; operational issues and circle formation at the implementation stage.

**Quality Circles and Team Spirit**

To the work situation, job satisfaction and employee empowerment. This study investigates changes in employee team spirit brought about through participation in Quality Circle (QC).

The Quality circle assessment was measured in terms of technical factors, frequency of participation, training, cognitive sense about QC, job satisfaction and commitment towards the job. Study illustrates the impacts of participation on 130 workers from Malaysian companies participated in a survey. Results show that QCs develop positive team spirits 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.

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 responsibility. QCs revolve around the principles of voluntary participation and collaborative decision-making. 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 technology. QCs can result in intangible benefits concerning employee in terms of improved morale, team spirits, communications and job satisfaction, and tangible benefits concerning management such as, cost saving and improved productivity and quality. Moreover, not considering tangible benefits intangible benefits are more than justifiable. QCs provide improved communication, quality improvement for organization effectiveness, a positive influence on employees' team spirits

**Objectives of the Study**

- 1) To study the impact of employee voluntary participation on Quality circle programme in Educational Institutions.
- 2) To examine the influence of Team Spirit and Working Environment on Quality circle programme in Educational Institutions
- 3) To examine the relationship between Quality circles and Institutional Performance.

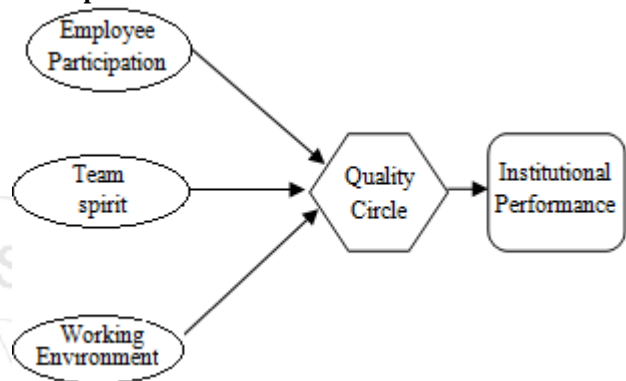
**3. Methodology**

Research design adopted for the study was descriptive research design. The Simple random sampling technique was used as sampling technique and unit of the sample is the Technical educational institutions in Chittoor district of Andhra Pradesh. A group of enthusiastic employees were identified as facilitators and the total sample of 256 employees were selected for the study. The Likert 5.0 rating scale has been administered for research instrument. The data were summarized; tabulated, analyzed and interpreted using statistical tools like Simple frequency, multiple regressions and correlation were used to reach certain results. Software packages SPSS 21.0 and AMOS 18 were being aided for data analysis.

**Research Hypotheses**

- 1) H<sub>1</sub>: Employee participation has a significant influence on quality circle in education institution
- 2) H<sub>2</sub>: Employee team spirit has a significant influence on quality circle in education institution
- 3) H<sub>3</sub>: Working Environment has a significant influence on quality circle in education institution
- 4) H<sub>4</sub>: Quality Circle implementation will result better Institutional performance

**Conceptual Model**



**Data Analysis and Results**

The basic characteristics of the respondent's demographical profile were shown in the table no-1. Regarding gender details of the respondents, male respondents are much in number compare to female (Male:N=134, Female=122) age group of the respondents was observed between 25-30 years more as it's frequency is 45% (N=115) and Highest number (N=167) of respondents are PG qualified (PG: M.Tech, MBA,M.Sc). Equal to five or more of five years of experienced employees were found high in number (186) and marital status of the respondents more or less to the equal frequency ( Married: N=132; Unmarried: N=134).

**Table 1: Demographics of Respondents**

S.No	Demographic Variable	Category	No of Respondents (Percentage)
1	Gender	Male	134 (62 %)
		Female	122 (38 %)
2	Age	20-25 years	64 (25 %)
		25-30 years	115 (45 %)
		30-35 years above 35 and Above	31 (12 %) 46(18 %)
3	Education	Under Graduation	89 (35 %)
		Post Graduation	167 (65%)
4	Experience	0-5 Years	28 (11 %)
		5-10	186 (73 %)
		10-15	31 (12 %)
		15 + years	11 (4 %)

**Reliability and Discriminate Validity**

Since the present had used to test the multiple regression models as multivariate analysis, it is a must to represent about the constructs' reliability and Discriminant validity. Therefore the below table no-2 was presented with cronbach's alpha and Average Variance Extracted (AVE).



**Table 2: Reliability and Discriminate Validity**

Sl.No	Construct	Alpha	AVE	A	B	C	D	E
1	Employee Participation(A)	0.86	0.82	0.90				
2	Team Spirit(B)	0.75	0.79	0.450	0.89			
3	Working Environment(C)	0.88	0.68	0.564	0.721	0.82		
4	Quality Circles(D)	0.85	0.91	0.348	0.678	0.721	0.95	
5	Institutional Performance(E)	0.79	0.72	0.761	0.832	0.565	0.667	0.85

There are five constructs used in the present study as they named employee participation, team spirit and working environment and these were independent or observed variables that estimates implementation of quality circle hence forth influenced through manifest variable or dependent variable at second stage called institutional performance. From the above table the reliability of the constructs as by means of alpha value that is ranging from

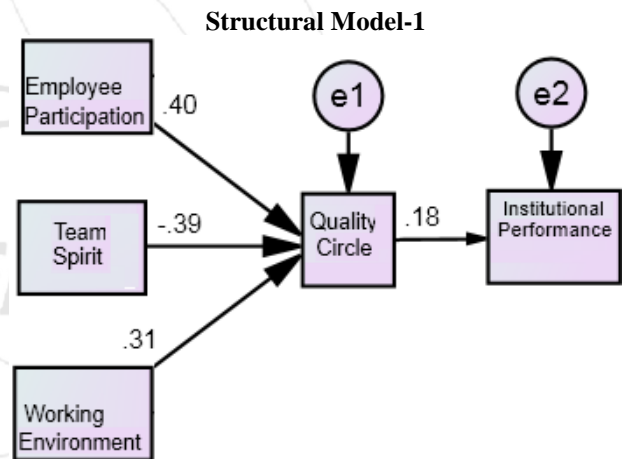
0.75 to 0.88 could be observed and found to be accepted. Discriminant validity has been checked by examining the suggested thresholds of Average Variance Extracted (AVE) by Fornel and Larcker (1981) which in above range of 0.70 in the present study and it was confirmed that there is no latent variable multi colinearity issue. The square root value of AVE of a construct is higher than the inter correlation the same construct with any other construct.

**Table 4: Mean, Standard Deviation and Correlation**

S.No	Construct	Mean	S.D	Correlations				
				A	B	C	D	E
1	Employee Participation (A)	3.9	0.231	-				
2	Team Spirit (B)	3.6	0.891	0.450***	-			
3	Working Environment (C)	4.1	1.02	0.564***	0.721***	-		
4	Quality Circles (D)	3.8	0.99	0.348***	0.678***	0.721***	-	
5	Institutional Performance (E)	4.0	0.430	0.761***	0.832***	0.565***	0.667***	-

Note: Correlations are significant at \*\*\*: P=<.001

Employee participation in quality circle implementation by its mean value is 3.9 which typically says that average agreeability on participation was at agreed stage (Mean=3.9). Team spirit that directs quality circle way of factor has also been acceptable variable since its mean is 3.6(S.D=.891), Working Environment in the institution has much prioritized by the employees (Mean=4.1; S.D=1.02), Quality circles and its underlying variable were rated at significantly acceptable level (Mean=3.8, SD=.99) and institutional performance which depends on implementation of quality circles through employee participation, team spirit and working Environment has been achieved 4.0 mean score with .430 deviation. The constructs inter correlations were quite good enough as they correlate each other with the between values of .34 to .832 positively except team spirit with quality circles organization (r=-.348; P<.001).



**Table 4: Model Fit Indices Achieved**

S.No	Fit Indices	Suggested Threshold	Achieved Threshold
1	RMSEA	< 0.07 (Stiger, 1990)	0.050
2	GFI	>0.80 (Mac Callum& Hong, 1997)	0.923
3	CFI	> 0.90 Hu and Bentler (1999)	0.910
4	TLI	>0.90 Hooper et al., (2008)	0.945
5	Chi-square/ degrees of freedom ( $\chi^2/df$ )	As high as 5.0 (Kline, 1998)	4.2

From the table above the result of achieved structural equation modeling threshold is observed. The Root Mean Square Approximation (RMSEA) was accepted to be fit as 0.05 (< 0.07 (Stiger, 1990), Goodness of Fit Index (GFI) was 0.923 which is at above the fitted values suggested by Mac Callum& Hong, (1997) as > 0.80, Confirmative Fit Index (CFI) was 0.910 hence it can be said CFI was perfectly fit, Tucker-Levis Index was 0.945 that is at above the Hooper et

al proposed fit value of TLI (>0.90) and the ratio of Chi-Square and Degrees of Freedom (4.2) was also as high as 5.0 suggested by Kline (1998). Hereafter the structural model studied in the present study was confirmed due to its' perfect fit indices like RMSEA, GFI, CFI, TLI and  $\chi^2/df$ .

**Table 5: Hypotheses Result**

S. No	Hypothesis	Path	Standardized Estimate	Sig.	Supported
1	H <sub>1</sub> : Employee participation has a significant influence on quality circle in education institution	QC <-- EP	0.405	***	Supported
2	H <sub>2</sub> : Employee team spirit has a significant influence on quality circle in education institution	QC <-- TS	-0.392	***	Supported
3	H <sub>3</sub> : Working Environment has a significant influence on quality circle in education institution	QC <-- WE	0.305	***	Supported
4	H <sub>4</sub> : Quality Circle implementation will result better Institutional performance	IP <-- QC	0.179	0.001	Supported

Note: **QC**: Quality Circle, **EP**: Employee Participation, **TS**: Team Spirit, **WE**: Working Environment, **IP**: Institution Performance, \*\*\*:  $P < .001$

#### 4. Findings

With certain results achieved from data analysis, discussions were been happened on the underlying study factors like employee participation, team spirit, working environment in relation with quality circle implementation in technical educational institutes thus resulted in better Institution performance. Employee expected level of participation in activities initiated by the institution has shown a significant influence on quality circle implementation since hypothesis (H<sub>1</sub>) is supported and the standardized estimate between quality circle and employee participation is 0.40 ( $P < .001$ ). Therefore quality circle execution would be better in implementation if the employee's participation team spirit is quite encouraging. While team spirit in terms of understanding the team work purpose and means, the implementation of quality circle has shown a negative influence (estimate=-.39) which is significant at 99 percent confidence level. Better working environment in Technical educational institute could bring productive quality circle establishment so that employee would contribute better for institutional growth as this was proved due to significant influence of working environment on quality circle (SE:0.305,  $P: .000 < .001$  and H<sub>3</sub> supported). Implementation of quality circle in Technical educational institute though employee participation, team spirit and working environment could influence Institutional performance in all activities since the path estimate is 0.18 and it is significant ( $P: .001 < .005$ ).

#### Research Implication

Having a back up support statistically, the present study would offer better suggestions to the aspirants from industry and academia. Nevertheless educational institutions are not exceptional from strategic implementation of quality circles for its performance matters. With a special light through on factors that influence quality circle like employee participation, team spirit and working environment, it has been noticed that when an employee is willing to participate in activities organized by the institution it is for sure the quality circle might be productive. So lead has to take care of employee participation should be quite good. Whereas team spirit is negatively influencing quality circle in educational institution as it may be because of being associated with team and encouraged to participate in quality circle an employee could not able to perform well enough. Good working environment in the organization leads gain of better knowledge so that employee could able to participate actively with knowledge in quality circle hence it is suggested working environment should be at encouraging position. All together by summing up of all these factors that are suggested above, quality circle is accountably influencing institutional performance in all aspects, so an overall eye care should be suggested to the management of educational institutions with respect to quality circle execution and administration.

#### 5. Conclusion

In the context of globalization, Quality and Competition are emerging to the forefront bringing about massive changes in all fields. Education cannot be exception. Education is a process of growth externalization and actualization of human potential and thus central to national development. Quality Circle implementation in institutions guarantees the better performance of the productivity, competency building, innovation etc. Quality circle act as a tool which provides more benefits like improved performance of the institution, increase quality of employee productivity and boost up the employee healthy relationship within the organization to guide and motivate workers in individual and team approach. The interesting question to be asked form this point of view is which factor would give better quality circle implementation strategy for in institution. The factors like employee participation, team spirit and working conditions are keen in implementation of quality circle in educational institutions. The present study had focused on these factors and proved that there is a significant influence of all these factors on implementation of quality circle thus resulted better performance of educational institutions.

#### 6. Limitations and Future scope of the Research

This study is limited to academic institutions only so that employee's participation in data collection could not reflect any other sector. Study did not explore new variable except employee participation, team spirit and working environment in order to find the impact of quality circle on educational institution performance. Limited time had been assigned by the respondents while collecting data hence it may result response bias probably. However quality circle

practice in educational sector is being a new one so there might be chance of less possibility to make sure of more productive results from this practice.

Future research can be on different aspects of quality circle like employee interest, work relationships, team cooperation, time space etc with relation to institutional performance. As explained above future research may focus on special group like students and mentees participation in quality circle hence measuring achieved results in employability skill development. It has been given scope for future researcher from the present research study to focus on impact of quality circle on institution performance through participation, team spirit and working environment.

## References

- [1] Athos, A. J., & Coffey, R. E. (1975). *Behavior in organizations: A multidimensional view*. Englewood Cliffs, NJ: Prentice-Hall.
- [2] Barra, R. J. (1983). *Putting quality circles to work*. New York: McGraw- Hill.
- [3] Beardsley, J. E., & Dewar, D. C. (1977). *Quality circles*. San Jose: J. F. Beardsley & Associates. Behavioral Sciences. Hillsdale, NJ: Erlbaum.
- [4] Bentler, P. M. (1992). On the Fit of Models to Covariance and Methodology to the Bulletin. *Psychological Bulletin*, 112, 400-404.
- [5] *Chartered Institute of Personnel and Development* by Marks Journal of Applied Psychology, Vol 17(1), Feb 1986, 61-69.
- [6] Cohen, J., & Cohen, P. (1975). *Applied multiple regression/correlation analysis for the Behavioral Sciences* Lawrence Erlbaum Associates, Publishers 2003 Mahwah, New Jersey London
- [7] Cole (1980, p. 142). *Human Resource Management: A Contemporary Perspective.*, London, Pitman Publishing Ch. 14
- [8] Cole, R. E. (1980). *Work, mobility, and participation: A comparative study of American and Japanese industry*. Berkeley: University of California Press.
- [9] Conant, E. H., & Kilbridge, M. D. (1965). An interdisciplinary analysis of job enlargement: Technology, costs and behavioral implications. *Industrial and Labor Relations Review*, 18, 377-395.
- [10] Cox, J., & Dale, B. G. (1985). Quality circle members' views on quality circles. *Leadership & Organization Development Journal*, 6(2), 20-23.
- [11] Dasgupta, R. (2014). Successful implementation of quality circles in an Indian Maharatna Unit: the driving factors. *Decision*, 41(1), 33-50.
- [12] Dhillon, B. S. (1988). Quality circles: a bibliography. *International Journal of Quality & Reliability Management*, 5(1), 53-75.
- [13] Elizur, D. (1990). Quality circles and quality of work life. *International Journal of Manpower*, 11(6), 3-7.
- [14] Emery, F. E., & Thorsrud, E. (1969). *Form and content in industrial democracy*. London: Tavistock Publications.
- [15] Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable Variables and measurement error. *Journal of marketing research*, 18, 39-50.
- [16] Friedlander, F., & Brown, L. D. (1971). Organization Development. *Annual Review of Psychology*, 22, 315-341.
- [17] Hackman, J. R., & Lawler, E. E. (1971). Employee reaction to job characteristics. *Journal of Applied Psychology*, 55, 259-286.
- [18] Hackman, J. R., & Oldham, G. R. (1980). *Work redesign*. Reading, MA: Addison-Wesley.
- [19] Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural equation modeling: Guidelines for determining model fit. *Articles*, 2.
- [20] House, J. S. (1981). *Work stress and social support*. Reading, MA: Addison- Wesley.
- [21] B. M. Staw (Ed.), *Research in organizational behavior* (Vol. 1, pp. 265-339). Greenwich, CT: JAI Press.
- [22] *Journal for Quality and Participation*, Worker-Participation Programs are Found Illegal." *New York Times*, 8 June 1993. Frost (1987) & Goldsmith et al (1997:145).
- [23] Kahn, R. L., & Antonucci, T. (1980). Convoys over the life course: Attachment, roles, and social support. In P. B. Baltes & O'Brin (Eds.), *Lifespan Development and Behavior* (Vol. 3, pp. 253-286). Boston: Lexington Press, 1980.
- [24] Kline, R. B. (1998). *Principles and Practice of Structural Equation Modeling*. Guilford Press, New York.
- [25] Lawler, E. E. (1975). Measuring the psychological quality of working life. In L. Davis & A. Cherns (Eds.), *The quality of work life* (Vol. I, pp.123-133). New York: Free Press.
- [26] Locke, E. A., & Schweiger, D. M. (1979). Participation in decision-making: One more look. In: B.M. Staw Ed., *Research in organizational Behaviour*, JAI Press, Greenwich, 1979, pp. 265-339.
- [27] Maier, N. R. F. (1967). Assets and liabilities in group problem solving: The need for an integrative function. *Psychological Review*, 74, 239-249.
- [28] Marks, M. L., & Mirvis, P. H. (1983). *Personal and situational factors influencing employee response to corporate merger*. Paper presented at the 91st annual convention of the American Psychological Association, Anaheim, CA.
- [29] McCallum R. C. & Hong, S. (1997). Power Analysis in Covariance Structure modeling using. *Multivariate Behavioral Research*, 32, 193-210
- [30] McHugh, M., & Brennan, S. (1992). Organization development and total stress management. *Leadership & Organization Development Journal*, 13(1), 27-32.
- [31] Mirvis, P. H., & Lawler, E. E. (1984). Accounting for the Quality of Work Lite. *Journal of Occupational Behavior*, 5, 197-212.
- [32] Okpu, T., & Jaja, S. A. (2014). Joint consultation and workers commitment in Nigerian banking industry. *International Journal of Business and Management*, 9 (3), 53. Canadian Center of Science and Education
- [33] O' Toole, James (1977). *Work, learning, and the American future*. San Francisco. Jossey-Bass.
- [34] O' Toole, M. (2002). The relationship between employees' perceptions of safety Porter, L. W., Lawler, E. E., & Hackman, J. R. (1975). Behavior in organizations.

- [35] Prakas Majumdar, J., & MuraliManohar, B. (2011). How to make quality circle a success in manufacturing industries. *Asian Journal on Quality*, 12(3), 244-253.
- [36] Richard, C. S. (1979). The statistical analysis of nonequivalent control group designs. In T. Cook & D. T. Campbell (Eds.), *Quasi-Experimentation* (pp. 147-206). Chicago: Rand- cNalley.
- [37] Rosenberg, R. D., & Rosenstein, E. (1980). Participation and productivity: An empirical study. *Industrial and Labor Relations Review*, 33, 355- 367.
- [38] Schonberger, R. J. (2007). Japanese production management: An evolution with mixed Success. *Journal of Operations Management*, 25(2), 403-419.
- [39] Seashore, S. E., Lawler, E. E. Mirivs, P. H., & Cammann, C. (1983). *Assessing organizational change: A guide to practice*. New Ybrk: Wiley mterecience.
- [40] Shea, T., & Self, J. (1986). *Learning and Teaching with Computers: The Artificial Intelligence Revolution*. Prentice Hall Professional Technical Reference.
- [41] Steiger, J. H. (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate behavioral research*, 25(2), 173-180.
- [42] Stogdill, R. M. (1959). *Industrial behavior and group achievement: A theory*. New York: Oxford University Press.
- [43] Swartz, G. E., & Comstock, V. C. (1979). One firm's experience with quality circles. *Quality Progress*, 12, 14-16.
- [44] Werther, W. B. (1983). Going in Circles with Quality Circles?—Management Development Implications. *Journal of Management Development*, 2(1), 3-18.
- [45] Wong, P. T. P. (1979). Frustration, exploration, and learning. *Canadian Psychological Review*: 20, 133-144.
- [46] Yeager, E. (1979). Examining the quality control circle. *Personnel Journal*, 58, 682-708