The Relationship between Leadership Styles and Quality Management Practices in Malaysian Manufacturing Firms

Shiau Wei Chan, Suman Tiwari D/O Suresh Tiwari, Rohaizan binti Ramlan, Md Fauzi Ahmad
Department of Production and Operation Management
Universiti Tun Hussein Onn Malaysia
Batu Pahat, Johor, Malaysia
swchan@uthm.edu.my, rohaizan@uthm.edu.my, mohdfauzi@uthn.edu.my

***Abstract*— In the era of globalization, the relationship between leadership styles and quality management practices is that both appears to be incapable of being clearly distinguished among the manufacturing firms in Malaysia. Thus, the goal of this research is to determine the relationship between leadership styles and quality management practices in manufacturing firms, Johor Bahru, Malaysia. There are three leadership styles which are investigated in this research to know how far it affects the quality of management practices in manufacturing firms. They are transformational leadership, transactional leadership and laissez faire leadership styles. In this study, survey questionnaires were administered to the targeted respondents, which are quality managers of Johor Bahru manufacturing firms. The obtained data are analyzed using descriptive statistics and correlation analysis. The findings indicated that there is a positive significant relationship between transformational and transactional leadership styles and quality management practices in Johor Bahru manufacturing firms. Meanwhile, the laissez faire leadership style has weak correlation with the quality management practices. This quantitative study is important to manufacturing firms not only in Malaysia but also worldwide in order to gain insight into the correlation between the leadership styles and quality management practices in manufacturing firms.**

Keywords— Leadership Styles; Quality Management Practices; Manufacturing Firms

I. INTRODUCTION

In this progressively globalized world, it is often found that the difficulties faced by manufacturing leaders who apply quality management practices seem to be dynamic and cannot be met by yesterday's solutions. Therefore, the future of quality management practices demand for new leaders who have the ability to effectively use multiple leadership styles for the improved implementation of quality management practices [1]. Although some studies related to leadership and quality management practices have been carried out [2, 3, 4], there appears to be few empirical evidence regarding the impacts of different leadership styles on quality management practices [1]. In addition, the relationship between different leadership styles and TQM practices also appears to be indistinctly known among the manufacturing firms in Malaysia. Therefore, the objective of this study is to determine the impacts of the three leadership styles on the quality management practices in Johor Bahru manufacturing firms.

Throughout the world, manufacturing sector is struggling to provide good quality management practices while managing costs [5]. In an organization, an effective leadership style provides higher performance of quality management practices as well as its economic growth [6]. The Federal Quality Institute of Malaysia [7] states that effective leaders show high commitment to public service and organization mission. This behavior is related to the literature of transformational leadership style. They highlighted that in order to achieve success in quality management practices, an effective leadership style needs to be used. The Malaysian Administrative Modernization and Management Planning Unit (MAMPU) introduced several quality awards that have leadership styles as one of its winning criteria. It is obvious that a good leadership style is needed to use to obtain good quality management practices.

II. LITERATURE REVIEW

A. Leadership Styles

According to Norshima &Vimala [8], leadership style is a process to influence others to follow rules and procedures to achieve objectives and the characteristics of the leader to monitor and control their followers. This shows that a leader portrays the leadership style and the follower would follow their leaders in order to obtain a vision or mission in a firm. Through the research done on the roles of leadership in Malaysian semiconductor manufacturing firms, it is shown that adaptable and knowledgeable leaders are normally needed to manage organizations with dynamic and equivocal environments [9]. Hence, leadership style is the backbone for the workers, which gives them support in fulfilling a task appropriately. Subsequently, Amagoh [10] states that leadership style is generally focused on the dyadic relationship between a leader and a subordinate. Leadership style can be described as a process of influence toward the achievement of organizational objectives.

Leadership effectiveness can be explained as a leader's success in influencing subordinates to achieving organizational goals. Effective leadership style is often seen as a source of competitive advantage and the foundation for organizational performance and growth [11]. This statement discusses that different organizations would use different leadership styles. Thus, the performance and growth of the organization is dependent on the leadership style used [12].

Transformational leadership has five distinct characteristics according to Bass and Avolio [13]:

i. Idealized Influence (charisma-attributed), when the leader exhibits the ability to instil pride and faith in followers
ii. Idealized Influence (behavior)—when the leader has the ability to share values and beliefs with followers
iii. Inspirational Motivation—when the leader inspires the subordinates to have an optimistic attitude and pursue challenges with confidence
iv. Intellectual Stimulation—when the leader is able to stimulate the followers to be creative and innovative as well as develop problem-solving techniques
v. Individual Consideration—when the leader has the unique quality of respecting followers, treating them as individuals and responding in a timely manner to their needs.

According to Alharbi & Yusoff [4], transactional leadership involves the use of contingent rewards, i.e. leaders reward followers in exchange for attaining the desired performance levels. Another distinctive dimension of transactional leadership is that it practices management by exception (MBE), which can either be passive or active. On the other hand, Judge and Piccolo [14] indicated that leaders who scored high on laissez-faire leadership scales avoid making decisions, hesitate in taking action, and are absent when needed, while Antonakis, Avolio, and Sivasubramaniam [15] have identified laissez-faire leadership conduct as avoiding responsibility, not responding to problems, being absent when needed, failing to follow up, resisting expressing views, and delaying responses.

B. Quality Management Practices

Ovretveit [16] defines Total quality management (TQM) as "an organization wide approach and philosophy, with a strategy for organization and personnel development and quality management and information structure" (p. 25). This definition considers TQM as a philosophical strategy that focuses on staff, management and structure. Quality management is a management philosophy done to increase operating and business results of an organization through activities of continuous improvement [17]. Saraph et al.'s [18] objective was to create an instrument or tool to measure a manager's perception of quality management at the business unit level specifically. This was achieved through an intensive literature review of quality management literature, from which they developed 120 recipes for organizational success, grouping these into eight categories, i.e. role of divisional top management leadership for quality, role of quality department, training, product/service design, supplier quality management, process management, quality data and reporting, and employee relations. To ensure the authenticity of the content and validity of the study, professors and graduate students at the University of Minnesota critically reviewed that the eight critical factors were valid [4].

C. Leadership Styles and Quality Management Practices

Anderson et al. [19] pointed out that in Deming's management method, the basic premise is creating an organizational system that fosters quality management practices implementation including customer focus, continuous improvement, and teamwork, which all require effective leadership. In addition, the leadership theory applied in the current research is drawn from Bass's [20] theory. Bass's work on the theory of transformational leadership grew out of Burns's [21] qualitative examination of charismatic political leaders [22] as well as House's [23] theory of charismatic leadership [24], which stemmed from ideas originating from the early work on charisma by Weber [25].

The development of leadership theories and quality management practices share the common objectives of improving organizational performance and enhancing the work experience of organizational members. However, it is unclear what specific leadership styles are most effective in organization pursuing quality management practices. Despite this, it is evident that the role of leadership is a key factor in enhancing effective quality management in organizations as all excellence models include leadership as an enabling driver. The role of leadership includes long-term commitment to innovation and creativity. Managing human resources is a strategic issue that requires managerial capability. Knowledge is an important organizational resource, and leadership plays a key role in facilitating the acquisition of that knowledge. Thus, leaders must have the ability to realize formulated vision by managing quality elements to transform the firm into using quality managerial practices [3]. This is possible through a transformational leader, who has the capability to inspire and direct subordinates.

Moreover, authors have found that top management support is essential for quality improvement. Salaheldin [26] concurred to this notion based on an exploratory study conducted on the specific problems that Qatar Steel Company faced in the implementation of the quality program. The study revealed that lack of support from top management was the biggest impediment to TQM implementation. When commitment and support from the top management was forthcoming, Quality Circles (QC) implementation led to an atmosphere of cooperation and brought in many positive results, like quality improvement, productivity increases, and improved management style.

Taylor and Wright [27] focused on the commitment of senior managers in the implementation of a TQM program, highlighting the period when TQM outcomes should be measured. The authors contended that performance measures taken too

978-1-4673-7762-1/16/$31.00 ©2016 IEEE

soon after TQM implementation would render the results inconclusive. If taken too long after the fact, there could be other factors responsible for the outcome. To explore the degree of success achieved through TQM implementation over a five-year period, the authors studied 113 organizations while looking into other factors that may be responsible for the high level of perceived TQM success. Although the size of the firm was not significant, the length of time for which the firms have been implementing TQM did impact their success. The most important factors were the initiatives taken by the senior management and employees' involvement. Taylor and Wright [27] also conducted a longitudinal study to determine the link between TQM implementation and successful outcomes. They found that managers must understand the nature and purpose of TQM, its relationship to ISO9000, and the benefits that can be derived from this program. Added to the importance of top management in TQM implementation, Deming predicted that visionary leadership was essential for an effective quality management program. Several case studies support the claim that effective quality management requires top management to provide a clear direction to employees [28]. From the literature review, this research proposes the three hypotheses as follows:

H1: Transformational leadership style is associated positively with quality management practices.
H2: Transactional leadership style is associated positively with quality management practices.
H3: Laissez-faire leadership style is associated negatively with quality management practices.

III. METHODOLOGY

This section examines the research methodology and how it has lead towards the data collection, data interpretation and research advancement. In this study, quantitative research design was used, which incorporates a survey through a structured questionnaire.

A. Research Design

This research was being carried out using quantitative method. Quantitative research involves systematic empirical investigation of social phenomena through statistical, mathematical or numerical data or computational techniques. Conducting a quantitative study can result in the clarification of relationship between variables [29]. The researcher obtained the data from two types of data collection which are primary data and secondary data. Primary data in this research will be collected form respondents via questionnaire survey.

B. Respondents

Purposive sampling method, which is a non-random sample in which few diverse means are used to select to select units that fit very specific characteristics [30], is used in this research. In this case, it is used to measure the relationship between leadership styles and quality management practices in Johor Bahru manufacturing firms. The population of this study was a number of quality managers in the selected manufacturing firms in Johor Bahru. The population is around 110. A sample is a smaller collection of units taken from a bigger population [30]. Based on Krejcie & Morgan's [31] table of population and sample number, a sample size of this research were 86 respondents.

C. Instrument

A research instrument is the tool or medium used in order to obtain data and information which is important in conducting a research study. This research will acquire questionnaire forms as the medium to obtain systematic data [32]. Questionnaire is the best suited medium for this research because it is able to reach a large pool of audience with time constraint provided. There are three sections in the questionnaire which are section A, section B and section C. Section A consists of demographic questions about the respondents, while questions in section B and C are constructed based on the objectives of the research which measure the most dominant leadership style used by quality managers and identifying the relationship between leadership style and quality management practices in Johor Bahru manufacturing firms. A pretest was conducted among 10 quality managers. According to Chua [33], the overall Cronbach's Alpha should be more than 0.600; any number less than that would demonstrate that the questionnaire is somehow questionable, vague in nature, or being ambiguous to the respondents. The Cronbach's Alpha value for the pretest is 0.961, so it is an agreeable and valid questionnaire.

D. Data Analysis

In data analysis stage, the data collected were interpreted through Statistical Package for Science Social (SPSS). The summary of information for a data is provided by descriptive statistics. Meanwhile, correlation analysis is a mainstream in numerous applications because it is a quantitative approach to assess whether two or more variables are related or not [34]. The measure of the correlation analysis is used to measure two variables, i.e. leadership styles and quality management practices.

IV. FINDINGS AND DISCUSSION

This section explains the findings on the data collected during the duration of the research. Correlation analysis was used to achieve the research objective. All the results and figures were acquired through the Statistical Social Science (SPSS) software.

A. Demographic Background

Respondent's background information, which includes gender, age, ethnic, level of study, duration of work, and number of employees in the company, was studied. Majority respondent who answered the questionnaire for this research is male for 75%, followed by female for 25%. 44.1% were aged within 26-30, followed by 50% within the age of 31-35 and finally 5.9% aged 36 years old and above. Moreover, a majority of respondents were Malay by 41.2%, followed by Chinese, 35.3% and Indian for 23.5%. Next, most of the quality managers were Degree holders, 50% followed by Diploma for 42.6% and Master for 7.4%. This shows that quality managers have good qualification. Besides that, most of the quality managers have been working for 1 to 3 years, 50%, followed by 4 to 7 years, 48.5%, and then less than 1 year for 1.5%. This shows that the quality managers are well-experienced. Next, the majority companies consist of 100 to 200 numbers of employees with a percentage of 44.1%, followed by 20 to 99 employees, 39.7%, less than 20 for 10.3% and finally more than 200 for 5.9%.

B. Leadership Styles and Quality Management Practices

In this research, the researcher made hypothesis according to the objectives of the study. Thus, in order to do hypothesis testing, the researcher carried out non-parametrical statistical test due to abnormal distribution. The inferential statistics used in this study is Spearman's rho correlation method. This method is used to identify the relationship between leadership styles and quality management practices. The strength of the correlation coefficient value is measured according to Higgins [35]: > 0.8 (very strong); 0.6 - 0.8 (strong); 0.3 – 0.5 (moderate) and <0.3 (weak).

TABLE 1 RELATIONSHIP BETWEEN TRANSFORMATIONAL LEADERSHIP AND QUALITY MANAGEMENT PRACTICES

Correlations				
			Transformational Leadership	Quality Management Practices
Spearman's rho	Transformational Leadership	Correlation coefficient	1.000	.370
		Sig (2tailed)	.	.002
		N	68	68
	Quality Management Practices	Correlation coefficient	.370	1.000
		Sig (2tailed)	.002	.
		N	68	68

Table 1 shows that the value of $p<0.05$ which is $p = 0.002$, $r = 0.370$. Thus, hypothesis 2 is accepted. The strength of relationship is moderate. Transformational leadership style is associated positively with quality management practices. The research delved into the relationship between leadership style and the establishment of a quality environment in research and development settings as researched by Berson and Linton [36]. It was found in their research that transformational leadership may lead to a quality environment in the context of a telecommunications firm. In other words, the research was successful in determining that transformational behaviors have an association with the realization of quality management practices.

TABLE 2 RELATIONSHIP BETWEEN TRANSACTIONAL LEADERSHIP AND QUALITY MANAGEMENT PRACTICES

Correlations				
			Transactional Leadership	Quality management Practices
Spearman's rho	Transactional Leadership	Correlation coefficient	1.000	.339
		Sig (2tailed)	.	.005
		N	68	68
	Quality Management Practices	Correlation coefficient	.339	1.000
		Sig (2tailed)	.005	.
		N	68	68

Table 2 shows that the value of $p<0.05$ which is $p = 0.005$, $r = 0.339$. Thus, the hypothesis is accepted. The strength of relationship is moderate. Transactional leadership style is associated positively with quality management practices. This finding is contrast with the finding of the study by Alharbi &Yusoff [4], where transactional leadership was found to significantly and negatively relate to quality management practices.

Table 3 shows that the value of $p>0.05$ which is $p = 0.394$, $r = 0.105$. Thus, the hypothesis is accepted. There is a weak relationship between Laissez-faire leadership and quality management practices. This finding is also different from the finding of the study by Alharbi &Yusoff [4] as the laissez-faire leadership had negative correlation with the quality management practices.

TABLE 3 RELATIONSHIP BETWEEN LAISSEZ-FAIRE LEADERSHIP AND QUALITY MANAGEMENT PRACTICES

Correlations				
			Laissez-faire Leadership	Quality Management Practices
Spearman's rho	Laissez-faire Leadership	Correlation coefficient	1.000	.105
		Sig (2tailed)	.	.394
		N	68	68
	Quality Management Practices	Correlation coefficient	.105	1.000
		Sig (2tailed)	.394	.
		N	68	68

V. CONCLUSION AND RECOMMENDATIONS

The results show that transformational and transactional had a positive correlation with quality management practices. Laissez-faire style has a weak relationship with quality management practices. The impact of leadership is an important determinant of productivity in any organization. This study attempted to understand leadership behaviors in terms of transformational, transactional leadership and laissez faire leadership styles. Efforts have also been made to demonstrate if any of these styles or their combination helps achieve quality management in manufacturing firm. The outcome of this research will be of immense benefit for academics as well as investors and regulators in thoroughly understanding the relation amongst leadership styles and quality management practices in Johor Bahru manufacturing sector.

On the other hand, the researcher recommends to further study the possibility of other variables in investigating and predicting quality management practices. These variables could include information system, financial resources, and employee readiness regarding the quality management practices. The researcher also recommends a different method of study, which is the qualitative method, which could effectively work in manufacturing sectors as interviews carried out with respondents may help acquire results. Moreover, future studies can be carried out on employee staff members to explore their opinions concerning quality management practices. Moreover, future studies should concentrate on including the top management self-rating of their leadership style. These could then be compared to the department managers' perceptions.

It is hoped that the findings of the study will contribute to the body of knowledge and the understanding of quality management practices in manufacturing firm, which has not been given ample attention. Furthermore, the research has highlighted various practical and theoretical issues regarding management practices and has listed limitations and recommendations for future studies.

ACKNOWLEDGMENT

This work was supported by Universiti Tun Hussein Onn Malaysia under Grant No. U365.

REFERENCES

[1] Ng, P. K., Yeow, J. A., Chin, T. S., Jee, K. S. & Chan, P. H. (2013). Leadership styles and their impacts on TQM practices in Malaysian manufacturing firms. *Proceedings of International Conference on Economics and Business Research*, 14-16 May 2013, Kedah, Malaysia.

[2] Ahire, S.L., & O'Shaughnessy, K.C. (1998). The role of top management commitment in quality management: an empirical analysis of the auto parts industry. *International Journal of Quality Science*, 3 (1), 5–37.

[3] Idris, F., & Ali, K. (2008). The impacts of leadership style and best practices on company performances: Empirical evidence from business firms in Malaysia. *Total Quality Management & Business Excellence*, 19(1), 165-173.

[4] Alharbi, M. & Yusoff, R. Z. (2012). Leadership styles and their relationship with quality management Practices in Public Hospitals in Saudi Arabia. *International Journal of Economics and Management Sciences*, 1(10), 59-67
[5] Ö zúahin, M. (2011) Linking leadership style to firm performance: the mediating effect of the learning orientation. *Procedia Social and Behavioural Sciences*, 24, 1546 – 1559.
[6] Wart, M. V. (2003), Public-Sector Leadership Theory: An Assessment. *Public Administration Review*, 63: 214–228
[7] Federal Quality Institute of Malaysia (2013) *Structural Policy Country Notes Malaysia*. Retrieved from http://www.oecd.org/site/seao/Malaysia.pdf
[8] Norshima, H. & Vimala, B. (2014) Leadership styles and information security compliance behavior: The mediator effect of information security awareness. *International Journal of Information and Education Technology*, 5(4), 311 – 318.
[9] Chan, P. H., Ng, P. K. & Jee, K. S., (2012). Identifying the link between leadership styles and TQM practices: A conceptual framework. *2nd International Conference on Design and Concurrent Engineering. Melaka*. pp. 40-44.
[10] Amagoh, F. (2009). Leadership Development and Leadership Effectiveness. *Management Decision*, 47(6), 989–999.
[11] Kim, S. (2007). Learning Goal Orientation, Formal Mentoring, and Leadership Competence in HRD: a Conceptual Model. *Journal of European Industrial Training*, 31(3), 181–194.
[12] Bass, B. M., & Stogdill, R.M. (1990). *Bass en Stogdill`s handbook of leadership: Theory, research, and managerial Applications*. New York: The Free Press.
[13] Bass, B.M. & Avolio, B. J. (1994). *Improving organizational effectiveness: Through transformational leadership*. Thousand Oaks, California: Sage Publications, INC.
[14] Judge, T.A., & Piccolo, R.F. (2004). Transformational and transactional leadership: A meta-analytic test of their relative validity. *Journal of Applied Psychology*, 89, 755–768
[15] Antonakis, J., Avolio, B. J., & Sivasubramaniam, N. (2003). Context and leadership: an examination of the nine-factor full-range leadership theory using the Multifactor Leadership Questionnaire. *The Leadership Quarterly*, 14(3), 261–295.
[16] Ovretveit, J. (2005). *The leader's role in quality and safety improvement: A review of research and guidance* (4th ed). Stockholm, Sweden: Association of County Councils.
[17] Agus, A. (2005), The structural linkages between TQM, product quality performance, and business performance: Preliminary empirical study in electronics companies. *Singapore Management Review*, 27(1), 87-105.
[18] Saraph, J., Benson, P., & Schroeder, R. (1989). An instrument for measuring the critical factors of quality management. *Decision Sciences*, 20(4), 810-829.
[19] Anderson, J., Rungtusanatham, M., Schroeder, R., & Devaraj, S. (1995). A Path Analytic Model of a Theory of Quality Management Underlying the Deming Management Method: Preliminary Empirical Findings. *Decision Sciences*, 26(5), 637-658.
[20] Bass, B. M. (1985). Leadership: Good, better, best. *Organizational Dynamics*, 13(3), 26-40.
[21] Burns, J. M. (1978). *Leadership*. Harper and Row, New York.
[22] Howell, J. M., & Avolio, B. J. (1993). Transformational leadership, transactional leadership, locus of control, and support for innovation: Key predictors of consolidated-business-unit performance. *Journal of applied psychology*, 78(6), 891-902.
[23] House, R. J. (1971). A path goal theory of leader effectiveness. *Administrative science quarterly*, 16(3), 321-339.
[24] Yukl, G. A., & Van Fleet, D. D. (1982). Cross-situational, multimethod research on military leader effectiveness. *Organizational Behavior and Human Performance*, 30(1), 87-108.
[25] Bass, B. M. (1990). From transactional to transformational leadership: Learning to share the vision. *Organizational dynamics*, 18(3), 19-31.
[26] Salaheldin, S. I. (2009). Problems, success factors and benefits of QCs implementation a case of QASCO. *TQM Journal*, 21(1).
[27] Taylor, W. A. & Wright, G. H. (2003). A longitudinal study of TQM implementation: Factor influencing success and failure. *Omega*, 31(2), 97-111.
[28] Laohavichien, T., Fredendall, L., & Cantrell, R. (2009). The effects of transformational and transactional leadership on quality improvement. *Quality Management Journal*, 16(2), 18.
[29] Neill, J. (2007). *Qualitative versus quantitative research: key points in a classic debate*. Retrieved from http://wilderdom.com/research/QualitativeVersusQuantitativeResearch.html
[30] Neuman, W.L. (2012). *Understanding Research. Boston*. MA: Pearson Education, Inc.
[31] Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30, 607-610.
[32] Catherine M. & Castellan ,(2010) Quantitative and Qualitative Research: A View for Clarity. *International Journal of Education*, 2(2), 1-14.
[33] Chua, Y. (2006). *Asas statistik penyelidikan buku 2.* Kuala Lumpur, Malaysia: McGraw Hill.

[34] Filzmoser, F. & Hron, K.,(2008) Correlation analysis for compositional data. *Mathematical Geosciences*, 41, 905-919.
[35] Higgins, J. (2005). *The radical statistician*. Retrieved from http://www.biddle.com/documents/bcg_comp_chapter2.pdf
[36] Berson, Y., & Linton, J. (2005). An examination of the relationships between leadership style, quality, and employee satisfaction in R & D versus administrative environments. *R and D Management*, 35(1), 51-60.

BIOGRAPHY

Include author bio(s) of 200 words or less.

Shiau Wei Chan is a lecturer in Department of Production and Operation Management, Universiti Tun Hussein Onn Malaysia, Batu Pahat, Johor, Malaysia. She earned Bachelor Degree in Industrial of Physics, Master and PhD in Mathematics Education from Universiti Teknologi Malaysia, Johor, Malaysia. She has published journal and conference papers. His research interests include production and operation management, business and management as well as mathematics and statistics education. She is a member of PERSAMA.

Rohaizan Ramlan is a senior lecturer in Department of Production and Operation Management at Universiti Tun Hussein Onn Malaysia. She has multidisciplinary research interests that encompass production and operation management, decision making in management, performance measurement and process improvement. Her current research project is process improvement in Malaysia Healthcare. Her teaching areas include Operation Management, Production and Planning Management and Operational Research.