Investigating the view of quality management success factors amongst future early career operations leaders

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ABSTRACT

Purpose - This research aims to investigate the gap between the current vision and knowledge of future early career operations leaders (OL) and common strategic total quality management (TQM) frameworks such as Malcolm Baldrige National Quality Awards (MBNQA) and Competing Value framework (CVF).

Design/Methodology/Approach - A survey questionnaire was developed for different groups of participants as current higher education students to identify the gap and analyse the significance of these groups on the factors in TQM framework. The Kruskal-Wallis test as the non-parametric quantitative analysis technique was adopted for this research.

Findings – A new set of TQM factors with necessity of more knowledge and understanding of future generation was identified, followed by highlighting clear differences amongst different groups of this generation in terms of their demographic measures, perceived leadership style and organisational culture.

Practical Implications – A sustainable operations leadership practice needs managers and leaders with a sustainable knowledge development of quality management (QM); and as the result of this study, the current vision of future young operations leaders would not echo this.

Research Limitations/Implication – This research study contributed significantly to the existing research about common QM models and their integration with theories relevant to organisational culture and leadership. The data collection can be extended further in the higher education sector or beyond that.

Originality/Value - This study has a systematic, non-parametric approach towards currently fragmented QM analysis, and is integrated with human resource and visionary elements of future young OL and universal QM models and theories.

Key words – Quality Management, Operations Management, Leadership, Early Year Professionals, MBNQA Model, Non-Parametric Test
Category – Research paper

1. Introduction

Operations management philosophy has progressed significantly in recent decades as the result of globalisation, cultural integration and sustainable mass customisation. This obliges the future Operations Leaders (OL) to transform their operations management and leadership philosophy towards quality excellence and efficiency. It was argued by scholars (Starr, 2016 and Walker et al, 2014) that any sustainable operations management practice should be transformed towards achieving quality excellence and efficiency. Recent research has sought OL and their employees possess requisite job skills and a unifying sense of quality in their organisation (Jayaram and Xu, 2016). Quality is defined as delighting all stakeholders, taking context into consideration (Van Kemenade, 2014).

The “Context” paradigm of QM was introduced as the future trend embedded in operational and strategic factors and dimensions of operations management, to handle the emergent change in QM, with more contextual approaches promising flexibility and adaptability (Van Kemendae, 2014). Despite heavy longitudinal studies in QM in the context of industry and size of organisations and also innovative evolution of operations management (Dong et al, 2016; Dora and Gellynck, 2015; Mosadeghrad, 2015; Kanpp, 2015; Isa and Usmen, 2015; Graham et a1, 2014; Bhat et al, 2014; Algasem et al; 2014; Ergun et al, 2014; and Phan and
Chambers, 2013), there is insufficient emphasis on QM philosophies, models, practices and
data as part of OL evolution for the future to promote more sustainable and competitive
management (Stanton et al, 2014). In spite of constant industrial evolution towards Industry
4.0 in the future, there is still strong argument of the pivotal role of QM with support from
(2018), Industry 4.0 involves connection and integration of digital/virtual and real/practical
world for the purpose of fundamental revolution in businesses that is only possible with
support from future OL with strong view on QM.

On the other hand, the crucial role of top management commitment on QM (Njeru and
Omondy, 2016) and the evolution of the QM concept from competition-driven to an
established culture, with a proactive approach, has been highlighted (Weckenmann et al,
2015). Therefore, this puts more pressure on future OL to enhance the organisation,
environment and workforce for the future in order to meet satisfactory customer quality
standards. However, it was suggested that the examination of QM with a successful
theoretical and conceptual approach in a business is strongly fragmented in the real world
(Evans, 2013). This prescribes the necessity of more critical analysis of the vision of future
OL about QM. We intended to identify the human and workplace elements – relate critical
success factors for QM in the vision of future young OL and also investigate the distinctive
gap between their vision and the common critical success factors of the respective QM
models.

We describe the future young OL as “early year professionals (EYPs)” in their future roles
and have still no professional and management experience and with critical need of
sustaining leadership power (Starr, 2016; and Hallet, 2013). Despite introducing EYPs as a
homogeneous group with differing values, attributes or operations than the previous
generation (Ng et al, 2012), more recent studies revealed that their job attributes are
heterogeneous (Guillot-Soulez and Soulez, 2014). This generation in different cohorts or
proxy such as gender, age, work and education experience differs remarkably from previous
generations. With the support from previous studies (Guillot-Soulez and Soulez, 2014), this
study intends to focus on young potential graduates as future senior OL in order to exclude
the effect of career stage, which is a recurrent problem in generational analysis.

2. Total Quality Management (TQM) model approaches

TQM is a crucial philosophy that facilitates young OL to experimental problems with
unknown solutions in order to establish quality and sustainably enhance operations (Jimenez-
Jimenez et al, 2015; and Phan and Chambers, 2013). TQM frameworks embrace quality
critical components and should also consider evolution in leadership behaviour and be
incorporated with emerging managerial and leadership aspects in the future (Dahlgaard-Park
et al, 2018). However, despite a great level of recognition for this philosophy, some
researchers admit that there is no guarantee of TQM success as this is a heterogeneous
philosophy with a lack of clear prescription (Mosadeghrad, 2015 and Sabella et al, 2014). In
response to this challenge, Graham et al (2014) have recommended operations management
ctribution and commitment to generate clear results and minimise the ambiguity of TQM
as a key driver of TQM success.

The essence of operations management visibility and interdependency of critical factors, or
TQM elements (Suarez et al, 2014) has revealed a greater need of systematic and well-proven
models to be utilised in organisations. This advocates the role of any OL as facilitators to
establish QM in their operations management and leadership philosophy through developing
appropriate visions and utilising appropriate models. There are different QM models and
frameworks that directly or indirectly reflect principles and hard and soft elements of TQM such as the Malcolm Baldrige National Quality Awards (MBNQA) (Jones, 2014), European Foundation for Quality Management (EFQM) Excellence Model (Suarez et al, 2014), Competing Value Framework (CVF) (Do Nascimento Gambi et al, 2015) and Quality Management Extension Model (Slack et al, 2013). In addition to these models, the theories of some quality gurus such as Deming, Juran and Crosby (Singh et al, 2013) can be used as theoretical platforms to extract quality constructs which could be considered by any operations manager including future young OL with their distinctive personality in this century.

EFQM model is an integrated learning and improvement TQM framework that encompasses a comprehensive and systematic self-assessment process that allows organisations to discern their strengths and weaknesses with the objective of quality improvement (Liu and Ko, 2018; and La Rotta and Prez Rave, 2017). Nevertheless, this model was criticised over its lack of distinction between soft and hard TQM elements associated to its building ingredients of leadership, people, strategy, partnership, process and result (Liu and Ko, 2018; and Gomez Gomez et al, 2011). Its generalisability and vibrant implementation across the Europe has also been questioned (La Rotta and Prez Rave, 2017). The MBNQA model was selected to be used as the main guiding framework for this research, as a highly recognised structured model with universality and relationship with seven different categories that has been acknowledged by both scholars and practitioners (Moonsamy and Singh, 2014). The categories or factors that each consists of various indicators include; “leadership”, “strategic planning”, “customer focus”, “measurement, analysis and knowledge management” integrated with “workforce focus”, “operations” and “result”, with all seven factors supported by the “core values” (Jones, 2014; and Sabella et al, 2014).

The vision and insight of the OL within organisations towards principles of TQM philosophy articulates the TQM organisational culture that distinguishes them from other leaders by selecting the best possible business excellence practice (Kumar and Antony, 2009; and Dahlgard and Dahlgard-Park, 2006). Amongst several organisational culture models that were used in QM literature, the CVF model is one of the best established, theoretically sound and relatively widely used instrument (Zu et al, 2010). This model presents four different organisational cultures as: “Group Culture (emphasis on teamwork and facilitator-type leader)”, “Hierarchical Culture (emphasis on order with administrator-type leader)”, “Rational Culture (emphasis on goal-setting with achievement-type leader)” and “Developmental Culture (emphasis on creativity with entrepreneurship – type leader)” (Do Nascimento Gambi et al, 2015), which are essential to be assessed for EYPs.

Visionary and transformational leadership and organisational culture were introduced as main TQM constructs to facilitate change and creativity (Knapp, 2015; Dora and Gellynck, 2015; Suarez et al, 2014; Moonsamy and Singh, 2014; and Asif et al, 2013). Visionary leadership style facilitates the organisational change initiatives to embark on TQM practices (Knapp, 2015; and Manville et al. 2012). Conversely, the most recent study by Teoman and Ulengin (2018) highlighted the importance of improving leaders’ behavioural leadership skills such as teamwork and employee empowerment that needs to be emphasised as part of future OL development. The leadership styles are divided into participative, democratic, situational, goal-oriented and autocratic (dictatorial) (Knapp, 2015; and Laohavichien et al., 2011).

Strategic decision making in operations management and re-engineering was noted by current operations research (Venkat et al, 2015). Planning for QM was highlighted in Juran’s
theory of QM (Njeru and Omondi, 2016). Rao (2015) emphasised that successful leaders require clear strategy with stretched goals for employees, as Jack Welsh successfully did in General Motors (GM) through the Six Sigma quality tool. According to NIST (2016), efficient work systems must also be designed in a way that allows an organisation to be agile and protect intellectual property. For instance, workplace flexibility practices have a strong positive relationship with strategic corporate performance (Whyman et al, 2015).

Market research and customer engagement are essential for OL to identify customers’ needs and translate them into appropriate organisational requirements in a timely fashion to satisfy them (Pakdil and Kurtulmusoglu, 2018; Njeru and Omondi, 2016; and Mosadeghrad, 2015). Social media as a recently-used, digital marketing tool was suggested as one of the most efficient and interactive norms of capturing the ever-demanding voice of customer (VOC) and global market research for technology and innovation – oriented OL now and in the future (Lilja et al, 2017; Chan et al, 2016; and Evans, 2013).

Longitudinal studies of TQM practices found a positive association between HR practices such as; empowerment, extensive training, performance appraisal and teamwork with TQM and organisational performance in the manufacturing and service sector (Stanton et al, 2014). Training and TQM-driven performance management were introduced as integral intellectual competence (IC) factors, which act as catalysts, to develop knowledge, skill and attitude (Harley et al, 2010). Hilton and Sohal (2012) supported the idea of developing a manager’s and employee’s capacity as the first priority to pursue any quality strategy.

Research studies have revealed that the pursuit of QM at an operational or process level is the ultimate formula to TQM (Moonsamy and Singh, 2014; and Suarez et al, 2014). Process improvement and control is a result of strategic management and human resource development and was suggested as part of the TQM philosophy to minimise variation and promote QA culture in the organisation (Asif et al, 2013). This practice must be continuously reviewed and modified to create Continuous Improvement (CI) culture which is another important indicator to establish TQM. The contemporary research (Van Kemenade, 2014) recognised CI as an ongoing improvement process with a crucial role in a TQM environment and approachability towards innovation (Lilja et al, 2017) that makes it more appealing for future OL.

Emergence of technological-based management and effective, collaborative and interactive information management systems and performance measurement were recommended as the essential element to be more highly recognised and promoted by OL in the future (Lilja et al, 2017; and Mosadeghrad, 2015). Creating the knowledge management pool and a continuous, cohesive and collaborative tacit and explicit knowledge and information sharing would promote effective QM practices (Gutierrez Gutierrez et al, 2016; Pascal et al, 2013) and broaden effective operations management experiential learning (Roth et al, 2016).

The human-focused and intelligent two-folded approach of QM, as suggested by Weckemann et al (2015), Jimenez-Jimenez (2015) and Van Kemendae (2014) would encourage OL to lead a higher quality organisation, environment and workforce for the future considering ethics, governance and financial performance. Notwithstanding, perceived customer satisfaction, in an ever-growing and considerably demanding environment, is a challenge for OL who want to excite their customers due to complex customer satisfaction rubric and possible external and internal mediating factors. Asif et al (2013) brought some very interesting issues to attention, which include social and ethical considerations in a broader context and environment as an essential indicator for the MBNQA. This has sparked significant attention towards ethics and social responsibility. Therefore, a three-dimensional
sustainable OL with social, environmental and financial perspectives has been increasingly promoted by scholars and OL as a future trend (Walker et al, 2014).

The system is used in any organisation in different sectors and of differing sizes to guide and measure the success of organisational and operational excellence in terms of quality and process improvement (Jones, 2014). The crucial TQM indicators that were presented in the MBNQA and other QM models and theories such as CVF model have guided authors to develop and propose a “multi-hexagonal conceptual framework” (Figure 1).

Therefore, it was decided to investigate the vision of potential future, young OL for every single category in order to examine the current view of these future EYPs about QM key performance indicators (KPIs) and find the most significant gaps. Respectively, differences in relation to the QM vision amongst demographic and organisational leadership style groups of participants as future OL with hypothetically heterogeneous job attribute will be identified. Hence, three research questions (RQ) have been developed by authors:

**RQ1. What are the key TQM KPIs with greatest deal of knowledge gap for future OL?**

**RQ2. Is there any significant difference in the vision of future young OL in relation to their demographic aspects about TQM KPIs?**

**RQ3. Is there any significant difference in the vision of future young OL in relation to their perceived ranking of different leadership and organisational culture styles about TQM KPIs?**

![Figure 1 – A common Multi-Hexagonal Conceptual QM framework (retrieved from MBNQA)](image-url)
3. Research methodology

A survey questionnaire instrument was utilised to cover an appropriate number of future OL with purposive sampling. As supported by Guillot-Soulez and Soulez (2014), it was decided to target the young and educated generation, with no particular permanent management role and extensive experience as future OL, to prevent the effect of career stage in the survey. Nonetheless, their casual work experience, during or before their education has been considered as non-career stage and therefore was included in the survey. This means that the authors intended to investigate the pure vision of future OL among EYPs. Two different cohorts of people were targeted in the format of two case studies, as post A-level students and to be—graduated students, to investigate the knowledge gap and reflect RQ1. The demographic measures such as age, gender, casual work experience and course of study have been analysed to reflect RQ2. Perceived ranking of five different types of leadership styles (five as the top ranking to one as the low ranking) and four types of the CVF organisational culture approaches (four as the top ranking and one as the low ranking) by respondents have been analysed to reflect RQ3.

Questions reflected predominantly MBNQA and CVF factors and their indicators, while covering some demographic measures. Table I presents indicators in each MBNQA category that were used in this questionnaire and their corresponding TQM model and theory as well as literature sources. The questionnaire consists of two sections: Section 1 of the questionnaire concerned with demographic questions and Section 2 included questions to reflect all indicators in the MBNQA. The Likert score of 1 (as lowest level of agreement) to 7 (as highest level of agreement) and also ranking model were used in the questionnaire structure.

Having considered common ethical measures and practices, the questionnaire was disseminated among populations in both cohorts followed by a three week, follow-up period. In total, 1483 questionnaires were sent to potential respondents of both cohorts in a Business faculty as part of a UK-based University via physical or digital dissemination. Having had careful consideration of questions and terminology of indicators, researchers were confident about the level of potential respondents’ self-knowledge and understanding of the questionnaire. This was also supported by conducting a pilot scheme and asking 10 individuals randomly from each cohort to review and answer questions in order to remove any ambiguity in the questionnaire.

The non-parametric testing was conducted for this investigation, since normal distribution was not considered as a pre-assumption, data points were independent from each other and dependent variables are not continuous (Field, 2013). The appropriateness of selecting quantitative data analysis was supported by the literature (Sabell et al., 2014; Moonsamy and Singh, 2014; and Do Nascimento Gambi, 2015). In order to answer RQ1, the median values were used to identify the lowest and highest overall scores for different constructs in each category. The non-parametric “Kruskal-Wallis” and “Mann-Whitney” tests were utilised to identify differences amongst groups in terms of “age”, “gender”, “casual work experience” and “studied courses” and answer RQ2. The non-parametric “Kruskal-Wallis” test was also utilised to identify differences amongst groups in terms of perceived ranking of different leadership styles and organisational cultures by respondents to answer RQ3. Statistical Package for the Social Sciences (SPSS) that accommodates non-parametric testing has been used as the software.
4. Median analysis
The median analysis was utilised for this study in order to answer RQ1 and identify the gap between current vision and knowledge of EYPs as future OL and existing categories with different factors of a TQM framework (MBNQA). This is the appropriate test for this purpose as median is unaffected by the extreme scores on either side of distribution, is relatively unaffected by skewed distributions and can be used with ordinal data (Field, 2013). The variables from different categories of MBNQA framework that were analysed with the Likert score system, were investigated to identify the lowest and highest appreciation of participants towards these TQM variables. The variables with the middle range of median have been disregarded, as this would not represent the significant gap. The variables with the lowest and highest possible median were identified to reflect the least and most recognised factors in MBNQA framework (table II). Interestingly, participants recognised teamwork and dictatorial leadership style as two least important factors for the success of TQM. However, they strongly believe on reward, listening to customers and meeting their requirements via performance measurement and information exchange to promote TQM.

5. Kruskal-Wallis and Mann-Whitney Tests for demographic groups
In order to answer RQ2, the Kruskal-Wallis test was utilised to identify difference amongst various demographic groups of participants as future OL. The Mann-Whitney test has also been utilised to identify the possible differences between two groups within each category. The result is presented for each individual demographic factor and their groups. The summary of Kruskal-Wallis test for all TQM factors that address difference amongst groups was presented in table III.

Age range factor
It was revealed that there is a significant difference (Asymp. Sig < 0.01) amongst all age ranges in relation to importance of creativity and innovation (to reflect the developmental organisational culture) (Asymp. Sig = 0.002), listening to the VOC (Asymp. Sig = 0.00), and recognising the meeting customer specification (Asymp. Sig = 0.001) and retaining satisfied customers (Asymp. Sig = 0.001) as measure of TQM success. As the result of the Mann-Whitney test, it was suggested that there is a significant difference (Asymp. Sig < 0.01) between 18-19 years old participants with older ages (if aggregated in one group) in relation to the above variables alongside the view on Inspection, importance of collaboration and durability of products/services as critical factors of TQM.

Gender factor
As the result of the Kruskal- Wallis test, it was evident that there is a significant difference (Asymp. Sig < 0.01) between female and male participants when they have been asked about leadership style (Asymp. Sig = 0.00), importance of reward (Asymp. Sig = 0.00), VOC (Asymp. Sig = 0.001), employee involvement (Asymp. Sig = 0.00), support (Asymp. Sig = 0.005), training and supervision (Asymp. Sig = 0.00), process improvement (Asymp. Sig =
and inspection during production (Asymp. Sig = 0.006) in order to achieve TQM. Authors did not apply Mann-Whitney test to analyse the gender, since there were only two groups within this analysis that was covered by Kruskal-Wallis test.

**Education subject background factor**

It was concluded from the Kruskal-Wallis test that participants from different business and management courses are significantly different (Asymp. Sig < 0.01) when they were asked about the importance of information management system (Asymp. Sig = 0.002) to facilitate customer engagement and promote TQM. Notwithstanding, when more detailed analysis as a result of the Mann-Whitney test, between two individual and independent groups was conducted, the result was different. It was revealed that participants with course background in business management were significantly different compared to their counterparts with educational backgrounds in international business management. Here, differences were found in terms of the importance of creativity and innovation (to reflect the developmental organisational culture) and employee capacity and capability as a workforce factor to promote TQM culture. The level of customer engagement as a measurement tool for customer satisfaction was the only variable with significant difference (Asymp. Sig < 0.01) between participants with general business management educational background and those with financial management education. Participants with general business management educational background and accounting education were significantly different (Asymp. Sig < 0.01) in relation to agreeing on meeting customer specification as an important quality factor in TQM. There were no more significant differences between participants with other education backgrounds (i.e. marketing and human resource management management).

**Educational experience factor**

There were only two groups of participants involved in this study and therefore the Kruskal-Wallis test could also represent the purpose of the Mann-Whitney test. It was revealed that post A-level participants are significantly different (Asymp. Sig < 0.01) with ready-to be graduated future YEPs in relation to importance of creativity and innovation (to reflect the developmental organisational culture) (Asymp. Sig = 0.00), flexibility of work systems (Asymp. Sig = 0.001) and meeting customer specification (Asymp. Sig = 0.001) as critical factors of TQM. Their view was also significantly different in terms of the importance of inspection before delivering to the customer (Asymp. Sig = 0.009) and also importance of customer retention (Asymp. Sig = 0.00) as the measure for customer satisfaction.

**Casual work experience factor**

This factor was decided to be analysed by authors to investigate whether the non- career informed casual work experience would have influence on the view of the participants. Two groups of participants with and without any work experience have been analysed via Mann-Whitney test. The result revealed that they are only different significantly (Asymp. Sig < 0.01) in relation to importance of social media to collect the VOC (Asymp. Sig = 0.006) and importance of employees’ behaviour of supplier as the metric to measure supplier’s quality (Asymp. Sig = 0.003).

**Table III appears here**

6. **Kruskal-Wallis Test for leadership style and organisational culture groups**

In order to answer RQ3, the Kruskal-Wallis test was utilised to identify differences amongst various groups of participants as future OL in terms of their perceived ranking of leadership
styles and organisational culture that they will pursue in the future. Scholars recommended four types of organisational culture to represent four quadrants of CVF that are used in the analysis. This analysis was extended to also five groups of future OL with their perceived ranking of their leadership style to achieve TQM. This informed the Kruskal-Wallis grouping exercise to represent each group based on ranking of the factors. For instance, due to having four quadrants of organisational culture in CVF, four ranking groups were recommended in Kruskal-Wallis test (the most likely type of organisational culture to pursue by each respondent in the future was ranked four and the least likely type was ranked 1). Likewise, five ranking groups of leadership style was recommended in Kruskal-Wallis test (the most likely type of leadership style to pursue by each respondent in the future was ranked five and the least likely type was ranked 1).

**Organisational culture**

As the result of the Kruskal-Wallis test, it was evident that a significant difference (*Asymp. Sig < 0.01*) exists between groups of participants only in relation to “Group Culture”. Respectively and amongst different ranking groups in “Group Culture”, the significant difference was found only for two TQM KPIs of “importance of planning” (*Asymp. Sig = 0.008*) and “importance of inspection before delivery to customer” (*Asymp. Sig = 0.004*). This means differences amongst participants in pursuing “Group Culture” makes significant differences of perception towards importance of planning and inspection before delivery to customers to establish TQM. The low median score of the teamwork that represents “group culture” and significant differences amongst population are the indications of greater concern. No other significant difference was found amongst different ranking groups of participants for other organisational cultures.

**Leadership style**

It was found from kruskal-Wallis test that significant differences (*Asymp. Sig < 0.01*) between groups of participants were evident in relation to four types of leadership styles. It was noted by the test result that different perceived rankings of “participative leadership” style makes significant difference in terms of their attitude or perception towards importance of “reward” (*Asymp. Sig = 0.00*), “planning” (*Asymp. Sig = 0.005*), “quality of supplied goods” (*Asymp. Sig = 0.004*), and “overall performance of the product (a customer satisfaction metric)” (*Asymp. Sig = 0.008*) as TQM KPIs. It was also evident that differences in perceived ranking of “democratic leadership” style makes significant difference in terms of their attitude or perception towards the importance of “employee involvement and engagement” (*Asymp. Sig = 0.008*) as a TQM KPI. The “importance of number of engaged customers as a customer satisfaction metric” was the only TQM KPI that was significantly different (*Asymp. Sig = 0.001*) amongst different groupings of participants in terms of their perceived ranking of the “goal-setting leadership”. It was found that differences in perceived ranking of “dictatorial leadership” style makes significant difference in terms of their attitude or perception towards the importance of “knowledge management” (*Asymp. Sig = 0.005*), “employee capability and capacity” (*Asymp. Sig = 0.002*), “quality of supplied goods” (*Asymp. Sig = 0.00*), “employee’s behaviour of supplier” (*Asymp. Sig = 0.00*), “appearance of the product” (*Asymp. Sig = 0.00*), and “durability” (*Asymp. Sig = 0.006*) as TQM KPIs. Finally, no significant difference was found amongst different perceived rankings of participants in relation to “situational leadership” style. The summary of the Kruskal-Wallis test for leadership styles was presented in table IV.
7. Discussion and research implications

This research study followed on studies by Jones (2014) and Sabella et al (2014) who recognised MBNQA framework as a comprehensive TQM model to be approached by leaders in their organisation. Having focused on future EYPs and OL, this study also supports recommendation by Sabella et al (2014) about contextualising and moderating the generic MBNQA model. We have also followed the footsteps of other scholars (Dahlgaard – Park et al, 2018; Romdhane et al, 2017; Knapp, 2015; and Antony, 2014) who highlighted the importance of organisational culture, leadership and creating a sustainable future to succeed in any TQM- related practices. The importance of visionary leadership as one of the pivotal factors to facilitate organisational change to embark on TQM practices was also noted by previous studies (Knapp, 2015; Dora and Gellynck, 2015; Suarez et al, 2014; Moonsamy and Singh, 2014; and Asif et al, 2013). Nevertheless, our finding encompasses the indication of a significant gap in visionary leadership appreciation and its importance to drive other TQM KPIs by future OL. This indicates the clear position of our research study to fill the gap that currently exists in TQM, MNNQA and leadership and organisational culture literature. In fact, this finding plays an integral role in terms of flourishing skills of future OL to lead organisations towards best-in-class level that was highlighted in the literature before (Rao, 2013).

8. Concluding remarks and managerial implications

This study intended to identify the clear gap between the current young and educated generation as future EYPs or OL with common TQM models such as MBNQA. It was also decided to identify if there is any difference amongst groups. It was clearly evident from this analysis that there are some serious concerns in relation to lack of appreciation towards the importance of organisational culture and leadership required to establish TQM culture amongst this generation. In fact, it was really difficult to identify to which CVF category this generation belongs to, since the gap in all of variables in this category was quite significant. Nevertheless, apart from those who appreciated “teamwork” with the “group culture” as their main organisational culture, there was no differences amongst others with other perceived organisational cultures in terms of importance of TQM KPIs. They recognised the participative leadership with teamwork decision making as the most important leadership style for TQM establishment. However, its low significance recommends lack of leadership appreciation amongst them. It was also evident that future OLs with participative or dictatorial leadership styles as two contrasting sides of spectrum are indicative in terms of the importance of TQM KPIs. This means that differences in other leadership styles would not necessarily make any differences in perceived attitude or perception towards importance of TQM KPIs. It was also worrying that higher education would not dramatically change the view of future OL in relation to QM. Therefore, EYPs need tremendous amount of supervision in their workplace and as part of their career development to recognise the strong HR integration with QM. In contrast, the customer orientation of TQM seems to be strongly recognised by this generation alongside integrated information and performance measurement systems.

Nevertheless, the journey in higher education seems to be effective in relation to changing the view of EYPs about recognition of developmental culture and customisation to support TQM establishment in organisations. It is clear that female EYPs as future OL recognised softer elements of TQM such as leadership, reward and employee involvement in decision making.
more than their male counterparts do. This is also extended to some hard elements, such as supervision and training, which female future OL believe to be of higher importance. The educational subject background and experience made future EYPs heterogeneous in relation to recognition of organisational culture as a soft element and customisation as a hard element of TQM establishment.

Overall, it is obvious that the current young generation would not be able to follow TQM frameworks and models comprehensively to establish sustainable QM and operation in their organisation or department, unless changes in their attitude towards softer elements of these models, such as organisational culture and leadership as key derives for TQM, are made. This study only covered the business and management-related educated future OL and did not certainly have a comprehensive view. The similar study could be extended to other higher education backgrounds such as engineering, social sciences and health. As a future study, it is also crucial to investigate the differences amongst these higher-educated future leaders and future leaders with no higher education background to understand their view in relation to TQM.

Reference


## Table I – MBNQA indicators and their TQM corresponding models and theoretical support

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<td>EFQM, MBNQA</td>
<td>NIST (2016); Sabella (2014)</td>
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<td>PDCA Cycle (Gap Analysis)</td>
<td>Agreement on gap analysis</td>
<td>EFQM, MBNQA, Deming Points, QM extension model</td>
<td>NIST (2016); Sabella (2014)</td>
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<td>Resource analysis</td>
<td>Agreement on resource analysis</td>
<td>EFQM, MBNQA</td>
<td>NIST (2016); Sabella (2014)</td>
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<tr>
<td>Transformation</td>
<td>Importance of multi-applied transformation</td>
<td>EFQM, MBNQA, Deming Points</td>
<td>NIST (2016); Sabella (2014); Singh et al (2013)</td>
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<tr>
<td>Supply chain management and partnership</td>
<td>Agreement on partnership approach with suppliers</td>
<td>EFQM, MBNQA, Deming Points, QM extension model</td>
<td>NIST (2016); Sabella (2014); Asif et al (2013); Singh et al (2013)</td>
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<td>VOC</td>
<td>Importance of listening to VOC</td>
<td>MBNQA, QM extension model</td>
<td>NIST (2016); Sabella (2014)</td>
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<td>Digital marketing</td>
<td>Importance of social media</td>
<td>MBNQA, QM extension model</td>
<td>NIST (2016); Sabella (2014)</td>
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<td>Market segmentation</td>
<td>Importance of segmentation to attain information</td>
<td>MBNQA, QM extension model</td>
<td>NIST (2016); Sabella (2014)</td>
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<td>Customer engagement</td>
<td>Importance of customer engagement</td>
<td>MBNQA, QM extension model</td>
<td>NIST (2016); Sabella (2014); Asif et al (2013)</td>
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<td>Comparative data collection</td>
<td>Importance of external information</td>
<td>MBNQA</td>
<td>NIST (2016); Sabella (2014); Asif et al (2013)</td>
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<td>Performance measurement</td>
<td>Importance of performance measurement</td>
<td>MBNQA</td>
<td>NIST (2016); Sabella (2014); Asif et al (2013)</td>
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<td>Knowledge management</td>
<td>Importance of explicit and implicit knowledge transfer</td>
<td>MBNQA, EFQM</td>
<td>NIST (2016); Sabella (2014); Singh et al (2013)</td>
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<td>Information management system</td>
<td>Importance of information management system</td>
<td>MBNQA, EFQM</td>
<td>NIST (2016); Sabella (2014); Asif et al (2013)</td>
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<tr>
<td><strong>Workforce</strong></td>
<td><strong>Importance of quality and quantity of employees</strong></td>
<td>MBNQA, EFQM, Deming Points</td>
<td>NIST (2016); Sabella (2014); Asif et al (2013)</td>
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<tr>
<td><strong>Employee involvement and engagement</strong></td>
<td><strong>Importance of employee involvement and engagement</strong></td>
<td>MBNQA, EFQM, Deming Points</td>
<td>NIST (2016); Sabella (2014); Asif et al (2013)</td>
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<td><strong>Support</strong></td>
<td><strong>Importance of management support</strong></td>
<td>MBNQA, Deming Points</td>
<td>NIST (2016); Sabella (2014); Asif et al (2013); Singh et al (2013)</td>
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<td><strong>Training</strong></td>
<td><strong>Importance of on job training and supervision</strong></td>
<td>MBNQA, Deming Points</td>
<td>NIST (2016); Sabella (2014); Asif et al (2013); Singh et al (2013)</td>
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</table>

<table>
<thead>
<tr>
<th><strong>Operations</strong></th>
<th><strong>Importance of integrated process improvement and design</strong></th>
<th>MBNQA, EFQM</th>
<th>NIST (2016); Sabella (2014); Asif et al (2013); Singh et al (2013)</th>
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<tbody>
<tr>
<td><strong>Continuous improvement</strong></td>
<td><strong>Importance of continuous process improvement</strong></td>
<td>MBNQA, EFQM, Deming Points</td>
<td>NIST (2016); Sabella (2014); Asif et al (2013); Singh et al (2013)</td>
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<tr>
<td><strong>Cost of quality</strong></td>
<td><strong>Agreement on quality improvement being expensive</strong></td>
<td>MBNQA, EFQM</td>
<td>NIST (2016); Sabella (2014)</td>
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<tr>
<td><strong>Inspection</strong></td>
<td><strong>Location of Inspection</strong></td>
<td>MBNQA, EFQM, Deming Points, QM extension model</td>
<td>NIST (2016); Sabella (2014); Singh et al (2013)</td>
</tr>
<tr>
<td><strong>Variation</strong></td>
<td><strong>Importance of variation reduction</strong></td>
<td>MBNQA, EFQM, Deming Points</td>
<td>NIST (2016); Sabella (2014); Asif et al (2013)</td>
</tr>
<tr>
<td><strong>Quality of supply</strong></td>
<td><strong>Supplier Performance Dimensions</strong></td>
<td>MBNQA, Deming Points</td>
<td>NIST (2016); Sabella (2014)</td>
</tr>
<tr>
<td><strong>Product and service</strong></td>
<td><strong>Product and Service performance dimensions</strong></td>
<td>MBNQA, EFQM, Deming Points</td>
<td>NIST (2016); Sabella (2014)</td>
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<tr>
<td><strong>Customer specification</strong></td>
<td><strong>Agreement on quality as reflection of customer specification</strong></td>
<td>MBNQA, EFQM</td>
<td>NIST (2016); Sabella (2014)</td>
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<tr>
<td><strong>Customer satisfaction</strong></td>
<td><strong>Customer satisfaction factors</strong></td>
<td>MBNQA, EFQM</td>
<td>NIST (2016); Sabella (2014); Asif et al (2013); Singh et al (2013)</td>
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<td><strong>Productivity</strong></td>
<td><strong>Importance of productivity against quality</strong></td>
<td>MBNQA, EFQM</td>
<td>NIST (2016); Sabella (2014)</td>
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<td><strong>Financial stability</strong></td>
<td><strong>Importance of quality to bring financial stability</strong></td>
<td>MBNQA, EFQM</td>
<td>NIST (2016); Sabella (2014)</td>
</tr>
<tr>
<td><strong>Ethics</strong></td>
<td><strong>Importance of social aspects of quality improvement</strong></td>
<td>MBNQA, EFQM</td>
<td>NIST (2016); Sabella (2014); Asif et al (2013)</td>
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Table II – Top and bottom range of Median analysis of MBNQA framework factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>N</th>
<th>MEAN</th>
<th>MEDIAN</th>
<th>MODE</th>
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<tr>
<td>Reward</td>
<td>611</td>
<td>5.7234</td>
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<td>Gap Analysis</td>
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<td>Voice of customer (VOC)</td>
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<td>5.6825</td>
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<td>Performance measurement</td>
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<td>5.4157</td>
<td>6.0000</td>
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<tr>
<td>Support</td>
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<td>5.3584</td>
<td>6.0000</td>
<td>6.00</td>
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<tr>
<td>Information management system</td>
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<td>5.3131</td>
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<td>6.00</td>
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<tr>
<td>Creativity &amp; innovation</td>
<td>611</td>
<td>2.6596</td>
<td>3.0000</td>
<td>3.00</td>
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<tr>
<td>Order &amp; control</td>
<td>611</td>
<td>2.7823</td>
<td>3.0000</td>
<td>4.00</td>
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<tr>
<td>Setting &amp; achieving goal</td>
<td>610</td>
<td>2.6328</td>
<td>3.0000</td>
<td>4.00</td>
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<tr>
<td>Democratic leadership</td>
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<td>3.1817</td>
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<td>Situational leadership</td>
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<td>3.2750</td>
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<tr>
<td>Goal-oriented leadership</td>
<td>611</td>
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<tr>
<td>Team work</td>
<td>611</td>
<td>2.2897</td>
<td>2.0000</td>
<td>1.00</td>
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<tr>
<td>Dictatorial leadership</td>
<td>611</td>
<td>1.9836</td>
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Table III – Summary of TQM measures that address significant differences amongst demographic groups

<table>
<thead>
<tr>
<th>Demographic measure</th>
<th>TQM Factor with differences amongst groups</th>
<th>Chi-Square</th>
<th>df</th>
<th>Asymp. Sig</th>
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<tbody>
<tr>
<td>Age Range</td>
<td>Creativity &amp; innovation</td>
<td>12.547</td>
<td>2</td>
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<tr>
<td></td>
<td>Voice of customer</td>
<td>15.507</td>
<td>2</td>
<td>0.000**</td>
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<td></td>
<td>Customer specification</td>
<td>13.252</td>
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<td>0.001**</td>
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<td></td>
<td>Number of customer retention</td>
<td>13.287</td>
<td>2</td>
<td>0.001**</td>
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<tr>
<td>Gender</td>
<td>Dictatorial leadership</td>
<td>18.206</td>
<td>1</td>
<td>0.000**</td>
</tr>
<tr>
<td></td>
<td>Reward</td>
<td>24.584</td>
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<td>0.008**</td>
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<td>Voice of Customer</td>
<td>11.825</td>
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<td>Employee involvement and engagement</td>
<td>22.080</td>
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<td></td>
<td>Support</td>
<td>7.860</td>
<td>1</td>
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<td></td>
<td>Training &amp; supervision</td>
<td>22.221</td>
<td>1</td>
<td>0.000**</td>
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<tr>
<td></td>
<td>Process improvement &amp; design</td>
<td>9.583</td>
<td>1</td>
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<td></td>
<td>Inspection during production</td>
<td>7.469</td>
<td>1</td>
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Table IV - Summary of TQM measures that address significant differences amongst ranking groups of different leadership styles

<table>
<thead>
<tr>
<th>Perceived leadership style by future OLs</th>
<th>TQM Factor with differences amongst groups</th>
<th>Chi-Square</th>
<th>df</th>
<th>Asymp. Sig</th>
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</thead>
<tbody>
<tr>
<td>Participative leadership</td>
<td>Reward</td>
<td>13.205</td>
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<td>0.000**</td>
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<td></td>
<td>Planning</td>
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<td></td>
<td>Quality of supplied goods</td>
<td>N/A</td>
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<td>0.004**</td>
</tr>
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<td></td>
<td>Overall performance of the product</td>
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<td>4</td>
<td>0.004**</td>
</tr>
<tr>
<td>Democratic leadership</td>
<td>Employee involvement and engagement</td>
<td>13.710</td>
<td>4</td>
<td>0.008**</td>
</tr>
<tr>
<td>Situational leadership</td>
<td>None</td>
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<td></td>
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<tr>
<td>Goal-oriented leadership</td>
<td>Number of engaged customers</td>
<td>17.667</td>
<td>4</td>
<td>0.001**</td>
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<tr>
<td>Dictatorial leadership</td>
<td>Knowledge Management</td>
<td>10.287</td>
<td>4</td>
<td>0.005**</td>
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<tr>
<td></td>
<td>Employee capability and capacity</td>
<td>15.161</td>
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<td>0.002**</td>
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<tr>
<td></td>
<td>Quality of supplied goods</td>
<td>N/A</td>
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<td>0.000**</td>
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<tr>
<td></td>
<td>Employee’s behaviour of supplier</td>
<td>41.128</td>
<td>4</td>
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<td></td>
<td>Appearance of the product</td>
<td>16.167</td>
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<td>Durability</td>
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