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Leadership Characteristics for Implementation and Sustainability of Quality: an exploratory study and directions for further research

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Abstract

Purpose: This qualitative study explores the concept of organisational leadership in the context of Quality Management deployments across a variety of business organisations, particularly focusing on the possible relationships between leadership approaches during the implementation and sustaining phases of Quality Management.

Design/Methodology/Approach: The study is based on one-to-one semi-structured virtual interviews with leaders in the quality field.

Findings: Four themes (Customers, Leadership, Quality Culture, and Sustainability of Quality) emerged from the post-interview data analysis, illustrating the critical role of Leadership in the successful deployment and sustainment of Quality Management, and identifying the leadership traits that are most conducive to successful organisational deployments.

Originality: Although some of these leadership traits are described in the wider leadership literature as belonging to one or more different leadership styles, there is no existing style of leadership that comprehends all the characteristics; thus, the need for a new leadership paradigm is this paper's theoretical contribution to the literature.

Keywords: Leadership, Quality Management, Total Quality Management

Article Classification: Research Paper

Introduction

This article presents the qualitative findings of a research project exploring the concept of organisational leadership in the context of Quality Management deployments across a variety of business organisations, particularly focusing on the possible relationships between leadership approaches during the implementation and sustaining phases of Quality Management, and the levels of success in the deployments thereof. In any organisation, effective leadership is a critical component of its conduciveness to success regardless of its size, type, or industry (Jiang, 2014); it helps nurture an honest, encouraging, collaborative, and motivating work atmosphere throughout the process of achieving organisational goals (Flynn and Saladin, 2006). Likewise, as stressed by Joseph Juran (Gupta, McDaniel, & Kanthi Herath, 2005), the role of leadership in Quality Management (QM) constitutes the backbone of any quality improvement strategy.

Nevertheless, although quality is a strategic priority for all businesses today, very little research has been carried out on the role of leadership in achieving and sustaining quality. Despite leadership being a well discussed topic among practitioners and researchers alike, even going back to the times of the pioneers of QM such as Deming, Juran and Crosby, there is still a lack of an overall coherent Leadership Framework for practitioners to follow to ensure success in deploying quality in organisations (Latham, 2014).

This study aims to close this gap and to understand the current role of leaders in organisations for sustaining quality, answering the following research questions:

RQ1: *What is the role of Leadership in the implementation and sustainability of Quality Management practices in Organisations?*

RQ2*: What Leadership styles and traits are more conducive to a successful implementation of Quality Management in organisations?*

Following an extensive literature review on leadership and QM, semi-structured interviews with 13 QM experts formed the qualitative dimension of this longitudinal, four years study on leadership and QM. These experts included quality managers, quality directors, and vice presidents of quality. A qualitative analysis of these recorded discussions yielded four general themes and provide insights into participants' experiences and views concerning the relationship between leadership and success levels in QM deployments, including patterns or trends in this relationship according to the profiles of participating organisations.

Literature Review

Many leadership thinkers at the forefront of the global leadership field have offered their views on the concept of leadership in different contexts such as market disruption, competitive advantage, effective management and more, where certain characteristics, behaviours and values play a role in a leader's success. Regardless of the concrete definition, leadership can be seen as closely linked to the ability to guide and influence people towards meeting certain goals. Since the 1980s, organisations have recognised the strategic importance of quality and QM that can enhance their competitive abilities and provide strategic advantages in the marketplace (Anderson & Rungtusanatham, 1994). In the field of QM, different management philosophies, frameworks, methodologies, tools, and techniques have evolved over the years, with Total Quality Management (TQM), Lean, Six Sigma and Lean Six Sigma among the most widely implemented strategies in organisations.

Leadership plays an essential role in implementing any business process improvement or quality improvement initiative within the organisation (Antony et al., 2018; Hirtz et al., 2007), and will be the most critical aspect in guiding the organisation through the Quality 4.0 evolution, firstly in the digital transformation process and subsequently leading the organisation in the digital environment (Sony et al., 2020).

The role of management commitment and leadership for the successful implementation of QM initiatives is highlighted both in the TQM literature (Das et al., (2010; Cho and Jung (2014); Kumar and Shamal, 2018) and the Lean Six Sigma literature (Laureani & Antony,

2016; Motiani and Kulkarni, 2021,; Srimathi and Narashiman, 2021) specifically, leaders are able to influence their followers to provoke creativity, develop integrated teams, and define and communicate the shared vision (Guillen and Gonzalez, 2001; Goetsch and Davis, 2006) needed for a successful deployment.

Despite managers' performance as leaders being necessary in the successful implementation of QM initiatives (Perles, 2002; Laureani & Antony, 2016), little consensus has been reached about the leadership competencies required to implement specific QM principles (Gonzalez and Guillen, 2002), and many organisations are struggling to make their continuous improvement initiatives a success, citing a lack of leadership, changing business focus, internal resistance and the availability of resources as the main impeding factors (Timans et al., 2012).

Notwithstanding studies on the Leadership characteristics for Lean Six Sigma specifically (Laureani & Antony, 2015), there are no rigorous examinations of what type of leadership is most appropriate for the successful deployment and sustainability of QM in various organisations today (Laohavichien et al., 2011). Among the different styles in the leadership literature (Laureani & Antony, 2017), the Transformational style of Leadership is often considered to have a significant positive impact on QM practices, being consistent with its philosophy of emphasising continual improvement and customer satisfaction, encouraging changes, setting clear and challenging goals and promoting teamwork (Waldman, 1994; Rui et al., 2010).

Cho and Jung (2014) examined the impact of transformational and transactional leadership on QM practices in organisations based in the US and China, concluding that the most effective leadership style for QM implementation varies depending on the national culture. Despite their implications for the management of quality in organisations, leadership theories have not explicitly focused on quality or on the role of leaders as managers of quality (Lakshman, 2006). By contrast, they largely focus on internal processes, outcomes and employees, rather than on customers and suppliers (Puffer & McCarthy, 1996; Eldor, 2021). As such, there is little empirical evidence as to the particular traits of Leadership required to successfully lead a QM programme, apart from

the all-too-common suggestion of the need for top management commitment (Nwabueze, 2011).

While the overall Leadership literature has identified that effective leaders have distinctive traits, such as drive, leadership motivation, honesty and integrity, self-confidence, cognitive ability, and knowledge of the business (Kirkpatrick & Locke, 1991, Anderson and Sun, 2015), all of which allow leaders to stand out from the crowd, in the QM literature these traits have not yet been fully developed and studied. This paper aims to close this gap, investigating which leadership traits and characteristics are more conducive to a successful implementation of QM in organisations (RQ2).

Research Methodology

This study is based on one-to-one semi-structured virtual interviews with leaders in the quality field; the recorded telephone conversations were transcribed, and their content was qualitatively analysed. The interview is a well-established qualitative research method (Crabtree & Miller, 1998), with the purpose to contribute to a body of knowledge that is conceptual and theoretical and is based on the meanings that life experiences hold for the interviewees (Di Cicco-Bloom & Crabtree, 2006). Additionally, it is a powerful method to gain insights into issues by understanding the experience of the individuals whose lives reflect those issues (Seidman, 2005).

In qualitative research, semi-structured interviews are the most commonly used interviewing format (Di Cicco-Bloom & Crabtree, 2006; Kallio et al., 2016; Adeoye-Olatunde and Olenik, 2021); these are usually organised around a set of predetermined open-ended questions, with other questions emerging from the dialogue between the interviewer and interviewee. In this study, semi-structured interviews were chosen for the following reasons:

- They allow the research to generate rich data; some degree of comparison is also possible, depending on how structured the questions are, and this facilitates a content analysis (Adeoye-Olatunde and Olenik, 2021).

- The language used by participants was considered an important factor in gaining insights into their perceptions and values of Leadership and QM (Bazeley, 2009).
- Contextual and relational aspects (e.g., industry sector, size of company, national culture) were seen as significant to understanding others' perceptions (Seidman, 2005).

The methodology paradigm adopted by this study is in the realm of qualitative research, based on a phenomenological position (Easterby-Smith et al., 2002); it does not commence with a prior hypothesis to be tested and proved but instead with an inductive approach to data analysis, where research outcomes are not broad generalisations but contextual findings: 'words are the way that most people come to understand their situations; we create our world with words; we explain ourselves with words; we defend and hide ourselves with words' (Maykut & Morehouse, 1994, p. 18).

The constant comparative method has been used in this study: this involves breaking down the data into discrete 'incidents' (Glaser & Strauss, 1967) or 'units' (Lincoln & Guba, 1985) and then coding them into categories. The coding was performed using the qualitative data analysis software NVivo. To critically evaluate the role of leadership in achieving and sustaining quality, it was necessary to explore the impact of leadership on the successful journey of quality in organisations, irrespective of their nature and size, and understand the effects of different leadership styles and traits on the success of an organisation's journey to achieving quality.

A total of 13 participants were chosen for this study, and their backgrounds and profiles were obtained through the authors' professional network. Participants are therefore leaders in different sectors, including consultancy, financial services, healthcare, renewable energy, and various types of manufacturing such as automotives, medical devices, machinery, chemicals, and electronics. A personalised invite was sent to each participant via e-mail and one-to-one semi-structured video interviews were conducted in

hour-long sessions over Zoom. Participants' demographic information is presented in Table I.

Insert Table I

The interview protocol, illustrated in the Appendix, was piloted first with four participants with Quality Management background to ensure it could meet the research objectives and would work as intended in real environment (Kim, 2011). The protocol was divided into three sections:

- Questions about the respondent's background and their role in the organisation.
- Questions about the present status of QM in their organisations.
- Questions about leadership traits and styles that are conducive to the successful implementation of QM/improvement in their respective organisations.

The interviewers followed the protocol and got to ask all the questions during each interview, ensuring consistency in its application. At the start of each interview, details on the project's objectives were concisely addressed, and the participants were assured that their confidentiality and anonymity were protected; they were also informed that they had the right to remain anonymous and to stop the interview at any time (Saunders et al., 2009). Confidentiality also guarantees objectivity and unbiasedness (Polit & Beck, 2004). the interviews were recorded and transcribed, and their content was qualitatively analysed, through coding using NVivo software.

Interview Analysis

There were several discrete cycles of analyses, involving separate cycles of coding, and two cycles of managing codes; one for the initial categorisation of open codes, and one for data reduction through consolidating codes into a more abstract theoretical framework

to prompt a more comprehensive examination of the data (Bazeley, 2009), leading to findings from which conclusions were drawn. The approach to conducting a thematic analysis (Braun & Clarke, 2006; Kallio et al., 2016; Adeoye-Olatunde and Olenik, 2021) is illustrated in Table II:

Insert Table II

From the data analysis following the interviews, four themes emerge; these are closely aligned to the interview topic guide:

- Customers
- Leadership
- Quality Culture
- Sustainability of Quality

Several sub-themes emerged during the analysis of participants' responses and were coded to these four themes. The following sections illustrate each sub-theme in-depth, cross-referencing it with the demographic variables outlined in Table I via structured tables. Each table displays the matrix of coding patterns between the sub-themes and the demographic variables: industry sector, location of company headquarters, organisation size and business unit size. For each table, the small numbers in parentheses in the first row, under the addressed demographic variable, refer to the participant ID. Also, the numbers in the table indicate how many participants referred to a particular sub-theme.

Customers

In analysing participants' comments on the theme of Customers, two sub-categories or themes were identified:

Voice of the Customer/Customers' Expectations

Here, 12 participants made 23 references to the voice of the consumer or customer expectations during the interviews: participant feedback stressed the importance of integrating customer expectations and requirements into operations, processes and key decisions to ensure customer satisfaction and loyalty. Two interviewees (Participant 1 and Participant 6) emphasised that "*customers are the focus of everything we do" and "customers are the main driver*", recognising the essence of customer-centred activities. Likewise, several participants noted the necessity of delivering products and services that are valuable to customers where they are willing to pay for it.

Customer Satisfaction

Unlike the "Voice of the Customer/Customers' expectations*"* sub-theme, Customer Satisfaction was deemed a success measure by only 8 participants. The participants highlighted the benefits of conducting customer satisfaction surveys to measure success by determining whether Critical to Quality characteristics (CTQs) have been addressed and if products and/or processes are customer centric. Participant 8 states as a quality director "*you don't want to do a project in an area where morale is extremely low. You want engagement, participation, and buy-in*".

A notable observation was that participant 5, who worked in human resource services, did not mention customers during the interview. All five participants from the United States highlighted understanding customers' voice and their expectations in the products or services they delivered, while only a few focused on customer satisfaction. In general, more participants addressed customer expectations than customer satisfaction, highlighting the importance of being customer-driven and understanding the value and benefits of providing quality products and services to customers.

None of the leaders interviewed acknowledged either suppliers or customer-supplier relationships, accentuating the gap highlighted in the literature (Puffer & McCarthy, 1996; Sik Cho & Jung, 2014; Basu and Bhola, 2015, Eldor, 2021). Likewise, participants did not

differentiate between internal and external customers; they gave general comments about customers without mentioning their type. This could be due to limitations of the interview protocol, which failed to include specific stand-alone customer-related questions.

Leadership

In analysing participants' comments during the interviews on the theme of Leadership style, each respondent framed their response around a series of factors that they thought shaped the leadership in their organisation. Having further analysed responses coded to this category, three sub-categories or themes were identified, suggesting that participants considered the role of leadership in Quality against a background of the three contextual factors of leadership style, leadership traits, and hierarchical roles, responsibilities, and relations.

Leadership Style

When asked to describe the leadership style of senior management within their organisation, seven participants (P2, P4, P5, P7, P9, P10, P12) described it as people-oriented, inclusive, and focused on leading rather than managing. One participant described the leadership style in his/her organisation was aiming to build as one that emphasises "*taking care of people while delivering results. Leadership style should be based on lean (GEMBA walks, talking to people, understanding people, posing questions, developing [a] visual management style, data-driven, dealing with people in a caring, supporting way).*" Such description aligns with the inclusive and servant leadership styles described in the leadership literature (Northouse, 2021;Lakshman, 2006; Eva et al., 2019): inclusive leadership incorporates a sense of shared identity, reduces status differences, and fosters employee participation and involvement (Northouse, 2021, Lakshman, 2006), while servant leadership emphasizes that leaders should be attentive to the needs of the followers, empower them, and help them develop their full human capacities (Northouse, 2021, Eva et al., 2009). Most organisations following such leadership styles belonged to the manufacturing sector or were located in the US, with an organisation size of <10,000, or business unit of <300.

Three participants (P1, P8, P13) linked the senior management's leadership style as quality- and goal-oriented, as well as driven by performance: such description aligns to the transactional style described in the leadership literature (Northouse, 2021), where the leader set clear objectives and goals for followers, using rewards to encourage compliance with these goals (Northouse, 2021, Laohavichien, 2009). Another three participants (P3, P6, P11) described it as diverse or a mix of different styles. For example, one participant described it as "*old style management mixed with new/modern style*", while another described it as "*a mix of some being transactional, as you go higher, they are more transformational*": such descriptions align with the adaptive leadership style described in the leadership literature (Northouse, 2021), where the leader helps people change and adjust to new situations: such style is often seen as an important trait for a leader to successfully deploy quality management in organizations (Van der Voet, 2016).

The participants were also asked to voice their opinion on whether the QM programme within the organisation would have had a different fate had the senior management followed a different leadership style; eight participants firmly agreed that the organisation would not have been able to achieve the same results if it had followed a different path, while four participants noted that they could have achieved the same result. One justification for this discrepancy is that a different leadership style would have required them to follow a different approach, which could have been challenging, inefficient, time-consuming, and costly. Others believed that it depends on the leader's knowledge, as different companies would require different approaches to achieve better results.

Leadership Traits

Regarding the leadership traits, participants view as crucial to successfully implementing QM in the organisation, a total of 27 have been identified. Table III lists the leadership traits mentioned by participants. The most common trait - mentioned by seven participants - is to establish a cultural environment and create meaningful purpose. The second most common traits - mentioned by five participants – is providing guidance, mentoring, and coaching. The third traits - mentioned by four participants - include promoting education and training, competence, and build a culture that supports the

direction. Other traits that were mentioned in three different instances include: being facts and results drive, cultivating trust and loyalty and being customer focused.

The aforementioned traits build upon the lack of a conclusive literature highlighting distinctive leadership traits.

Insert Table III

Hierarchical Roles, Responsibilities and Relations

Most participants (P1, P2, P4, P5, P6, P8, P10, P11, P12, P13) believed that the journey to quality leadership varies at different levels in the management hierarchy. One participant clarified, "*The shop floor is not going to be driving change, they are going to be task driven as they are reacting to the KPIs that are on their unit. The senior management levels are going by the metrics and making sure that we follow through. The different levels are tied, but their roles are different*." Two participants (P3 and P7) believed that although it does vary, there must be a certain mindset that is consistent across all levels: P7 mentioned "*somebody sitting at a shop floor does not need to worry about exact numbers around the cost of quality but rather need to understand how the costs that you are incurring in quality impacts the overall financial metrics*".

Quality Culture

In analysing participants' comments during the interviews on the theme of Quality Culture, five sub-themes were identified:

Communication & Transparency

According to 77% of the participants, communication and transparency were dominant characteristics of quality culture. The interviewees shed light on the significance of honest, open, and informal communication between employees, inducing improved performance, a positive work environment and the elimination of inefficiencies. Participant 5 pointed out the benefits of transparency and communication by stating that employees

"*feel inclusive and included in the process that they were buying into and therefore they would advocate better*".

Accountability & Employee Empowerment

Here, 10 out of 13 participants quoted accountability and process ownership as vital drivers for employee empowerment and the breeding of trust among individuals. In addition, they stressed the relevance of top management support and granting employees opportunities to use their expertise, employees to develop their creativity skills in problem solving scenarios and encouraging them to love and take pride in their work. Participant 1 succinctly highlighted this premise from his experience with Dr. Edwards Deming: "*he urged anyone at the manufacturing plant to point out any quality concern, and they [employees] would get recognised and even receive an award for doing so*".

Performance Management & Reward Systems

Eight out of 13 participants highlighted the cruciality of performance management and reward systems for a healthy and sustained culture of quality. They discussed the vitality of leaders monitoring and evaluating employees' work and improving performance by adopting continuous improvement initiatives, including employee development and training programmes to boost their knowledge and skill sets, thus helping the team perform better. Moreover, the participants pointed out the positive impact of providing physical or financial rewards and adopting recognition systems through leader boards and annual meetings, underlining employee progress and achievements. One participant suggested that "*[leaders] need to recognise and celebrate success, no matter how small or big*."

While the theme of a reward system emerged as a critical one while talking about employees' motivation, most participants suggested that there is no 'one-size-fits-all' rubric on this issue, with many incentives, from financial to non-financial ones, used widely in the industry, depending on industry and regional norms (Laureani and Antony, 2021).Employees with different cultural orientations may be motivated in different ways

by an identical reward: the reward system should provide incentives to motivate employees to participate further and continuously improve their own job (Sun, Kee Hui, Tam, and Frick, 2000, Cavallone and Palumbo, 2022).

Engagement & Collaboration

Furthermore, 10 out of 13 participants cited collaboration and engagement as crucial factors in motivating people to work together cohesively and harmoniously, thus cultivating a healthy quality culture. Participant 10 articulated the weight of these factors: "*There is no one size fits all approach, but essentially [leaders] need to engage in listening and promote respect and engagement of people*". Additionally, the participants denoted the benefits of adopting team-oriented quality systems that consider employee reviews and morale levels, thus enhancing their sense of influence and leadership since “the employees need to be part of the solution”. Hence, their voices are vital to the process and project success.

This is in line with Business Excellence research implicating that culture is an equally important pillar besides a developed structure and improvement systematics to manage operations in a sustainable way (Abdullah et al., 2008). Research on organizational culture (Schein, 1985; Alvesson, 2002), and more specifically quality culture (Fundin et al., 2019; Cronemyr et al., 2017), focuses on describing behaviours as a means to better understand how a specific culture could be expressed in practise. Being aware of behaviours that either hinders or foster a quality culture could give insights on what behaviours to develop; engagement and collaboration are two backbones that frame a sustainable quality culture.

Customer-Driven

Six out of 13 participants underlined the cultivation of a customer-driven environment to maintain a culture of quality and extrinsically motivating employees. Some interviewees regard scores from customer satisfaction surveys as indicators of employee motivation, claiming that valued employees are more motivated, productive, and responsive to feedback. Participants concluded that "*one of the fundamental aspects of motivation is to help people become more customer-oriented*". These cultural characteristics are

consistent with TQM's philosophy because they emphasise continuous improvement, put the customer first and promote communication and teamwork. All 12 participants from the distinct sectors unanimously recognised the importance of employee accountability and empowerment in the workplace. Participants from organisations in manufacturing, financial services and human resource mentioned all sub-themes as significant.

Tables IV-V show how many times each cultural attribute was deemed important by respondents belonging to different geography (Table IV) and Company size (Table V): each table show the number of times each cultural attribute was mentioned by the respondents.

From a geographical perspective, the possible impact of the national and regional culture reflects in the participants' perceptions of what are the more important quality cultural attributes: while participants from the US, Western Europe and India mention all the five sub-themes as important, with particular focus on accountability and empowerment from the US based participants, the participants from Northern and Southern European Countries didn't mention customer driven, while the participant from China didn't mention communication and transparency, and performance management. This aligns with the literature showing how the pattern of adoption of quality management practices and techniques vary across national boundaries (Mathews et al., 2001) and how national culture plays a key role in implementations (Erthal and Marques, 2018).

Moreover, themes relating to quality culture characteristics were raised by roughly the same number of participants across all sizes of organisations (Table V), pointing to the small impact of organisation size in these responses.

Insert Table IV

Insert Table V

Sustainability of Quality

In analysing participants' comments during the interviews on the theme of the sustainability of Quality, the sub-themes of ISO 9001, Digitalisation and Quality 4.0 were identified.

ISO 9001

In terms of the implementation of ISO 9001, seven of the 13 participants (P2, P4, P5, P6, P9, P10, P11) confirmed the adoption of the standard within their organisation. One participant further elaborated, "*Yes, it's been around for over ten years. Traditionally, it was just focused on the service elements of what we were delivering. But then, recognising that actually they needed to also be implemented within our finance and transactional processes, as well as all of our systems. The team is now looking at ISO23000 which is a standard around digital ISO, business process and business continuity certification.*" On the other hand, four participants (P3, P7, P8, P12) had not implemented ISO 9001 within their organisation. Three others (P3, P8, P12) had resorted to adopting more industry-specific standards, while the remaining participant (P7) had only adopted some aspects of ISO 9001, but it was neither officially certified nor fully implemented. The participant further clarified that, *"Aspects of quality have been integrated into systems, but they are not completely conforming to the ISO standard"*.

Most organizations that implemented ISO 9001 were manufacturing organizations based either in the US or Western Europe, with an organisation size of less than 10,000 and a quality business unit size of less than 300. This aligns with the literature on ISO 9001 implementation, that shows how the application of ISO 9001 in different countries is closely related to the country's level of development and competitiveness (Rodriguez-Arnaldo and Martinez-Lorente, 2020), and a positive correlation between the level of innovation and business sophistication of industries and the ISO 9001 implementation (Sampaio et al., 2009).

ISO 9001 and alternative standards are sustained in these organisations through QM systems, audits, documentation, training, and regular communication across the organisation. The most common opinion of ISO 9001 standards is that they are only a starting point for quality excellence. To quote the participants, it is "*only a base for quality management*", "*the minimum standard*", and "*a minimal standard*." Another participant believed that it is, "*not generic, and it is not easy to apply directly*."

Digitalisation and Quality 4.0

All thirteen participants have confirmed their organisation's implementation of either digitalisation or Quality 4.0. One participant emphasised that, "*digitalisation is part of the strategy of commercial excellence and operational excellence as well as digital strategies [being] one of their pillars.*" Another participant further highlighted the urgency and importance of its implementation by stating that, "*you have to do that otherwise you are out of business*". However, the interviews showed that degree of implementations vary in the level, maturity, or motivation behind the implementation: three participants (P2, P6, P12) belonged to organisations that are in the initial phases of implementation, two (P7, 10) suggested that the organisation would only partly implement digitalisation or Quality 4.0 and one (P8) belonged to an organisation that implemented it as a result of government requirements.

The participants have reported the following benefits of digitalisation and Quality 4.0 implementation: enhanced efficiency (mentioned in six instances), followed by improved responsiveness and reduced processing time (mentioned in four instances), and increased resource utilisation and proper use of information (mentioned in three instances). Moreover, enhanced business sustainability, product and service quality, customer experience and reduced nonconformities were mentioned in two instances. Finally, additional benefits include enhanced accounting and financial controls, the centralisation of activities, the opportunity to upscale workers, agility, clarity of work and reduced waste and cost. Overall, the areas of Digitalisation and Quality 4.0 have only been lightly touched upon during the interviews; these are therefore areas that need to be further developed in future research.

Discussion

From the qualitative analysis of the interviews emerge the critical role of Leadership in the successful deployment and sustainment of QM, in line with the literature that identified Leadership as a Critical Success Factor (Porter & Parker, 1993; e Sá & Kanji, 2003; Ferdowsian, 2016; Lachman & Nicklin, 2017; Oakland, 2011; Taylor & Wright, 2003).

Interview respondents illustrated how critical their organisation's Leadership was in starting the QM journey, setting a clear vision and the direction to achieve it; such leadership was inclusive, goal-oriented, and customer-driven. Respondents also highlighted how Leadership promotes education and training for the next phase, centred around digitalisation and Quality 4.0. This centrality of Leadership answers the first research question of the study (***RQ1***: *What is the role of Leadership in the implementation and sustainability of Quality Management practices in Organisations?*).

In addition, other characteristics needed in the effective Leadership of QM have emerged. The leader needs to be *Customer-Driven*, able to integrate customer expectations and requirements into operations and processes, be *People-oriented*, able to create an inclusive work environment, set an example of not being afraid of failure and being open-minded to change and ensure employee involvement across the organisation. The customer and stakeholder perspective are however much broader today which implies a leadership enable to listen and understand a bigger picture with a societal satisfaction balancing economic, social, and environmental sustainability (Deleryd and Fundin, 2020). As part of this, it is critical for the leader to *cultivate trust*, acting more as a leader rather than a manager, creating a safe space in which employees are not afraid of experimentation and failure. Fundin et al., (2019) describe this as an emergent quality management paradigm; this implies a recognition of dichotomies such as for example exploration and exploitation as mutually dependent.

Establishing and utilising effective and transparent *communication* systems and structures emerged as an important leadership trait and good practice in engaging the workforce and achieving buy-in to QM measures. Implementing QM is a transformational journey for an organisation, radically changing the way things are done; it is necessary for the leader to be *visionary* and able to articulate a shared vision with which the employees can engage, while at the same time being *goal-oriented*, articulating tangible and measurable goals employees can strive for.

The perception leadership has of QM is also an important contextual factor impacting deployments; it is fundamental for leadership to perceive it not just as a toolkit for fixing

quality problems, but as a philosophy, a way of thinking, to be ingrained into the workplace's *culture* over time. Cameron & Sine (1999) ascertained that a high failure rate is experienced when quality programmes are introduced in organisations without an accompanying change in the culture of the organisation. A change in the prevailing paradigm, or the quality culture of the organisation, is required if QM is to achieve its potential to enhance organisational performances (Cameron & Sine, 1999). From the interview analysis, this requires employee training and education in new skills, hence it is critical for the leader of the organisation to provide guidance*, mentoring and coaching*, assisting employees along the journey.

Leadership needs to foster employees' *engagement and collaboration*, crucial factors in motivating people to work together cohesively and cultivating a healthy quality culture. It is therefore critical for a leader to create a culture of *accountability* and *empowerment* for employees.

These characteristics of Leadership answer the second research question of the study (***RQ2***: *What Leadership styles and traits are more conducive to a successful implementation of Quality Management in organisations?*).

The identification of the leadership traits that are more conducive to a successful QM implementation would be useful to leaders in organisations that are about to embark on the deployment of a QM programme, outlining what traits to look for in a suitable leader for such efforts (Table III): this would help organisations about to embark on this journey to understand whether they have the right type of leadership in place.

Limitations and Future Research Agenda

As with any study, this has some limitations, mostly due to the sample size of the interviews, which did not allow us to determine statistically significant patterns, and the need to limit the interview protocol to keep interview times at a reasonable length. As a result, several areas have been excluded and would require follow-up studies: the role of suppliers, the customer-supplier relationships, and the differentiation between internal and external customers. These, together with the areas of Digitalisation and Quality 4.0, will be the focus of follow-up studies. In addition, the role of Leadership in the era of

Digitalization is not explored in our study and this should also be explored in the future research. We also suspect that the leadership traits in the evolution of Quality 4.0 will be slightly different from the past and this again needs to be explored in our future agenda of research.

Conclusion

This study addressed the two research questions, confirming the focus of Leadership in the successful deployment and sustainment of QM in organisations [**RQ1**], and identified the leadership traits that are more conducive to a successful deployment thereof [**RQ2**].
The findings were presented in four parts corresponding to the four key themes that emerged in the analytical process, namely, *customers, leadership, quality culture and the sustainability of quality.* The exploration of these themes provided rich insights into participants' experiences and views concerning the relationship between leadership and success levels in QM deployments.
The five more important leadership traits identified are: to create meaningful purpose for employees, provide guidance, mentoring and coaching, promoting education and training, competence and building a culture that support quality.
From a theoretical point of view, although some of these leadership traits are described in the wider leadership literature as belonging to one or more different leadership styles, there is no existing style of leadership that comprehends all the identified characteristics (Lakshman, 2006; Nwabueze, 2011); the need for a new leadership paradigm is therefore this paper's theoretical contribution to the literature.

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Appendix - Interview Protocol

Leadership for Quality – A Qualitative Global Study

WELCOME

First, we would like to thank you for agreeing to participate in our global research project, which is critically evaluating the role of leadership in achieving and sustaining quality. Your input as a leader in quality can make an immense difference to our project and we would like to take this opportunity to appreciate your contribution to this study. To facilitate our notetaking, we would like to record our conversations today. For your information, only researchers on the project will be privy to the recordings, which will be deleted after transcription. All information is confidential, your participation is voluntary, and you may stop at any time if you feel uncomfortable.

We have planned this interview to last no longer than one hour. During this time, we have several questions that we would like to cover and if any questions need further clarification, please do let us know.

INTRODUCTION

You have been selected to speak with us today because you have been identified as someone who has a great deal to share about the deployment of Quality Management in your organisation. Our research project focuses on the impact of Leadership on the successful journey of quality in organisations, despite their nature and size. We would also like to understand the impact of different Leadership styles and traits on the success of the quality journey in your organisation. Our study does not aim to evaluate your company's success or your personal techniques or experiences. Rather, we are trying to develop best-in-class practices for Leadership in Quality which [will] help those organisations to achieve and sustain quality as a weapon for creating competitive advantage.

INTERVIEWEE's BACKGROUND: ***in this section we will ask a few questions to understand your organisation and your role in the business.***

1. Please confirm your title and role in the organisation:
2. Please indicate the sector your organisation belongs to:
3. Please indicate the location of your company headquarters:
4. Please indicate your own office location:
5. How many employees, approximately, your organisation has:
6. How many employees, approximately, your business unit has:

Present status of Quality Management in your business

7. What does quality mean to you and how do you view quality management in general?
8. Does your organisation have a separate quality department and what are the specific roles of the quality department?
9. Have you implemented ISO 9001 in your organisation? If so, when? How do you sustain the standard in your business?

10. What are the primary measures of success for Quality in your organisation? Please share the key metrics of quality in your organisation at [the] strategic, operational, and tactical levels.
11. How has quality evolved in your organisation?
12. Has your organisation adopted digitalisation of quality or Quality 4.0? If not, why not? If yes, when and what are the benefits from the adoption of Quality 4.0?

Leadership for Quality related questions

13. In your view, does the type of Leadership in a Quality journey vary at different levels in the management hierarchy (Senior Management Level, Middle level, and Shop-floor level) and, if so, how?
14. What are the Leadership traits that you believe are more conducive to successful implementation of Quality Management/improvement in organisations?
15. How would you describe the Leadership style of the senior management team in your organisation?
16. Do you think the Quality Management programme in your organisation would have reached the same results with a different style of leadership? If YES, why? If NOT, why NOT?
17. How did the top management communicate the need for Quality Management at the outset of the journey? Was that communication a success? If yes, how did you measure the success of your quality journey? If not, why not? How do you know it was not successful?
18. As a leader in your organisation, how do you motivate (i.e., intrinsic, extrinsic or both) your employees in the engagement of quality improvement exercises or activities? How do you win their hearts and minds and what are your typical challenges in winning their hearts and minds?
19. What do you think are the characteristics of a quality culture? How does your organisation sustain a culture of quality?

CLOSING

Thank you for taking the time to share with us your knowledge and experience.

This is critical to build a systematic understanding of Leadership processes and Quality Management, and we thank you for your time.

We will be in touch in the coming weeks, once we have completed the first round of interviews, to share with you what we have learned.

Code	Job Title	Sector	Company Headquarters	Organisation size	Business unit size
P1	Quality and Reliability Manager (retired as of 2005)	Manufacturing	Michigan, US	250,000	800
P2	VP of Quality	Manufacturing	US	157,500	
P3	Quality Director	Manufacturing	Switzerland	89,000	500
P4	Global Quality Director	Manufacturing	California, US	65,000	200
P5	VP of Digital Success Management	Human resources services	Zurich, Switzerland	35,000	150
P6	Corporate VP Quality Management	Energy	Bilbao, Spain	27,000	1,200
P7	Business transformation leader	Financial services	India	25,000	Cannot share specifics
P8	Quality Director	Healthcare	Washington DC, US	17,000	3,000
P9	Operational Excellence Director	Manufacturing	Missouri, US	8,000	
P10	VP of Global Manufacturing and Processing	Manufacturing	Berlin, Germany	2,000	1,200
P11	Director of QHSE and Lean Six Sigma Master Black Belt at CMP Products	Manufacturing	Cramlington, UK	420	20
P12	Senior Vice President for Engineering and Quality	Manufacturing	China	200	200
P13	Independent Quality Consultant	Business consulting services	Norway	NA	NA

Table I – Participants' profiles

Analytical Process (Braun & Clarke, 2006)	Braun and Clarke: Practical Application in NVivo	Strategic Objective	Iterative Process throughout Analysis
1. Familiarise yourself with the data	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas. Import data into the NVivo data management tool	**Data Management** (Open and hierarchical coding through NVivo)	Assigning data to refined concepts to portray meaning
2. Generating initial codes	Phase 2 - Open Coding - Coding interesting features of the data in a systematic fashion across the entire data set, collecting data relevant to each code		
3. Searching for themes	Phase 3 - Categorisation of Codes - Collating codes into potential themes, gathering all data relevant to each potential theme		Refining and distilling more abstract concepts
4. Reviewing themes	Phase 4 - Coding on - Checking if the themes work in relation to the coded extracts (level 1) and the entire data set (level 2), generating a thematic 'map' of the analysis	**Descriptive Accounts** (Reordering, 'coding on' and annotating through NVIVO)	
5. Defining and naming themes	Phase 5 - Data Reduction - On-going analysis to refine the specifics of each theme, and the overall story [storylines] the analysis tells, generating clear definitions and names for each theme		Assigning data to themes/concepts to portray meaning
6. Producing the report	Phase 6 - Generating Analytical Memos - Phase 7 - Testing and Validating Phase 8 - Synthesising Analytical Memos. The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating the analysis back to the research question and literature, producing a scholarly report of the analysis	**Explanatory Accounts** (Extrapolating deeper meaning, drafting summary statements and analytical memos through NVIVO)	Assign meaning Generating themes and concepts

Table II - Qualitative Analysis Approach (Braun & Clarke, 2006)

#	Trait	Participant ID
1	Establish a cultural environment and create meaningful purpose	3, 5, 6, 8, 10, 11, 13
2	Provide guidance, mentoring and coaching	5, 6, 7, 10, 11
3	Invest in education and training	4, 8, 10, 12
4	Competence	5, 6, 11, 13
5	Build a culture that supports direction	5, 6, 9, 10
6	Driven by facts and results	2, 3, 5
7	Cultivate trust and loyalty	10, 12, 13
8	Customer focused	3, 7, 9
9	Transparency	5, 10
10	Open mindedness	5, 12
11	Resilience	3, 5
12	Talent and competence cultivator	3, 13
13	Resourcefulness	4, 6
14	Caring	2
15	Passionate	2
16	Ethical	2
17	Fortitudinous	2
18	Eliminate emotions	2
19	Righteous	2
20	Open to criticism	11
21	Strong personality	11
22	Strategic thinking	3
23	Problem solver	3
24	Bias for improvement	7
25	Eye for detail	7
26	Adaptable	5
27	Dr. Deming's 14 points for management	1

Table III - Frequency of Leadership Traits

Quality Culture Characteristics by Region	United States (1,2,4,8,9)	Northern Europe (11,13)	Southern Europe (6)	Western Europe (3,5,10)	China (12)	India (7)
Communication & Transparency	3	2	1	3	-	1
Accountability & Empowerment	5	2	1	3	1	1
Performance Management & Reward System	2	1	1	3	-	1
Engagement & Collaboration	3	2	-	3	1	1
Customer-Driven	3	-	-	1	1	1

Table IV - Matrix of coding pattern between quality culture characteristics and company location

Quality Culture Characteristics by Company Size	1 (5)	<10K (9.10,11,12)	10K- 30K (6,7,8)	30K - 50K (5)	50K -70K (2,4)	>70K (1,3)
Communication & Transparency	1	2	2	1	2	2
Accountability & Empowerment	1	4	3	1	2	2
Performance Management & Reward System	-	2	2	1	1	2
Engagement & Collaboration	1	3	2	1	1	2
Customer-Driven	-	2	2	1	1	-

Table V - Matrix of coding pattern between quality culture characteristics and organisation size

Peer Reviewer #	Comment	Answer
Peer Reviewer #1	Could strengthen describing validity of the study and research method, and the implications to leaders and how they would apply the results.	- Added paragraph in the methodology section to describe validity and consistency of research method. - Added a paragraph in the discussion section outlining how leaders could use the results.
Peer Reviewer #1	Good methodology: could further discuss the validity, such as, did you pilot the interview questions first. There was consistency in the interview questions but was there also consistency in the application of the interview questions, did all interviewers and interviewees get to all of the questions.	In the methodology section, we have added: - a paragraph on the piloting of the interview protocol. - a paragraph to elaborate on the consistency of application of the interview questions.
Peer Reviewer #1	Could be further enhanced describing how leaders would use the results.	Added a paragraph at the end of the discussion section outlining how leaders could use the results.