The effect of leadership styles on Total Quality Management (TQM)-A suggested model- An applied studyon the mobile service companies in Egypt

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Abstract

TQM is a fast becoming a key issue in the industry. The leadership style is at the heart of our understanding of the successful TQM implementation. To date no study clarified how leadership styles affect TQM implementation. Thisstudyaimsatempiricallyinvestigatesthesignificantimpactof leadership styleson TQMimplementationin thetelecommunication for mobile servicescompanies in Egypt. In contrast, mostof theprevious studiesconsidered leadership as one of TQM dimensions. In addition, most commonly the previous literature discussed three types of leadership styles which are transformational, transactional and charismatic leadership. However, they discussed the effect of any type of the three on factors rather than TQM. This study seeks to investigate the effect of five leadership styles on TQM implementation. These styles include transformational leadership,

transactional leadership, visionary leadership, charismatic leadership and culture based leadership. A conceptual model had been established and it had been tested using a survey data collected from a sample of 800employees working in the Egyptian telecommunication for mobile service companies using the quantitative method and the regression analysis of results. Charismatic leadership has the strongest effect on TQM implementation. However, transformational leadership has the least effect on TQM implementation among the five mentioned leadership styles.These findings contribute to increasing the knowledge about leadership styles constructs and clarifying how these constructs affect TQM implementation. Additionally, this study provided a detailed quantitative analysis of the results of applying this research on a developing country such as Egypt. However, it suffers from its application on the service sector which is completely different from the goods manufacturing sector and from other service sectors.

Keywords: TQM, leadership styles, transformational leadership, visionary leadership.

1. Introduction

TQM had been defined in different ways in the literature, it had been considered as asystematicapproachof managementbasedoncontinuousimprovement which always needs the top management support. Joss (1994) illustrated thatpreplanning, top management commitment and structuring for quality are considered as major implementation criteria for TQM. Copper and Dale (1994) assured that senior managers play great roles in TQM implementation.In spite the consideration of teamworkand employee involvement as the main key enablers for TQM, some researchers investigated the role of leadership in TQM implementation. Tan and Libby

(1997) assured that motivation, leadership, and creativity are the factors which are vital for productivity, performance, and quality of work and services. The literature till 2002 depended on investigating only casestudies. Furthermore, most of the literature discussing TQM in the service sector in this time depended on the grounded theory and they suffered from great subjectivity. Recently, management leadershiphad been considered asanimportantfactorin

TQM implementationbecause itimproves performancethrough influencingotherTQMpractices (WilsonandCollier2000). Guillén and González (2002) illustrated that leadership is a requirement for TQM implementation but they demonstrated only the role of leadership in increasing customer satisfaction through enhancing commitment of followers. Successful implementationofTQMrequires effectivechangesinan organization'scultureand it issomehowimpossible without managementleadership (Rad, 2013).Ithasbeen arguedthatTQM consists of two components which are hard and soft ones. Hard components present in its tools and techniques and soft component lies in leadership and human resource management (Rahman and Bullock, 2005). Thesoft factors ofTQM have been developed by Shahinand Dabestani (2011) to involve committedleadership,adoptionand communication ofTQM, closer customerrelationship, closersupplierrelationship,benchmarking, increased training,open organization,employee empowerment,zero- defect mentality and process improvement. Gunasekaranand Dubey (2013) considered the motivational leadership among the soft TQM dimensions. This affirmsJuran and Gryna (1993), Karaszewski (2010) and Rui et al. (2010) conclusions that leadership helps in building quality goals and providing resources to stimulate improvement which is essential for TQM implementation and increases the

firm performance.Abdalla (2013) illustrated that both the soft and hard total quality management (TQM) practices affectthe total productive maintenance (TPM) in the Jordanian manufacturing companies. In addition, he considered leadership as one of the soft components of TQM. Formby et al. (2018) modeldemonstrated the presence of non-linear relationship leadership and firm's performance in case of TQM implementation. However, all of this literature had not illustrated the effect of leadership styles on TQM. The effect of leadership styles had been illustrated in other factors rather than TQM. The most recent classification of leadership styles had been based upon the personal authority of the leader (Desgagné, 2002) and it had classified them into five leadership styles. These five leadership styles included transformational, transactional, visionary, charismatic and culture based leadership (Wang et al., 2010). Transformational leadership is the most studied leadership style over the past 30 years (Rubin et al., 2005; Xenikou and Simosi, 2006; Robbins and Coulter, 2007;Camps and Rodriguez, 2011;Birasnav et al. 2011; Warrilow, 2012; McCleskey, 2014; Jyoti and Dev, 2015;Rao and Abdul , 2015;Kim and Shin , 2017). However, there are some studies that clarified the effect of both transformational and transactional leadership collectively on organizational reputation, knowledge management,

organizational commitment, enterprise success, change appraisal and firm's performance (Men, 2010; Nguyen and Mohamed, 2010;Shareef et al., 2012;Ghazali et al.,2015;Holten and Brenner, 2015;Tahrhini et al. , 2016). Transactionalleadership had only been studied by Zeng et al. (2011) and Salvaggio. In addition, Kent (2016) recently correlated charismatic leadership to loyalty and contribution and professional respect as part of lower factors of LMX (Leader Member Exchange). However, Kantabutra and Vimolratana (2009), Kantabutra and Rungruang (2013) and Taylor et al. (2014) correlated visionary leadership to customer satisfaction, employee affective commitment and organizational effectiveness. Culture based leadership had only been correlated to either goal interdependence and leader member relationship or change management (YiFeng and Tjsovold, 2008; Al-Ali, A. et al., 2017). However, a major problem had been found in these previously discussed studies since they demonstratedeach constructforleadership styles separately or collected only transformational and transactional leadership. Wang et al. (2010) put several dynamic constructs for each leadership style collecting the five leadership styles together. Although,theEgyptian telecommunication sector is a rapidly growing sector, it has a great competition and this has not been translated into better rates and services for customers. In past few years,

there was a steady deterioration in the quality of mobile and internet services and the customers agreed that the quality of all services provided in the telecom sector are not satisfactory (Mobinil report, 2013). There had been no study to demonstrate the role of leadership styles in enhancing TQM implementation in the telecommunication for mobile service sector or the ways to improve the quality of services in Egypt.This study seeks to obtain data which will help to address these research gaps. The methodological approach had been applied in this study is a mixed methodology based on carrying out both qualitative and quantitative research. By employing qualitative modes of enquiry, the researcher attempted to illuminate the leadership styles constructs that help in implementing TQM successfully and the problems encountered in this phase. The qualitative research had been carried out through an exploratory study by interviewing 30 top managers inthesecompanies.This study revealedtheexistenceof someofproblemsinthesecompanies such as the dependence only on the charismatic leadership which emphasizes on the role of the leader in the process rather than the individual development and the decrease guiding the employees to achieve their targets smoothly. The researcher had also carried out the quantitative survey and she analyzedthe data using the

regressionbySPSS 22 (2016)tohavebetterunderstandingofthe relevant factors. The quantitative survey confirmed the finding that transformational leadership has the least effect on TQM implementation as it had been illustrated in the exploratory study and it added that visionary leadership is the leadership style which has the greatest effect on TQM implementation. This let the study to have a major contribution to research on TQM implementation in the telecommunication sector in Egypt.This paper has been divided into five sections. The first section gives an introduction about the research. The second section deals withthe theoretical background and literature review. The third section is concerned with the methodology used for this study. The fourth section presents the results and discusses the findings of the research. The fifth section contains the conclusion, managerial implications, future research and limits.

2. Literature review

TQM is a management system aims to fulfill customers' needs to achieve long term organizational success. TQM suffers from several implementation challenges. Leadership is one of these important challenges (Krumweide et al., 1998). TQM aims to create a social system free from fear or conflict by increasing trust, collaboration and learning (Dale and Bunney, 1999).

Guillén and González (2002) illustrated that leadership is a requirement for TQM implementation. Unfortunately, this study lacks to demonstrate how leadership increases followers′ commitment. Stam (2008) illustrated that visionary leaders involve employees in the decision making process by communication of a common vision to motivate followers to make this vision come true.Stid and Bradach (2009) added that visionary leaders can do this by linking middle level and lower level managers with mission related work of the firm. In addition, Menon (2014) highlighted how transformational leaders increase employees' satisfaction by enhancing followers' creativity, motivation and reward. However, Menon (2014) model had been applied on the educational sector so its results cannot be generalized on the commercial service sector. Numerous studies have attempted to explain the relationship between different leadership styles and customer satisfaction (e.g. Leithwood and Jantzi, 2000; Kantabutra and Avery, 2007). Leithwood and Jantzi (2000) demonstrated that transformational leaders increase customer's involvement and satisfaction through building an organization vision and goals, providing intellectual stimulation and offering individual support. Kantabutra and Avery (2007) added that visionary leaders affect the customer's satisfaction through staff

empowerment and motivation. A large and growing body of literature has investigatedthe necessity of top management commitment in initiating the implementation process by being responsible for the availability of resources and employees development (Lake and Mohanty , 1995 ; Latino, 1999;Motwani, 2001;Prajogo and Sohal , 2003;Taylor and Wright, 2003; Vouzas and Pychogios, 2007). Much of the current literature on TQM pays particular attention to the leadership role in increasing the knowledge share, total productive maintenance and firm's performance(Ooi , 2009;Abdalla , 2013;Gunasekaran, A and Dubey , 2013). Recently, Formby et al. (2018) revealed that management leadership behavior is directed toward growth in capability building and enhancing the competitive advantage in firms with little TQM experience rather than in firms with extensive TQM experience since workforce had the dominant effect in firms with extensive TQM experience. The models which discussed the TQM had been classified into two clusters. The first cluster demonstrates the effect of leadership styles on either TQM implementation or quality management practices. The second cluster demonstrates how TQM implementation affects other factors rather than leadership styles. The first cluster includes Alharbi and Youssef (2012) model, Argia and Ismail (2013) model and Argia (2014) model. Alharbi and

Youssef (2012) argued that transformational leadership, transactional leadership and laissez - faire leadership significantly affect quality management practices rather than TQM implementation (as a broader concept). However, they proved that there is a negative correlation between transactional leadership and quality management practices. Moreover, this study had been applied on public hospitals in Saudi Arabia. Argia and Ismail (2013) proved that the leader's actions is the most influential dimension among the transformational leadership dimensions that have a significant effect on TQM practices as the leaders are those who guide the followers toward reaching their respective levels of potential (Seaver, 2010; Jameson, 2010). However, this study had been applied on the higher educational institutes in Libya. Then, Argia (2014) highlighted that transformational leadership constructs collectively do not significantly affect TQM implementation in Libyan public universities. The second cluster contains Al-Khawaldeh and Chapman (2002) model, Prajogo and Sohal (2003) model, Ooi (2009) model, Abdalla (2013) model, Chen et al. (2013) model, Gunasekaran and Dubey (2013) model and Formby et al. (2018) model. The generalizability of much published research on this issue is problematic. Al-Khawaldeh and Chapman (2002) emphasized that there is a statistically

significant positive relationship between the TQM elements and labor productivity. However, Al-Khawaldeh and Chapman (2002) incorporated mostly the soft TQM determinants rather than the hard elements. In addition, it had not demonstrated the effect of leadership on the productivity since this model had not considered leadership as one of TQM soft determinants. Furthermore, this model had been applied on Jordanian companies in the industrial sector and it had used small sample size (76 managers only) so its results cannot be generalized. In the same vein, Prajogoand Sohal (2003) model illustrated the presence of a significant casual weak correlation between TQM and the product and process innovation performance without demonstration of the leadership role in TQM implementation. But, this model is a conceptual model. There is a large volume of published studies describing the role of leadership as one of TQM metrics and how it can affect knowledge management behaviors, achieving flexibility ,encouraging differentiation and enhancing the firm's performance. Ooi (2009) emphasized that leadership is positively related to knowledge management behaviors. On the other hand, Ooi (2009) model had been considered as a conceptual model and it had not demonstrated which TQM practice had more influence on the knowledge management

process. Chen et al. (2013) clarified that the differentiation strategy can be considered as a mediator in the relationship between soft TQM and organizational performance and they referred to the leader's role in achieving flexibility and encouraging differentiation. However, Chen et al. (2013) model had not demonstrated which leadership style encourages more flexibility and differentiation. Furthermore, this model used the convenience sampling technique and the self-reporting questionnaire. Gunasekaran and Dubey (2014) modelused the motivational leadership among the soft TQM dimensions. Leadership had been considered as an important dimension for TQM implementation in several literature. This confirms Juran and Gryna (1993),Karaszewski (2010) and Rui et al. (2010) conclusions that leadership helps in building quality goals and providing resources to stimulate improvement which is essential for TQM implementation and firm performance enhancement. Conversely, this model revealed that visionary leadership had an effect only on the firm performance which is moderated by the firm's size which supports the previous studies (Terziovski and Samson , 2000 ; Tylor and Tylor , 2013). Furthermore, this model used perceptual rather than objective performance measures and the data on soft TQM dimensions and performance measures were collected at the same

point in time. Formby et al. (2018) modelexplained that management leadership involve workers in decision making , coach them , encouraging them to learn new skills to let them make good independent decisions. Moreover, it differentiated between management behavior in firms with little TQM experience and in firms with extensive TQM experience whereas, it revealed that management has dominant effect on success in firms with little TQM experience while in firms with extensive TQM experience workforce had the dominant effect. However, the sub-groups defined by each of the contextual variables in this model at each stage of analysis are not demographically representative. The studies presented thus far provide evidence that there is a link between entrepreneurship and TQM implementation.

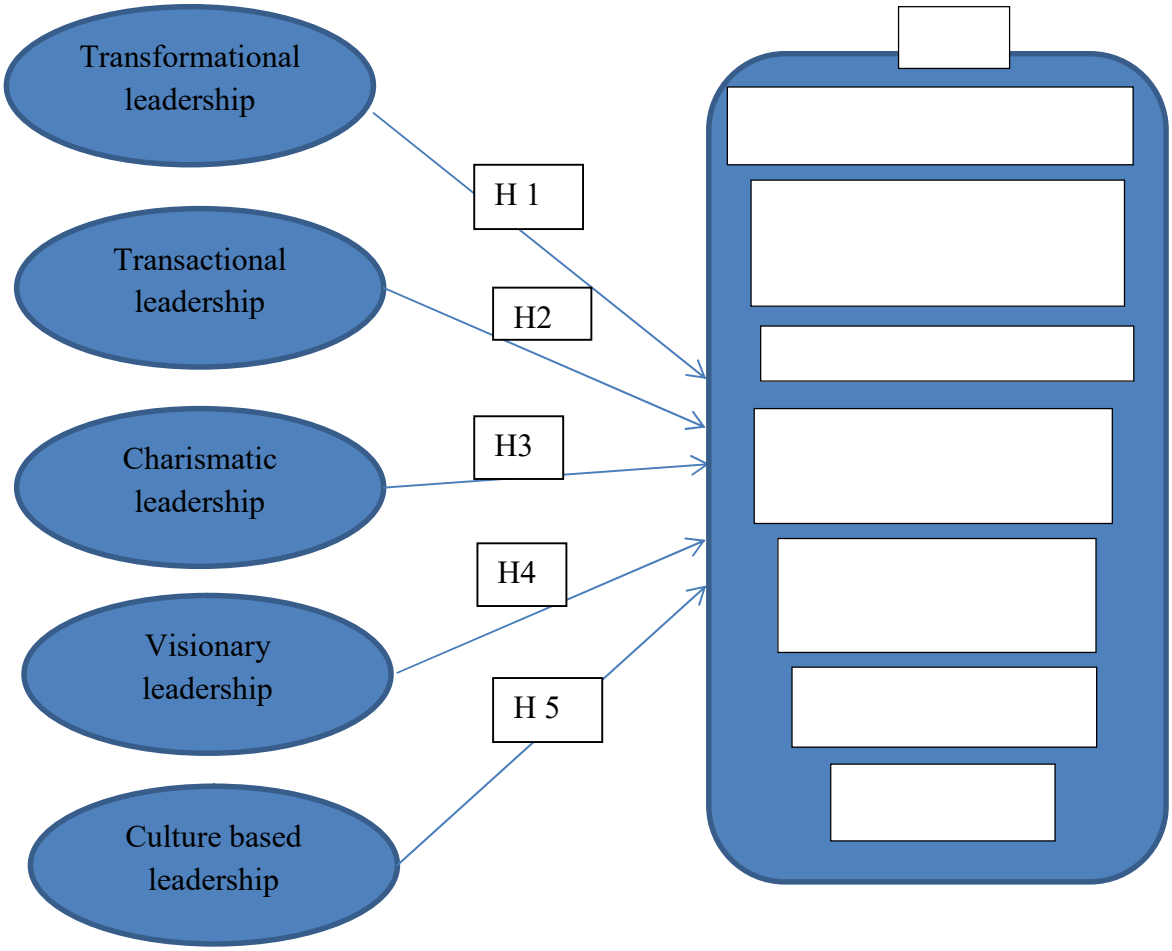
3. Methodology

3.1 Conceptual framework

Thepurposeofthis studyis toexaminetheeffectofleadership stylesonTQM implementationtofillthis gapintheliterature. Reviewing the previous literature allows us todiscovergapsinthe literaturetoguidefutureempiricalandtheoreticaldevelopment.Wefirstreviewed leadership and TQM studies thathavebeenconductedsofarandweclassified leadership styles intofive constructsas demonstratedinfigure1.Multiplemeasures

wereconsideredineachoftheseconstructs. In contrast to the previousmodels, this conceptual framework discusses all the sub-dimensions and their effect on TQM implementation as demonstrated in figure 1. In Spiteofthelimitedliteratureabouttheleadership stylesinthetelecommunication sectorin Egyptas discussedbefore,the researcher's suggestedmodeladdressesthe leadership stylesdimensions whichaffectTQM implementationinthetelecommunication for mobile servicecompanies inEgypt. Thisistoanswerthe researchquestionwhichis"Whataretheleadership stylesaffectingTQM implementationinthetelecommunication sectorinEgypt?".

Figure1. Conceptual framework for the effect of leadership styles effect on TQM



Source: The author's suggested model

3.1.1 Leadership styles

Different authors measured leadership styles in a variety of ways in either the educational sector

or the business sector. Bass (1985) illustrated only two constructs which are the transformational and transactional leadership. Weber's (1947) and Howell and Shamir (2005) demonstrated the charismatic leadership as one of the leadership styles. Bass (1985), Nanus (1992) and Sashkin (1992), Martin and

Epitropaki (2001), Luhrmann and Eberl (2007) and Kantabutra(2009, 2012) engaged visionary leadership among the leadership styles constructs. Bradley and Parker (2001), Bolden and Kirk (2009), De Cremer et al. (2010), Northouse (2013), Meng (2014), Helpap and Bekmeier-Feuerhahn (2016) introduced culture based leadership to leadership styles constructs. However, Wang et al. (2010) was the only study which illustrated these five constructs collectively and developed dynamic metrics for them. However, this study suffered from its limited practical application. Because of the dynamicity of the metrics used in this study and their correlation to the analysis which had been illustrated in the literature review in section 2, the researcher decided to use these inclusive metrics and apply them on her research.

3.1.1 Transformational leadership

Bass (1985) considered idealized influence and intellectual stimulation as the only two dimensions for transformational leadership. Bass and Avolio (1990) added behaviors and actions to these previously mentioned dimensions. Antonakis et al. (2003) argued that the third dimension should be the individualized consideration. Warrilow (2012) come up with the fourth dimension for transformational leadership which is the inspirational motivation. He emphasized its importance since it illustrates the degree to

which the leader articulates a vision that inspires the followers with optimism about their future goals (Geijsel et al., 2003; Singh and Krishnan, 2008). Wang et al. (2010) were the first to demonstrate the four transformational leadership dimensions. Recently, studies have emphasized using only intellectual stimulation and inspirational motivation as transformational leadership metrics (Schepers et al., 2015; Ogbonna and James, 2013). A number of studies examined the correlation between transformational leadership and team effectiveness and performance. Özaralli (2003) and Geijsel et al. (2003) demonstrated that transformational leadership has a high positive correlation with team effectiveness since it paves the way to supervisors to give their sub-ordinates the confidence necessary to achieve the task alone. However, this study had used limited sample size (152 participants). Wang et al. (2010) added that transformational leaders show keen interest in their followers by encouraging intellectual stimulation and providing development opportunities to their teams by helping them rethink the key points of the past smooth operation. Rao and Abdul (2015) affirmed that transformational leadership is positively related to team performance. However , this study used non- probability sample and low number of respondents (182 respondents. Routhieaux andGutek (1998) clarified that team effectiveness is mostly associated with effective TQM implementation. Other studies considered the relationship between transformational leadership and customer satisfaction and the relationship between TQM implementation and customer satisfaction. Jayakody and Sanjeewani (2006) clarified that the confidence given by the supervisor to the subordinate to work alone significantly affects the customer trust and customer commitment. However,

this model illustrated that this impact is a low positive one and this study had been applied on the banking sector in Sri Lanka. Leithwood and Jantzi (2000) reached another result that transformational leadership had a weak but significant effect on customer involvement. Moreover, Motwani (2001) model , Prajogo and Sohal (2003) model, Santos-Vijande and Alvarez-Gonzalez (2007) model, Ooi(2009) model, Munizu (2013) model, Rad et al. (2014) model and Sadikoglu and Olcay (2014) model proved the presence of a strong correlation between customer focus and TQM implementation.A number of authors integrated transformational leadership to employee satisfaction and linked employee satisfaction to TQM implementation. Erkutlu (2008) highlighted that there is a significant relationship between transformational leadership behaviors and employee'ssatisfaction with work because of encouragement of employability and acceptance of the organization's values. However, this study had been applied on hotels in the summer seasonwhich is a very busy season for tourism in Turkey, with high stress levels for managers and high workloads for subordinates which might have affected the results. Moreover, it suffered from a self-selection bias among the subordinates who participated in this study because of the voluntary participation. Ugboro and obeng (2000) illustrated the presence of positive correlation between top management transformational leadership and employee's satisfactionduring TQM implementation.Ooi et al. (2009) added a new clarification which is the positive correlation between team work and customer focus on one side and employees' satisfaction on the other side. They argued that when the teamwork was perceived as a dominant TQM practice, improvements in job satisfaction levels were significant. Previous research findings into the

relationship between transformational leadership and empowerment on one side and between TQM implementation and empowerment on the other side have been consistent. Aveyet al. (2008) illustrated that transformational leadership positively influences empowerment. Kim and Shin (2017) clarified that transformational leadership positively influences psychological empowerment rather than any type of empowerment. But, this study used the single respondent method and the data in this study had been gathered from a few selected companies in Korea so its results cannot be generalized. Thamizhmanii and Hasan (2010) illustrated that empowerment should be structured and planned to achieve the goal of TQM implementation. Over the past decade most research in transformational leadership has emphasized the use of different metrics for transformational leadership and some studies tried to correlate some of these metrics such as inspirational motivation to quality practices. Burns (1978) and Bass (1985) considered idealized influence and intellectual stimulation as the only two dimensions for transformational leadership. Bass and Avolio (1993) added behaviors and actions to these previously mentioned dimensions. Antonakis et al. (2003) argued that the third dimension should be the individualized consideration. Warrilow (2012) come up with the fourth dimension for transformational leadership which is the inspirational motivation. He emphasized its importance since it illustrates the degree to which the leader articulates a vision that inspires the followers with optimism about their future goals (Geijsel et al., 2003; Singh and Krishnan, 2008). Wang et al. (2010) were the first to demonstrate the four transformational leadership dimensions. Recently, studies have emphasized using only intellectual stimulation and inspirational motivation as

transformational leadership metrics (Schepers et al., 2005 ;Ogbonna and James, 2013). Jabnoun and AL Rasasi(2005)illustrated that inspirational motivation of followers (the leader encourages sub-ordinate to rethink the key points of past smooth operations) is significantly correlated with all dimensions of service quality and continuous improvement. However, this study was conducted in six UAE hospitals so its results cannot be generalized to other sectors. This let the researcher to assume that inspirational motivation is the construct which has the greatest effect on TQM implementation. Furthermore, it is evident that most of transformational leadership metrics are correlated to TQM implementation so it can be considered as the dimension which has the greatest effect on TQM implementation among the other four dimensions.Based on the abovediscussion, the researcher assumes that transformational leadership significantly affects TQM implementation.

H1: Transformational leadership positively and significantly affects TQM implementation.

3.1.2 Transactional leadership

Much of the current literature on transactional leadership pays particular attention to the correlation between transactional leadership and organizational commitment and the link between organizational commitment and TQM

implementation. Rehmanand Afsar(2012) argued that transactional leadership is positively related to organizational commitment since the supervisor does not take action unless the target cannot be reached. However, this study used the questionnaire developed by Bass and Avolio(1993) which ignored using some factors such as environment, competition, population and demographics which affect the employees' commitment. In addition, this study had been applied on universities and private educational sectors and it suffered from low response rate. Dai et al. (2013) and Afshari and Gibson (2016) added that transactional leadership significantly affects both trust and organizational commitment since the supervisor does not interfere unless the problem gets worse. In contrast, these studies had been applied on the integrated hospitality environment in Asia (Taipei City) and healthcare and manufacturing sectors respectively. Furthermore, both of them used small sample size. Schalk and Dijk (2005) illustrated the strong correlation between employee commitment and TQM implementation but this model is a conceptual qualitative model. In recent years, there has been an increasing amount of literature on the correlation between transactional leadership and employee creativity. Tung and Yu (2016) illustrated that transactional leadership hasanegativerelationshiptoemployeecreativity since the supervisor does not

interfere unless the problem gets worse. This findingisconsistentwiththeresultsofGumusluoğlu andIlsev (2009) which proved that transactional leadership hasanegativerelationshiptoemployeecreativity. Sanda et al. (2017) clarified the opposite which is proving that transactional leadership has a positive and significant relationship toemployee's creativity since it illustrated that the work-related flow acts as a moderator for the effect of transactional leadership on employee creativity. However, this study had been applied on Ghanaian telecom industry which differs from other countries so its results cannot be generalized. Semedo et al.(2017) came up with the prove that commitment mediates the relationship between leadership and employees' creativity. Furthermore, Dixit andBhati (2012) and Fabienei and Kachchhap (2016) correlated employees' creativity to employees' commitment. Surveys such as that conducted by Almansour (2012) and Notgrass (2014)have shown that transactional leadership is positively related to the employees' satisfaction. However, Almansour (2012) study had been applied on the educational sector and Notgrass (2014) study used small sample size (105 participants). Ugboro and obeng (2000) argued that there is a positive correlation between the employees' satisfaction and TQM implementation.Additionally, Pantouvakis

and Patsiouras (2016)illustrated that transactional leadership moderates the relationship between service quality and customer satisfaction. However, this study used small sample size (118 participants) and the questionnaire in this study had been self-rated by executives only in Small and Medium Sized Enterprises (SMEs) in Greece. Avast majority of TQM literature such as Motwani (2001) model , Prajogo and Sohal (2003) model, Santos-Vijande and Alvarez-Gonzalez (2007) model, Ooi(2009) model, Munizu (2013) model, Rad et al. (2014) model, Sadikoglu and Olcay (2014) model and Sinha et al. (2016) proved the presence of a strong correlation between customer focus and TQM implementation. There is a consensus among social scientists that transactional leadership metrics include contingent reward and either positive or negative management by exception (e.g. Bass ,1985 ; Hargis et al. , 2001 ; Robbins , 2007). Bass (1985) considered two dimensions for transactional leadership which are contingent reward and management by exception without splitting it into active or passive. Hargis et al. (2001) used passive management by exception rather than active management by exception as a measure for transactional leadership. Robbins and Coulter (2007) included positive management by exceptions among transactional leadership dimensions. A lot of researchers considered contingent reward and

active management by exception as transactional leadership metrics (Bycio et al., 1995; Avolio, et al., 2010; Wang et al., 2010). They clarified that transactional leaders use the active form of management by exception to monitor the followers' performance and to take the necessary corrective actions to force followers to change their work attitudes and behaviors. Stevenson (2011) explained theimportance of splitting the TQM goals into day to day, middle level and long term goals and they clarified the importance of active management by exception in achieving these goals. In the same vein, the researcher argued that active management by exception is the sub-variable which has the greatest effect on TQM implementation. The evidence presented in this section suggests that there is a great correlation between transactional leadership and TQM implementation and some of transactional leadership metrics significantly affect TQM implementation. So, the researcher proposed that transactional leadership significantly affects TQM implementation.

H2: Transactional leadership positively and significantly affects TQM implementation.

3.1.3 Charismatic leadership

What we know about the relationship between charismatic leadership and employees' commitment is largely based upon empirical studies that investigate how charismatic leadership affects employee commitment. Rowden (2000)argued that charismatic leadership significantly affects the organizational commitment. He proved that two charismatic leadership dimensions affects organizational commitment which are inspiration of new ways to solve the old problems and sensitivity for members' needs. However, this study used small sample size (245participants) and it had been applied on USA. Schalk and Dijk (2005) illustrated the strong correlation between employee commitment and TQM implementation using the psychological contract as a tool to increase the employees commitment but this model is a conceptual qualitative model.Inspiration of new ways to solve the old problems (take the initiative to find the crux of the problem , take effective action to supervise sub-ordinates) and idealized influencehave been identified as major metrics for charismatic leadership behavior which is positively and significantly related to subordinates' positive work attitude and employees' satisfaction (Hoogh et al., 2004). Ugboro and obeng (2000) illustrated the presence of positive correlation between charismatic leadership and employee satisfaction during TQM implementation.Since most of the literature

highlighted the role of inspirational motivation, the researcher considered it as the sub-variable which has the greatest effect on TQM implementation. The other part of the literature correlated charismatic leadership to innovation and linked innovation to TQM implementation. Keller (2006) argued that inspiration of new ways to solve the old problems as one of the charismatic leadership dimensions is a strong predictor of technical quality in research projects aimed at producing radical innovation. Ayoko et al. (2009) added that team identity and team co-operation mediate the relationship between charismatic leadership and levels of perceived innovation. They justified that by the increase in the levels of group cohesion in case of team co-operation. Routhieaux and Gutek (1998) illustrated team co-operation is mostly associated with effective TQM implementation. Furthermore, Ooi et al. (2009) added that teamwork and cohesionhad been perceived as a dominant TQM practices. Antunes et al. (2017) clarified that there is a statistically significant relationship between product innovation and TQM implementation. Yusr(2016) confirmed Prajogo and Hong (2008) and Pekovic and Galia (2009) findings that TQM significantly affects innovation performance through innovation capability. However, this study had been applied on small and medium sized firms, it targeted only quality and operations managers and

its response rate is low (21%).From the above discussion, we hypothesize that charismatic leadership significantly affects TQM implementation.

H3: Charismatic leadership positively and significantly affects TQM implementation.

3.1.4 Visionary leadership

Packard (2001) illustrated that visionary leadership is a key element in defining the basic purpose, goals, and parameters or requirements of TQM and articulate that with the company vision. Kantabutra and Avery (2007) had argued that the vision content and communication are indirectly predictive of enhanced staff satisfaction. De Menezes (2012) clarified that there is a positive association between the level of job satisfaction in a workplace and the quality of product outcomes. However, this study had been applied in UK so its results cannot be generalized. On the other hand, Prajogoet al. (2017) emphasized the reverse which is that TQM practices affect employees' job satisfaction. In one well-known recent study, visionary leadership had been directly correlated to employees' commitment since it raises the level of intrinsic value associated with goal accomplishment and it makes use of the sub-ordinates' confidence in their leaders (Kantabutra and Rungruang , 2013).

This study emphasized the presence of strong linkages between followers' effort and goal achievement to create higher levels of personal commitment on the part of the leaders and followers to a common vision, mission, and organizational goals. However, this study had been applied on a state-owned energy provider in Thailand so its results cannot be generalized. Schalk and Dijk (2005) integrated employee commitment and quality management based on the concept of employees' psychological contracts with their organization considering it as mutual obligation between employees and their organizations. In contrast, this study's results cannot be generalized since it had been held on only one country using the key informant technique in the healthcare sector. Recently, Krajcsák (2018) emphasized that employee's self-commitment has an indirect impact on quality management systems rather than TQM implementation. Other authors (see Sashkin and Sashkin, 2002 ;Zhou et al. , 2018) clarified that visionary leadership is positively related to employee creativity since they highlighted that visionary leadership increases the employees confidence, prosocial use of power and seeking out opportunities for learning and knowledge sharing. However, this study had been applied only in high-technology industries and it collected data from a single geographic region in one country (China). Alternatively, Politis (2005)

found that quality function deployment (which is a major precursor for TQM implementation) significantly affects employee creativity.As noted by Kantabutra and Rungruang (2013), Sashkin and Sashkin (2002) and Zhou et al. (2018) employees' confidence in the leader is the sub-variable which has the greatest effect on TQM implementation. Drawing on an extensive range of sources demonstrated in the above discussion, the researcher assumed that visionary leadership significantly affects TQM implementation.

H4: Visionary leadership positively and significantly affects TQM implementation.

3.1.5 Culture based leadership

A vast majority of studies such as Hallinger and Kantamara (2001) , Schraeder et al. (2005), Yifeng and Tjosvold (2008), Hawkins and Wright (2009) and Yiinget al. (2009) illustrated that culture based leaders increase their employees' confidence to achieve their objectives alone by increasing employees' commitment through personal development and the use of innovative tools. However, these studies had been applied on the educational sector, the public sector organizations, private sector organizations, educational institutions and executives in private companies respectively so

their results cannot be generalized. However, Densten and Sarros (2012) argued that culture based leadership increases their employees' confidence to achieve their objectives alone by changing the operations process. Conversely, the design of this study was based on suing the cross-sectional research design which could limit the extrapolation of the results.Al-Ali et al. (2017) clarified how culture based leadership increases their employees' confidence to achieve their objectives alone during the change management process. They argued that this can take place by motivating employees to accept change by being committed to it to achieve their goals. However, this study focused on organizational-level variables rather than individual and group level variables. Additionally, it had been applied on the United Arab of Emirates (UAE) context so its results cannot be generalized. Pourrajab et al. (2015) demonstrated that leaders should increase their employees' confidence to achieve their objectives alone during the time of change by decreasing their resistance to change since this has a significant effect on TQM implementation. However, this study suffered from its application on public schools in Iran. This study results contradict with Kivimäki et al. (1997) study results which illustrated that TQM implementation significantly affects change and it enhances the wellbeing and work-related attitudes of health care staff

personnel. Preliminary work on increasing sub-ordinates' feeling of proudness as being a member of the department by culture based leaders was undertaken by Bligh et al. (2006) who described that commitment enhances this feeling of proudness between subordinates and knowledge sharing. Routhieaux and Gutek (1998) affirmed that feeling of proudness as being a member of the department in the time of achievement is mostly associated with effective TQM implementation. Meng (2014) added that democratic leadership style is positively related to knowledge sharing and increasing the proudness of being a member in the department mainly in either collectivistic or individualistic societies. In contrast,these studies had some limitations such as using small sample size (188 participants) and they had been applied on China and USA respectively. As previously discussed, there is a strong evidence that culture based leaders increase their employees' confidence to achieve their objectives alone is the sub-variable which has the highest effect on TQM implementation. Some analysts attempt to correlate culture based leadership and employee creativity on side and TQM and employee creativity on the other side. Beldow et al. (2011) illustrated that the culture based leadership encourage exploration and creativity of employees by fine tuning their behavior. However, in most of the literature, no clear direct link had been

established between creativity and TQM. From the above discussion, the researcher proposes that culture based leadership significantly affects TQM implementation.

H5: Culture based leadership positively and significantly affects TQM implementation.

3.2 Research Design

3.2.1 Data Source (The Egyptian telecommunication for mobile service companies)

There are threetelecommunication for mobile service companies in Egypt such as Orange Egypt for Telecommunications, Vodafone Egypt and Etisalat Egypt. Vodafone Egypt entered the Egyptian telecommunication market in 1998. Click GSM was rebranded to Vodafone Egypt in 2002. Since 2007, Vodafone Egypt's shareholders structure consists of Vodafone Group with 54.93%, Telecom Egypt with 44.94% and minority free float of 0.13%. Vodafone Egypt completed a full acquisition of Raya Telecom in June, 2007 (Vodafone Sustainability Report, 2013). Orange Egypt for Telecommunications is an Egyptian joint Stock company started its operations in Egypt on May, 1998. It completed a full acquisition of Mobinil Egypt group on March, 2016 (Orange Egypt for Telecommunications Consolidated interim

financial statements, 2016). Etisalat Egypt is a subsidiary of Etisalat U.A.E. (United Arab Emirates). It started its operations in Egypt in 2007. It is the first 3.5 G network operator in Egypt. November 2007, Etisalat Egypt upgraded to 3.75G which is the marketing term for HSUPA(High Speed Uplink Packet access).Etisalat Egypt was the first mobile operator in Egypt to offer Downlink speeds up to 7.2 Mbit/s which is two times faster than 3.5G downlink speeds. Today, Etisalat Egypt's 2G and 3G robust and high quality network covers and serves 99% of the population in Egypt, with download speed reaching up to 84 Mbit/s. Moreover, Etisalat Egypt is the first and the only operator in Egypt that has an exclusive international gateway. There is a great competition in the telecom for mobile services sector in Egypt but this has not been translated into better rates and services for customers. This sector suffers from a lot of problems such as the presence of a steady deterioration in the quality of mobile and internet services in the past few years, patchy mobile connections, dropped calls and slow internet services. Egypt maintains growth in the telecommunication sector in last decade and it tried to lease parts of its networks internationally. The challengefortheforms workinthismarketis notonlytomake satisfaction for the existing customers' needs regarding quality of

servicebuttoscale up the required quality levels rapidly to match the fast change in the customer's needs.

3.2.2 Methods used

Different authors measured leadership styles quantitatively (Bycio et al., 1995; Avolio, et al., 2010; Wang et al., 2010). However, the researcher usedthe mixed methods for measuring data by qualitative and quantitative methods. An exploratory study had been carried out by the researcher in which she interviewed 30 top managers in different companies as a qualitative technique. This is to help the researcher to have an effective description of participants' opinions and experiences and to help the researcher to build concepts and hypotheses (Challoub-Deville and Deville, 2008).However, qualitative research does not assign frequencies to phenomena (Wilson, 2014). So, the researcher used the quantitative methods which depend on statistics and content analysis, using large sample of data to be more trustful and to save time. The researcher analyzed these data using Statistical Package for Social Sciences (SPSS) (Connolly, 2007). Furthermore, the researcher integrated both of methods to give the reader more confidence in the results and the conclusions they draw from the study (O' Cathain et al., 2010). The questionnaire was developed in both English and Arabic. The researcher

designed the questionnaire making use of developed questionnaire scales which had been adapted from the literature then they have undergone pilot testing and revision.

3.2.3 Sample

Atelephonesurveywas conductedbythe researcher with seniors, middle management and top management who work in the three telecommunication for mobile services companies in Egypt. The researcher had contacted 800 employees while she received 550 answered questionnaires and so the total response rate is 68.75 %. The sampling unit is all experienced participants in all departments including engineering, customer services, marketing, sales, franchising and planning, product development andhumanresources. Descriptive data were generated for all variables. Significance levels were set at the 1% level using the student t-test. Data management and analysis were performed using SPSS 22 (2016). The survey was carried out over the course of the growing period from September, 2016 till May, 2017. However, there are some limitations such as excluding part timers and juniors who are under the probations period. The qualitative research had been carried out using the interviews method which had been

conducted by the researcher with a previous determined appointment with top managers using the telephone interview.

3.2.4 Reporting results and discussion of questionnaire and interviews results

3.2.4.1 Descriptive statistics

The items used to measure constructs in this study were selected based on a review of relevant literature pertaining to leadership styles and TQM. To assure content validity, we included items that have been used in prior studies wherever possible. Five items on the questionnaire measured the extent to which leadership styles affects TQM implementation. Charismatic leadershiphas the lowest coefficient of variation (12.52%) and culture based leadership has the highest coefficient of variation (15.90%) as demonstrated in table1.

Table 1. Descriptive statistics for each construct

	Coefficient of variation	Mean	Standard Deviation
a) Charismatic leadership	12.52%	4.55	0.570
b) Transactional leadership	12.92 %	4.52	0.584
c) Visionary leadership	13.49 %	4.67	0.630
d) Transformational leadership	15.63%	5.11	0.799
e) Culture based leadership	15.90 %	5.25	0.835
f) TQM	16.71	5.38	0.899

From table 1 it is clear that dispersion of the results around the mean is the greatest in charismatic leadership compared to all other independent variables. This increases the probability to find an outlier result so the probability of finding a lot of scores far beyond the mean value exists. Moreover, dispersion of the results around the mean is the lowest in the culture based leadership compared to all other independent variables. This clarifies that the probability of finding an outlier result is minimum so almost all values have scores near the mean.

3.2.4.2 Correlation matrix

Results from interviews of top management before starting the quantitative survey distribution reported that transformational leadership had the least correlation to TQM implementation in Egypt. The quantitative results allowed generation of aggregate data for each item by averaging responses from different informants. Measurement items draw on the existing literature of leadership styles and TQM implementation (Wang et al., 2010;Motwani et al., 2001) respectively. The constructs are measured by multiple items anchored on a five point likert scale. Pearson correlation coefficient has positive values for all independent variables with TQM implementation. The observed correlations between leadership styles and TQM implementation can be explained in this way, any increase in leadership styles variables will increase TQM implementation. In other words, the variables move in the same direction since there is a positive correlation.Visionary leadershipvariablehasthehighestandstrongestcorrelationwithTQMimplementation (0.605).On the other hand, charismatic leadership still has a strong correlation with TQM (0.510). While, transactional, culture based and transformational leadership have weak correlations with TQM since they have correlations' values less than 0.5. Their correlations values are (0.409, 0.401

and 0.370) respectively. There is an agreement between the qualitative and quantitative research that transformational leadership has the lowest correlation with TQM implementation.

3.2.4.3 Hypotheses testing

H1: Transformational leadership positively and significantly affects TQM.

Transformational leadershipaffects TQM implementation by 9.1 % at a significance level of less than 0.01 and a confidence level of 99 % as demonstrated in table 2.

Table 2.Regression analysis for transformational leadership

Model	R	R square	Adjusted R square	Std. Error of the Estimate
2	0.302	0.091	0.088	0.3234

All hypothesis sub-variables are accepted to affect TQM implementation at a significance level of less than 0.01 and a confidence level of 99 %. Itis evidentthat transformational leadership significantly affects affectTQM implementationatFvaluethatisequalto685.707 for all thehypothesis sub-

variables ata significancelevelofless than0.01andaconfidencelevelof99%. Transformational leadership sub-variables can be arranged according to their effect on TQM using their (b) values in a descending order such as degree of feeling of wellness by sub-ordinate when working with leaders and leader's encouragement to sub-ordinate to rethink the key points of past smooth operations with b values (0.022, 0.019) respectively. Furthermore, transformational leadership positively and significantly affects TQM implementation as in table 7. This agrees with the theoretical assumptionin section 3.1.1.

H2: Transactional leadership positively and significantly affects TQM.

Transactional leadershipaffects TQM implementation by 10.1 % at a significance level of less than 0.01 and a confidence level of 99 % as demonstrated in table 3.

Table 3. Regression analysis for transactional leadership

Model	R	R square	Adjusted R square	Std. Error of the Estimate
2	0.318	0.101	0.098	0.3217

All hypothesis sub-variables are accepted to affect TQM at a significance level of less than 0.01 and a confidence level of 99 %. Itis evidentthat transactional leadership significantly affects affectTQM implementationatFvaluethatisequalto307.03 for all the hypothesis sub-variables at a significance level of less than 0.01 and a confidence level of 99 %. Transactional leadership sub-variables can be arranged in a descending order such as taking of actions by leader to help if sub-ordinate's target could not be reached and non-interference from leader unless sub-ordinate's problem gets worse with b values (0.375, 0.213) respectively. Additionally, transactional leadership positively and significantly affects TQM implementation as in table 7. This matches with the theoretical assumptions in section 3.1.2.

H3: Charismatic leadership positively and significantly affects TQM.

Regression analysis for this hypothesis demonstrates that charismatic leadership style affects TQM implementation by 80.6 % at a significance level of less than 0.01 and a confidence level of 99 % as demonstrated in table 4.

Table 4. Regression analysis for charismatic leadership

Model	R	R square	Adjusted R square	Std. Error of the Estimate
4	0.898	0.806	0.804	0.149

All hypothesis sub-variables are accepted to affect TQM implementation at a significance level of less than 0.01 and a confidence level of 99%. Itis evidentthat charismatic leadership significantly affects affectTQM implementationat F value is equal to 564.6 at a significance level of less than 0.01 and a confidence level of 99 %.Charismatic leadership style sub-variables can be arranged in a descending order such as leader's inspiration of new ways to solve old problems, leader's pushing of sub-ordinate to achieve departmental objectives, rewarding sub-ordinate for doing the task well by leader and leader's initiation to find an effective action for the problem with b values (0.966, 0.951, 0.702, 0.389) respectively. Added to these, charismatic leadership positively and significantly affects TQM implementation as in table 7. This matches with the theoretical discussion in section 3.1.3.

H4: Visionary leadership positively and significantly affects TQM

Regression analysis for this hypothesis demonstrates that visionary leadership affects TQM

implementationby 17.1 % at a significance level of less than 0.01 and a confidence level of 99 %

as demonstrated in table 5.

Table 5 Regression Analysis for visionary leadership

Model	R	R square	Adjusted R square	Std. Error of the Estimate
2	0.413	0.171	0.168	0.308

All hypothesis sub-variables are accepted to affect TQM at a significance level of less than 0.01

and a confidence level of 99 %. Itis evidentthat visionary leadership significantly affects

affectTQM implementationat F value is 562.8 for all the hypothesis sub-variables at a

significance level of less than 0.01 and a confidence level of 99 %. Visionary leadership sub-

variables can be arranged according to their effect on TQM in adescending order such as the

degree of subordinate confidence in theleader and belief of the sub-ordinate in leader’s

judgment to solve any difficulties with b values (0.293, 0.191) respectively. Moreover,

visionary leadership positively and significantly affects TQM implementation as in table 7.

The results are in line with the theoretical expectations in section 3.1.4.

H5: Culture based leadership positively and significantly affects TQM.

Regression analysis for this hypothesis demonstrates that culture based leadership affects TQM implementation by 28.4 % at a significance level of less than 0.01 and a confidence level of 99 %as demonstrated in table 6.

Table 6. Regression Analysis for culture based leadership

Model	R	R square	Adjusted R square	Std. Error of the Estimate
2	.0.533	0.284	0.282	0.287

All hypothesis sub-variables are accepted to affect TQM at a significance level of less than 0.01

and a confidence level of 99 %. Itis evidentthat culture based leadership significantly affects

affectTQM implementationat F value is equal to 108.594 for all hypothesis sub-variables at a significance level of less than 0.01 and a confidence level of 99%.Culture based leadership sub-variables can be arranged in a descending order such as sub-ordinate's feeling of proudness as being a member of department and leader's giving of confidence to his/her sub-ordinate to achieve alone (0.124, 0.104) respectively. Furthermore, culture based leadership positively and significantly affects TQM implementation as in table 7. This contradicts with the theoretical assumption which considered leader's giving of confidence to his/her sub-ordinate to achieve alone as the sub-variable which has the greatest effect on TQM implementation.

Table 7. Coefficients and t- test for the researcher's suggested model

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig
	B	Std.Error	Beta		
(Constant)	4.510	0.276		16.342	**<0.001
X1. Charismatic leadership	4.527	0.608	0.835	7.447	**<0.001
X2. Visionary leadership	1.362	0.1062	0.637	12.828	**<0.001
X3. Culture based leadership	1.737	0.797	0.562	2.18	**<0.001
X4. Transactional leadership	1.0479	0.175	0.435	5.988	**<0.001
X5. Transformationalleadership	3.412	0.239	0.211	14.279	**<0.001

5. Conclusion

The present study was designed to determine the effect of leadership styles on TQM implementation. This project was undertaken to design a model and evaluate the effect of leadership styles on TQM implementation in the Egyptian telecommunication for mobile services companies. Returning to the hypothesis posed at the beginning of this study, it is now possible to state that leadership styles significantly affects TQM implementation by 41%. This studyhadmadebothacademicandmanagerial contributions totheexistingliteraturesinceitrankedthesemetrics accordingtotheir effect onTQM implementationsuchascharismatic leadership, transformational leadership, culture based leadership, visionary leadership and transactional leadership withbvalues (4.527,3.412, 1.737,1.362, 1.0479)respectively. The conclusion can be drawn from the present study is that transactional, culture based leadership and visionary leadershipshould be developed in the Egyptian telecommunication for mobile services companies. The present study makes several noteworthy contributions to the literature. First, it illustrated why leadership styles can be considered as one of the factors affecting TQM implementation. Second, the present study provides additional evidence with respect to the effect of transformational leadership as one of the major

contributors on TQM implementation. Third, these findings enhance our understanding of the role of culture based leadership in the TQM implementation process in the Egyptian telecommunication for mobile services companies. Fourth, the empirical finding in this study provides a new understanding of the role of transactional leadership on TQM implementation. Fifth, one of the key strengths of this study is its long duration and its application on the Egyptian telecommunication for mobile services companies. Although, the current study is based on one sector in Egypt, this sector had been considered as one of the most growing sectors in Egypt. On the other hand, these findings contradict withthetheoreticalassumption that transformational leadership has the greatest effect on TQM implementation. However, there results match the qualitative research finding that charismatic leadership is the leadership style which has the highest effect on TQM implementation. Some contradictory findings had been presentedto the theoretical assumptions which includeconsidering thesub-ordinate's feeling of proudness as being a member of department to havethe greatest effect on TQM implementation in this research. Additionally, this model demonstrated the effect of culture based leadership and visionary leadership on TQM implementation which had not been illustrated before. Moreover, the

collective effect of the five leadership styles on TQM had not been demonstrated before.

6.1 Limitations

Finally, a number of important limitations need to be considered. First, this study investigates only leadership styles according to the recent classification. Second, the sample size in the qualitative exploratory is small (30 top managers). Third, this study had been applied on one sector which is the telecommunication sector. Fourth, the sample was nationally representative of leadership styles but it would tend to miss people who were part time employees.

6.2 Recommendations for further research work

This research has thrown up many questions in need of further investigation. Development of these scales provides an empirical basis for further scale refinement by other scholars characterizing socially responsible practices in different cultures. It would be interesting to compare experiences of individuals within different sectors in Egypt. Further investigation and experimentation into leadership styles effect on TQM implementation is strongly recommended. A further study could assess the long-term effects of

leadership styles on TQM implementation. Considerably more work will need to be done to determine the effect of culture-based leadership and visionary leadership on TQM implementation. Additionally, more information on charismatic leadership would help us to establish a greater degree of accuracy on this matter.

6.3 Implications or recommendations for practice or policy

There is, therefore, a definite need for considering leadership styles as one of the factors affecting TQM implementation. These results suggest that transactional leadership significantly affects TQM implementation which is contrary to a lot of the previous studies. Another important practical implication is that investigating the effect of sub-ordinate's feeling of proudness as being a member of department on TQM implementation. A reasonable approach to tackle this issue also could be the knowledge of the way by which the degree of feeling of wellness by sub-ordinate when working with leaders enhances TQM implementation. Taken together, these findings support strong recommendations to the strong effect of transformational leadership on TQM implementation.

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