

Assessing the influence of transformational leadership on competitive advantage through important innovations and quality results: Case of railway industry

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ABSTRACT

The importance of quality and innovation in today's 21st century cannot be over emphasised, therefore organisations require leadership styles that can embrace both innovation and quality in order to confront today's dynamic competitive fierce environment. Sometimes organisations fail to attain or maintain their competitiveness because of limited understanding regarding these strategic variables. There is little research that has attempted to analyse the direct and indirect-relationships among these strategic variables. Therefore this study attempted to bridge the gap in literature by analysing how important-innovations and quality-results as TQM practices influence the association between transformational leadership-style and competitive advantage using sample data collected from TAZARA employees in management using Jamovi. The study shows that transformational leadership style, quality-results and important innovations have significant positive effects on competitive advantage. The results also show that important-innovations and quality-results both individually and collectively partially mediate the relationship between transformational-leadership and competitive- advantage. Managers and advocates of transformational leadership style are emphasised to be aware and cautious of quality results and important innovations at all-time especially in today's dynamic environment.

1. Introduction

The 21st century unlike other centuries is very dynamic therefore, organisations require transformative leaders in order to survive this competitive business environment. It has become very important for all managers at all levels to exhibit their capabilities of how they might influence other employees within their organisations to achieve the organisational objectives and survive today's volatile dynamic fierce environment. Transformational leadership (TL) has been recognized as one of the most relevant factors that influences innovation (Al Ahmad et al., 2019). Transformational leaders move organisations forward with the help of every employee within their organizations. Managers who have influence on enhancing innovation in organisations have been described to have transformational type of leadership (Bass & Avolio, 1994) and help in enhancing quality in organisations to foster competitiveness. A number of studies have linked transformational leadership to competitive advantage (see Yamin, 2020; Devie & Hartono, 2018; Ekuma, 2014) while other studies have linked transformational leadership style to enhanced quality in organisations (Ambarwati et al., 2021; Mahdikhani & Yazdani, 2020; Su et al., 2019) as well as innovativeness (Afsar & Umrani, 2019; Hui et al., 2018; Al Ahmad et al., 2019; Aminbeidokhti et al., 2016). To better comprehend the association among transformational leadership, quality, innovation and competitive advantage, I attempted to investigate the direct and indirect relationships linking these variables considering that very few studies have attempted to

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investigate these associations. Moreover, the sector under study, the railway industry has received no attention in this area despite contributing more to the world economy (Talib & Rahman, 2010). This study adopted TQM success critical factors of TQM namely: important innovations and quality results as mediators on the association between transformational leadership and competitive advantage.

2. Literature Review and hypothesis development

2.1 Transformational leadership

A transformational leader is innovative, creative and inspiring and guides people in a way that they perform at an optimum level in their organisation and also become creative and innovative in their area of work. Transformational leaders make their subordinates realise the value of what they are capable of doing. Theorists and scholars believe that transformational leadership management is far more effective than pragmatic leadership (Korejan & Shahbazi, 2016).

2.2 Quality Results

Quality Results is an element that is concerned with observing quality results across all operations and ensures that the demands of the customers are met. This element ensures that cost of production and production measures are emphasised together with the valuation of employee success (Ang et al., 2000).

2.3 Important Innovations

This is a very critical success factor of TQM and the main driving factors of improving quality (Ang et al., 2000). It helps to reduce costs, improve productivity, and increase profitability.

2.4 Competitive Advantage

Competitive advantage is the ability of a company to conduct its activities very unique from its competitors (Kotler, 2000). Price or costs, quality, are capabilities of competitive advantage that differentiate a firm from its rival competitors (Tracey et al., 1999).

2.5 Transformational Leadership and Competitive Advantage

In Indonesia, Devie and Hartono (2018) investigated the impact of transformational leadership on accounting firms competitiveness. The study presented that transformational leadership has a positive significant influence on competitive advantage. Yamin (2020) investigated the moderating role of competitive advantage on transformational leadership and entrepreneurial intention on retention of employees. The study found that competitive advantage moderated the association between transformational leadership entrepreneurial intentions. In the UK, Ekuma (2014) investigated transformational leadership and its implications on organizational competitiveness. The study found that transformational leadership contributes to organisational effectiveness and leads to organisational competitiveness. Based on literature, we proposed that transformation leadership foster organisational competitiveness, thus:

Hypothesis 1: *Transformational Leadership has a positive significant effect on Competitive Advantage.*

2.6 Transformational Leadership and Important Innovations

Afsar and Umrani (2019) investigated the effect of transformational leadership on innovative work behaviour in Pakistan firms. The study presented a positive significant impact of transformational leadership on employees' innovative work behaviour. In Vietnam, Hui et al. (2018) conducted a study to determine the effect of transformational leadership on innovation capability in firms. The study found that transformational leadership practice is relevant to enhance innovation. Al Ahmad et al. (2019) investigated the impact of transformational leadership on innovation in the Lebanese banking sector. The study confirmed that transformational leadership enhances innovation in the banking sector. In Iran Aminbeidokhti et al. (2016) conducted a study on a medical university to investigate the role of transformational leadership and knowledge management processes on rate of organisational innovation. The study found that transformational leadership has a meaningful positive effect on organisational innovation and knowledge management processes. Based upon the above literature, we proposed that transformational leadership enhances innovation. Therefore:

Hypothesis 2: *Transformational Leadership has a significant positive effect on Important Innovations.*

2.7 Transformational Leadership and Quality Results

Ambarwati et al.(2021) investigated the association between transformational leadership with teacher motivation to enhance quality assurance in Indonesia. The study showed that when the perception of transformational leadership is better, then teachers' motivation for quality assurance improves and vice versa. Mahdikhani and Yazdani (2020) examined TL and service

quality in businesses active in the field of e-commerce in Iran with mediating role of team and trust. The study revealed that transformational leadership has a significant positive impact on service quality and does improve team performance. In China, Su et al. (2019) investigated the impacts of TL on Service Quality in chain restaurants. The study revealed that TL significantly improves employees' service quality at branch and individual branch level. Lin et al. (2015) conducted a study in the Taiwan health sector to investigate influences of transformational leadership style in nursing on quality working lives. The study revealed that transformational leadership styles have a positive influence on the quality of working lives of nurses. Based on literature, we suggested that transformational leadership influences quality. Therefore:

Hypothesis 3: *Transformational Leadership has a significant positive effect on Quality Results.*

2.8 Quality Results and Competitive Advantage

Chaniago and Mudjiardjo (2021) investigated the impact of service differentiation and logistics service quality on competitive advantage and its impact on marketing performance of freight forwarding companies in Jakarta. The study found a significant influence of quality on competitive advantage. Hendratmoko (2021) analysed value creation on product innovation, development and quality to competitive advantage in Indonesia. The study found that product quality, innovation and product development have a significant positive effect on competitive advantage. Kusumadewi and Karyono (2019) investigated the impact of quality and innovation on competitive advantage in retailing. The study found that quality and innovation do have a significant impact on competitive advantage. Rashid (2019) investigated the dimensions of service quality and their effects on competitive advantage in the Iraq banking sector. The study found the significant impact of quality on competitiveness. Quality is a holistic part of a company's total competitive advantage. Today's consumers are very much interested in the quality of either a service or product. Therefore I proposed that quality has an influence on competitive advantage. Thus:

Hypothesis 4: *Quality Results has a significant positive effect on Competitive Advantage.*

2.9 Innovation and Competitive Advantage

Lee and Yoo (2019) what to find out if open innovation does lead to competitive advantage in Korean manufacturing companies. The results suggested that the association between the needed capabilities of any organisation must be considered for performing open innovation in order to secure competitive advantage. Innovation capability is widely accepted as an important means of achieving sustainable competitive advantage for organisations before the rapid change of business environment and increasing competitive pressure (Hui et al., 2018). Anning-Dorson (2018) conducted a study that focused on India and Ghana on innovation and competitive advantage creation. The study showed that in Ghana and India, innovation largely positively relates with competitive advantage. Based on the above literature we suggested that important innovations are the key to productivity and creates competitiveness by discovering better or new ways to compete in a market environment. Thus:

Hypothesis 5: *Important Innovations have a positive significant effect on Competitive Advantage.*

2.10 Transformational Leadership, Innovation, quality and Competitive Advantage

In UAE, AlOwais (2019) investigated the influence of TL on competitive advantage through knowledge and innovation in the Telecommunication Regulatory Authority. The study revealed that organizational knowledge and innovation mediate the association between transformational leadership and competitive advantage competitive advantage. In linking all the four variables based on literature review the conceptual framework shown on Fig. 1 was formulated as well as the development of two more hypotheses highlighted below.

Hypothesis 6: *Quality Results mediates the association between Transformational Leadership and Competitive Advantage.*

Hypothesis 7: *Important Innovations mediates the association between Transformational Leadership and Competitive Advantage.*

3. Conceptual Framework

Based on the association among variables utilised in this study and literature review, a hypothesized model was formulated as shown on Fig. 1.

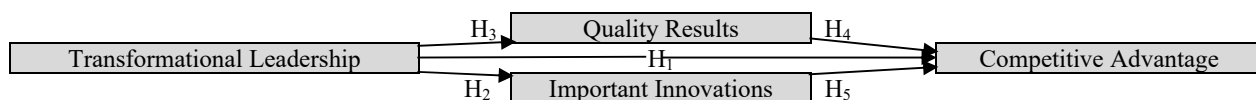


Fig. 1. Hypothesised Model (Source: Author 2022)

4. Methodology

Tanzania Zambia Railway Authority (TAZARA) was picked for this study. TAZARA is owned by two states, namely Tanzania and Zambia on a 50:50 basis and has been in operation ever since 1975. A structured questionnaire was distributed to 180 respondents who are in management against the target population of 240. 153 respondents completed and submitted the questionnaire. Quantitative research approach was employed to analyse data collected and due to the modeling nature of this study, Jamovi software was used in computations. The sample of 153 against 240 population targets met and exceeded the minimum required threshold recommended by Morgan and Krejcie (1970) to carry out scientific research. See Table 1 for further verifications regarding the suggested sample size according to Morgan and Krejcie (1970) formula:

Table 1

Determine Size of the sample of a given Population using Morgan and Krejcie (1970) formula

N	S	N	S	N	S
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note: S is sample size, N is size of population

Morgan and Krejcie (1970)

5. Measures

The Likert scales of five-point was adopted and utilised to evaluate constructs with strongly agree (5) whereas, strongly disagree (1). Transformational Leadership, Important Innovations and Quality Results measures were adopted from a quite number of studies (Coşkun, 2011; Aquilani et al., 2017; Ang et al., 2000; Prajogo & Sohal, 2006; Claver et al., 2003; Terziovski, 2006). Measures for competitive advantage (CA) were adopted from Hilmy (2016) as well as Berhanu (2019).

5.1 Data presentation and analysis

The analysis of the findings of this study was based upon statistical methods using Jamovi software. The findings have been presented in descriptive statistics, figures, tables and hypothesis tests.

5.2 The Response Rate

Of the 180 questionnaires distributed to the population target of 240, a total of 153 respondents completed and submitted back the questionnaire representing 85%.

5.3 Demographic Characteristics

Demographic profiles of 153 respondents that participated in the study based on their gender and experience are shown on Table 2.

Table 2
Demographic Profile

Description	Frequency	Percentage
Gender		
Male	128	83.66
Female	25	16.34
Total	153	100
Years of Experience		
< 10	48	31.4
10-20	55	32.7
> 20	50	35.9
Total	153	100

Source: Author (2022)

Of the 153 respondents, 25 (16.34%) were female and 128 (83.66%) were male. Of the number of years worked with the company, out of 153 respondents, 50 (35.9%) had over 20 years work experience, 55 (32.7%) had 10 to 20 years work experience whereas, 48 (31.4%) had less than 10 years' work experience.

5.4 Descriptive Statistics

The four constructs' mean, skewness, kurtosis and standard deviation, are presented on Table 3.

Table 3
Mean, Kurtosis & Skewness of Constructs (N = 153)

	CA	QR	II	TL
N	153	153	153	153
Mean	2.91	3.18	2.99	3.08
Skewness	-0.0807	-0.296	-0.0269	0.00867
Std. error skewness	0.196	0.196	0.196	0.196
Kurtosis	0.00701	0.505	0.373	-0.0439
Std. error kurtosis	0.39	0.39	0.39	0.39

Source: Author (2022)

The values of means for all four constructs indicate that respondents responded favourably. Kurtoses as well as skewness are in the recommended range threshold of -2 of +2 showing no serious deviation from normality for the four constructs.

5.5 Validity and Reliability

A minimum of 150 cases is usually required to carry out principal component analysis (Fan et al., 2008), thus, our sample size of 153 was adequate to carry out component analysis. The Cronbach alpha for the four constructs scale was computed by conducting reliability analysis with required threshold of (0.7) point seven (Hair et al., 2006) in order to get reliable measures of determining good internal suitability and consistency of the measures.

The instrument factorability of 21 items was measured and it was observed that all items correlated at least 0.3 with one other item signifying good factorability. The measure of sampling adequacy (Kaiser Meyer Olkin) was 0.873 above the value of 0.6, whereas Bartlett's test of sphericity was significant ($\chi^2(210) = 1377, p < .001$). The principal components analysis for the 21 items was suitable as shown on Table 4.

Table 4
Test results of Kaiser-Meyer-Olkin and Bartlett's

Kaiser-Meyer-Olkin and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.873
Bartlett's Test of Sphericity	Approx. Chi-Square	1377
	Degrees of freedom	210
	Significance	.000

Source: Author (2022)

The Cronbach's alpha for the instrument was way above the required threshold of 0.7 (Hair et al., 2006). The instrument Alpha coefficients ranged between 0.769 and 0.833. Alpha coefficient for transformational leadership scales was 0.833, alpha coefficient for quality results scales was 0.769, alpha coefficient for important innovations scales was 0.794 and alpha coefficient for competitive advantage scales was 0.793. All four Cronbach alpha coefficients were in the required acceptable range of above 0.7 as shown in Table 5.

Table 5
Test Results of Cronbach Alpha

Items	Cronbach's Alpha	Number of Items	Comment
Overall	.914	21	Accepted
Transformational Leadership	.833	6	Accepted
Important Innovation	.794	5	Accepted
Quality Results	.769	5	Accepted
Competitive Advantage	.793	5	Accepted

Source: Author (2022)

5.6 Linearity

The linearity assumption was verified by the computation of Pearson correlation coefficients as presented in Table 6.

Table 6
Correlation matrix

		CA	QR	II	TL
CA	Pearson's r	—			
	p-value	—			
	N	—			
QR	Pearson's r	0.522 ***	—		
	p-value	< .001	—		
	N	153	—		
II	Pearson's r	0.492 ***	0.702 ***	—	
	p-value	< .001	< .001	—	
	N	153	153	—	
TL	Pearson's r	0.485 ***	0.669 ***	0.575 ***	—
	p-value	< .001	< .001	< .001	—
	N	153	153	153	—

Note. * p < .05, ** p < .01, *** p < .001

Source: Author (2022)

The results show significant positive correlations among transformational leadership, important innovations, quality results and competitive advantage. Competitive advantage and Quality results have positive significant Pearson coefficient of 0.522, competitive advantage and important innovations have a positive significant Pearson correlation coefficient of 0.492, competitive advantage and transformational leadership have a positive significant Pearson correlation coefficient of 0.485. Quality results and important innovations have a positive significant Pearson correlation coefficient of 0.702, quality results and transformational leadership have a positive significant Pearson correlation coefficient of 0.669. Important innovations and transformational leadership have a positive significant Pearson correlation coefficient of 0.575.

The correlations show that there are no multicollinearity problems because the correlations are below the required acceptable threshold cut off of 0.85 (Hair et al., 2010).

5.7 Fitness of the Model

A regression model test was run before estimating the proposed model of this study.

Overall Regression Model Test

Regression models were tested on the following hypotheses.

$$H_0 : \beta_1 = \beta_2 = \beta_3 \dots \dots \dots B_i = 0$$

H_a : One regression coefficients is at least not equal to zero

Table 7 shows that there were strong significant associations between constructs based upon the regression analyses carried out. The first model shows the proposed effect of quality results on competitive advantage and has shown good fit significant values of R(0.522), R²(0.273) and significant F-Value of 56.6. This indicates that quality results explain 27.3% of variation in competitive advantage. Second model that suggests the impact of important innovations on competitive advantage, indicates good fit significant values of R (0.492), R²(0.242) and significant F-Value of 48.1. This shows that important innovations elaborates 24.2% of variation in competitive advantage. The third model that suggests the impact of transformational leadership on competitive advantage, indicates good fit significant values of R (0.485), R²(0.235) and significant F-Value of 46.3. This shows that transformational leadership elaborates 23.5% of variation in competitive advantage. The fourth model that suggests the impact of transformational leadership on quality results indicates good fit significant values of R (0.669), R²(0.447) and significant F-Value of 122. This shows that transformational leadership explains 44.7% of variation in quality

results. The last model that suggested the effect of transformational leadership on important innovations shows good fit significant values of $R(0.575)$, $R^2(0.331)$ and significant F-Value of 74.5. This indicates that transformational leadership explains 33.1% of variation in important innovations.

Table 7
Summary of Regression Model Fit Measure

Model		R	R ²	Adjusted R ²	Overall Model Test	
					F	P
1	QR predicting CA	0.522	0.273	0.268	56.6	< .001
2	II predicting CA	0.492	0.242	0.658	48.1	< .001
3	TL predicting CA	0.485	0.235	0.230	46.3	< .001
4	TL predicting QR	0.669	0.447	0.443	122	< .001
5	TL predicting II	0.575	0.331	0.326	74.5	< .001

CA= Competitive Advantage
 QR = Quality Results
 TL= Transformational Leadership
 II= Important Innovations

Source: Author (2022)

5.8 Testing of the Hypotheses

The study tested seven hypotheses with respect to direct and mediation effects. Table 8, Table 9 and Fig. 2 show results of the hypotheses tested.

Table 8
Indirect and Total Effects

Type	Effect	Estimate	SE	95% C.I. (a)		β	z	p
				Lower	Upper			
Indirect	TL \Rightarrow QR \Rightarrow CA	0.144	0.0549	0.03644	0.252	0.164	2.62	0.009
	TL \Rightarrow II \Rightarrow CA	0.105	0.0434	0.01959	0.19	0.119	2.41	0.016
Component	TL \Rightarrow QR	0.562	0.0505	0.46314	0.661	0.669	11.12	< .001
	QR \Rightarrow CA	0.256	0.0949	0.07022	0.442	0.245	2.7	0.007
	TL \Rightarrow II	0.527	0.0607	0.40838	0.646	0.575	8.69	< .001
	II \Rightarrow CA	0.198	0.079	0.04348	0.353	0.207	2.51	0.012
Direct	TL \Rightarrow CA	0.184	0.09	0.00803	0.361	0.21	2.05	0.04
Total	TL \Rightarrow CA	0.433	0.0634	0.30879	0.557	0.485	6.83	< .001

Note. Confidence intervals calculated standard (Delta method)
 Note. Betas are standardized effect

Source: Author (2022)

Table 9
Hypotheses

No	Hypothesis	Results
1.	Hypothesis 1: Transformational Leadership has a positive significant effect on Competitive Advantage	Supported
2.	Hypothesis 2: Transformational Leadership has a significant positive effect on Important Innovation	Supported
3.	Hypothesis 3: Transformational Leadership has a significant positive effect on Quality Results	Supported
4.	Hypothesis 4: Quality Results have a significant positive effect on Competitive Advantage	Supported
5.	Hypothesis 5: Important Innovations has a positive significant effect on Competitive Advantage	Supported
6.	Hypothesis 6: Quality Results mediate the association between Transformational Leadership and Competitive Advantage	Supported
7.	Hypothesis 7: Important Innovations mediate the association between Transformational Leadership and Competitive Advantage	Supported

Source: Author(2022)

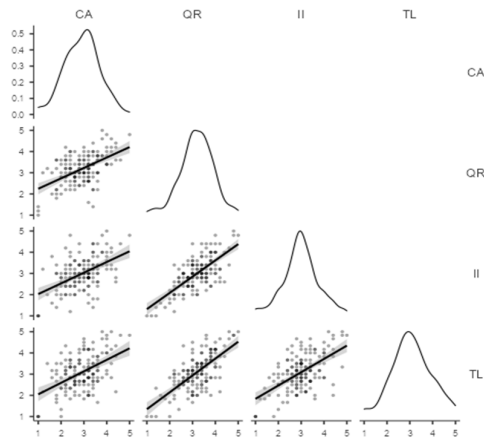


Fig. 2. Plot of the residuals (Source: Jamovi output)

The significance and path coefficients for the model of this study are presented on Table 8. All the associations hypothesised are supported.

First hypothesis 1, on the effect of transformational leadership on competitive advantage (TL \Rightarrow CA) shows that it is statistically significant ($\gamma = 0.433$, $p < .001$), thus, hypothesis 1 is supported. After the mediation effect of both quality results and important innovations, the direct effect is also statistically significant ($\gamma = 0.184$, $p < .05$).

Second, transformational leadership has a significant positive effect on important innovations ($\gamma = 0.527$, $p < 0.001$), hence hypothesis 2 supported. Third, transformational leadership has a significant positive effect on quality results ($\gamma = 0.562$, $p < 0.001$), therefore, hypothesis 3 is supported. Fourth, quality results have a significant positive effect on competitive advantage ($\gamma = 0.256$, $p < 0.05$), thus hypothesis 4 supported. Fifth, important innovations have a positive significant effect on competitive advantage ($\gamma = 0.198$, $p < 0.05$), hence, hypothesis 5 is supported.

5.9 The analysis of mediating effects

The indirect effect of transformational leadership on competitive advantage through quality results (TL \Rightarrow QR \Rightarrow CA) indicates a positive statistically significant ($p < 0.05$, $\gamma = 0.144$; 95% CI: [0.03644, 0.252]; ratio effect=0.3326). This indicates a partial mediation effect of quality results, thus, hypothesis 6 is supported. The indirect effect of transformational leadership on competitive advantage through important innovations (TL \Rightarrow II \Rightarrow CA) shows a statistically positive significance ($p < 0.05$, $\gamma = 0.105$; 95% CI: [0.01959, 0.190]; ratio effect = 0.2425). This indicates partial mediation effect of important innovations, thus, hypothesis 7 is supported. The indirect effect of strategic planning on productivity through education and training (SP \Rightarrow ET \Rightarrow P) is statistically insignificant ($p = 0.275$, $\gamma = 0.0346$; 95% CI: [0.0275, 0.0967]; ratio effect=0.054). This shows that there is no mediation effect of education and training, thus hypothesis 10 is not supported. Overall, the model indicates that the two mediators (quality results and important innovations) partially mediate the association between transformational leadership and competitive advantage based upon a direct effect that is positively significant ($\gamma = 0.184$, $p < 0.05$), ratio effect of 0.4249. Quality results have a more significant effect compared to important innovations.

6. Discussion

It is evident that the majority of males occupy more managerial positions than females in TAZARA whereas the majority of employees with 10 to 20 years work experience are the majority followed by those with over 20 years work experience indicating that the company has experienced employees in management.

The results show that among the three total quality management practices employed in this study, quality results has the highest implementation, followed by transformational leadership, then important innovations.

The first hypothesis was tested to determine if transformational leadership has a positive significant effect on competitive advantage. The results have proved that transformational leadership has a positive significant effect on competitive advantage on both both total and direct effects (with or without mediation effect of quality results and important innovations). These results are consistent with previous studies that have supported and presented that transformational leadership have an effect on competitive advantage (see Yamin, 2020; Devie & Hartono, 2018; Ekuma, 2014).

The second hypothesis was tested to ascertain if transformational leadership has a significant positive effect on important innovations. The results show that transformational leadership has a significant positive effect on important innovations. The outcomes are consistent with the findings of Afsar and Umrani (2019), Hui et al. (2018), Al Ahmad et al. (2019) and Aminbeidokhti et al. (2016). Transformational leaders do inspire, encourage and motivate their subordinates in order to foster innovation as well as creating the needed change. Workers are encouraged to be creative problem solvers as they are trusted to work independently when pursuing the organisation's vision and objectives.

The third hypothesis attempted to investigate whether transformational leadership has a significant positive effect on quality results. The outcome shows that transformational leadership has a significant positive effect on quality results. These results support earlier similar studies conducted by Ambarwati et al. (2021), Mahdikhani and Yazdani (2020) and (Su et al. (2019) that focused on the relations between transformational leadership and quality. Transformational Leadership improves quality when the leadership in an organisation pays particular attention to education, training, employee development as well as improvement in processes.

Hypothesis four was an attempt to test whether quality results have a significant positive effect on competitive advantage. The findings indicate that quality results has a significant positive effect on competitive advantage and supports the previous similar studies that focused on the association between quality and competitive advantage (see Chaniago & Mudjiardjo, 2021; Hendratmoko, 2021; Kusumadewi & Karyono, 2019; Rashid, 2019). The association between quality and competitive advantage is that when an organisation's functional quality is higher, the more it becomes efficient, and the more it attains a competitive edge in the market environment.

The fifth hypothesis was tested to ascertain if important innovations have a positive significant effect on competitive advantage. The results have shown that important innovations have a positive significant effect on competitive advantage. This is consistent with previous similar studies that focused on the association between innovation and competitive advantage (see Lee & Yoo, 2019; Hui et al., 2018; Anning-Dorson, 2018)

Hypothesis six was tested to determine if quality results mediate the association between transformational leadership and competitive advantage. The outcome of the analysis indicates that quality results partially mediate the association between transformational leadership and competitive advantage. This outcome is a great contribution to literature because it is the first empirical test to be carried on this association.

Hypothesis seven was tested to determine whether important innovations mediate the association between transformational leadership and competitive advantage. The results of analysis show that important innovations partially mediate the association between transformational leadership and competitive advantage. This outcome is a great contribution to literature because it is the first empirical test to be carried out on this association particularly in the railway sector. The result also supports the earlier similar study conducted by AlOwais (2019) in UAE on Telecommunication Regulatory Authority.

The mediation effect of the two mediators (quality results and important innovations) on the relationship between transformational leadership and competitive advantage shows a partial mediation effect, thereby leaving room for other practices of TQM to be included in future studies.

7. Theoretical managerial implications

The outcomes of this study are relevant to managerial practices. The results act as an eye opener for managers with a transformational type of leadership style to pay particular attention to quality results and important innovations if their organisations are to have competitive advantage over their rival competitors or remain competitive in this volatile competitive environment.

8. Conclusion

This research is the first to explore the association among transformational leadership, important innovations, quality results and competitive advantage. I found a partial mediating effect on multiple mediation effects of important innovations and quality results on the pathway from transformational leadership to competitive advantage.

Quality results and important innovations play a partial mediating role individually and collectively in the association between transformational leadership and competitive advantage. This study gives empirical evidence on the nature of the relationship between transformational leadership and competitive advantage. This study gives evidence that quality results and important innovations are the relevant elements in transformational leadership style that help organisations to attain competitive advantage over their rival competitors. Managers or advocates of transformational leadership style should be aware and cautious of quality results and important innovations at all-time especially in today's dynamic environment.

9. The Limitations and Future Research

This was a case study of TAZARA. This narrows generalisation of the study outcome to other industrial sectors. I strongly recommend for a replication to be conducted in other railway companies as well as other sectors. I also recommend that future research studies include other practices of TQM as moderators or/and mediators.

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