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CRITICAL SUCCESS FACTORS IN TOTAL QUALITY MANAGEMENT AND THEIR INFLUENCE ON QUALITY PERFORMANCE: A STUDY AMONG INDIAN INDUSTRIES

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ABSTRACT
Quality management is a critical area in the intensification of global market competition. Determinants of quality performance of Indian industry managers are to be evaluated. Information was collected using a designed questionnaire based on four critical success factors from 342 respondents from different manufacturing industries in Southern India using Google Forms. Statistical tests, such as correlation, regression, and analysis of variance (ANOVA), are employed for results validation. Customer Focus, Continuous Improvement, Employee Involvement, and Feedback & Measurement independent variables are measured, and their impacts on quality performance are examined. It is confirmed that these factors combined explain 89.20% of quality performance variance and leave 10.80% to other unspecified factors. The study provides insight into Total Quality Management in the manufacturing units and sheds light on effective excellence management performance. It is confirmed that Indian industries can utilise these insights to enhance their excellent management performance and overall effectiveness. The study confirms the TQM enactment nexus in the Indian manufacturing sector, which is a valuable framework for industry practitioners and policymakers.

KEYWORDS: *Quality Management, Total Quality Management, Indian Manufacturing, Critical Success Factors, Excellence Performance, Statistical Analysis, TQM Implementation.*

INTRODUCTION
Quality performance is a key organisational success factor indicating a company's ability to meet customers' needs consistently and enhance the efficiency of operations. Total Quality Management (TQM) is a basic principle derived from the early research of authors such as Feigenbaum, Juran, and Deming. Its application varies in different national and organisational contexts. Relative examination of the variations provides valuable insights into alignment and divergence in implementation strategies.

TQM is inherently linked to customer feedback, continuous improvement (CI), and employee involvement, all of which result in better quality performance outcomes (Yang, 2020). Customer-oriented approaches are vital to aligning manufacturing operations with the marketplace's requirements. Studies by (Lado et al., 2011; Perera et al., 1997) identify that integrating customer feedback into the quality management system is crucial. Along with this, technological advancements, including improved reality and electronic customer relationship management (E-CRM) systems, enable organisations to obtain real-time criticism. This, in turn, enables dynamic and instantaneous process improvements (Gupta, 2015; Liu & Chen, 2023).

Critical Success Factors in Quality Performance Parameters
Critical Success Factors (CSFs) are the factors of high significance for organisations to perform well on quality. The involvement of employees, continuous improvement, training, and empowerment have direct effects on the effectiveness and efficiency of production (Hirzel et al., 2017; Marin-Garcia & Bonavia, 2015). Continuous examination of CI systems guarantees long-term quality improvement, and the tenacity of initiatives is maintained by leadership and employee participation (Huq et al., 2010; Janee Ali et al., 2013). Integrating CI with JIT, TQM, and Six Sigma methods reinforces an organisation's quality performance mechanism (Beraldin et al., 2022).

This manuscript will assess the quality performance of industry managers and examine the role played by critical success factors in quality. In doing so, it will contribute theoretical knowledge on high manufacturing standards and maintaining quality performance

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excellence in various organisational settings. The results will provide information on best practice for maintaining quality performance excellence in various organisational settings.

Conceptual Framework:

The conceptual framework identifies four CSFs influencing quality performance:

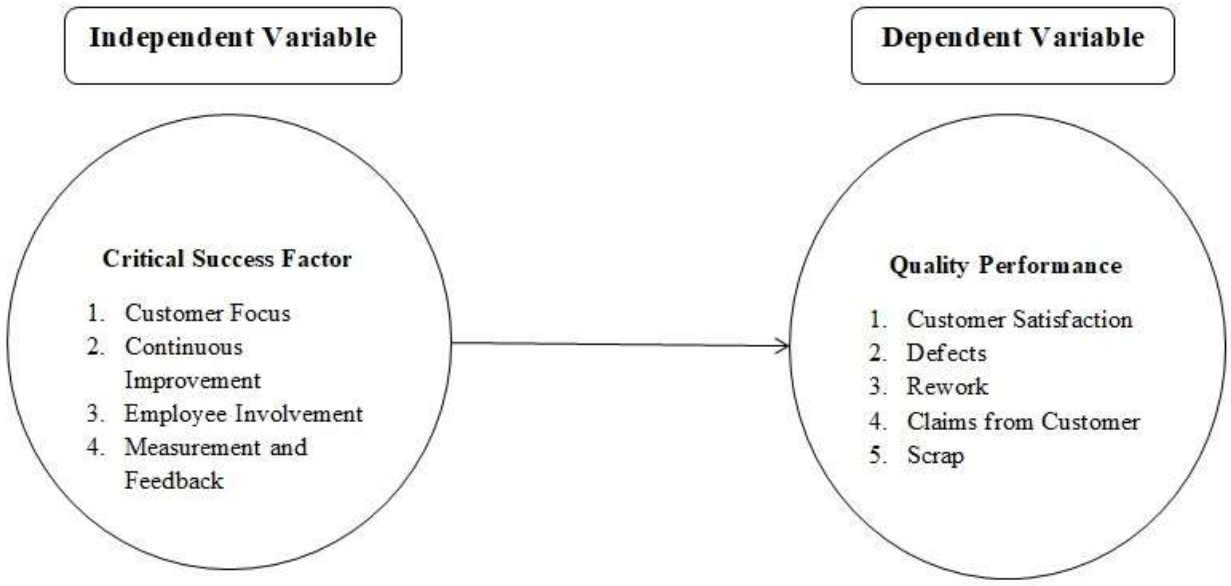

Fig 1. Conceptual Framework

1.2. Independent Variable: Critical Success Factors (CSFs)

1. Customer Focus (CF): One of the pillars of TQM is customer focus (CF), placing extreme emphasis on customer needs and expectations for long-term satisfaction. Organisations following the TQM approach know that listening to and responding to customers is the solution to long-term success (EVANS & LINDSAY, 2017). This is done by systematically gathering customer feedback, fixing the problem instantly, and constantly improving products and services to meet consumer needs (Zairi, 2013). With a customer-centric strategy, organisations can build customer loyalty and maintain a competitive advantage in competitive markets (Ghobadian & Gallear, 1996). Effective customer focus comes into existence by leveraging effective feedback mechanisms such as surveys, online feedback, and customer interaction, which enable businesses to receive real-time feedback and predict future needs (Parasuraman et al., 1991). Additionally, leveraging technology, such as artificial intelligence-based analytics and customer relationship management (CRM) software, enables data-driven decisions and increased personalisation in service delivery ((Kumar et al., 2018). Organisations that practice CF in TQM also concentrate on employee training so that customer interface teams embrace the necessary skills and knowledge to answer questions accurately and provide superior service (Reeves & Bednar, 1995).

2. Continuous Improvement (CI): CI is a crucial component of TQM, which emphasises improving processes and optimising overall performance. CI involves ongoing assessment and improvement of operations to ensure continuous improvement and adaptation to changing market needs (Imai, 2007). By methodically addressing inefficiencies, organisations can eradicate mistakes and eliminate non-value-added phases, eventually leading to productivity and quality of service enhancement (Bessant & Caffyn, 1997). The Plan, Do, Check, Act (PDCA) cycle is a natural component of CI, providing a systematic problem-solving and process improvement approach (Deming, 1987). With incremental improvement, businesses can foster novelty, augment efficiency, and sustain competitiveness. In addition, tools such as Lean and Six Sigma are frequently used to enable by eliminating defects, streamlining processes, and encouraging continuous learning and innovation culture (Antony & Banuelas, 2002). Effective application of CI in TQM relies on effective leadership, worker commitment, and supportive organisational culture to experiment and learn from failure (Garvin, 1998). By incorporating CI into their strategic planning, firms not only ensure enhanced quality performance but also sustain long-term success in an intensified competitive market (Oakland, 2014).

3. Employee Involvement (EI): Employee Involvement is a significant element of TQM as it creates a culture of shared responsibility and continuous participation in quality improvement programmes. Engaged employees are accountable for process improvement through innovative suggestions, taking responsibility for work, and collaborating with others to make rational choices. Such involvement

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enhances productivity, responsibility, and overall organisational performance (Yong & Wilkinson, 1999). An organisation that encourages employee involvement is more motivated and has better morale, leading to enhanced job satisfaction and retention (Bowen & Lawler III, 1992). Empowerment is a significant component of EI as organisations that provide employees with decision-making power enable them to actively make quality improvements (Bowen & Lawler III, 2005). Additionally, holistic training and development programmes provide workers with expertise and understanding required to actively take part in quality management processes (Kaynak, 2003). Good EI also includes cross-functional teams, where employees from different departments collaborate to identify inefficiencies and create solutions that are aligned with organisational goals (Huq et al., 2010)This team-based mechanism creates a culture of continuous learning and process improvement, ensuring quality goals are consistently met (Marin-Garcia & Bonavia, 2015). EI is a significant element of TQM as it enables organisations to leverage the knowledge and commitment of their employees to provide better quality outcomes. By creating a participative culture, organisations can create innovation, accountability, and long-term success in quality management (Oakland, 2014).

4. Measurement and Feedback (MF): Measurement and Feedback is the canopy under which organisations apply evidence-based decision-making to enhance quality. Pursuing key performance indicators (KPIs) and frequent review of feedback mechanisms permit companies to detect quality gaps and take remedial measures (Neely et al., 2005). Based on this approach, quality goals become aligned with organisational goals and customer expectations, eventually improving the efficiency of operations and service delivery (Kaplan & Norton, 1996). Feedback mechanisms like customer surveys, employee feedback, and real-time analysis of data present important inputs on trends in performance and areas for improvement (Yilmaz & Bititci, 2006). Also, the application of technology-based resolutions like business intelligence tools and AI-based analytics augments the accuracy and responsiveness of quality measurements (Kumar et al., 2018). Entrenching measurement and feedback systems in TQM facilitates a culture of accountability, allowing organisations to make quality-driven decisions for continuous improvement and long-term success (Oakland, 2014)

1.3. Dependent variable: Quality performance (QP)

Quality Performance (QP) is a dependent variable of greatest significance in TQM, which is a set of parameters responsible for the success of quality programs in an organisation. These parameters include customer satisfaction, reduction of defects, minimisation of rework, reduced customer claims, and reduced scraps. High-quality performance is directly responsible for operational efficiency, profitability, and customer retention (Juran, 1999). Customer satisfaction is a significant quality performance parameter, as it measures the degree to which an organisation surpasses or meets consumer outlooks (Parasuraman et al., 1991). Organisations with high-quality standards have fewer defects, leading to reduced production costs and efficient resource utilisation (Deming, 1987). Reduced customer grievances also indicate a company's ability to deliver consistent products and services, leading to brand reputation and competitive advantage (Oakland, 2014). Reduced scrap is a significant QP parameter, as it indicates efficient waste management and lean manufacturing practices (Shah & Ward, 2003). By implementing efficient quality control processes and continuous improvement practices, organisations can restructure resource utilisation, eliminate unnecessary costs, and attain sustainability (Imai, 2007). Quality Performance (QP) in TQM measures an administration's ability to carry superior goods and facilities while ensuring operational efficiency. By focusing on customer satisfaction, fewer defects, reduced rework, reduced customer claims, and scrap reduction, firms can achieve long-term success and a strong market share (Powell, 1995).

1.4. The Relationship between CSFs and QP:

CSFs have a direct bearing on Quality Performance (QP) improvement. High Customer Focus (CF) results in high-quality services, increased customer satisfaction, and reduced complaints. Continuous Improvement (CI) eradicates defects and reduces rework systematically, improving efficiency and optimised output. Employee Involvement (EI) augments accountability and innovation by encouraging active participation in management and quality assurance. Moreover, Feedback mechanisms and effective Measurement enable organisations to receive timely data, identify deviations, and correct action to maintain superior quality standards. This conceptual framework is unswerving with Total Quality Management (TQM) principles, setting the implication of CSFs in bringing excellent quality results. Organisations can apply this model to identify areas to be improved, arrange quality improvement projects based on importance, and develop approaches for long-term performance improvement. By scientifically addressing CSFs, companies can enhance quality management practices and business efficiency, higher customer satisfaction, and long-term competitive gain in manufacturing.

2. REVIEW OF LITERATURE

Customer-focused manufacturing approaches are imperative for performance optimisation. Empirical studies depict a strong connection between customer focus and non-financial performance measurement. (Caemmerer & Wilson, 2010; Perera et al., 1997) stress that consumer-driven campaigns are essential to the performance measurement system. Besides, the infusion of customer input into quality management practice helps manufacturing operations to consistently improve and thereby meet the desired customer expectations. (Lado et al., 2011; Liu & Chen, 2023; Sousa, 2003) revealed that relational capabilities in the supply chain enhance customer service and

financial performance, thus leading to customer-centric manufacturing strategies. Recent technological advancements played a significant role in collecting feedback from customers immediately. (C.-C. Chen & Cheng, 2007; Gupta, 2015) reveals how augmented reality systems enable customers to provide feedback on products at different stages of production to enhance quality management. Furthermore, the adoption of E-CRM systems enhances a firm's ability to act on customer feedback, leading to competition improvements (Agag et al., 2023; Liu & Chen, 2023). The digitalisation process further transformed this into the use of mobile apps to analyse real-time feedback (C.-C. Chen & Cheng, 2007; Mourtzis et al., 2018), which, according to studies, improves service quality and operational performance (New & Szwejczewski, 1995).

CI is the foundation of long-term operational efficiency. Training is a vital component of CI, but only if improvement methods are standardised (Bond, 1999; van Assen, 2021). The balance between method-specific training and general training will help sustain employee engagement and improvement efforts. (Huq et al., 2010; Janee Ali et al., 2013) emphasise that administrative self-valuation and management commitment are the primary drivers of CI sustainability. Structural empowerment, which encourages knowledge acquisition and communication, also plays a significant role in CI implementation, thus emphasising the importance of long-term employee development (Hirzel et al., 2017). The connection between CI and employee involvement is clearly visible when considering motivational factors and CI maturity levels. According to (Chang, 2005; Yang, 2020), the maturity of CI requires an integration of top-down authority and bottom-up involvement to achieve maximum benefit. Employee involvement is also increasingly important at the later stages of CI initiatives, and participation is effective only if the organisation aligns with CI practices (Beraldin et al., 2022; Galeazzo et al., 2021). Further, the CI methods need to be carefully planned for long-standing acceptance and viability as described by the Continuous Improvement Acceptance Model (Jurburg et al., 2019).

A very important principle in the effective implementation of Lean Manufacturing (LM) is employee involvement. It has been indicated that the participation of employees strongly affects the implementation outcomes of LM practices in efficiency and production performance (Marin-Garcia & Bonavia, 2015). Furthermore, contingent reward alone is not a significant factor. Thus, financially rewarding people cannot make them adopt lean in and by itself. A more holistic approach, which includes training, empowerment, and communication, is required to achieve success (Beraldin et al., 2022). Employee involvement in CI activities, such as JIT and TQM, has been found to enhance organisational performance indirectly (Beraldin et al., 2022; Galeazzo et al., 2021). In the case of Six-Sigma, huge employee involvement reduces role ambiguity and encourages innovation, which are critical for the methodology's success (Huq et al., 2010; van Assen, 2021). Effective leadership and participatory management strengthen this engagement even further by building a collaborative culture that supports CI (Ezzeddine & Aoun, 2020; Huq et al., 2010).

The performance measurement system has been revolutionised, and its use is now no longer a simple traditional cost accounting, but an integrated dynamic performance measurement system that aims to enhance the system by way of continuous improvement (C. Chen et al., 2004; C.-C. Chen & Cheng, 2007). In fact, IDPMS involves integrating all functions within an organisation, including planning, manufacturing, and customer service, into one approach to measuring performance. Product and service quality improvement can be enhanced with the help of customer feedback, as revealed by (Agag et al., 2023; Ramamoorthy et al., 2012), who indicated that lean manufacturing systems use customer feedback to improve performance. Supplier-integrated performance measurement systems, which are a part of TQM, focus on incoming inspection, reject performance, and product reliability metrics (C. Chen et al., 2004; Liu & Chen, 2023). Such metrics, in connection with Just-in-Time parameters, support the continued improvement of quality. The systems of performance measurement that are built around the customer feedback mechanism improve organisational learning and promote the idea of operational improvement (Caemmerer & Wilson, 2010; Wirtz & Tomlin, 2000).

A quality performance is by nature customer response, improvement through continuous employee participation (Yang, 2020). There are several pieces of evidence indicating that companies, employing customer-driven practices, discussed in the preceding, align quality management practices to better serve customer's expectations of high quality in both service and products (Lado et al., 2011; Perera et al., 1997). The role of employee empowerment and involvement in CI processes is critical to sustaining quality improvements (Hirzel et al., 2017; Marin-Garcia & Bonavia, 2015). The integration of JIT, TQM, and Six Sigma methodologies ensures continuous enhancement of quality performance through structured employee involvement and regular feedback loops. Besides, technological advancement in customer feedback systems reinforces the propensity to control quality; for example, new products in augmented reality and E-CRM systems improve firms' speed to act on consumer insight toward high quality in any production cycle (Gupta, 2015; Liu & Chen, 2023).

3. OBJECTIVES OF THE STUDY

The primary objectives of the study are:

1. To examine the relationship between the choice critical success factor and excellence performance.
2. To identify the effect of the critical success factors and excellence parameters.

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4. RESEARCH METHODOLOGY

In the research used the Critical Success Factors (CSF) approach to describe quality performance adequately. The research design is exploratory, aiming to evaluate quality performance among industry managers, such as general managers, production managers, and quality managers. A structured questionnaire with 16 items on CSFs was prepared to determine the determinants of organisational quality performance. Primary data were gathered through a Google Forms survey of 342 manufacturing industry managers in the southern region of India. The study link was distributed to prospective respondents, and participation was voluntary, with informed consent from all respondents. 342 valid responses were utilised, consisting of 210 males (61.40%) and 132 females (38.60%). The form was split into dual segments: the major segment gathering the demographic profiles of respondents and the next segment with 16 items on CSFs. All the items were rated on a five-point scale of 1 (strongly disagree) to 5 (strongly agree), which was constructed to measure the link between CSFs and excellent performance in the production industry. The research offers important insights into the determinants of quality performance from the industry manager's point of view and the pivotal role of CSFs. Using an exploratory research approach, the findings enhance the knowledge of quality and its effect on administrative performance in the Indian industrial sector.

ANALYSIS AND DISCUSSION

Cronbach's alpha reliability test

Nunnally (1978) recommended that an alpha of 0.5 or 0.6 is a good reliability indicator. Zikmund et al. (2013) specified that Cronbach's alpha of up to 0.70 reflects a good degree of acceptability. The Cronbach's alpha score in this study was 0.916, reflecting the questionnaire's high internal consistency and reliability.

Interdependence between the variables CF, CI, EI and MF (Independent Variables) with QP parameter (Dependent Variable)

The research explores the interrelationship among all independent variables and Quality Performance (QP). To examine the interdependence of these relationships, statistical tools like correlation, analysis of variance and regression analyses were applied.

The examination of the Pearson correlation coefficients in Table 1 explores the interdependence between the independent variables Customer Focus (CF), Continuous Improvement (CI), Employee Involvement (EI), and Measurement and Feedback (MF) and the dependent variable, Quality Performance (QP).

Customer Focus (CF) and Quality Performance (QP): The correlation between CF and QP is 0.786, replicating a robust positive relationship. This indicates that the enhancement of customer focus greatly enhances quality performance.

Continuous Improvement (CI) and Quality Performance (QP): The correlation between CI and QP is 0.753, replicating a robust positive relationship. This echoes that continuous improvement practices greatly enhance quality performance.

Employee Involvement (EI) and Quality Performance (QP): The correlation between EI and QP is 0.665, which reflects a moderate to solid positive relationship. This reflects that enhanced employee involvement enhances quality performance, though its impact is less than that of CF and CI.

Measurement and Feedback (MF) and Quality Performance (QP): The correlation between MF and QP is 0.735, which reflects a robust positive correlation. This reflects that appropriate measurement and feedback mechanisms greatly enhance quality performance.

Interrelationships among Independent Variables

I. CF, CI, EI, and MF all have a positive correlation with each factor, reflecting that these factors are interdependent.
II. The strongest inter-variable correlation is that between CF and CI (0.658), reflecting that continuous improvement programs often overlap with strong customer focus.
III. The lowest correlation is between CF and EI, at 0.345, which shows a weaker but significant association.

All the independent variables, i.e., CF, CI, EI, and MF, are highly correlated with quality performance at the 0.01 level (2-tailed), thereby ensuring their pivotal role in the enhancement of QP. Among these variables, CF has the strongest correlation with QP, at 0.786, thereby emphasising its decisive significance in attaining high-quality outcomes. The findings indicate that an enhancement of these factors as a package might result in considerable quality performance improvement.

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Table 1. Output of Pearson Correlation Coefficient

Correlations						
		CF	**CI**	**EI**	**MF**	QP
CF	Pearson Correlation	1	.658**	.345**	.475**	.786**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	342	342	342	342	342
CI	Pearson Correlation	.658**	1	.381**	.456**	.753**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	342	342	342	342	342
EI	Pearson Correlation	.345**	.381**	1	.541**	.665**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	342	342	342	342	342
MF	Pearson Correlation	.475**	.456**	.541**	1	.735**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	342	342	342	342	342
QP	Pearson Correlation	.786**	.753**	.665**	.735**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	342	342	342	342	342

Source: Researcher's Calculation
Note: ** Correlation is significant at the 0.01 level (2-tailed).

Table 2. Output of Pearson Correlation Coefficient

Model	R	R Square	Adjusted R Square	Std Error of the Estimates
1	.945[a]	.892	.891	.27857

Source: Researcher's Calculation
Note: [a] Predictors: (Constant) CF, CI, EI and MF.

Table 2 reveals the summary of the regression model findings, which test the relationship between the independent variables Customer Focus (CF), Continuous Improvement (CI), Employee Involvement (EI), and Measurement and Feedback (MF) and the dependent variable, Quality Performance (QP).

The R-value (0.945) shows a very strong positive relationship between the collective independent variables (CF, CI, EI, and MF) and Quality Performance (QP). This infers that these factors jointly have a strong influence on QP.

The R-Square value of 0.892 infers that the independent variables influence 89.2% of the variance in Quality Performance (QP). This implies a high illustrative power of the model, which confirms that CF, CI, EI, and MF have a strong impact on QP.

The Adjusted R-Square value of 0.891 has a very low margin when compared with the R-Square value, which implies that even after adjusting for the number of predictors, the model still has a high explanatory power.

The standard error of the estimation (0.27857) is a measure of the average difference between actual and predicted values. A lower standard error suggests that the model's predictions are quite accurate.

The regression analysis illustrates that CF, CI, EI, and MF combined account for a big 89.2% of the variance in Quality Performance (QP). The high R-value (0.945) approves a strong relationship between these factors and QP, which implies their vital role in quality improvement. This implies that organisations focusing on these Critical Success Factors (CSFs) can improve significantly quality performance.

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Table 3. Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	216.960	4	54.240	698.983	.000[b]
	Residual	26.151	337	.078		
	Total	243.111	341			

Source: Researcher's Calculation

Table 3 displays the ANOVA results, which test the significance of the overall regression model in foreseeing Quality Performance (QP) using the independent variables: Customer Focus, Continuous Improvement, Employee Involvement, and Measurement and Feedback. The regression model is highly statistically significant, as the F-Statistic of 698.983 is extremely high. A large F-statistic suggests that the independent variables significantly affect QP. The p-value of 0.000 is below 0.05, thus leading to the conclusion that the regression model is highly significant. The result suggests a statistically significant relation between the independent variables and QP. The ANOVA results authorise that the regression model is statistically significant ($p < 0.001$), which suggests that Customer Focus, Continuous Improvement, Employee Involvement, and Measurement and Feedback as a group have a strong effect on Quality Performance (QP). The high F-statistic of 698.983 and the high sum of squares for regression, which is equal to 216.960, advocate that the model can explain the variance in QP. This again supports the significance of these Critical Success Factors (CSFs) in enhancing quality performance in the manufacturing industry.

Table 4. Regression Coefficients

Model		Unstandardised Coefficients		Standardised Coefficients		
		β	Std Error	Beta	t	Sig.
1	(Constant)	.492	.046		10.652	.000
	CF	.279	.018	.380	15.440	.000
	CI	.203	.019	.268	10.927	.000
	EI	.246	.019	.279	12.934	.000
	MF	.251	.021	.281	12.196	.000

Source: Researcher's Calculation
Note: [a]Dependent Variable: QP

Constant (β = 0.492, p = 0.000): The constant value of 0.492 is the base Quality Performance (QP) when all independent variables Customer Focus, Continuous Improvement, Employee Involvement, and Measurement and Feedback are equal to zero. It indicates that, even without these variables, there is a base level of organisational quality performance. The statistically significant p-value of 0.000 validates that this value is significant and not coincidental.

Customer Focus (CF) (β = 0.279, p = 0.000): The regression coefficient for CF is 0.279, which indicates that a one-unit increase in CF increases QP by 0.279, assuming that all other variables are reserved constant. The standardised coefficient value of 0.380 indicates that CF contributes the most to QP among the predictors. The high t-value of 15.440 and p-value of 0.000 validate that CF is a highly significant predictor of QP. This result underscores the key role of customer-focused strategies in driving quality performance.

Continuous Improvement (CI) (β = 0.203, p = 0.000): It indicates that a unit increase in CI increases QP by 0.203, which is a positive but relatively minor contribution compared to CF. The standardised coefficient value of 0.268 indicates that CI contributes moderately to quality performance. The t-value of 10.927 and p-value of 0.000 authenticate that CI is a significant predictor of QP. These results emphasise the important role of continuous process improvement and defect removal in improving overall organisational quality.

Employee Involvement (EI) (β = 0.246, p = 0.000): The coefficient (0.246) shows that Employee Involvement (EI) has a positive influence on Quality Performance (QP). The standardised coefficient (0.279) shows that EI has a significant influence on quality performance, indicating the need for committed employees to provide innovation, and decision-making in quality management. The t-value (12.934) and p-value (0.000) also support that EI is a significant predictor of QP. This confirms the requirement for employee engagement in quality improvement programs.

Measurement and Feedback (MF) (β = 0.251, p = 0.000): A one-unit change in MF is equivalent to a 0.251 change in QP, thus indicating its relevance to improving quality. The standardised coefficient (0.281) indicates that MF has a comparatively stronger influence, followed only by Customer Focus (CF). The t-value (12.196) and p-value (0.000) again confirm that MF is a statistically

significant predictor of QP. This reflects the crucial role played by timely data collection, data analysis, and corrective action to maintain high-quality standards.

Based on the regression coefficients, the association between Quality Performance and the independent variables Customer Focus, Continuous Improvement, Employee Involvement, and Measurement and Feedback can be represented as follows:

$$QP = 0.492 + 0.279\ (CF) + 0.203\ (CI) + 0.246\ (EI) + 0.251\ (MF)$$

The above equation shows that increases in CF, CI, EI, and MF lead to improved Quality Performance (QP), with the highest influence on Customer Focus (CF), followed by Measurement and Feedback (MF), Employee Involvement (EI), and Continuous Improvement (CI). These results prove that organisations keen on improved quality performance must enhance these crucial success factors.

5. CONCLUSION

This research completely examines the result of Critical Success Factors (CSFs) on Quality Performance in the manufacturing industry. Four independent variables are Customer Focus, Continuous Improvement, Employee Involvement, and Measurement and Feedback. The results indicated that all these critical success factors significantly increase quality performance, reflecting positive relationships and high correlations with QP.

The reliability analysis, with Cronbach's alpha of 0.916, declares that the research instrument is of high internal consistency and thus confirms the validity of the collected data. In correlation analysis, all CSFs show a positive significant relationship with QP. Customer Focus correlates with QP at 0.786, Continuous Improvement at 0.753, Measurement and Feedback at 0.735, and Employee Involvement at 0.665. This implies that customer needs, continuous process improvement, employee engagement, and effective feedback mechanisms are significant factors in quality performance.

The regression analysis also confirms the strength of these relationships since CF, CI, EI, and MF together explain 89.2% of the variance in QP ($R^2 = 0.892$), which is a very high explanatory power. Among these factors, Customer Focus (CF) has the highest impact on QP ($\beta = 0.279$), highlighting its critical role in achieving superior quality outcomes. The ANOVA results confirm the overall statistical significance of the model ($F = 698.983$, $p < 0.001$), reinforcing the crucial role of CSFs in driving quality performance.

It can be derived that the regression equation clearly shows improvements in CF, CI, EI, and MF, which lead to higher quality performance (QP) and CF being the most influencing factor.

6. MANAGERIAL IMPLICATIONS

Some very interesting practical implications of the findings are for manufacturing organisations seeking to improve the quality performance of their businesses. Making Customer Focus a priority ensures the organisation aligns its processes to the expectations of customers, which in the end means better customer satisfaction and few complaints. Applying Continuous Improvement helps in minimising defects and rework, thereby being more efficient. Toning up Employee Involvement allows accountability and innovation, and timely information through robust Measurement and Feedback mechanisms is useful for continual improvement.

This study emphasises the crucial role of CSFs in delivering superior quality performance in the manufacturing sector. Systematic strengthening of CF, CI, EI, and MF enhances the likelihood of operational excellence and maintaining high quality standards while maintaining a competitive edge. Future studies may investigate more aspects that involve to excellence performance, such as emerging technologies and industry-specific challenges, to add to the quality management practices understanding of different manufacturing contexts.

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