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Service Quality and its Influence on Service Excellence and Customer Satisfaction with Water Provision in Nyandeni Municipality

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ABSTRACT

Service quality is a critical determinant of organisational success and customer satisfaction, particularly in essential public utilities like water provision. This study examines the impact of service quality dimensions on service excellence and customer satisfaction within Nyandeni Municipality, Eastern Cape, South Africa, a region facing significant challenges in its water service provision. Through a quantitative cross-sectional design, data were collected from 380 residents using a structured questionnaire and analysed via partial least squares structural equation modelling (PLS-SEM). The findings reveal that assurance, empathy, and reliability are significant drivers of service excellence, while tangibility and responsiveness show insignificant impacts. Service Excellence itself emerges as a powerful predictor of customer satisfaction ($\beta = 0.777$), accounting for 73.8% of its variance. The model demonstrates strong explanatory power, with service excellence explained by 80.8% of the variance from the five service quality dimensions. These results underscore that achieving customer satisfaction in municipal water provision requires a focused strategy on building trust, demonstrating care, and ensuring dependable service. The study provides a validated framework for municipal policymakers and water service managers to enhance service delivery, optimise resource allocation, and foster public trust in rural contexts, contributing valuable insights to the literature on public service quality and sustainable development.

Keywords: Service Quality, Service Excellence, Customer Satisfaction, Water Provision, Public Utilities, Nyandeni Municipality, PLS-SEM
JEL Classifications: D12

1. INTRODUCTION

The provision of high-quality services is a cornerstone of organisational success and customer satisfaction across various sectors, including essential public utilities. In the context of water provision, maintaining high service quality is not merely an operational goal but a critical determinant of public health, social equity, and overall community well-being (Kumar et al., 2019). Service quality, encompassing dimensions such as reliability, responsiveness, and assurance, is fundamental to achieving service excellence, the consistent delivery of services that meet or exceed customer expectations (Aladwan and Alshami, 2021). Ultimately, service excellence is a key driver of customer satisfaction, which reflects residents' evaluations of the service received in comparison to their expectations (Aburayya et al., 2020). High levels of satisfaction are crucial for fostering public trust and reinforcing the perceived legitimacy and effectiveness of municipal authorities (Afroj et al., 2021; Kansara, 2020).

Despite its importance, many municipalities, particularly in rural South Africa, face significant challenges in delivering satisfactory water services. The Nyandeni Municipality in the Eastern Cape is a case in point, where infrastructural deficiencies, resource constraints, and complex socio-economic conditions hinder the

provision of reliable and safe water (Setiono and Hidayat, 2022). This failure in basic service delivery has profound implications, impeding progress towards Sustainable Development Goal 6 (clean water and sanitation), exacerbating public health risks from waterborne diseases, and perpetuating cycles of poverty by stifling economic growth (Lin et al., 2010).

While the relationship between service quality, service excellence, and customer satisfaction is well-established in broader literature (Marcos and Coelho, 2022; Muharam et al., 2021), a significant research gap persists. Existing studies have predominantly focused on urbanised settings or other service sectors, leaving the unique challenges and dynamics of rural municipalities, such as Nyandeni, critically underexplored (Munusamy et al., 2010; Rad et al., 2010). A deeper understanding of how specific service quality dimensions—tangibility, reliability, responsiveness, assurance, and empathy influence service excellence and citizen satisfaction in this context is urgently needed.

Therefore, this study aims to fill this gap by investigating the influence of service quality on service excellence and customer satisfaction with water provision in Nyandeni municipality. By doing so, it seeks to provide empirical data that can inform policy decisions, guide resource allocation, and develop targeted strategies for improving water service delivery. The findings will offer valuable insights for the Libode Town Water and Sewerage Company, local policymakers, and water service providers, enabling them to bridge the gap between service delivery prospects and community expectations, thereby enhancing public trust and fostering sustainable community development (Creswell and Poth, 2018).

2. LITERATURE REVIEW

This study is grounded in two complementary theoretical perspectives that provide a robust foundation for analysing municipal service delivery: Participatory democracy theory and efficient service delivery theory.

2.1. Participatory Democracy Theory (PDT)

Participatory democracy theory (PDT) emphasises the active involvement of citizens in the governance processes that affect their lives. With roots in the philosophies of Jean-Jacques Rousseau and further developed by scholars like Pateman (1970), PDT argues that direct citizen engagement leads to more legitimate and effective governance. In the context of municipal water provision, this theory posits that involving residents in planning, decision-making, and monitoring of services enhances transparency, accountability, and the overall quality of service delivery (Neuberger, 2004). When citizens are empowered to voice their opinions and concerns, service providers can better align their operations with community needs and expectations, thereby increasing the perceived value and satisfaction with the services rendered. This active participation fosters a sense of shared responsibility and can transform residents from passive recipients into engaged stakeholders in the municipal governance process.

2.2. Efficient Service Delivery Theory (ESDT)

Efficient service delivery theory (ESDT) focuses on optimising resources, processes, and management to achieve maximum output and effectiveness in public service provision. This theory contends that local governments, due to their proximity to the people, are often best positioned to deliver certain services more efficiently than central government bodies (Adeyemo, 2010; Kafle and Karkee, 2003). The core principle is to streamline operations, reduce waste, and ensure that services, such as water provision, are delivered reliably, safely, and in a timely manner (Kunle and Odewale, 2017). In practice, this involves optimising infrastructure, distribution networks, and operational procedures (Wang and Palazzo, 2021). ESDT provides a critical lens for evaluating the operational performance of the Nyandeni municipality, asserting that its primary mandate is to provide essential services in the most effective and resource-conscious way possible to meet established standards and public needs.

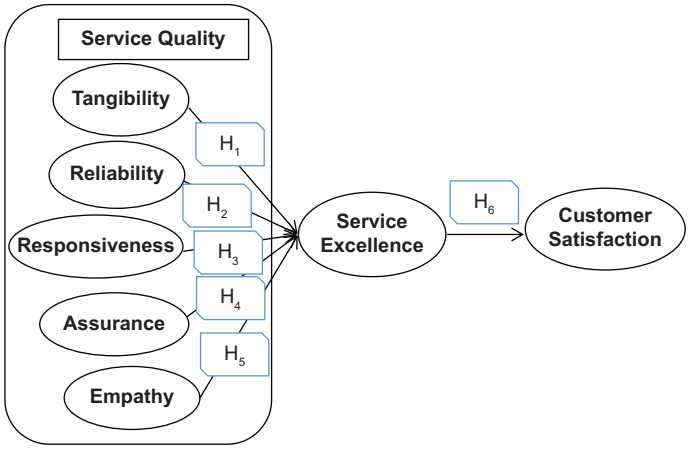
2.3. Synthesis of Theories in the Current Study

These two theories offer a comprehensive framework for this research. PDT highlights the importance of the demand side—community engagement and responsiveness—in shaping service quality and satisfaction. Conversely, ESDT addresses the supply side—the operational efficiency and managerial effectiveness required for excellent service delivery. Together, they provide a holistic view: High-quality water services in Nyandeni municipality depend not only on efficient internal management (ESDT) but also on actively incorporating citizen feedback and fostering a collaborative relationship with the community (PDT). This integrated approach is essential for achieving sustainable service excellence and fostering the long-term trust and satisfaction of residents.

3. CONCEPTUAL MODEL AND HYPOTHESIS FORMULATION

Based on the theoretical foundations and empirical literature reviewed, a conceptual model was developed to guide this research. The model, depicted in Figure 1, proposes that five key service quality dimensions, tangibility, reliability, responsiveness,

Figure 1: Conceptual model



Source(s): Authors' own creation

assurance, and empathy, act as predictor variables. These dimensions are hypothesised to influence the outcome variable, customer satisfaction, through the mediating mechanism of service excellence. The arrows in the model illustrate the proposed causal pathways, positing that the service quality dimensions collectively foster service excellence, which in turn directly drives customer satisfaction.

3.1. Hypotheses Development

This section outlines the hypothesised relationships between service quality dimensions, service excellence, and customer satisfaction, drawing on established theoretical and empirical literature.

3.2. Tangibility and Service Excellence

Tangibility, which encompasses the physical evidence of a service, such as infrastructure, equipment, and personnel appearance, serves as a primary cue for customers to assess quality. These tangible elements signal competence and attention to detail, directly shaping initial perceptions and expectations (Zeithaml et al., 2016). In the context of essential utilities, the condition of water infrastructure pipes, treatment plants, and service vehicles provides a visible indicator of the municipality's commitment to service. A well-maintained physical presence can create a positive and memorable service experience, thereby fostering perceptions of excellence (Berry et al., 2016). Consequently, it is hypothesised that:

H_1: Tangibility has a significant positive relationship with Service Excellence in Nyandeni Municipality.

3.3. Reliability and Service Excellence

Reliability is the ability to perform the promised service dependably and accurately. It is foundational to service excellence, as it directly builds trust and reduces perceived risk for the customer (Cronin and Taylor, 2016). For water provision, reliability translates to the consistent availability of safe water, adherence to supply schedules, and the infrequency of service interruptions (Parasuraman et al., 2022). When a municipality reliably meets its core promises, it fosters confidence and strengthens its relationship with residents, which are hallmarks of service excellence (Rust and Zahorik, 2023). Therefore, it is proposed that:

H_2: Reliability has a significant positive relationship with Service Excellence in Nyandeni Municipality.

3.4. Responsiveness and Service Excellence

Responsiveness refers to the ability to promptly assist customers and provide effective service. It is demonstrated through the speed and efficiency with which an organisation addresses inquiries, requests, and complaints (Blery et al., 2019). In municipal water services, responsiveness is critical when residents report leaks, water quality issues, or billing discrepancies. Prompt and effective action in these situations demonstrates attentiveness and a commitment to resolving problems, which enhances the customer's experience and contributes directly to perceptions of service excellence (Kaura et al., 2022). Thus, the hypothesis is formulated:

H_3: Responsiveness has a significant positive relationship with Service Excellence in Nyandeni Municipality.

3.5. Assurance and Service Excellence

Assurance is defined as the knowledge and courtesy of employees, as well as their ability to inspire trust and confidence. This dimension is driven by the human element of service delivery, involving employees being perceived as competent, credible, and respectful (Kaura et al., 2019). Assurance creates a positive organisational perception by making customers feel secure in their transactions (Parasuraman et al., 2018). In a municipal context, this translates to residents trusting that water quality is safe, and that municipal staff are knowledgeable and professional. This trust is a direct contributor to service excellence. Accordingly, the following hypothesis is presented:

H_4: Assurance has a significant positive relationship with Service Excellence in Nyandeni Municipality.

3.6. Empathy and Service Excellence

Empathy involves the provision of caring, individualised attention to customers. It reflects the service provider's effort to understand and address the unique needs and circumstances of their clients (Ganguli and Roy, 2019). Empathy fosters a strong emotional connection, which is crucial for building long-term relationships and loyalty (Wieseke et al., 2022). For a municipality, demonstrating empathy means understanding the diverse needs of different communities, communicating in a compassionate manner, and showing a genuine commitment to public welfare. This dimension significantly impacts how residents perceive the overall excellence of the service (Karatepe, 2020). Hence, it is hypothesised that:

H_5: Empathy has a significant positive relationship with Service Excellence in Nyandeni Municipality.

3.7. Service Excellence and Customer Satisfaction

Service excellence, characterised by the consistent delivery of superior service across all dimensions, is a primary antecedent of customer satisfaction. While service excellence represents the objective high standard of delivery, customer satisfaction is the subjective outcome—the customer's affective response to their perception of the service received compared to their expectations (Oliver, 2021; Johnston and Clark, 2018). Extensive research confirms that when service providers consistently exceed expectations—achieving service excellence—they directly drive high levels of customer satisfaction, foster loyalty, and generate positive public sentiment (Zeithaml et al., 2016). Consequently, the final hypothesis is:

H_6: Service Excellence has a significant positive influence on Customer Satisfaction in Nyandeni Municipality

4. METHODOLOGY

This study employed a quantitative, cross-sectional research design to investigate the relationships between service quality dimensions, service excellence, and customer satisfaction. The target population consisted of residents of Nyandeni Municipality, with a specific focus on the communities of Mangcwanguleni and Marhubeni in Libode. These areas were selected as they host the municipality's largest pay points, serving a significant portion of the population and providing access to a diverse pool of water service users. A probability simple random sampling was utilised.

To select 380 respondents. Data were collected using a structured, self-administered questionnaire. The data were analysed using SPSS for demographic data and SmartPLS for Structural Equation Modeling to test the proposed hypotheses.

5. RESULTS

5.1. Respondent Profile

The demographic profile of the respondents reveals a sample that is nearly gender-balanced but predominantly consists of a young to middle-aged, educated, yet economically vulnerable population. The largest age cohorts were 26-35 (37.9%) and 36-45 (33.9%), indicating the findings are heavily representative of working-age adults. While educational attainment was relatively high, with over 75% of respondents holding a post-high school qualification, this stands in stark contrast to the socioeconomic data, which shows unemployment as the most common employment status (34.7%) and the largest income segment (37.9%) earning below R2500/month. Furthermore, the sample was overwhelmingly composed of black respondents (93.7%), accurately reflecting the regional demographics of Nyandeni municipality. Consequently, the study's findings primarily capture the perceptions of a demographically young and educated, yet economically constrained, segment of the community, for whom the reliability and quality of essential public services, such as water provision, are of critical importance. These results are demonstrated in Table 1 below;

5.2. Result of Structural Equation Modeling

5.2.1. Measurement model analysis

The results of the measurement model analysis, as presented in Table 2, confirm the robustness, reliability, and validity of the constructs used in this study. All constructs demonstrated strong internal consistency, with Cronbach's alpha and composite reliability values exceeding the recommended thresholds of 0.7 and 0.8, respectively. Convergent validity was firmly established, as indicated by factor loadings for all scale items being well above the 0.6 benchmark and the average variance extracted for each construct surpassing the critical value of 0.5. This confirms that the measurement items are highly representative of their respective latent constructs namely assurance, customer satisfaction, empathy, reliability, responsiveness, service excellence, and tangibility and that the model possesses a satisfactory level of internal reliability and convergent validity for subsequent structural analysis.

5.2.2. Discriminant validity

The discriminant validity of the measurement model was assessed using the Heterotrait-Monotrait ratio (HTMT) criterion, a modern and rigorous approach for establishing that the constructs in the model are distinct from one another. As shown in Table 3, all HTMT values were found to be below the conservative threshold of 0.85, with the highest value being 0.788 between responsiveness and tangibility. This confirms that each construct in the model—assurance, customer satisfaction, empathy, reliability, responsiveness, service excellence, and tangibility—shares more variance with its own indicators than with any other construct, thereby robustly establishing discriminant validity. This result provides strong evidence that the constructs are empirically distinct and that the measurement model is sound for testing the structural relationships.

5.3. Structural Model Assessment (Path Analysis)

Upon establishing a valid and reliable measurement model, the study proceeded to evaluate the structural model. Path analysis was employed to test the hypothesised causal relationships between the latent constructs, as is standard in partial least squares structural equation modelling (PLS-SEM) (Henseler et al., 2016; Hair et al., 2022). This analysis yields path coefficients, which indicate the strength and direction of the relationships, and allows for the testing of their statistical significance. The results of the hypothesis tests are summarised in a subsequent table, detailing each proposed relationship, its path coefficient, t-statistic, and P-value. In line with established convention, a t-statistic >1.96 (corresponding to a significance level of $P < 0.05$) was used to determine whether a hypothesised path was statistically significant, and thus whether the hypothesis was supported (Burkus, 2016).

5.4. The Standardised Root Mean Square Residual

The model fit was assessed using several indices to determine how well the proposed conceptual model aligns with the observed data.

Table 1: Sample demographic characteristics

Gender	Frequency	Percentage	Age category	Frequency	Percentage	Marital status	Frequency	Percentage
Males	185	48.7	18-25	67	17.6	Single	169	44.5
Females	195	51.3	26-35	144	37.9	Married	153	40.3
			36-45	129	33.9	Divorced	58	15.3
			46+	40	10.5			
Total	380	100	Total	380	100	Total	380	100
Qualification	**Frequency**	**Percentage**	**Occupation**	**Frequency**	**Percentage**	**Racial group**	**Frequency**	**Percentage**
High school	93	24.5	Student	77	20.3	Black	356	93.7
Diploma	115	30.3	Employed	121	31.8	White	4	1.1
Degree	110	28.9	Self employed	50	13.2	Indian	4	1.1
Postgrad	62	16.3	Unemployed	132	34.7	Coloured	16	4.2
Total	380	100	Total	380	100	Total	380	100
Income level	**Frequency**	**Percntage**						
<2500	144	37.9						
>2500;<5000	81	21.3						
>5000;<10000	82	21.6						
>10000+	73	19.2						
Total	380	100						

Table 2: Accuracy analysis statistics

Research constructs	Scale item				Cronbach's Alpha value	Composite reliability value	Average variance extracted (AVE)	Factor loading
	Mean value		Standard deviation					
A								
A_1	0.730	0.285	0.032	0.063	0.618	0.797	0.567	0.731
A_2	0.718		0.038					0.720
A_3	0.806		0.021					0.806
CS								
CS_1	0.669	0.198	0.037	0.053	0.758	0.838	0.509	0.670
CS_2	0.683		0.036					0.684
CS_3	0.778		0.021					0.778
CS_4	0.747		0.024					0.747
CS_5	0.681		0.034					0.682
E								
E_1	0.730	0.254	0.029	0.067	0.742	0.838	0.564	0.730
E_2	0.756		0.031					0.758
E_3	0.768		0.026					0.768
E_4	0.747		0.025					0.747
R								
R_1	0.731	0.182	0.032	0.051	0.744	0.839	0.566	0.731
R_2	0.767		0.025					0.768
R_3	0.746		0.026					0.746
R_4	0.720		0.031					0.721
RE								
RE_1	0.777	0.117	0.028	0.062	0.728	0.830	0.550	0.778
RE_2	0.783		0.024					0.783
RE_3	0.698		0.033					0.699
RE_4	0.747		0.030					0.748
SE								
SE_1	0.736	0.778	0.028	0.031	0.750	0.842	0.571	0.737
SE_2	0.743		0.032					0.745
SE_3	0.782		0.024					0.781
SE_4	0.759		0.026					0.760
T								
T_1	0.717	0.107	0.034	0.065	0.748	0.841	0.569	0.718
T_2	0.777		0.024					0.777
T_3	0.754		0.028					0.754
T_4	0.766		0.030					0.767

A: Assurance, CS: Customer satisfaction, E: Empathy, R: Reliability, RE: Responsiveness, SE: Service excellence and T: Tangible

Table 3: Heterotrait-Monotrait ratio (HTMT)

Research constructs	A	CS	E	R	RE	SE	T
A	0.753						
CS	0.773	0.713					
E	0.743	0.752	0.751				
R	0.702	0.709	0.700	0.752			
RE	0.729	0.762	0.732	0.721	0.742		
SE	0.766	0.777	0.757	0.721	0.725	0.756	
T	0.739	0.761	0.728	0.720	0.788	0.724	0.754

A: Assurance, CS: Customer satisfaction, E: Empathy, R: Reliability, RE: Responsiveness, SE: Service excellence and T: Tangible

The Standardised Root Mean Square Residual (SRMR) values of 0.060 for the saturated model and 0.075 for the estimated model are both below the recommended threshold of 0.08, indicating a good fit and that the model does not produce significant residuals. However, the normed fit index (NFI) values of 0.759 and 0.740 fall below the conventional acceptance level of 0.90, suggesting room for improvement in the model's explanatory power. The Chi-square value is significant, which is common in models with larger sample sizes. The discrepancy measures (d_ULS and d_G) further describe the distance between the empirical and model-implied covariance matrices. Overall, while the SRMR indicates an acceptable model fit, the NFI values suggest that the model may not fully capture all the complexities in the data, as demonstrated in Table 4.

5.5. Coefficient of determination (R^2)

The explanatory power of the structural model was assessed using the coefficient of determination (R^2). As shown in Table 5, the model explains a substantial portion of the variance in the endogenous constructs. Specifically, the five service quality dimensions (tangibility, reliability, responsiveness, assurance, and empathy) collectively explain 80.8% of the variance in Service Excellence. Furthermore, Service Excellence itself is a very strong predictor of Customer Satisfaction, accounting for 73.8% of its variance. These R^2 values, which are well above the thresholds for substantial explanatory power in behavioural research, indicate that the model possesses strong predictive accuracy. The adjusted R^2 values, which are nearly identical to the R^2 values, confirm that the model is robust and that the high explanatory power is not an artifact of overfitting with an excessive number of predictors, as noted by Hair et al. (2019).

5.6. Predictive Relevance (Q^2)

The model's predictive relevance was assessed using the Stone-Geisser Q^2 value obtained through a blindfolding procedure.

Table 4: Model fit summary

Research constructs	Saturated model	Estimated model
SRMR	0.060	0.075
d_ULS	1.444	2.311
d_G	0.609	0.693
Chi-square	1214.698	1315.237
NFI	0.759	0.740

Source: Researcher's own construction

Table 5: R-squared 2

Research construct	R-square	R-square adjusted
Customer satisfaction	0.738	0.736
Service excellence	0.808	0.803

As shown in Table 6, both endogenous constructs demonstrate strong predictive relevance, with Q^2 values of 0.689 for Service Excellence and 0.675 for customer satisfaction. Since these values are substantially greater than zero, they confirm that the model has high predictive power and is well-validated for making out-of-sample predictions. The accompanying prediction errors, root mean square error (RMSE) and mean absolute error (MAE), provide further context for the model's forecasting accuracy. These results, in conjunction with the high R^2 values, provide robust evidence that the structural model is not only explanatory but also possesses significant predictive relevance (Hair et al., 2019).

5.7. Effect Size (f^2)

The effect size (f^2) was calculated to assess the relative impact of each exogenous construct on the endogenous constructs in the model. As shown in Table 7, the effect sizes reveal a clear hierarchy of influence. The path from service excellence to customer satisfaction demonstrates an exceptionally large effect ($f^2 = 2.811$), confirming its role as the primary and most powerful driver of satisfaction. Among the service quality dimensions influencing Service Excellence, Assurance has a medium effect ($f^2 = 0.211$), while Empathy ($f^2 = 0.047$), Reliability ($f^2 = 0.029$), and Responsiveness ($f^2 = 0.015$) exhibit small effects. Tangibility ($f^2 = 0.000$) was found to have no substantive effect. These results quantify the distinct contributions of each predictor, highlighting that while assurance, empathy, and reliability are statistically significant, their individual impact on Service Excellence is modest compared to the overwhelming influence service excellence itself has on customer satisfaction.

5.8. Path Model

The PLS estimation path coefficient values and the item loadings for the research construct are shown in Figure 2. The path coefficients from the structural model reveal the specific strengths of the relationships between the constructs. The results confirm that service excellence ($\beta = 0.777$) is an exceptionally strong and significant direct predictor of customer satisfaction, which aligns with the previously noted large effect size (f^2). Regarding the drivers of service excellence, the analysis identifies assurance ($\beta = 0.286$) as the most influential service quality dimension, followed by empathy ($\beta = 0.256$) and reliability ($\beta = 0.183$). In contrast, the paths from responsiveness ($\beta = 0.115$) and tangibility ($\beta = 0.104$) to service excellence are notably weaker and were found to be statistically insignificant. Furthermore, the model

Table 6: Predictive relevance (Q^2)

Research constructs	Q^2 predict	RMSE	MAE
CS	0.675	0.574	0.442
SE	0.689	0.561	0.392

CS: Customer satisfaction, SE: Service excellence

Table 7: f-squared

Research construct	f-square
Assurance->Service excellence	0.211
Empathy->Service excellence	0.047
Reliability->Service excellence	0.029
Responsiveness->Service excellence	0.015
Service Excellence->Customer satisfaction	2.811
Tangibility->Service excellence	0.000

T: Tangibility, R: Reliability, RE: Responsiveness, A: Assurance, E: Empathy, SE: Service excellence and CS: Customer satisfaction

exhibits strong psychometric properties, as evidenced by the high factor loadings of all measurement items on their respective constructs, which exceed the 0.6 threshold, thereby confirming the reliability of the scales used. In summary, the model robustly establishes that achieving Customer Satisfaction is primarily dependent on delivering Service Excellence, which is itself most effectively driven by fostering Assurance, Empathy, and Reliability in water service provision.

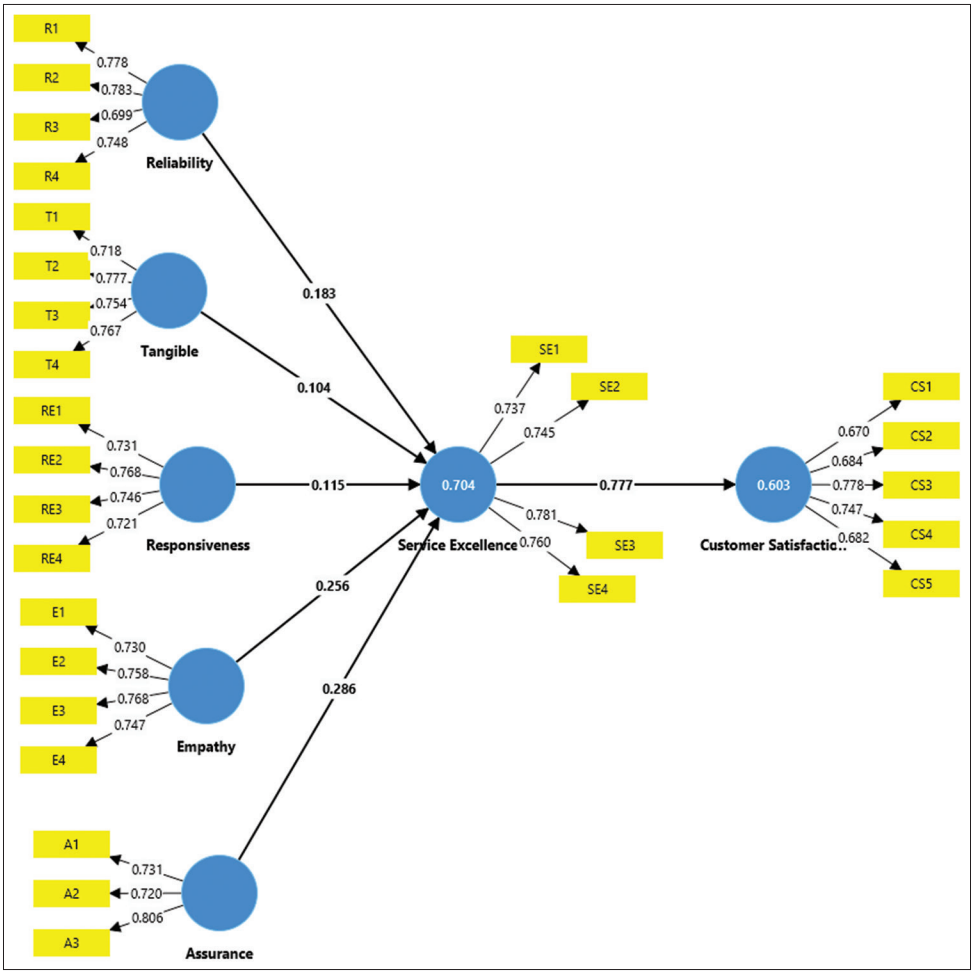
Table 8 presents the results of the hypothesis testing, providing clear and compelling evidence in support of the proposed conceptual model. Four of the six hypothesised relationships were statistically significant and supported, while two were not. The analysis reveals that service excellence (SE) is an overwhelmingly strong and significant direct driver of customer satisfaction (CS), with the highest path coefficient in the model ($\beta = 0.777$, $P < 0.000$), thus providing robust support for H_6. Concerning the antecedents of service excellence, the findings indicate that assurance (A) ($\beta = 0.286$, $P < 0.000$), Empathy (E) ($\beta = 0.256$, $P < 0.000$), and Reliability (R) ($\beta = 0.183$, $P < 0.000$) are all significant positive predictors, confirming H_4, H_5, and H_2, respectively. This establishes them as the core service quality dimensions that underpin excellence in water provision.

6. DISCUSSION OF RESULTS

The findings of this study offer nuanced insights into the mechanisms by which service quality affects customer satisfaction in the context of public water provision. The results robustly support the central thesis of the model, while also revealing critical differentiations between the service quality dimensions.

The most powerful relationship in the model was between service excellence and customer satisfaction (H_6: $\beta = 0.777$, $P < 0.000$). This finding underscores that the residents' overall perception of excellent service is the paramount driver of their satisfaction. This aligns directly with the work of Zeithaml et al. (2016), whose seminal research established that the cumulative perception of service quality is the most critical antecedent of customer satisfaction and behavioural intentions. In essence, for the residents of Nyandeni Municipality, their final judgment of satisfaction is

Figure 2: Structural model



Source(s): Authors' own creation. T: Tangibility, R: Reliability, RE: Responsiveness, A: Assurance, E: Empathy, SE: Service Excellence and CS: Customer satisfaction

Table 8: Results of structural equation model analysis

Hypothesised relationship	Hypothesis	Path coefficient (β)	T-statistics	P-value	Outcome
T>SE	H_1	0.104	1.601	0.110	Insignificant and not supported
R>SE	H_2	0.183	3.573	0.000	Significant and supported
RE>SE	H_3	0.115	1.847	0.065	Insignificant and not supported
A>SE	H_4	0.286	4.552	0.000	Significant and supported
E>SE	H_5	0.256	3.834	0.000	Significant and supported
SE>CS	H_6	0.777	25.365	0.000	Significant and supported

T: Tangibility, R: Reliability, RE: Responsiveness, A: Assurance, E: Empathy, SE: Service excellence and CS: Customer satisfaction

overwhelmingly determined by a holistic assessment of service excellence, rather than by isolated service attributes.

Regarding the drivers of service excellence itself, the results delineate a clear hierarchy of influence. The supported hypotheses reveal that Assurance (H_4), Empathy (H_5), and Reliability (H_2) are the foundational pillars. The significance of assurance, which instils confidence through staff knowledge and credibility, is well-documented. Parasuraman et al. (2018) identified assurance as a key dimension that creates a positive organisational perception, which is critical in contexts such as public utilities, where trust in the provider's competence is non-negotiable. Similarly, the strong effect of Empathy, reflecting individualised care and understanding, supports the findings of Ganguli and Roy (2019), who argued that empathy is indispensable for service excellence as it fosters the emotional connections that underpin long-term customer relationships and loyalty. Reliability, the ability to perform the promised service dependably, is consistently cited as the most fundamental dimension. Our results confirm this, as its significance reinforces the argument by Cronin and Taylor (2016) that reliable performance is the cornerstone upon which trust is built, reducing customer uncertainty and solidifying perceptions of excellence.

Conversely, the lack of support for Tangibility (H_1) and Responsiveness (H_3) is highly instructive. The insignificance of Tangibility suggests that, while physical infrastructure is a basic necessity, its presence does not, in itself, elevate perceptions

to excellence in this setting. Residents may view functional infrastructure as a baseline expectation rather than a value-adding feature. The non-significant result for Responsiveness is more surprising but can be contextualised. It may indicate that while prompt responses to complaints are valued, a reactive approach is insufficient to cultivate a perception of excellence if the core service (reliable, safe water) is not consistently assured. This finding suggests a potential "threshold effect," where responsiveness only becomes a significant driver of excellence once more fundamental needs of reliability and safety are consistently met.

In conclusion, the study demonstrates that achieving customer satisfaction in municipal water provision is not about excelling equally in all service dimensions. Instead, a targeted strategy is recommended: the municipality must first and foremost build a reputation for assurance, empathy, and reliability. By securing trust, demonstrating care, and delivering on its core promise, the municipality can achieve service excellence, which in turn is the most direct and powerful path to securing resident satisfaction and, ultimately, public trust.

7. CONCLUSION AND IMPLICATIONS OF THE STUDY

This study offers significant theoretical and practical implications for understanding and improving service quality in public utilities, specifically within rural municipal contexts.

7.1. Theoretical Implications

The research makes a substantive contribution to the body of knowledge on public service delivery. Firstly, it validates and refines the SERVQUAL model in a novel context—rural South African water provision, demonstrating its applicability while highlighting that not all dimensions hold equal weight. The findings reveal that assurance, empathy, and reliability are the core drivers of service excellence, whereas tangibility and responsiveness, while expected, are not significant differentiators. This hierarchy offers a crucial theoretical nuance, suggesting a "threshold effect" where certain dimensions establish a foundational expectation, while others actively shape perceptions of excellence. Secondly, the study powerfully confirms the role of Service Excellence as a full mediator between service quality dimensions and customer satisfaction. This establishes a more precise theoretical chain of effect, showing that quality attributes must first coalesce into a holistic perception of excellence before they can effectively translate into resident satisfaction.

7.2. Practical and Managerial Implications

For the management of Nyandeni municipality and similar local governments, the findings provide a clear, actionable roadmap for strategic improvement and resource allocation.

- Municipal managers should prioritise interventions that build assurance (e.g., transparent communication on water quality, training staff for credibility and knowledge), demonstrate empathy (e.g., community engagement programs, understanding specific community needs), and ensure reliability (e.g., proactive infrastructure maintenance to minimise service interruptions). Investing in these three areas will yield the highest return in terms of perceived service excellence
- Key performance indicators (KPIs) and citizen satisfaction surveys should be re-weighted to heavily emphasise assurance, empathy, and reliability, rather than treating all service quality dimensions as equally important
- The findings advocate for a shift in municipal communication from promising modern infrastructure (Tangibility) to guaranteeing consistent, safe, and compassionate service. Policymakers can utilise these insights to craft service charters that explicitly commit to these core dimensions, thereby managing citizen expectations and fostering trust.

7.3. Limitations and Future Research Directions

While this study provides valuable insights, its limitations present opportunities for future scholarly inquiry.

The primary limitation is the use of a non-probability sampling technique (mall-intercept), which, despite its practicality, limits the generalizability of the findings to the entire population of Nyandeni municipality. The cross-sectional nature of the data provides only a snapshot in time, capturing perceptions at a single moment and preventing analysis of how these relationships evolve. Furthermore, the study was geographically confined to one municipality, and the model did not incorporate potential external variables such as political attitudes, historical context, or comparative service delivery from other sectors, which could influence satisfaction.

Building on this study's findings and limitations, future research should:

- Replicate the study in other rural and semi-urban municipalities across South Africa and other regions to enhance the external validity and identify contextual nuances
- Employ longitudinal studies to track changes in resident perceptions following specific municipal interventions, thereby establishing causality and understanding the dynamics of service quality perceptions over time
- Investigate the moderating role of demographic factors (e.g., income level, length of residence) and external factors (e.g., media influence, political trust) on the relationships between service quality, excellence, and satisfaction
- Expand the model by including outcome variables such as citizen trust in local government, compliance with water restrictions, and willingness to pay for services to provide a more comprehensive view of the impact of service excellence
- Complement quantitative findings with qualitative approaches (e.g., interviews, focus groups) to gain a deeper, nuanced understanding of why residents prioritise assurance and empathy, and what specific actions would constitute "excellence" from their perspective.

REFERENCES

Aburayya, A., Marzouqi, A., Alawadhi, D., Abdouli, F., Taryam, M. (2020), An empirical investigation of the effect of employees' customer orientation on customer loyalty through the mediating role

of customer satisfaction and service quality. Management Science Letters, 10(10), 2147-2158.

Adeyemo, A.O. (2010), Understanding citizens' participation in service delivery protests in South Africa's Sedibeng district municipality. International Journal of Social Economics, 40(5), 458-478.

Afroj, S., Hanif, F., Hossain, M.B., Fuad, N., Islam, I., Sharmin, N., Siddiq, F. (2021), Assessing the municipal service quality of residential neighborhoods based on SERVQUAL, AHP and citizen's score card: A case study of Dhaka North City corporation area, Bangladesh. Journal of Urban Management, 10(3), 179-191.

Aladwan, S.A., Alshami, S.I. (2021), The impact of service excellence and service innovation on organisational reputation: Quantitative evidence from Jordanian public sector. The TQM Journal, 33(6), 1544-1560.

Berry, N., Lobban, F., Emsley, R., Bucci, S. (2016), Acceptability of interventions delivered online and through mobile phones for people who experience severe mental health problems: A systematic review. Journal of medical Internet research, 18(5), e121.

Blery, E., Batistatos, N., Papastathopoulou, P., Sfakianaki, E. (2019), Service quality and customer satisfaction in the public sector: The case of a Greek municipal water utility. International Journal of Public Sector Management, 32(3), 230-249.

Burkus, D. (2016), Under New Management: How Leading Organizations Are Upending Business as Usual. United States: Houghton Mifflin Harcourt.

Cohen, L., Manion, L., Morrison, K. (2000), Research Methods in Education. 5th ed. Falmer: Routledge.

Creswell, J.W., Poth, C.N. (2018), Qualitative Inquiry and Research Design: Choosing among Five Approaches. 4th ed. London: Sage Publications.

Cronin, J.J., Taylor, S.A. (2016), Measuring service quality: A reexamination and extension. Journal of Marketing, 56(3), 55-68.

Dube, B., Roberts-Lombard, M., Van Tonder, E. (2015), Management guidelines for universal quality challenges across the focus group research process. Journal of Applied Business Research, 31, 239-254.

Ganguli, S., Roy, S.K. (2019), Generic technology-based service quality dimensions in banking: Impact on customer satisfaction and loyalty. International Journal of Bank Marketing, 29(2), 168-189.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. (2019), Multivariate data analysis. 8th ed. Cengage.

Hair, J.F., Hult, G.T.M., Ringle, C.M., Sarstedt, M. (2022), A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). 3rd ed. London: Sage.

Henseler, J., Hubona, G., Ray, P.A. (2016), Using PLS path modeling in new technology research: Updated guidelines. Industrial Management and Data Systems, 116(1), 2-20.

Johnston, W., Clark, I. (2018), Urban local governance in the crucible: Empirical overtones of central government meddling in local Urban councils affairs in Zimbabwe. Theoretical and Empirical Research in Urban Management, 13(3), 60-75.

Kafle, S., Karke, K. (2003), Towards Ideal Local Government: Strengthening Participatory Development. [Unpublished Memoir]. United States: World Bank.

Kansara, S. (2020), Modelling the water supply service quality: A case study of the municipal corporation. International Journal of Productivity and Quality Management, 29(1), 94-108.

Karatepe, O.M. (2020), Service quality, customer satisfaction and loyalty: The moderating role of gender. Journal of Business Economics and Management, 12(2), 278-300.

Kaura, V., Datta, S.K., Vyas, V. (2019), Impact of service quality on satisfaction and loyalty: Case of two public sector banks. Vilakshan the XIMB Journal of Management, 9(2), 65-76.

Kaura, V., Byrne, R., Fife, K. (2022), Responsiveness as a driver of service excellence in public utilities. Journal of Services Marketing, 36(4), 512-528.

Kumar, D., Singh, A., Jha, R.K., Sahoo, S.K., Jha, V. (2019), A variance decomposition approach for risk assessment of groundwater quality. Exposure and Health, 11, 139-151.

Kunle, S.B., Odewale, A.D., (2017), The efficiency level of political leadership in local governments areas of Osun State, Nigeria (2007-2015). Public Policy and Administration Research, 7(7), 59-65.

Marcos, A.M.B.D.F., Coelho, A.F.D.M. (2022), Service quality, customer satisfaction and customer value: Holistic determinants of loyalty and word-of-mouth in services. The TQM Journal, 34(5), 957-978.

Muharam, H., Chaniago, H., Endraria, E., Harun, A.B. (2021), E-service quality, customer trust and satisfaction: Market-place consumer loyalty analysis. Journal Minds Manajemen Ide dan Inspirasi, 8(2), 237-254.

Munusamy, J., Chelliah, S., Mun, H.W. (2010), Service quality delivery and its impact on customer satisfaction in the banking sector in Malaysia. International Journal of Innovation Management and Technology, 1(4), 398-404.

Neuberger, D. (2004), Financial Inclusion, Regulation, and Education in Germany (No. 530). [ADBI Working Paper].

Oliver, R.L. (2021), Customer satisfaction and loyalty. In: Baker, M.J., Saren, M., editors. Marketing Theory: A Student Text. London: Sage. p345-367.

Parasuraman, A., Zeithaml, V.A., Berry, L.L. (2018), SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. Journal of Retailing, 64(1), 12-40.

Parasuraman, A., Zeithaml, V.A., Berry, L.L. (2022), A Conceptual Model of Service Quality and Its Implications for Future Research. Journal of Marketing,49(4), 41-50.

Pateman, C. (1970), Participation and Democratic Theory. Cambridge: Cambridge University Press.

Pedhazur, E.J., Schmelkin, L.P. (2013), Measurement, Design, and Analysis: An Integrated Approach. London: Psychology Press.

Rad, N.F., Som, A.P.M., Zainuddin, Y. (2010), Service quality and patients' satisfaction in medical tourism. World Applied Sciences Journal, 10(1), 24-30.

Rust, R.T., Zahorik, A.J. (2023), Customer satisfaction, customer retention, and market share. Journal of Retailing, 69(2), 193-215.

Setiono, B.A., Hidayat, S. (2022), Influence of service quality with the dimensions of reliability, responsiveness, assurance, empathy and tangibles on customer satisfaction. International Journal of Economics Business and Management Research, 6(9), 330-341.

Wang, S., Palazzo, E. (2021), Sponge City and social equity: Impact assessment of urban stormwater management in Baicheng City, China. Urban Climate, 37, 100829.

Wieseke, J., Geigenmüller, A., Kraus, F. (2022), On the role of empathy in customer-employee interactions. Journal of Service Research, 15(3), 316-331.

Zeithaml, V.A., Berry, L.L., Parasuraman, A. (2016), The nature and determinants of customer expectations of service. Journal of the Academy of Marketing Science, 21(1), 1-12.