



An examination of the external environmental complexities affecting leadership effectiveness in the uMzimkhulu Local Municipality

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Abstract

This research aimed to examine the external environmental complexities affecting leadership effectiveness in uMzimkhulu Municipality using the complex adaptive leadership theory as its theoretical framework. It used a mixed methods approach. Purposive sampling was used to draw a sample of managerial employees from the municipality and semi-structured interviews were used to collect data from them. A survey questionnaire was used to collect data from non-managerial employees from the same municipality. The results showed agreeability that community pressures, political change dynamics and changes in economic cycles were the key external factors that challenged the municipality's ability to meet its service delivery goals. The external environment of the UMLM is complex, intricate and dynamic enough to adversely affect leadership effectiveness. As recommended, on the strategic front, the municipality needed to enhance contingency strategies that directly deal with the external environment challenges that affect service delivery. On the leadership development front, it needed to equip its leaders with skills to manage external environment complexities, including through the guidance of the complex adaptive leadership theory.

Keywords: external environment, municipality, complexities, leadership, uMzimkhulu

Introduction

This research seeks to examine the external environmental complexities affecting leadership effectiveness in uMzimkhulu Municipality (UMLM). It further examines whether the complexity adaptive leadership theory can help leaders manage external complexities that can be identified in the UMLM. Managing the external environment is part of the leadership's role. However, the degree to which they effectively do this is affected by the complexity and density of such an environment. Reddy (2016b) expressed the view that uncertainties, contestations, tensions, hostilities and the dynamics of the operating environments have had the effect of increasing the perceived complexity in managing municipal organisations. Reddy (2016b) asserts that South African municipalities face turbulent and rapidly changing external environments that are translated into complex, multifaceted and interlinked challenges that hinder the effectiveness of leaders' service delivery.

The study was conducted against the background of external environmental challenges facing uMzimkhulu Municipality. The challenges cannot entirely be ascribed to the prevailing socio-political and economic environment currently prevailing in the country but have been compounded by failing leadership. In its integrated development plan for the 2021/2022 financial years, the UMLM highlights that it faced key challenges in its attempts to meet its key performance areas including institutional development and governance, service delivery and local economic development. In the same report, it cites leadership deficiencies including accountability and insight problems noted by the Auditor General of South Africa's office. The municipality classified its challenges

into infrastructural, institutional and economic. The first two are predominantly internal with economic issues being cited as external (UMLM, 2022). However, the study presupposes that like many municipalities, the external environment could be more complex than envisaged.

The results of the study would help to improve the understanding of how the complex environment affects leadership effectiveness so that new leadership innovations and approaches will be developed to effectively mitigate the challenges posed by the ever-changing external environment. An improved understanding of external environmental complexities could help the UMLM to move towards the attainment of its KPAs. This is based on the views of several scholars who note that understanding the external environment enhances organisations' capacities to deal with the problems it poses. From a leadership development perspective, it empowers an organisation to capacitate its leaders with skills needed to effectively manage its complexities and dynamics enhancing the probability of organisational goal attainment.

EXTERNAL ENVIRONMENTAL COMPLEXITIES AFFECTING LEADERSHIP EFFECTIVENESS

This section reviews the various external environmental complexities affecting leadership effectiveness.

The multistakeholder nature of the external environment

The interaction of different people with different agendas and expectations tensions and competing interests poses one of the most daunting complex phenomena affecting leadership effectiveness in organisations (May et al., 2016). The external environment of public sector institutions is often complex given that there are several stakeholders entangled in some form of rivalry to gain influence in the manner in which are run (May et al., 2016). More often the external environment of public sector institutions is made up of an entanglement (mixture) of stakeholders with multi-faceted interests such as communities, politicians, civil society organisations and bureaucrats regarding how things should be run. (Hueske et al., 2015). The existence and entanglement of several external agents in the broader external environment is plausible and compatible with the situation prevailing in municipalities, whereby there are so many actors having vested interest in the manner in which municipalities are run and some of the forces are so powerful and have got legitimate power (Hueske et al., 2015).

Technological changes

The twenty-first (21st) century has become known as a century of immense technological change (Gilpin, 2018). The Fourth Industrial Revolution (4IR) wave has arguably infiltrated every aspect of human life globally (Shava & Ndebele, 2024; Ndebele & Enaifoghe, 2023). This phenomenon of rapid technological changes has unfortunately been seen as a threat by public sector leaders, hence the low-level rate of responsiveness towards adopting new technological ways of doing business and providing services to the people. However, the growing number of young adults making up a large part of the population in many developing countries has brought pressure to bear on many public sector leaders to utilise technologies to provide better quality services, especially in the area of communication, community liaison and provision of basic services (Riege and Lindsay, 2006).

Technology has forced changes in basic managerial functions and has led to added pressure and emphasis on using computer-based management science techniques technology for planning, decision-making, control, and coordination purposes which inadvertently put pressure on leaders without higher intellectual capability (Cherunilam, 2021). The complexity arises from the fact that demands for efficiency, and higher responsiveness to customer/clients' demands for better quality services have put unanticipated pressure on leaders to embrace new technologies which has unintendedly produced a strain on managers and other individuals, potentially affecting morale, productivity, and output (Cherunilam, 2021).

Socio-demographic changes

Socio-demographic changes refer to adjustments in the structure and composition of people's age, gender characteristics, income distribution, levels of literacy and education, tastes and preferences as well as their population densities (Chapple, 2000). Complexity in the socio-demographic environment arises from the fact that the world is continuously witnessing a demographic structure that is in a constant trend of changing from one form to the other. In some cases, the demographic structural changes require leadership to adjust quickly to the new demands emanating from the socio-demographic environment. For municipalities new socio-demographic changes require new approaches to governance, communication and community liaison strategies. Every geographical area under a municipality is likely to have different socio-demographic characteristics which put pressure on leaders to become adaptive in the manner in which they communicate and provide services to people as well as changes in marketing strategies (Lieske et al., 2014).

The political environment complexities

The entrenchment of democracy in South Africa and the world at large has seen the emergence of an unprecedented number of a wide variety of political forces from different philosophical persuasions who occasionally exert enormous pressure on public sector leaders (Mathieu et al., 2019b). The leadership in the local government institutions such as municipalities are faced with political complexity in the sense that they face difficulties in satisfying the competing interests of all these political and legal formations. Organisation strategy is in some measure affected by political factors (Cherunilam, 2021). Complexity in the political environment arises from the conflicting interests of various pressure groups, interest groups political parties differing ideologies, opinions, manoeuvres from civil society organisations, and resident associations all requiring the attention of the leadership in the local government space (Remi Aiyede, 2003).

Economic environmental complexities

The influence of economic factors on organisations is high and formidable (Han et al., 2001). In the South African context, there has been a series of economic fluctuations that have hampered the smooth planning and implementation of local government infrastructure programmes. For example, the prolonged recession that engulfed South Africa from 2008 to 2014 and the recent emergence of COVID-19 have contributed to a further downturn in the economy of the country and have brought about enormous pressure on public sector managers to deliver in such a constrained economic environment (Pricewaterhouse Coopers, 2020). Flowing from this, it is clear that during times of economic recession revenues accruing to municipalities often decrease as residents and corporates are constrained in terms of paying rates for services provided (Pricewaterhouse Coopers, 2020). Complexity then arises when residents' expectations of quality service delivery and pressure to deliver are so high against constrained budgets. This then requires leaders with unique abilities to lead in such a complex environment.

Complexity adaptive leadership theory

As stated above the theory underpinning this study is the complexity adaptive leadership theory. Complexity theory is the study of the behaviour of large collections of simple interacting units that have the potential to evolve (Coveney, 2013). In essence, complex systems are characterised by three main features. Firstly, they have many interacting units. Secondly, they are dynamic, implying that their behaviours change all the time. Thirdly, complex systems are adaptive. Interacting agents within an organisation often change because relationships that exist are subject to several interacting influences.

Structures and dynamic behaviours that emerge in a complex environment are rarely recognizable as a predictable linear combination of the forces that initiated prior processes. It has been observed that complex theories are difficult to separate into distinct parts because they are being changed dynamically by the nature of interactions that will be occurring (Thompson et al., 2016). Interactive behaviours and their manifestations feedback on one another in a convoluted fashion whereby effects become causes of the next chain of events (Thompson et al., 2016). More so, each effect in a complex environment comes from multiple chains of causation to such an extent that if one of the causes of the effect ceases, the other causes will lead to the sustenance of the same effect (Thompson et al., 2016). This assertion leads to the conclusion that complex systems are robust and recurrent. In addition, complex systems are characterised by controversies and controversial ideas within the organisation, interpersonal conflicts, resource competitions, overlapping roles, conflicting interests, changing worker preferences, and different leadership styles within the internal environment.

Assumptions of the complex adaptive leadership theory

The assumptions underpinning the complexity leadership theory were identified by Lichtenstein et al. (2016), and are as follows:

- Complex leadership is only possible in an organisation with a bureaucratic superstructure that among other things has already laid down procedures, stated goals, and a vision and a mission. This is essential for a leader to understand the formal and informal group interactions easily enough thereby helping to develop skills to coordinate complex dynamics.
- Complex leadership is functional where the leadership has a flexible mentality that easily facilitates adaptation to new conditions, among all organisational hierarchical levels.
- Complexity leadership is more effective under a complex adaptive system that is more open to responding quickly to changing environmental conditions.

- Leadership in general terms is a function of resonating with new conditions and the interaction between the internal and external environment and organisations.
- Flexibility and adaptability require minimum restrictions and limited independence

The complex adaptive leadership has greater relevance to South African municipalities because they also face numerous internal (endogenous) and external (exogenous) challenges arising from the interaction of different people with different agendas and expectations which cannot all be fulfilled at once. The mere existence of several forces weakens the powers of the management in charge of municipalities. This further confirms the complex adaptive leadership's assertion that the leader's influence in making municipalities work efficiently is diminished, thus requiring the cooperation of many stakeholders who become mini-leaders in their own right. This has made it imperative for managers in municipalities to engage in networking, negotiations, and empowerment as espoused by complex adaptive leadership and to work towards reducing tensions.

RESEARCH METHODS

The study's research methods are hereby discussed. This starts with a brief explanation of the research design applied.

Research design

This research adopted a contextual research design. According to Sarma (2015), contextual research design is conducted to help identify what exists in the actual social world and the way the aspects of the social world manifest. In essence, both aspects of explorative and descriptive research designs interconnect to make a contextual research design. An explorative research design is defined as a preliminary investigation into a hypothetical or theoretical idea to discover something that has never been known (De Vaus et al., 2014). Thus, the contextual research design helped to identify previously unknown issues about complex adaptive leadership styles in a municipality setting.

Research methods

This research adopts the convergent parallel mixed method research strategy where both qualitative and quantitative data are collected and analysed concurrently (Chone, 2002). The concurrent collection of data using the convergent parallel mixed method research strategy enabled the research to come up with a more comprehensive understanding of the research problem namely external environmental complexities affecting leadership effectiveness in the uMzimkhulu Local Municipality.

Research site

This research was conducted within the jurisdiction of the uMzimkhulu local Municipality. The uMzimkhulu Local Municipality is a Category B municipality situated within the Harry Gwala District in KwaZulu-Natal, South Africa.

Population and sampling

The target population of this study was mainly the managerial and non-managerial employees of uMzimkhulu Municipality which has a total population of 163 operational employees and 19 managerial employees (*uMzimkhulu Local Municipality Human Resources Records*).

This study applied purposive sampling for qualitative research and simple random sampling for quantitative research as the main sampling strategies.

The sample size for this research involved 78 employees drawn from a total complement of 163 employees. The sample size of 70 respondents was determined after using the Slovin formula at a 95% level of confidence with a margin error of 5%. The researcher used Slovin's formula to calculate the sample size n from the population $N = 163$. In the case where the researcher knows only the population, Slovin's formula can be applied (McCall, 1970). According to Slovin's formula:

$$n = N / (1 + Ne^2)^*$$

where:

n = sample size of the population,

N = Total population

e = margin of error.

In this study, the sample size n at 95 % confidence level will be calculated as follows: $n = 163 / [(1 + 163 (0.05^2)] = 66.87$ which was then rounded up to become 67 to become the sample size for this research. For the qualitative study, the same sample size was 11 respondents.

This qualitative study sample consisted of five Senior Management, three Middle-Level Management and three Technicians and associate professionals employees.

Data Collection Methods

The study made use of three data collection methods: semi-structured interviews for the qualitative aspect of the study, survey questionnaires for the quantitative approach, and document review for the gathering of secondary data.

Quantitative Tests and Data Quality Control

Data quality control measures involve steps to be taken to ensure the validity and reliability of research data in quantitative research and measures to ensure the trustworthiness of research data in qualitative research (Bryman and Bell, 2003).

Validity and reliability

A pilot study was conducted to test the validity and reliability of the research instrument. The pilot study involved distributing a survey questionnaire to ten respondents working in a managerial capacity in one of the municipalities. It also involved giving the questionnaire to the research Supervisor for this study who is an expert both in the subject and in research matters.

Reliability was ensured by using the Cronbach Alpha measurement to determine levels of internal consistency. The Statistical Package for Social Sciences (SPSS version 24) was used to calculate the Cronbach Alpha coefficient. A Cronbach Alpha coefficient above 0.7 implied that the findings are reliable with the level of reliability increasing up to 1.

Trustworthiness and authenticity

Trustworthiness and authenticity of data are essential in research because they increase the trust that would-be users of the research findings. Cope (2014) points out that qualitative data control involves ensuring that the research findings are transferable, dependable, conformable, and credible. In this research, credibility was established through preliminary visits to uMzimkhulu Local Municipality and an in-depth review of existing literature. Triangulation with literature added further credibility (Cope, 2014). Transferability was ensured by following standard qualitative research data collection procedures, aligning with similar studies in comparable contexts (Shenton, 2004). Dependability was maintained by rigorously integrating data collection, analysis, and theory generation, with repeated references ensuring reliability (Shenton, 2004). Conformability, the alignment of research findings with the gathered information, was upheld through triangulation and transparent acknowledgement of the researcher's biases and assumptions (Denzin and Lincoln, 2011). These measures collectively contribute to the robustness and reliability of the research.

Data Analysis

Data from structured questionnaires were analysed using both descriptive and inferential statistics. The Statistical Package for Social Sciences (SPSS) version 24 was used to analyse quantitative data. Chi-square tests were done to assess for associations between the respondents' rating of complexities affecting leadership effectiveness and respondents' levels of education. Qualitative data analysis for this study was achieved through thematic analysis using NVIVO which is a process that entails splitting a broader data set, sorting and organising the data into some pattern according to a commonality in context and meaning.

Ethical Consideration

The study was approved by the UKZN Humanities and Social Sciences Research Ethics Committee (HSSREC) under reference number HSSREC/00001193/2020. Permission to do research in the municipal area was also sought from the relevant authorities at the KwaZulu-Natal Provincial government offices. The respondents' rights to informed consent, privacy, anonymity and confidentiality and protection from harm were strictly adhered to. These were communicated to the respondents in an informed consent letter.

RESULTS

The study's data analysis results are presented in this section starting with the respondents' socio-demographic data.

Description of respondents

Table 1 shows the respondents' socio-demographic data.

Table 1: Respondents' sociodemographic data

	Response	N	%
Gender	Males	58	52.3
	Female	53	47.7
	Total	111	100
Level of Education	No formal education	3	2.7
	Primary	2	1.8
	Secondary	15	13.5
	Post -Secondary	18	16.2
	Above first Degree	73	65.8
	Total	111	100
Departments	Budgets	5	4.5
	Revenue Collection	13	11.8
	Waste Management	21	18.8
	Maintenance Infra. and Equip.	23	20.9
	Other	48	43.6
	Total	110	100

In the study, 52.3 % of respondents were males compared to women who constituted a valid percentage of 47.7%.

In the sample, 2.7 % of respondents indicated that they had no formal education, 1.8% had primary level education, 13.5% possessed secondary level education, 16.2 % had post-secondary level education and 65.8% had post-graduate education. The sample was therefore dominated by persons with a first degree or higher. This might imply that most of the respondents might have had a better understanding of the diction and terms in the research instrument. Words like complex, adaptive leadership, turbulent internal and external environments, enabling leadership, and administrative leadership require higher levels of education. Thus, one can be persuaded to interpret the findings of the research as emanating from people who possess secondary and post-graduate degree qualifications.

The results show that 4.5% of respondents came from the budgeting department, 11.8% from the revenue collection department 18.8% from the waste management department, 20.9% from the maintenance of infrastructure and equipment departments, and 43.6% came from "Other" departments. This finding illustrates that the views of respondents are heavily skewed in favour of management, technical and professional employees who came from "other" departments aside from budgeting, waste management, revenue collection, and maintenance of infrastructure and equipment departments.

Perceptions of factors that affect leadership effectiveness in the MLM

Figure 1 summarises the respondents' ratings of the extent to which fast-paced technological changes, constant changes in residents' tastes and preferences, continuous changes in service delivery innovations, changes in the economic cycles of the country, changes in the political composition of the council and community pressures affected leadership effectiveness in the MLM.

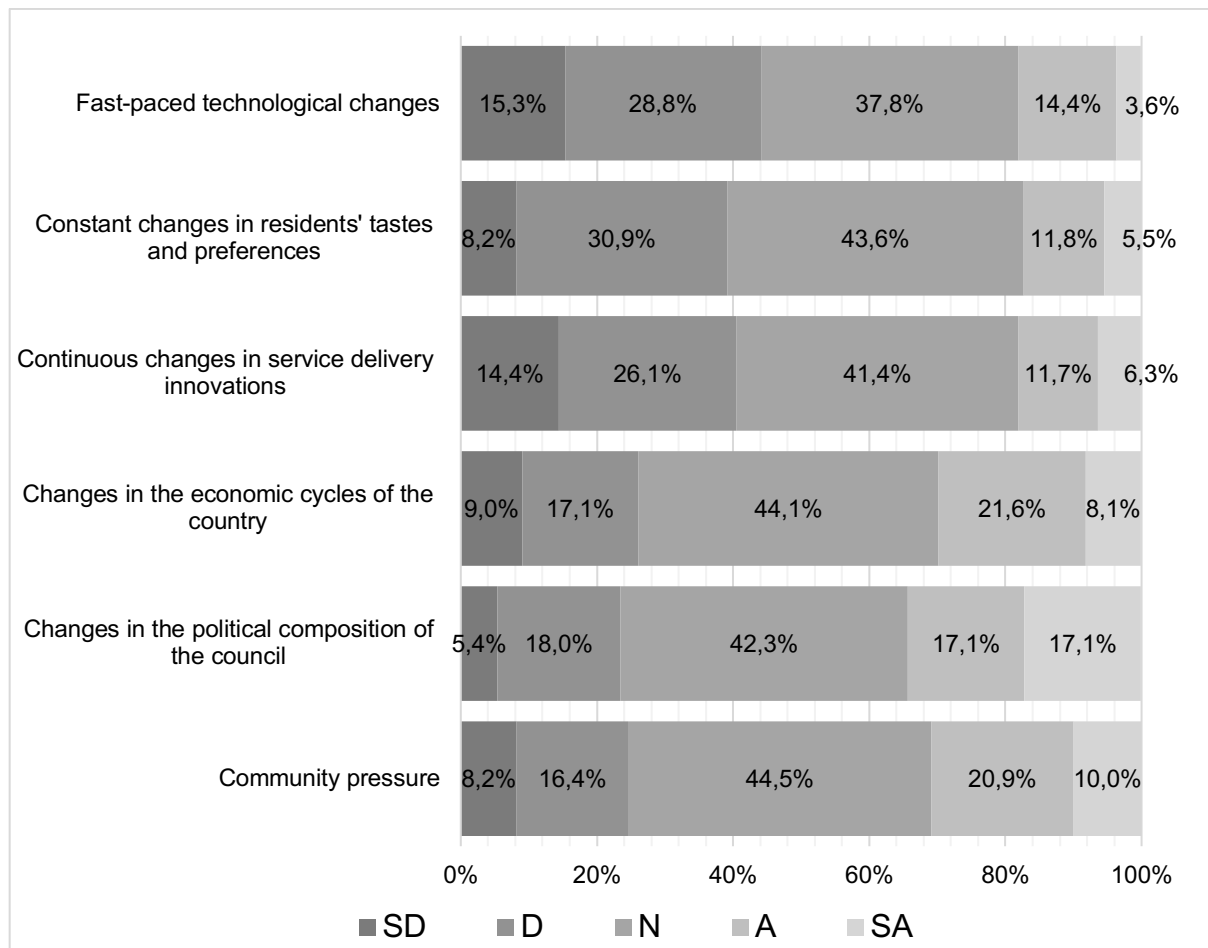


Figure 1: To what extent do you agree/disagree that the following factors affect leadership effectiveness in the MLM?

Fast-paced technological changes

Figure 1 above shows that a majority of respondents 37.8% somewhat agreed with the statement that fast-paced technological changes are affecting leadership effectiveness while 14.4% agreed and 3.6% strongly agreed. Furthermore, 28.8% of the respondents disagreed and 15.4% strongly disagreed respectively. A visual analysis of the graph demonstrates that more respondents somewhat agreed than disagreed. Therefore, this might suggest that fast-paced technological changes are not significantly affecting leadership effectiveness at the municipality and are not likely to pose a challenge that is adding to external environmental complexity.

Constant changes in residents' tastes and preference

Respondents were asked to indicate their view on whether the municipality is faced with constant changes in residents' tastes and preferences as a challenge to the leadership. Figure 1 shows that a majority of the respondents (43.6%) somewhat agreed with the statement that constant changes in residents' tastes and preferences affect leadership effectiveness while 11.8% agreed and 5.5% strongly agreed. Furthermore, 30.9% of the respondents disagreed and 8.2% strongly disagreed respectively. A visual analysis of the graph demonstrates that more respondents somewhat agreed than disagreed. Therefore, this might suggest that constant changes in residents' tastes and preferences affect leadership effectiveness.

These sentiments were also observed in the interviews, as shown in the extracts below:

"....of late we have been facing pressure from residents demanding that we phase out standpipes and replace them with piped water inside their homes, they do not understand the cost implications of this demand and such demands are also at the behest of some politicians seeking to curry favour with residents, yet this puts enormous pressure on the municipal leadership to manage unrealistic community expectations" IDGR3

"....in certain sections of the municipality, there are people who are demanding that they no longer want to receive from water bowsers but now require piped water into their resident homes" IDGR3

The above interview intercepts demonstrate that some residents are coming up with unrealistic demands that the municipality leadership cannot reasonably meet in line with community expectations. Furthermore, respondents pointed out that residents' new demands for piped water inside houses are signalling a change in

new tastes and preferences for how they expect to receive their water. Depending on the category of people, the interview excerpts illustrate that those respondents receiving water from bowser now require standpipes while those who were already receiving from standpipes now require piped water inside their homes. This finding provides insights into the existence of residents' tastes and preferences changing and posing challenges to the municipal leadership".

Continuous changes in service delivery innovations

A question was posed to respondents to indicate their views on whether continuous changes in service delivery innovations affect leadership effectiveness at the municipality. Figure 1 above shows that a majority of the respondents 41.4% somewhat agreed with the statement that continuous changes in service delivery innovations affect leadership effectiveness while 11.7% of the respondents agreed and 6.4% strongly agreed. However, 26.1% of the respondents disagreed and 14.4% strongly disagreed respectively. Therefore, this might suggest that continuous changes in service delivery innovations affect leadership effectiveness maybe not significantly as it is not likely to pose a challenge that is adding to external environmental complexity.

Changes in the economic cycles of the country

A question was posed to respondents to indicate their views on whether changes in the economic cycles of the country significantly affect leadership effectiveness at UMLM. Figure 1 above shows that the majority of the respondents 44.1% somewhat agreed that changes in the economic cycles of the country affect leadership effectiveness while 21.6% agreed and 8.0% strongly agreed. However, 17.1% of the respondents disagreed and 9.2% strongly disagreed respectively. This might suggest that although changes in the economic cycles of the country affect leadership, however, it appear not significant and are not likely to be a formidable external environmental complexity. These sentiments were also observed in the interviews:

".... The economy of this country has not been kind to the municipalities especially ours, since I took over the economy has been getting worse and worse and this affects municipal budgets and ability to deliver the right amount of service at the right quality, money accruing to our municipality has been getting cut as revenue inflows dwindled due to poor economic performance and high unemployment" IDGR1

"....we have witnessed economic growth going down and COVID-19 made the situation, worse, many people lost their jobs and the indigent population in our municipality grew, many businesses closed and so are revenue base was eroded so we found ourselves not being able to complete projects and offer good services to the people, we ended up cutting spending which also compelled us to stop servicing other areas and this is creating problems for us with residents"

The above interview excerpts demonstrate that municipal leaders are affected by economic downturns as alluded to in the interview excerpts. Periods of poor economic performance lead to lower revenue inflows and budgetary cuts which results in the failure to complete projects and provide the right quantity and quality of services. This causes residents dissatisfaction and hence puts the leadership in a bad light. Next is a discussion of the results of external environmental complexity arising from changes in the political composition of the council.

Changes in the political composition of the council

Respondents were asked to indicate their views on whether changes in the political composition of the council affect leadership effectiveness at the municipality. Figure 1 above shows that a majority of the respondents (40.3%) somewhat agreed that changes in the political composition of the council affect leadership effectiveness while 18.1% agreed and 18.1% strongly agreed. However, 18.1% of the respondents strongly disagreed, while 5.3% strongly disagreed. A visual analysis of the graph demonstrates that greater divergence of views is in almost equal measure. Therefore, this might suggest that changes in the political composition of the council are not significantly affecting leadership effectiveness at the municipality and are not likely to be a formidable external environmental complexity. These sentiments were also observed in the interviews, as shown:

"if you are a manager in a municipality you will realise that you work with a council that is infested with people of different political persuasions such that for you to reach a decision you will have to navigate lots of political minefields and the situation gets worse when these political interest group gets changed either through an election or through recalls or other means, so you will experience getting used to many of them and getting to work with new political faces with different ethics and interests and in my view this is quite a job to do..." FGDGR 2

The above interview excerpt demonstrates that leaders in charge of municipalities find it difficult to work with a council composed of people with different political interests. The respondent further insinuated that the leadership finds it difficult to work with different political faces from divergent political faces who are frequently

changed from time to time on account of elections, recalls and other reasons. The leaders are insinuating that it is difficult to adapt and work with people from different political parties with divergent interests.

Community pressure

Figure 1 shows that the majority of the respondents 44.2% somewhat agreed that community pressure affects leadership effectiveness while 20.2% agreed and 9.6% strongly agreed. However, 17.1% of the respondents disagreed while 8.9% strongly disagreed. Clearly, the data shows that there is a greater divergence of views regarding whether community pressure affects leadership effectiveness. A visual analysis of the graph demonstrates that greater divergence of views in almost equal measures. Therefore, this might suggest that community pressure is not significantly affecting leadership effectiveness at the municipality and is not likely to be a formidable external environmental complexity. Some of these sentiments from these results were captured in the following interview excerpts:

"... quite a number of people in our municipality are very active in terms of participating in municipal affairs and so they always mobilise other [people to demonstrate against council on any matter and sometimes organisers of these demonstrations do not give dialogue a chance hence our suspicion that they are political activists bent on destabilising council..."IDGR3

"...communities have negative perceptions about the municipality that's why we always experience several service delivery protests about several issues such as demand for housing, electricity and water, but I don't blame them because they deserve these things and it also makes us as municipality to work harder for the people" IDGR4

Community pressure was therefore viewed from both a positive and negative perspective. Regardless, it affected how leaders worked.

Tests of association - educational qualifications versus respondent perceptions

The Chi-square tests of association were used to assess respondents' views on external environmental complexities affecting leadership effectiveness in the uMzimkhulu Municipality based on respondents' educational qualifications. Table 2 below summarises the results.

Table 2: Summary of Chi-square results

Variable	χ^2	df	p-value
Fast-paced technological changes	15.663	16	0.477
Constant changes in residents' tastes and preferences	29.43	16	0.021
Continuous changes in service delivery innovations	26.869	16	0.043
Changes in the economic cycles of the country	19.043	16	0.266
Changes in the political composition of the council	12.493	16	0.709
Community pressure	14.190	16	0.585

As shown above, statistically significant associations were found between two of the external factors and respondents' qualifications. These were Constant changes in residents' tastes and preferences and Continuous changes in service delivery innovations. These are further discussed.

Table 3: Crosstabulations for statistically significant Chi-square tests

Variable	Category	SD	D	N	A	SA	Total
Constant changes in residents' tastes and preferences	None	66,7%	0,0%	33,3%	0,0%	0,0%	100%
	Primary	0,0%	0,0%	50,0%	0,0%	50,0%	100%
	Secondary	0,0%	21,4%	64,4%	7,1%	7,1%	100%
	Post-secondary	11,1%	27,8%	38,9%	22,2%	0,0%	100%
	Above first degree	6,8%	35,6%	41,1%	11,0%	5,5%	100%
	Count	9	34	48	13	6	110
	Total	8,2%	30,9%	43,6%	11,8%	5,5%	100%
Continuous changes in service delivery innovations	None	0,0%	66,7%	33,3%	0,0%	0,0%	100%
	Primary	0,0%	0,0%	50,0%	0,0%	50,0%	100%
	Secondary	13,3%	6,7%	53,4%	13,3%	13,3%	100%
	Post-secondary	22,2%	22,2%	22,2%	33,4%	0,0%	100%

	Above first degree	13,7%	30,1%	43,8%	6,8%	5,6%	100%
	Count	16	29	46	13	7	111
	Total	14,4%	26,1%	41,4%	11,7%	6,3%	100%

Source: Authors own construction (2024)

Constant changes in residents' tastes and preferences

The Chi-square result indicates that the respondents' views were significantly associated with their educational qualifications, as shown by the Chi-square test results :($\chi^2= 29.430$, $df=16$, $p=0.021$). This suggests that the level of the educational qualification of the respondents influenced their responses. Hence, these responses cannot be attributed to chance.

The majority of the respondents 66.7 % without formal education strongly disagreed that constant changes in residents' tastes and preferences affect leadership effectiveness while 33.3% somewhat agreed. The results also show that 50% of the respondents with primary-level education somewhat agreed while another 50% strongly agreed with the statement. This shows some degree of polarity between respondents with primary-level education. A high proportion of respondents with secondary-level education 64.4% somewhat agreed, 7.1% agreed, and 7.1 % strongly agreed. However, 21.4% of the respondents disagreed with the statement. The results further illustrate that more respondents with secondary education somewhat agreed than explicitly disagreed and agreed with the statement that constant changes in residents' tastes and preferences affect leadership effectiveness.

Concerning respondents with post-secondary education, the results reveal that 38.9% of the respondents somewhat agreed, while 22.2% agreed constant changes in residents' tastes and preferences affect leadership effectiveness. While 27.8% disagreed, 11.1% also strongly disagreed with the statement. This result shows that there are varied perceptions among respondents with post-secondary education regarding whether constant changes in residents' tastes and preferences affect leadership effectiveness within the municipality as external environmental complexity.

Continuous changes in service delivery innovations

The participants' views were significantly associated with their educational qualifications, as shown by the Chi-square test results ($\chi^2= 26.869$, $df=16$, $p=0.043$). This Chi-square result showed that the responses were influenced by their level of education qualification.

Table 2 reveals that the majority of the respondents (66.7 %) with no formal education disagreed that continuous changes in service delivery innovations affect leadership effectiveness while 33.3% somewhat agreed. The results also show that 50% of the respondents with primary-level education somewhat agreed while a similar 50% strongly agreed to the statement. This also shows some degree of polarity between respondents with primary-level education.

The results displayed in Table 2 also show that a high proportion of respondents with secondary-level education (53.4%) somewhat agreed that continuous changes in service delivery innovations affect leadership effectiveness. 13.3% of the respondents agreed while a similar 13.3% also strongly agreed. On the other hand, 6.7% of the respondents while 13.3% of the respondents strongly with the statement. The results further illustrate that more respondents with secondary education somewhat agreed than explicitly agreed and disagreed that continuous changes in service delivery innovations affect leadership effectiveness.

As far as respondents with post-secondary education are concerned, the results reveal that 22.2% of the respondents somewhat agreed, and 33.4% agreed. While 22.2% of the respondents disagreed, a similar 22.2% of the respondents also strongly disagreed that continuous changes in service delivery innovations leadership effectiveness. This result shows that there are varied perceptions among respondents with post-secondary education regarding continuous changes in service delivery innovations affecting leadership effectiveness within the municipality as external environmental complexity. A different trend exists for the category of respondents with above degree qualification where the majority of the respondents 43.8% somewhat agreed, 6.8% agreed and 5.6% strongly agreed. Meanwhile, 30.1% of the respondents disagreed while 13.7% strongly disagreed with continuous changes in service delivery innovations. In general, the result revealed that a total of 20 (18.0%) of the respondents agreed that continuous changes in service delivery innovations affect leadership effectiveness at UMLM. On the other hand, a total of 45 (40.5%) respondents disagreed with the statement while 46 (41.4%) of the respondents somewhat agreed. This result shows a divergence of opinion between those who disagreed and those who somewhat agreed that continuous changes in service delivery innovations leadership effectiveness at UMLM.

DISCUSSION

From the analysis, the UMLM exhibits all the three main characteristics of a complex system discussed by Coveney (2013). It has many interacting units including in the form of departments and divisions. Secondly, it is dynamic, being mainly driven by electoral political changes and its existence within a changing economy and being a holder of changing socio-economic groups. Thirdly it is exposed to multiple interacting agents. These have been described as residents' associations, political units, and pressure groups among others. The UMLM is exposed to multiple causation factors that operate in a non-linear manner, a situation that Thompson et al. (2016) associated with complexity. The UMLM leadership ecosystem can therefore be classified as complex and dynamic and likewise as one that could benefit from complex adaptive leadership. The individual factors behind this complexity and dynamism are further discussed below.

Fast-paced technological changes

Though respondent views were not significantly associated with their educational qualifications, a larger proportion of respondents across the various educational categories somewhat agreed that fast-paced technological changes affect leadership effectiveness in the municipality. Complexity arises when an organisation does not have the requisite financial and human resources or capacity to adapt to fast-paced technological advancements against mounting pressure from stakeholders to become efficient through the use of new technologies for delivering services. The emergence of fast-paced technological changes poses a challenge to leadership effectiveness because it makes the external environment complex as it makes it difficult for the leadership to keep pace and adapt. These findings agree with scholars such as Hueske et al. (2015) and Gilpin (2018) who state that the phenomena of rapid technological changes have unfortunately been seen as a threat by public sector leaders hence the low-level rate of responsiveness towards adopting new technological ways of doing business and providing services to the people.

Constant changes in residents' tastes and preference

The findings show that the majority of respondents somewhat agreed that constant changes in residents' tastes and preferences affect leadership effectiveness. Municipal leaders need to ensure that they deliver services to their residents which satisfy their tastes and preferences. Complexity arises for the leadership of municipalities if they find themselves entangled in a situation whereby residents' tastes and preferences are changing. Pressure from residents sometimes is unbearable given that some of them come up with unrealistic demands which cannot all be fulfilled at once because of a lack of adequate funds and staff. The finding is consistent with Lieske et al. (2014) who also state that the constantly changing demographic structural changes and residents' tastes and preference exerts enormous pressure on the leadership to adjust quickly to the new demands emanating from the socio-demographic environment and for the municipality's new socio-demographic changes requires new approaches to governance, communication and community liaison strategies.

Continuous changes in service delivery innovations

The study results revealed that more respondents somewhat agreed that continuous changes in service delivery innovations are an external environmental complexity affecting leadership effectiveness at UMLM. Leaders faced with an external environment characterised by continuous changes in service delivery innovations experience enormous pressure to keep pace with the new innovative demands. In some cases, the organisations they lead won't have enough financial and human resources to be able to effect service delivery innovations and this poses external environmental complexities. Thus, the leadership at UMLM have an enormous job to do in terms of formulating strategies to effectively deal with the complexities associated with external environmental complexities in the form of continuous changes in service delivery innovations.

Changes in the economic cycles of the country affect leadership effectiveness

While positive changes in the economic cycle of the country can present opportunities for the leadership of municipalities, the same cannot be said of downturns in the economic cycles. An interesting trend in the study results showed that a larger proportion of respondents across the various educational categories somewhat agreed that changes in the economic cycles of the country affect leadership effectiveness. This finding is consistent with views expressed by Han et al. (2001) who state that the influence of economic factors on organisations is high and formidable. Also, the finding agrees with Han et al. (2001) who give examples of economic factors in the external environment that give rise to environmental complexities as continuous changes in consumer spending patterns, periodic variations in the income levels of the population, periodic variations in household purchasing

power and subsequent variations in aggregate demand and supply. Thus, changes in the economic cycles affect leadership effectiveness and as such must be taken into consideration as an external complexity.

Changes in the political composition of the council

A larger proportion of respondents somewhat agreed that changes in the political composition of the council affect leadership effectiveness. This finding has similarities with assertions from May et al. (2016) who asserted that the interaction of different people with different agendas and expectations tensions and competing interests poses one of the most daunting complex phenomena affecting leadership effectiveness in organisations. Also, the finding of the current study is in line with Cherubim's(2021) submission that complexity in the political environment arises from the conflicting interests of various pressure groups, interest groups political parties differing ideologies, opinions, manoeuvres from civil society organisations, resident associations all requiring the attention of the leadership in the local government space.

Community pressure

Despite the divergence, the results across the various educational categories were skewed towards the majority somewhat agreeing that community pressure affects leadership effectiveness at the municipality. Thus, community pressure can be regarded as an external environmental complexity affecting leadership effectiveness at UMLM Sometimes pressure from the communities can lead to both positive and negative outcomes in as far as enhancing leadership effectiveness. The external environmental complexity facing the leadership at UMLM arose from the fact that quite a number of people under UMLM are very active in terms of participating in municipal affairs and so they always mobilise other people to demonstrate against the council on any matter and sometimes organisers of these demonstrations do not give dialogue a chance hence the suspicion that they are political activists bent on destabilising council. Some communities under UMLM have negative perceptions about the municipality that's why the municipality leaders always experience several service delivery protests pertaining to several issues such as demand for housing, electricity and water. This finding is in line with the line of argument put forward by May et al. (2016) that the external environment of public sector institutions is often complex given that there are several stakeholders especially community members entangled in some form of rivalry to gain influence in the manner in which are run. Similarly, Hueske et al. (2015) assert that more often the external environment of public sector institutions is made up of an entanglement (mixture) of stakeholders with multi-faceted interests such as communities, politicians, civil society organisations and bureaucrats regarding how things should be run.

CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS

The study revealed that the municipality is facing several external complexities that affect the effectiveness of its leaders. These complexities include constant changes in residents' tastes and preferences, which challenge the leaders to adapt and respond to the diverse and dynamic needs and expectations of the public; changes in the economic cycles of the country, which affect the leaders' ability to manage the resources, budget, and expenditure of the municipality; changes in the political composition of the council, which influence the leaders' power, legitimacy, and stability, as well as their relationship with the other spheres of government and the stakeholders and community pressure, which demands the leaders to be accountable, transparent, and responsive to the public issues and concerns, as well as to balance the interests and conflicts among different groups and sectors.

To conclude, the external environment of the UMLM is complex, intricate and dynamic enough to adversely affect leadership effectiveness. The municipality's leaders' ability to influence goals and KPA achievement is strongly determined by how they manage this environment. This implies the capacitation of the municipality on two fronts. On the strategic front, the municipality needed to enhance contingency strategies that directly deal with the external environment challenges that affect service delivery. On the leadership development front, it needed to equip its leaders with skills to manage external environment complexities, including through the guidance of the complex adaptive leadership theory.

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