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Editorial

D Sanders-Nel

Chief Editor

In **'Covid-19 and the Need to Contextualise Problems and Policies: A Comparative Perspective'**, M de Vries, H J Kroukamp and L C van Jaarsveldt investigate the role of public policy analysis and evaluation based on local and international responses to the Covid-19 pandemic. The article uses South Africa as a point of departure and compares specific contextual features of the Covid-19 pandemic with those of other countries. The authors confirm that, based on the worldwide responses to the Covid-19 pandemic, contextual features have varying effects on uniform policies. According to the authors, "This is seen in the varying effectiveness thereof in reducing the spread of the virus and the fatality rate – the anticipated consequences, and in the varying economic, social, and political effects of the policies – the unanticipated consequences". As the research in this article is explorative, the authors call for more in-depth research on the topic.

D H Delpont, in the article, **'Understanding and Interpreting Measures of Central Location, Dispersion and Confidence Intervals in Pandemics: The Case of the Novel Coronavirus (Covid-19)'**, argues that sound public management and administration rests on public managers' ability to interpret data and analysis to support decisions. This article reviews typical measures to report a new epidemic outbreak, such as Covid-19. According to the author, "The statistics used in the recent coronavirus involve clinical characteristics of the infected population, and are reported in the form of means, modes, medians, interquartile ranges and confidence intervals". In this regard, the author argues that straightforward explanations of these statistical methods could promote understanding among public administrators and managers about how epidemiological data is being analysed. In conclusion, Delpont highlights that, "This increased understanding could assist managers in responding to the pandemic, its characteristics and using descriptive statistics appropriately and thus enhance their ability to formulate effective strategies".

In **'Peace Education: A Viable Tool for Peacebuilding in Africa'**, E B Niyitunga explores the viability of peace education in peacebuilding, and investigates its role in addressing conflict and facilitating a culture of real peace on the continent. The article adopted a qualitative research design and followed an explorative approach to reach key conclusions. The research findings suggest that colonial-based peace education continues to breed a Eurocentric culture and perspectives. As such, it has failed to facilitate sustainable peace in Africa. The article also found that individuals who are deprived of their culture and heritage have no sense of value, which could

jeopardise peace. However, when applied correctly, the author argues that peace education could serve as a viable tool to support peacebuilding in conflict-ridden Africa. The author states that, "There is a need to decolonise the Eurocentric perspectives, values, cultures and traditions that control the curriculum in universities in Africa". To overcome these challenges, the article recommends a focus on formulating new institutional frameworks and curriculum reforms.

In **'The Nexus between Public Service Motivation and the Use of Co-production as an Alternative Service Delivery Arrangement by South African Municipalities'**, C van Staden and M Biljohn examine the role of alternative service delivery arrangements (ASDAs) as an effective service delivery strategy amid resource and capacity challenges. However, the authors add that the success of these strategies depend partly on the motives in which public service motivation is grounded. By following a qualitative research design, this article explores the motives (rational, norm-based, and affective) of Public Service Motivation (PSMT) as a set of context variables that provide conditions under which the municipal administration and politicians might adopt co-production as an ASDA. The research findings suggest that all three motives on which the PSMT is premised could influence the municipal administration's and politicians' decision to adopt co-production. The authors state that, "...although co-production is a viable governance strategy and ASDA in the 21st century, its success depends in part on the public service motivation of the municipal administration and politicians who are key decision-makers regarding service delivery processes".

In **'New Public Management and Effective Social Service Delivery: The Case of Mutare City Council, Zimbabwe'**, P N Fungurai and M Okbandrias explore the implications of New Public Management (NPM) on social service delivery within a complex socio-economic and political context. Using the Mutare City Council in Zimbabwe as a case analysis, the article investigates whether public administration reform under NPM has helped solve the social service delivery crisis in Zimbabwe. The authors argue that, certain NPM strategies implemented by the Mutare City Council, such as the creation of ward development committees, helped bring the council closer to the people. Nonetheless, the research concludes that the adopted NPM reforms failed to improve social service delivery in Mutare. In conclusion, the article advances the argument that "fractional, paltry, unconscious, and unsystematic application of the NPM by the Mutare City Council specifically, and Zimbabwe, rendered the NPM reforms ineffective".

In **'Assessing Resource Allocation for Efficient and Effective Community Policing in the Daveyton Township, South Africa'**, S Tsoabisi examines whether the four key resources highlighted in Chapter 7 of the South African Police Services Act 68 of 1995, namely the period of service in the Community Police Forum (CPF), employment status, orientation and training, and transportation means of the members of the CPF were addressed in the said township. It also investigates whether

Section 19(1), which stipulates that CPFs established at police stations should be representative of the community, was adhered to. Research findings suggest the lack of, or inadequacies in, the allocation of resources to CPFs in the Daveyton township area. Based on the findings, the author suggests that the South African Police Service should put more measures in place to assist CPFs in executing their duties. “The allocation of adequate resources should serve as the central goal between communities and the police service as the first core component of the existence of effective, efficient and cost-effective community policing,” concludes the author.

In **‘The Fourth Industrial Revolution and its Implications for World Order’**, M A Ramakgolo and D C Ukwandu argue that unparalleled technological developments, such as the Fourth Industrial Revolution (4IR), present significant opportunities and challenges. As such, the public sector, scholars, the private sector, and businesses are all seeking ways to navigate the profound transformations brought about by these interruptive technologies. According to the authors, “The 4IR impacts the economy at a regional, national, and global level, with many positive consequences, but also with the danger of promoting inequality and development gaps between groups of nations, as well as within nations”. As businesses lead both societal interruptions and innovation, the authors highlight their crucial role in ensuring that all stakeholders’ needs are met. Furthermore, to help circumvent these challenges, the authors call for global cooperation and shared understanding of how technology is reshaping our economic, societal, cultural, and individual lives.

D M Mokgethi and G van der Waldt, in their article **‘The Application of Project Management Methodology for Municipal Infrastructure Grant Projects: The Case of Ramotshere Moiloa Local Municipality’** underscore the importance of implementing established project management methodologies for the successful operationalisation of the Municipal Infrastructure Grant (MIG) programme. This article reports on the findings of an empirical study conducted at the Ramotshere Moiloa Local Municipality regarding the project management unit’s application of project management methodologies concerning infrastructure development projects. The empirical findings suggest specific challenges, such as inadequate financial controls leading to disclaimers or qualified audits; lack of monitoring mechanisms for implementing MIG projects; lack of strong and effective project governance structures; and appointed officials who fail to meet the minimum competency requirements and project skills for their positions. Based on these challenges, the article makes recommendations regarding municipality-specific project management methodologies to help address infrastructure backlogs.

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Covid-19 and the Need to Contextualise Problems and Policies

A Comparative Perspective

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ABSTRACT

Although the Covid-19 pandemic that spread over the world in 2020 is a tragedy in terms of casualties, it is also exemplary. Exemplary, as an illustration that identical policies in different contexts have varying effects and that contextualisation is a necessity when analysing the effectiveness of public policies. The one-size-fits-all response from governments all over the world enables the investigation into the anticipated and unanticipated consequences of these policies within varying contexts. This article takes South Africa as a point of departure and compares the contextual features important for the Covid-19 pandemic seen in this country with those visible in other countries. The conclusion is that the worldwide responses to the Covid-19 pandemic are illustrative for the importance of contextual features on the varying effects of uniform policies. This is seen in the varying effectiveness thereof in reducing the spread of the virus and the fatality rate – the anticipated consequences, and in the varying economic, social, and political effects of the policies – the unanticipated consequences.

INTRODUCTION

The year 2020 may be seen as the year in which policymaking all over the world was shifted to virologists. During the Covid-19 pandemic, most governments went to these medical experts for advice, resulting in a one-size-fits-all policy for every country. One problem in the recommendations that came about was that they were a-contextual. The general view is that, as the nature of the virus is identical in the United States of America (USA), Europe, Brazil, Russia, India, China, South Africa and the rest of the world, thus the policies to contain the spread thereof must be identical as well, and this should result in identical outcomes. If this results in varying outcomes, for instance, if the fatality rate is less in India or Russia compared to the fatality rate in European countries, it must be because of poor statistics in those countries, the lack of testing, or unreliable measures.

In the social sciences scholars have known for a long time that analyses of public policies on behalf of policymakers need to be contextualised as the effects of such problems and of government actions vary depending on the structural and cultural specificities involved (Haque 1996, Bagchi 1996, Lewis 2015). Modern (realistic) evaluation research points out that the intended effects and the degree of goal achievement – anticipated effects – of policies vary under different contextual conditions (Pawson and Tilly 1997). In the classic view, the effects and side effects are perceived to be due to the contents of policies and are seen as a natural by-product of the goals set and the use of financial, communicative, judicial, and/or institutional-organisational instruments respectively (De Vries 2016). The modern view is, however, that the effectiveness of policies is the result of the policy in interaction with contextual features.

This introduction calls for a re-assessment of theories on cause and effect, policies, and their intended effects and unanticipated consequences. The research presented below is based on an analysis of the policies seen all over the world to contain the spread of and the mortality caused by Covid-19 and argues that, first of all, the effectiveness of policies and their unintended consequences need to be contextualised.

Covid-19 has had a big impact on the world since the start of 2020. By 27 October 2020, over 43 million people had been infected and – at a conservative estimation – nearly a million have died (WHO 2020a). The policies implemented all over the world to combat the spread of the virus were similar as most countries followed the recommendations of the World Health Organization (WHO).

This makes the case of Covid-19 policies unique. Citizens witnessed a one-size-fits-all public policy that countries all over the world implemented at approximately the same time. It enables an investigation of the varying anticipated and unanticipated consequences of the policies enacted to combat the virus in different contexts and different situations on the ground. Based on the above

background, the research is guided by the following question: What is theoretically known about the need to contextualise analyses of effects and side effects of public policies, and does the analysis of the anticipated and unanticipated effects of Covid-19 and its policy response point to the need to contextualise such analyses?

The next section presents a theoretical overview focusing on the theory regarding anticipated and unanticipated consequences and the need to contextualise such effects. Subsequently, this article applies this theory to the analysis of the intended and unintended effects of the worldwide policies meant to contain the pandemic. Lastly, a discussion and the outcomes will be provided with the conclusion.

THEORETICAL OVERVIEW

When the first cases of the coronavirus arose at a wet market in Wuhan, China, few people anticipated the grave health effects it would cause all over the world in a short period of time (WHO 2020b). A simple analysis of the main cause suggested that wet markets such as those in Wuhan are dangerous, as meat is sold alongside live animals. This facilitates zoonotic diseases, meaning viruses are transmitted from animals to humans. For this reason, Wuhan authorities banned the trade of live animals at wet markets on 22 January 2020. The policy followed the basic idea that such a public policy has desirable effects and the absence thereof had undesirable consequences. The presence or absence of public policy is the cause, and the improvement or deterioration respectively in the problematic situation is the effect thereof. This is the basic idea behind all public policies.

Nonetheless, the prohibition of wet markets in Wuhan could not prevent the spread of the coronavirus all over the world. By October 2020, more than 43 million people had been infected and over a million people had died because of what then became known as Covid-19. That is according to official figures, which are probably inaccurate as the suspicion is that many governments tried to produce favourable statistics as far as possible. This is indicated, for instance, by the difference between the number of deaths officially due to the virus and the number of excess deaths – the number of people who died in a month compared to the average of people who died in that same month in previous years. In the countries that calculated such figures, the surplus deaths were sometimes 2.5 times higher than the official figures on Covid-19 fatalities suggested.

The spread of Covid-19 was primarily conceived to be a public health issue. This put the virologists within the WHO as well as national virologists at the centre of delivering expertise and advice to governments, suggesting making developments in all other policy areas secondary to the common approach to limit the

number of deaths as a result of becoming infected. This centrality of health care specialists also resulted in very similar policies being opted for all over the world.

For the public, the WHO recommended policies and most governments used the approach of social and physical distancing, personal and respiratory hygiene, self-isolation, and staying informed (WHO 2020c). For governments, the main policies included the following: lockdowns – meaning that people were confined to home; closing all non-essential businesses – meaning that people had to work from home or became unemployed; closing all educational sectors – from basic schooling to universities; prohibiting large gatherings – meaning that people could not meet in large groups or attend mass events; regulating the mandatory use of face masks; and later on the tracking and tracing of contacts of infected persons. The specifics varied between countries as to what type of work is considered to be essential and non-essential, what distance is prescribed, what hygiene is needed, what is the maximum number of people allowed in a gathering, and under which circumstances face masks are mandatory. However, the nature of the policies was largely identical for many countries. Again, the assumption was that these policies – irrespective of context – would produce the desired effect of containing the spread of the disease. It was assumed to be self-evident that such policies were like medical treatments in which “it would be an absurdity to imagine that the social context transforms the treatment” (Pawson and Tilly 1997:59).

However, in social science, it is widely acknowledged that this is precisely what happens in social programmes. In a medical perception, the underlying idea is that if the problem is the same everywhere, that is, the spread of Covid-19, the treatment should be the same everywhere, hence the one-size-fits-all solutions. This line of thinking ignores the growing knowledge from the social sciences that the effectiveness of policies is not so much due to the goals and instruments used in the policies, but rather due to the fit between the nature of the policy and the context in which it is implemented (Faletti and Lynch 2009). Faletti and Lynch argue “unless causal mechanisms are appropriately contextualised, we run the risk of making faulty causal inferences” (Faletti and Lynch 2009:1144) and that “causation resides in the interaction between the mechanism and the context within which it operates”. Pawson (2002) warned policymakers about the risk of mechanically transferring successful policy programmes to contexts in which the underlying mechanism may not lead to the same outcome (Faletti and Lynch 2009:1151). Pawson and Tilly (1997) put it bluntly when they say, “We know that there are no universal panaceas and no magic bullets in the world of social and public programmes. Everyone understands that what works in Dulwich might not go down so well in Darlington, still less in Detroit”. They argue about their own ‘realist’ approach that, “[I]n realist jargon the causal connections are established via ‘context, mechanism, and outcome configurations’... In the realist view, all

three elements must be considered in order to address the master question, 'what works?'"

The conclusion from the wealth of research on contextualisation is that the extent to which intended effects are achieved varies with a context defined as, "the relevant aspects of a setting (analytical, temporal, spatial, or institutional) in which a set of initial conditions leads (probabilistically) to an outcome of a defined scope and meaning via a specified causal mechanism or set of causal mechanisms" (Faletti and Lynch 2009:1152).

Not investigated before is that the unanticipated consequences of public policies might also vary when a one-size-fits-all policy is implemented in different contexts. The fact that policies as a kind of purposeful action may have unanticipated consequences was already addressed in 1936 by the famous American sociologist, Robert Merton, in one of his most cited papers, "The unanticipated consequences of purposive action". Merton (1936:895) defined consequences as "those elements in the resulting situation, which are exclusively the outcome of the action, i.e., those elements which would not have occurred had the action not taken place" (Merton 1936:895). The author defined actions as distinct from behaviour as they involve "motives and consequently a choice between various alternatives" (Merton 1936:895). This includes public policies. Another element of the equation, that consequences are unanticipated, refers to those consequences of purposive action that are unforeseen. These can be either functional, dysfunctional, or irrelevant (in Merton's terminology, non-functional) (Merton and Merton 1968). The authors differ from manifest functions, which are conscious and deliberate, while latent functions are unconscious and unintended. "Manifest functions are those objective consequences contributing to the adjustment or adaptation of the system which are intended and recognized by participants in the system. Latent functions, correlatively, being those which are neither intended nor recognized" (Merton 1957:105). Because it is hardly possible to look inside the heads of policymakers, it is nearly impossible to tell for sure whether or not the consequences were unanticipated. This research restricts such consequences to those effects that are not foreseen in either their direction or magnitude, and which are not taken into account when considering designing and/or implementing a policy.

Merton (1936:904) mentioned five causes for the occurrence of dysfunctional unanticipated consequences, namely limitations in the existing state of knowledge; error in the appraisal of the present and future situation, including wishful thinking, and the refusal or inability to consider certain elements of the problem; economic interests in which immediate interests often dominate the consequences in the long term; basic cultural values in which the felt necessity of an action out of basic values precludes the consideration of further consequences; and the appearance of so-called self-defeating predictions, where predicting a certain outcome itself tends to change the initial course of developments (Merton 1936:

904). In those days, it was not standard to address the issue that purposeful action can have varying unintended consequences, because of specifics in different contexts.

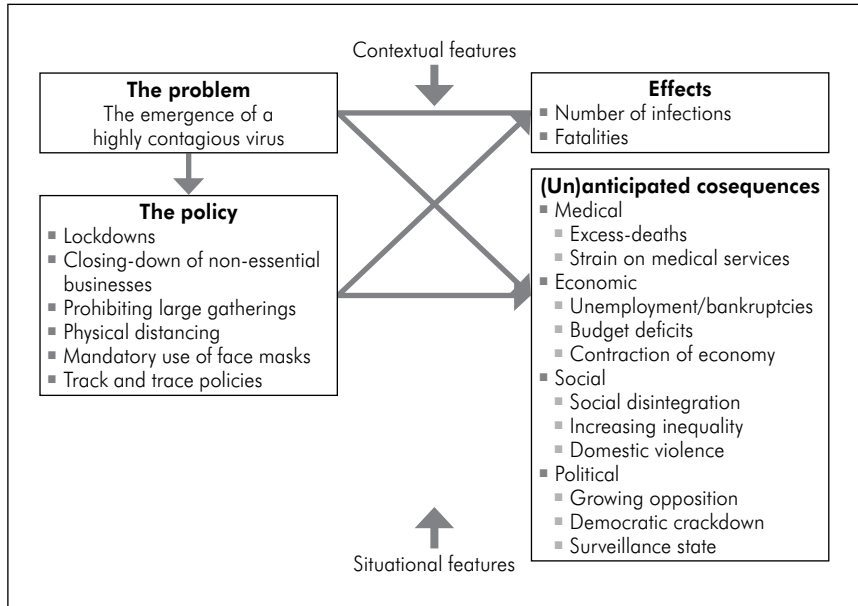
The theory resulted in much research, especially in the fields of sociology and public policy analysis. For scholars, the distinction between unanticipated consequences and intended effects is important because analysing unanticipated consequences implies that they search for the ‘real’ effects hidden behind ‘stated’ ones (Berger 1963:38). It urges scholars to advance a “debunking motif” (Ritzer 2000). Research based on the theory of unanticipated consequences of policies addressed, among others, developments in bureaucracy (Scott 2013), social innovation (Van Wijk, Zietsma, Dorado, De Bakker and Marti, 2019), anti-gambling policies (Preston and Roots 2004), and drug-control policies (Chouvy 2012). As Bernhard and Preston (2004:1397) noted, “Merton certainly served as a founding figure for this tradition as he sought to separate the stated motivations behind policy decisions from the unintended consequences that resulted”.

Concluding, this section argued that it is relevant to examine the unanticipated consequences of purposive action as suggested originally by Robert Merton. This section also argued that policymaking as a major type of purposive action provides an excellent case for such analysis. This is subsequently more relevant, as the theories and typologies concerning policymaking as developed in the last decennia enable researchers to limit, specify and understand the nature of the unanticipated effects of policymaking. The worldwide approach to combat Covid-19 presents a unique case in that it is a one-size-fits-all policy applied in many countries under very different circumstances. The next section argues that the case is exemplary in showing the difficulties in making general claims about intended effects as well as unanticipated consequences of the problem as such, and the need to look for the interaction between policies and varying contextual features in different countries.

COVID-19 POLICIES AND THE NEED TO CONTEXTUALISE (UN)ANTICIPATED CONSEQUENCES

This section will argue that the problem of Covid-19 is illustrative for the need to contextualise the varying impacts of the problem and policies in different countries. First, this section will address the need to contextualise the anticipated consequences of the problem and the policy responses. These anticipated consequences are found in the spread of the virus and its fatality rate. South Africa is used as an example to illustrate this point. This is a country of approximately 57 million people and witnessed its first infected patient on 1 March 2020. Two weeks later, President Ramaphosa declared a national state of disaster, prohibiting

Figure 1: A simplified conceptual model: Covid-19



Source: (Authors' own construction)

gatherings of more than 100 people. On 18 March, schools were closed, and on 23 March, the president announced a national 21-day lockdown to be effected on 26 March and to end on 16 April (South African Government 2020). Exempt from the lockdown were:

- health workers, pharmacy and laboratory personnel, and emergency personnel;
- security services (police officers, military personnel, and private security);
- people regarded as necessary to the basic functioning of the economy (supermarkets, transportation and logistical services, petrol stations, banks, essential financial and payment services);
- those working in industries that cannot be economically shut down (mines and steel mills).

Again, this article takes the development of the problem and the policy responses in South Africa as the point of departure, comparing developments in South Africa with developments in other countries. Translating the expose presented in the theory section, in a simplified model concerning the pandemic and the responses to it, resulted in Figure 1.

The figure shows the need to contextualise all the effects. It also suggests that there is not only an arrow from the policy to the anticipated and unanticipated

consequences, but also an arrow suggesting the problem itself has such effects. Concerning Covid-19, the effects on anticipated consequences are self-evident as the infectivity causes infections and fatalities, while policies are intended to reduce these consequences – the spread and fatalities. Next, the anticipated consequences of the problem and the policies, will be explained.

Contextualising the anticipated consequences of the problem and the policies

Despite all the policies in place, by October 2020, the number of people in South Africa that tested positive was 708 000 and the number of official deaths due to Covid-19 exceeded 18 000 (John Hopkins University of Medicine 2020). The provinces with large cities were especially struggling, with one-third of the infected victims being inhabitants of Gauteng (Johannesburg), 18% coming from KwaZulu-Natal (Durban), and 17% from the Western Cape (Cape Town). Cape Town witnessed the start of the surge in May, the Eastern Cape and Gauteng in June, with other provinces experiencing an increase in July and August. At the end of August 2020, South Africa ranked fourth in the world in the number of infected persons, after the USA and three other BRICS countries – Brazil, India and Russia.

These developments can well be explained by contextual features existing in South Africa that worsened the consequences of the virus in South Africa. Over 20% of its population lives in overcrowded informal settlements or traditional structures. Traditional structures are defined as “all dwellings constructed from clay, mud, reeds or other locally available materials such as huts” (Socio-Economic Rights Institute of South Africa (SERI) 2018:6). The United Nations-Habitat (UN-Habitat 2006) defines informal settlements as a group of individuals living under the same roof who lack one or more of the following:

- Durable housing of a permanent nature that protects against extreme climate conditions.
- Sufficient living space, which means no more than three people sharing the same room.
- Easy access to safe water in sufficient amounts at an affordable price.
- Access to adequate sanitation in the form of a private or public toilet shared by a reasonable number of people.
- Security of tenure that prevents forced evictions (UN-Habitat 2006).

Furthermore, international statistics indicate that approximately 10% of the South African population uses open defecation, and one-quarter of the population has no access to basic sanitation services, including soap and water. In such a context, the virus has ample opportunity to spread, no matter what measures are installed. It should be noted that these are not problems only faced by South Africa.

According to the UN-Stats (UN-Stats 2020) since 2018, “the absolute number of people living in slums or informal settlements grew to over 1 billion, with 80 percent attributed to three regions: Eastern and South-Eastern Asia (370 million), sub-Saharan Africa (238 million), and Central and Southern Asia (227 million)” (UN-Stats 2020).

In terms of deaths caused by the virus – the fatality rate – South Africa has suffered less as it ranked 65th in the world at the end of August 2020, with a fatality rate of 2.1%, whereas this is worldwide 3.4% and in some of the hardest hit European countries, for example, Belgium, Spain and Italy, it even surged to 13% (John Hopkins University of Medicine 2020). This can also be explained by contextual factors, in this case, demographics. South Africa has a relatively young population with only 5.2% of its population older than 65 years. Worldwide, the percentage over 65 is 7.2%; in the USA, it is over 15%; and in Europe, in many countries, it is well over 20% (WHO 2020d). As the virus is especially fatal for vulnerable, older people, this is an important contextual factor to take into account when judging the varying effects of the virus in different countries (John Hopkins University of Medicine 2020).

Many developing countries, including South Africa, have a low number of hospital beds. In South Africa, the number is two beds per 1 000 individuals, with one-quarter thereof being in private hospitals. To compare this, the number of hospital beds per 1 000 individuals in Germany is four times as high (8.3), in France it is 6.5, in Belgium 6.2, in Italy 3.4, and in Spain 3.0 (World Bank 2020).

If someone is infected and suffers from severe symptoms caused by the virus, finding a hospital bed is a necessity. The probability of being taken to a hospital is much lower in South Africa than in Europe or the USA. The same applies to intensive care units (ICUs), which in South Africa amount to 5.8 per 100 000 of the population, while this is 34.7 per 100 000 in the USA, 29.2 per 100 000 in Germany, 12.5 per 100 000 in Italy, 11.6 in France and 9.7 in Spain (McCarthy 2020). In terms of ICUs, South Africa, however, does better than many other countries such as China and India with 3.6 and 2.3 ICU beds per 100 000 population respectively (McCarthy 2020). Such contextual features can well explain the varying fatality rate experienced by many countries.

In light of the above, this article concludes that the emergence of Covid-19 presents an excellent illustration of the need to contextualise the effects of global problems within the specifics of the national context and the situational factors confronting a country like South Africa, compared to other countries.

This also affects the authors’ understanding of the effectiveness of public policies and has consequences for policymakers in that they need to consider whether it makes sense to implement international recommendations into a national policy irrespective of the situation at hand. If one-quarter of the population lives in informal settlements and lacks basic sanitation or space, one can wonder about

the efficacy of a national approach to oblige everybody to meet the requirements of social and physical distancing, personal and respiratory hygiene, self-isolation, and staying informed. For those people living in an informal settlement, meeting the requirements might simply be impossible. In such a case, area-based policies could be more effective than housing-related measures. One could even dispute the need for such policies in a country like South Africa altogether, as the expectation is that the achievement of intended effects would be low given the specifics of this country. Policies are most probably not able to contain the spread; policy-makers could beforehand have foreseen that the fatality rate would be small given the age demographics and the reduction thereof due to the policies even smaller. Such a consideration depends, of course, also on the (un)anticipated effects of such policies. That is the topic to be discussed in the next subsection.

Contextualising the unanticipated consequences of the problem and the policies

This second part of the analysis addresses the unanticipated consequences of Covid-19 and the policy responses. The authors will give examples of the unanticipated, medical, economic, social and political consequences, to argue the need for contextualisation thereof.

Medical consequences

One impact of the pandemic was that it was assumed that during the lockdown, people with serious diseases – not Covid-19 related – hesitated to see their general practitioner and that general practitioners would become reluctant to see patients not suffering from this disease. Overcrowded hospitals would be unavailable for regular checks, needed surgeries, and health care appointments with patients suffering from diseases other than the virus. All this was said to be the cause of excess deaths indirectly related to the pandemic and its policy response. At least, that was described for developed countries in Europe. Excess deaths are also seen in South Africa. Researchers at the South African Medical Research Council (SAMRC 2020), calculated that up to August 18, there had been 39 087 excess deaths in South Africa. Unique to South Africa is that these excess deaths have only been seen since the second half of June, that is, after the strictest form of lockdown had already ended and was eased to level 3. The South African government distinguishes five levels of lockdown. Level 5 is the most stringent and was in force in April. Important is that during this lockdown, and contrary to the increase in excess deaths in Europe during lockdowns, one sees negative figures for excess deaths in South Africa during this period. This is due, among others, to fewer road traffic accidents and fewer homicides. With the lowering of the lockdown level in South Africa, the restrictions were eased. At the time the excess

deaths started to rise. Although requirements regarding social distancing, wearing face masks and hygiene were still in place and compulsory, this allowed the resumption of rail, bus and taxi services; e-hailing services; private vehicles; the reopening of personal care services, restaurants for 'sit-down' meals; accredited and licenced accommodation, conferences and meetings for business purposes; cinemas, theatres, libraries, museums, archives and galleries, casinos; and non-contact sports (South African Government 2020).

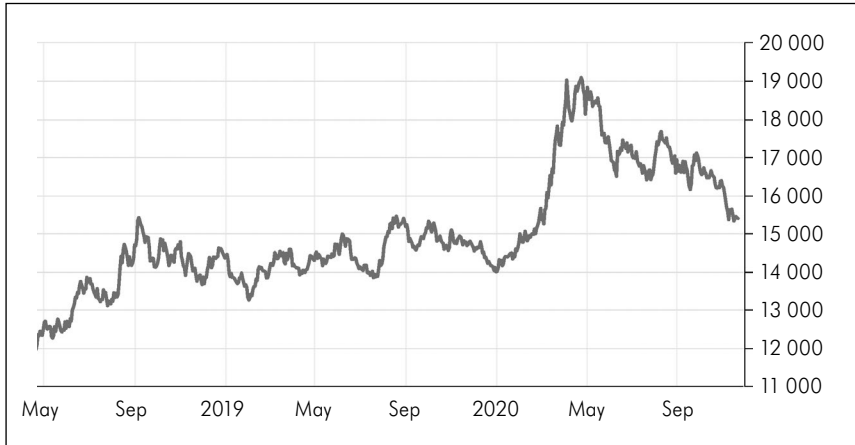
Important for the authors' argument on the need for contextualisation is that in many European countries the figures on excess deaths increased *during* the lockdown and went down again after the lockdowns ended, while in South Africa, the surge only became apparent two to three months *after* the lockdown. In South Africa, the excess deaths as an indicator for unanticipated medical consequences have to be interpreted differently from those in European countries. A situational factor, specific for developing countries, including South Africa, explaining this is found in three reports. The first one is from the International Labour Organisation (ILO), showing that the share of informal employment in South Africa is about 35% and an additional 9.2% working in households (ILO 2018). In practice, the formal or informal nature of a job held by an employee is determined based on operational criteria such as social security contributions by the employer (on behalf of the employee), and entitlement to paid sick leave and paid annual leave (ILO 2018:10). These workers are excluded from government stimulus packages and lose their income immediately during a stringent lockdown. Within the first month of the lockdown three million South Africans had lost their jobs, contributing to an increase in food insecurity and poverty. Widespread food shortages emerged in mid-July.

Another report showing the devastating consequences of the lockdown and closing all non-essential businesses is from researchers from the Stellenbosch and Johannesburg universities (Wills, Patel, Van der Berg and Mpeta 2020). Based on a survey, the authors conclude that 40% of all adults reported that their household lost its main source of income after lockdown started in South Africa on March 27 and that in the two months after, 21% went hungry. Wills *et al.* (2020) further argue that despite the government's relief package, large groups of households are experiencing tremendous hardship as a direct consequence of the lockdown and losing household income sources. It could well be that their inadequate financial foundation had severe consequences even when the lockdown was eased; in June they were still only permitted to leave their home to go to work if they had a permit, which people in the informal sector do not have.

Economic consequences

It is undisputed that Covid-19 and the resulting policies – especially the lockdown and closing of all non-essential businesses – also had economic consequences

Figure 2: Exchange rate changes ZAR to US\$ between May 2019 and August 2020



Source: (South African Reserve Bank 2020)

and this is seen in many countries. Nonetheless, the economic impact varies enormously between countries. In South Africa, the government is expected to have a shortfall in tax revenues in 2020/2021 of R300 billion on total tax revenues of R1 422 billion in 2019. In April 2020, it installed first a R500 billion stimulus package, expanding it one week later to R800 billion. Furthermore, South Africa is expected to see up to a 10% contraction of the GDP, whereas the prediction in 2019 was that GDP in 2020 would grow by 1.7% (National Treasury Republic of South Africa 2020).

That economic consequences vary over countries is best seen in exchange rates. When South Africa's President Ramaphosa announced a national 21-day lockdown on 23 March, to be effective on 26 March and to end on 16 April, in the same week the exchange rate of the South African rand devalued compared to the US\$ by 25% (see Figure 2).

Exchange rates are used to illustrate the impact of contextual factors as they vary per definition between countries. The decreasing value of one currency is the increase in the value of the other currency. Similar changes were seen in the other BRICS countries (Bank of England 2020). The Brazilian Real lost nearly half its value, the Russian Ruble lost 29%, the Chinese Yuan remained rather stable and devalued by only 2% and the Indian Rupee, devalued by 7%. This was, however, not the case for the Euro. This currency increased in value compared to the US\$. During the European lockdowns in March, the value of the Euro increased by 5.6% and between March and August 2020, over 9% (World Bank 2020). Although Covid-19 had a big impact on European countries, especially Spain and Italy, the effect on the

exchange rate compared to the international standard, the US\$ was in the opposite direction, unlike that seen for developing countries (World Bank 2020). If changes in exchange rates are indicative of the national economic impact of the virus and the policy response to it, it is clear that these consequences vary hugely between countries and even more so between developed and developing countries.

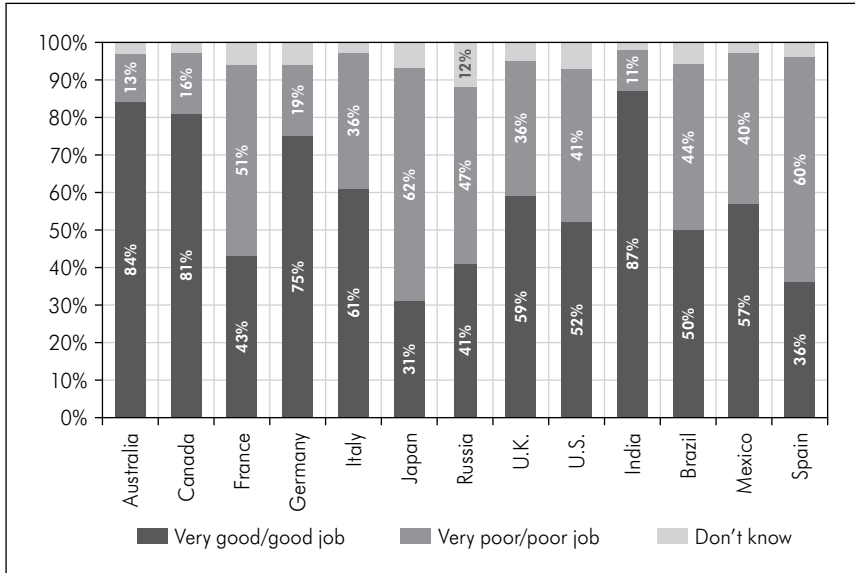
Social consequences

Not all consequences of the policy responses to Covid-19 have to be seen as dysfunctional. As indicated already the reduction in road traffic fatalities and the reduced number of homicides in South Africa was positive. A positive effect was unexpectedly also seen in domestic, intimate and personal violence. Many international organisations feared that this kind of violence would increase as a consequence of the lockdown. The surge in domestic violence was seen in many countries according to the ActionAid report (2020). The ActionAid report mentions an increase in the calls to a national anti-violence hotline in Italy of 59% comparing 2020 with 2019. The ActionAid report (2020) also mentions a tenfold increase in sexual and domestic violence in Bangladesh, a 700% increase in demand for counselling services in the Gaza Strip, and a 230% increase in Greece in the call volume to the government hotline within one month during the lockdown. All this makes the organisation conclude that domestic violence has surged worldwide. Services across the globe are being cut or closed leaving women trapped – or forced to return to dangerous households (ActionAid 2020). However, such an increase is not the case in South Africa (Institute for Security Studies (ISS) 2020a). The number of domestic violence cases reported to the South African police between March and April dropped by 69.4% (ISS 2020a). Although the validity of such figures for the actual frequency of domestic violence can be disputed, it can also be a consequence of the peculiarities in the South African policies to combat the virus, namely by installing an alcohol ban. The main reason for the alcohol ban was to reduce the burden on trauma centres, ICU units, and hospital admissions, as many traffic accidents are due to alcohol abuse and violence on the streets (stabbings) is often related to alcohol. The alcohol ban would also have a preventive effect in complying with the requirements of social distancing, hand sanitation, and the use of face masks. It was anticipated that it would reduce domestic violence as well, as scholarly studies had pointed out that such violence is in the vast majority of cases due to excessive consumption of alcohol (ISS 2020a). The example shows that anticipating otherwise unanticipated consequences of one's policies can reduce the magnitude thereof and produce positive effects.

Political consequences

The medical strains, the economic downturn, and the limitations imposed by the policy response to Covid-19 have caused protest demonstrations in many countries.

Figure 3: Is your government doing a good job on containing Covid-19?



Source: (IPSOS 2020)

(Note: Data labels under 10% are not shown)

First of all, in those countries that were already heavily politicised, and in which the leaders were reluctant to implement the WHO recommendations (a/o. Brazil, USA). South Africa did not escape from such protests either. The country saw an increase in protest demonstrations from March 2020 onwards. These demonstrations are most frequent in the most populous provinces being hardest hit by Covid-19. The Western Cape recorded one-third of all protest action (33%), followed by Gauteng (27%), KwaZulu-Natal (17%) and the Eastern Cape (15%) (ISS 2020b). The number of protest demonstrations went up from two a day in March to eight a day in July.

Nonetheless, a survey among South Africans (Independent Polling System of Society (IPSOS) 2020) showed that the vast majority are satisfied with their government’s response to the pandemic (83% vs 17% dissatisfied). Almost all support the idea of requiring those with Covid-19 to remain home until they are well (97%); requiring those who have contact with infected people to self-isolate (96%); and stopping handshake/kiss greetings (95%). They also support restricting public gatherings, and the public health social measures: closing restaurants/night-clubs (95%); churches and mosques; markets; closing a city off for two weeks (80%); closing transport between cities; and closing transport in and around cities (73%). Nine in 10 (93%) support school closures (IPSOS 2020). Apart from South Africa, the support given to different governments’ responses to the pandemic is shown in Figure 3.

Shown in Figure 3 is that such support varies hugely among countries. At the end of April 2020, only in India was a higher percentage found compared to South Africa, where they judged that their government had done a good job (87%). In France, Japan, Russia, and Italy – all hard-hit countries – a minority of respondents judge favourably regarding the response of their government to Covid-19.

It requires a lot of additional research to understand the peculiar finding that the support for the government policies is the highest in those two countries – South Africa and India – that were hit hardest by Covid-19 as indicated by the surge in the number of infections and the severity of unanticipated medical and economic consequences.

DISCUSSION AND CONCLUSIONS

This article calls for contextualisation in the analysis and evaluation of public policies and sees the policy responses to the Covid-19 pandemic as an exemplary case that shows why this is needed. We used South Africa as our point of departure. This was not only done because two out of the three authors are South Africans. South Africa is special in many aspects. The poverty among a large portion of the population, the number of people working in the informal sector and living in informal settlements, the number of unemployed, the country's politicisation, the corruption, the economic downturn already visible before the pandemic became a reality – these factors make it a prime example to argue that contextualising anticipated and unanticipated consequences of public policies is desperately needed. The research presented in this article is explorative. It points to the need to do such research in a much more advanced way. This is especially needed because although the authors conclude that conducting such research is necessary, it is also full of pitfalls.

There are at least three pitfalls in such analyses, as already mentioned by Merton (1936). The first concerns how to ascertain that a manifest or latent outcome is indeed the consequence of the purposive action and can be attributed to that action. Merton (1936) gave two reasons for such causal imputation, namely that the outcome would not have occurred had the action not been undertaken, and second, that the supposed relation between the action and the outcome 'makes sense'. Applying these remarks to the illustration of the consequences of Covid-19 and the policy responses in South Africa shows the existence of these pitfalls. Perhaps it makes sense to see the devaluation of the rand as a direct consequence of the policies enacted, but taking a long-term perspective one could ask whether such a downfall would not also have occurred without the pandemic. It results in the question of whether the fall in the exchange rate was due to the measures enacted to combat the virus, would have occurred anyway, or were accelerated by

the pandemic. Such research remains tricky although nowadays advanced methods are available to make a convincing argument about cause and effect based on empirical research – experiments, statistical causal analysis, multilevel causal modeling, and qualitative comparative analysis. Policy analysis has also benefitted from advanced theories, more or less grounded in empirical research, giving the generative mechanisms and pointing out the specific combinations of contextual and instrumental variables that result in the effects. If the observer provides the generative mechanism between the purposive action and the outcome within the specific context, based on sound theorising and empirical support, causal imputations will be stronger. Nonetheless, the argument for causation cannot be proven and can always be contested, especially because empirically we are dependent on valid and reliable indicators, which are not always available.

A second issue in analysing unanticipated consequences of purposive action distinguishes whether these consequences are beneficial or harmful. The issue that arises is ‘beneficial for whom’ and ‘harmful for whom’. Merton himself distinguished between the consequences for the actor, the target group, and society as a whole (Merton 1936: 895). A more recent typology by Wilson about the distribution of costs and benefits of policies adds to this distinction (Wilson 2009; Knill and Tosun 2008). Wilson distinguishes between diffuse and narrowly concentrated benefits of a policy, and diffuse or concentrated costs involved. In the Covid-19 pandemic and the policy response, both benefits and costs seem diffuse, but this does not prevent the policies from having severe effects, especially on countries and people living in countries that are already disadvantaged.

The classic view is that unanticipated consequences are due to the nature of the purposeful action. This goes to the heart of policymaking as the goals (purposes thereof) and the instruments used to achieve those goals are seen as the determinants thereof. As to the goals of policies, a useful typology to distinguish such goals is whether the policy is meant to be regulatory – specifying conditions and constraints for individual and collective behaviour; distributive – providing resources and infrastructure; redistributive – changing the distribution of goods and services; or constituent – modifying procedures and institutions (Lowi 1972). Notwithstanding the usefulness of this distinction, the pandemic shows that specifics of the context in which goals are set and policies implemented determine whether regulatory goals will have unanticipated constituent, distributive, or redistributive effects. It is apt to refer to Knill and Tosun, who argue that policies meant to be one kind of policy (regulatory or constituent), could well have unanticipated consequences in a completely unanticipated way, namely in their distributive and redistributive effects, and vice versa (Knill and Tosun 2012: 18).

Unanticipated consequences can also be the result of the instruments applied in a policy. Legal instruments (law making, regulations) have unanticipated consequences regarding the costs of their maintenance and ensuring compliance. These

could also result in a changed morality not arguing that something is good or bad in itself, but that something is good or bad dependent on its being allowed or prohibited by the law. This is seen as an inferior kind of morality and as such, a dysfunctional unanticipated consequence (Auerbach 1983:vii; De Vries 2016:99).

The use of financial instruments – subsidies, levies, fines and rewards – is known for its so-called Matthew effect: “He who has shall be given”. It implies that such instruments are likely, but unintentionally increasing inequality as the larger part of subsidies is often received by groups who least need them (De Vries 2010).

The same goes for communication as a policy instrument that is known for producing a knowledge gap. The unanticipated consequence of information and communication transfer is that those people who are already well informed will benefit most, and such instruments increase the difference between the haves and the have nots.

In the response to the Covid-19 pandemic, all these instruments are used. There are laws and regulations installed for lockdowns and social and respiratory distancing. Fines are issued for violations, governments took care of ample communication and informing the citizenry about developments in the spread of the virus and the actions taken, and at times additional hospitals were built to take care of those who suffered serious medical problems when becoming infected.

The basic idea is that unanticipated effects of purposive actions (policies) are inherent to the goals of and means used in those actions. This article went one step further in arguing that this is still only half the story. The context in which policies are designed and the goals and means applied determines the variance in the unintended consequences of such actions. According to the authors, the nature of policies might be less relevant than their fit with contextual features in which the action takes place.

All this results in the conclusion that it has been very dangerous to place such importance on the advice of virologists in policymaking all over the world as a response to the Covid-19 pandemic. Educated in medicine, virologists were expected to produce a one-size-fits-all policy to be implemented in every country, irrespective of the medical, economic, social and political consequences. They could not have anticipated all these consequences and even less that these would vary with contextual variance. At the start, it was said that 2020 might be seen as the year in which policymaking all over the world was handed to virologists. Probably, in the years to come, public administrators will be asked to clean up the consequences.

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Understanding and Interpreting Measures of Central Location, Dispersion and Confidence Intervals in Pandemics

The Case of the Novel Coronavirus (Covid-19)

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ABSTRACT

Understanding the application of statistical methods is an essential component in the analysis of pandemics. Although the management of emergencies that stem from such pandemics can be a challenging task, the effects caused by such emergencies can be mitigated by improved preparedness, the implementation of preventive measures, timely response and the implementation of recovery strategies. Statistical methods provide tools that can assess the relative magnitude of pandemics, such as Covid-19. A key feature of public health management is an understanding of data and analysis to quantify the extent of such pandemics, and to be successful in their mandate. The statistics used in the current coronavirus pandemic involve clinical characteristics of the infected population, and are reported in the form of means, modes, medians, interquartile ranges and confidence intervals. These measures form part of descriptive and inferential statistics, and more specifically measures of central location and variation, as well as measures of precision. The aim of this article is to review these measures, which are typically used when reporting a new epidemic outbreak. First, the difference between descriptive statistics and inferential statistics is described, after which a thorough theoretical explanation is given regarding measures of central location and variation, as well as measures of precision. Straightforward explanations of these statistical methods may promote understanding among public administrators and managers about how epidemiological data is being analysed.

This increased understanding could assist managers in responding to the pandemic, its characteristics and descriptive statistics appropriately and thus enhance their ability to formulate effective strategies.

INTRODUCTION

Practitioners may be overwhelmed by the mass of statistical data that has emerged during the Covid-19 global pandemic. Croucher (2012:223) emphasises the important role of statistics in addressing a multitude of problems in science and technology. It follows, therefore, that statistics has a wide involvement in fields such as public management and public administration which require decision-making in situations in which uncertainty exists. The recent global outbreak of Covid-19 clearly illustrates this uncertainty; therefore, a good understanding of statistics and statistical analysis is necessary.

Why is statistics important in public administration or management? Berman and Wang (2016:4) argue that the philosophy behind public management obliges public managers to become actively involved in enhancing the public good, and not merely to “sit behind a desk and crunch numbers”. Analytical approaches involving research and statistics are increasingly in demand because many decisions made by public administrators require data and analysis. Public managers and administrators therefore need to understand statistics to be educated consumers of statistical information so that they can be successful in their mandate.

Public administrators are responsible for the writing and the passage of laws that determine government involvement in health policy. Policy analysis often begins by examining and describing the extent and characteristics of a problem and associated factors, and managers are expected to base decision-making on sound data and analysis. Therefore, factual data and objective analysis are ever-present in programmes and policies for reducing judgement errors stemming from factually incorrect subjective perceptions. Hunter (1993) argues that development of public health management requires skills contributing to effective health outcomes. Political and management skills are thus necessary in addition to epidemiological and other science-based skills (Hunter & Berman 1997). It is therefore necessary for public health management to develop and establish an information and intelligence database to support public health; this involves the incorporation of epidemiological data with a broad range of other social sciences and management research.

Data and objective analysis are often used to describe and analyse problems, for example, the magnitude of health pandemics such as the current Covid-19 pandemic. It is thus important to know how the virus is transmitted, who is most

at risk of infection, how many people are infected, and what preventative measures can be taken to curb the spread of the virus. Therefore, it matters whether the median age of people who are infected with the novel coronavirus is 20 years, or 75 years, or somewhere in between and whether more males are infected than females. Managers would be able to formulate effective strategies by describing the extent of this pandemic, its characteristics and descriptive statistics accurately.

Statistical thinking has made significant contributions to understanding of epidemics as there is a sense of urgency to collect data for detecting and monitoring future epidemics (Brookmeyer 1996:781). In determining the possible outcomes of this new virus, researchers report mainly on means, medians, interquartile ranges and confidence intervals. These statistical measures form part of a broader spectrum measuring central location and variation, and point estimates. Previous research in the field of health has not focused on how statistical measures can be useful in the field of public management and public administration. One way to overcome this problem is to give a thorough theoretical explanation of these measures and to demonstrate how these measures form part of descriptive and inferential statistics.

The aim of this article is to review measures of central location and dispersion, as well as confidence intervals, and its application for interpreting data during a pandemic such as Covid-19. These measures form part of descriptive statistics and inferential statistics that can be typically used when reporting a new epidemic outbreak. An explanation of these measures could help public administrators and managers who may not have a statistical background to understand the use of data for application in a health crisis. "As virologists continue to incorporate more quantitative or high throughput methods into their research, statistical methods will become even more essential for interpreting data and drawing accurate conclusions that others can understand" (Richardson & Overbaugh 2004:669).

SITUATIONAL CONTEXT

In the next section, the situational context is sketched before a theoretical explanation of statistics is given using examples from the Covid-19 pandemic.

The Covid-19 pandemic

As millions of people waited in anticipation for the year 2020, a mysterious virus made its appearance in Wuhan, China during the first week of December 2019. Little did the world know that 8 December, and possibly earlier, marked the beginning of a zoonotic coronavirus that had crossed species and would infect human populations for the third time in as many decades. The rapid response of Chinese public health, clinical and scientific institutions, has enabled the identification of

this infectious disease and the initial understanding of the epidemiology of infection. Zhu, Zhang, Wang, Li, Song, Zhao, Huang, Shi, Lu, and Niu (2020) identified and characterised the new virus as the novel coronavirus. After it was first identified, the recent outbreak of the novel coronavirus has risen exponentially, with cases occurring in China and other countries and regions. Despite worldwide efforts to contain the virus, hotspots continue to emerge as newly confirmed cases surge around the world with worrisome speed. The number of cases is still on the rise with more than 4 525 497 people infected and more than 307 395 fatalities (World Health Organization 2020).

At the beginning of any outbreak, such as the novel coronavirus, it is vital to have access to readily available information in order to assess the situation so that the risks can be understood and outbreak containment activities initiated (Heymann 2020:469). This information can be obtained from initial reports, laboratories that endorse the initial investigation, and information collected from prior outbreaks of related species (Heymann 2020:469). With advancement in technology such as the internet, a lot of this information is emerging in real time, and quick dissemination of information is a top priority for disease prevention and control. A number of features of the disease have come into focus through extraordinarily rapid sharing of research. From the start of the Covid-19 outbreak, researchers began to pin down the “who”, “what”, “when”, “where” and “how much” of what could be found from people who were infected. For example, Zhu *et al.* (2020) reported on the results of an investigation that was conducted by the Chinese Center for Disease Control and Prevention. Through this epidemiologic and etiologic investigation, the origin of some pneumonia clusters has been identified. Clinical features were also described in two patients with pneumonia. Chen, Liu and Guo (2020b) reported on the genome structure, replication, and pathogenesis of the virus. Huang, Wang, Li, Ren, Zhao, Hu, Zhang, Fan, Xu, Gu, Cheng, Yu, Xia, Wei, Wu, Xie, Yin, Li, Liu, Xiao, Gao, Guo, Xie, Wang, Jiang, Gao, Jin, Wang and Cao (2020) described clinical features of patients infected with the 2019 novel coronavirus in Wuhan, China, while Chan, Yuan, Kok, To, Chu, Yang, Xing, Liu, Yip, Poon, Tsoi, Lo, Chan, Poon, Chan, Ip, Cheng, Chen, Hui and Yuen (2020) investigated a family cluster of pneumonia associated with the novel coronavirus that suggests person-to-person transmission. Read, Bridgen, Cummings, Ho and Jewell (2020) estimated early epidemiological parameters and epidemic predictions for the novel virus. These parameters and predictions form part of data analysis which plays a significant role in public management and policy analysis.

The importance of statistics in public management and policy analysis

Although Covid-19 has put a lot of strain on health care systems worldwide, the consequences of the Covid-19 pandemic go far beyond those faced by hospital

systems; they affect nearly every segment of society. Addressing the Covid-19 pandemic as well as its effect on society needs more than the actions of health care providers and medical practitioners alone. It demands the engagement of citizens, government at all levels and a diverse array of individuals and organisations involved in policymaking and policymaking processes.

Covid-19 has spawned a surge in the number of public policies adopted. During times of crisis and high uncertainty, the need for scientific expertise is increasing as governments and the public seek certainty in understanding problems and in finding solutions. This poses a need for what is known as evidence-based policymaking, which indicates to the public that decisions are taken on the basis of informed and reasonable judgements that serve the public good. Scientific experts can help establish the severity of pandemics, such as Covid-19, in a population, forecast its trajectories over time, and estimate the likely effects of various policy responses, from mitigation to suppression. The role of policy sciences in understanding such a crisis offers insight into such situations with the goal of steering government and society towards greater human dignity. Crisis decisions focus on public policy which should be evaluated on the basis of containing threats, minimising damage and ensuring order and stability.

Why do statistics matter in public management and policy analysis? According to the World Bank (2000:vii), it matters because “they are the evidence on which policies are built”. Statistics help to identify needs, set goals and monitor progress (Australian Bureau of Statistics (ABS) 2010). Statistics may also support the decision-making process by enabling managers and analysts to establish numerical benchmarks in order to monitor and evaluate the progress of a policy or programme. This is important to ensure that the policies follow the initial objectives and identify any areas which need improvement. Since data and analysis play a significant role in many decisions made by public administrators, analytical techniques which include research and statistics are increasingly in demand (Berman and Wang 2016:4). These include the extent of social and public health challenges, such as the current Covid-19 pandemic, for the purpose of describing and analysing issues. In particular, quantitative analysis aims to provide an objective, factual underpinning for situations and responses. Berman and Wang (2016:6) argue that “even more, analysis is more than data analysis; it is grounded in research methods that provide a rigorous way of understanding policies and programs, and about asking certain questions about them”. Analysis allows us to examine and quantify the magnitude of problems, such as the Covid-19 pandemic, solutions, and possible impact of proposed strategies in ways that are seldom possible with other information. An emphasis on facts and objective analysis may decrease judgement errors resulting from factually incorrect subjective perceptions. As such, managers are expected to bring data and analysis to the decision-making table.

Public administration as a field of study comprises the government and governance systems, the particular social systems, and the economic system (Van der Walldt 2017:9). Governments are responsible for taking strategic decisions to improve the quality of life of people and the community. Over the past two decades, national and international governments have continually stressed the importance of evidence-based decision-making in driving policy processes (Organisation for Economic Co-operation and Development (OECD) 2005). The use of statistical information is essential for making evidence-based decisions that facilitate the implementation of new policies, monitor current policies, and determine the efficacy of policy decisions (ABS 2010). Davis (2004:3) purports that “it helps people make well informed decisions about policies, programmes and projects by putting the best available evidence from research at the heart of policy development and implementation”. It is therefore imperative that policymakers have the expertise and abilities to understand, interpret and draw relevant conclusions from statistical information. When public managers and policy analysts understand and interpret data accurately, their ability to identify key issues that need reform is improved and their proposals for change are likely to respond to the ‘real’ needs of the community (ABS 2010). Evidence-based decisions will lead to more successful policy decisions and, as a result, better outcomes for the society. If the evidence is not used as a basis for decision-making, or if the evidence used is not an accurate reflection of the ‘real’ needs of the key population, proposals for change are likely to yield unsuccessful outcomes which may lead to negative outcomes for those hoping to benefit from them (Urban Institute 2003).

Statistics are a valuable source of evidence as they provide us with clear, objective, numerical statistics on important aspects of life, such as population growth and characteristics, economic performance, health and well-being trends and the condition of our surrounding environment (ABS 2010). However, the availability of statistical evidence does not necessarily contribute to successful decision-making. In order to use statistics to make well informed decisions, it is important to have the skills and knowledge to be able to access, understand, analyse and communicate statistical information. These skills provide the basis for understanding the complex social, economic and environmental dimensions of an issue and transforming data into usable information and evidence-based decisions. As such, comprehension of simple and more complex statistical concepts and terminology is important for the effective use of statistical information and for the interpretation and inference of data. This includes concepts such as measures of central location and variation, as well as confidence intervals. These concepts form part of descriptive and inferential statistics, which are discussed next.

Descriptive statistics versus inferential statistics

Univariate analysis is the simplest form of statistical analysis and can be split into two major divisions: descriptive and inferential statistics. The main difference between descriptive statistics and inferential statistics is that, “descriptive statistics condenses sample data into a few summary descriptive measures”, while inferential statistics “generalises sample findings to the broader population” (Wegner 2016:7). Each of these segments is crucial, offering unique techniques for achieving different objectives.

Descriptive statistics

When accessing data for the first time, the data is first organised and summarised. The collection of methods used to organise and summarise data is referred to as descriptive statistics (Lombaard, Van der Merwe, Kele & Mouton 2011:3). A number of items are included in this section of the statistics, such as measurements of central location, including the mean, median and mode; measurements of variance, such as the range and standard deviation; measures such as kurtoses and skewness; investigation of relationships and correlation between paired data; and graphic representation of statistical results. These measures are crucial because it allows scientists to see patterns between data, with the main purpose of making the data meaningful. While descriptive statistics only describes the behaviour of a random variable in a sample, inferential statistics thus allow managers to understand the ‘bigger population picture’ of a random variable based on sample evidence (Wegner 2016:7).

It is hard to visualise raw data. However, descriptive statistics enables the presentation of the data in a more tangible way, which makes it easier to interpret the data. Vetter (2017:1797) defines descriptive statistics as “specific methods basically used to calculate, describe, and summarise collected research data in a logical, meaningful, and efficient way”. In new areas of inquiry, descriptive studies often represent the first scientific toe in the water (Grimes and Schultz 2002). Much of the statistical information in company reports, magazines, newspapers, as well as other publications consists of data that is summarised and presented in a form that is easy for the reader to understand (Anderson *et al.* 2010:10). Since the outbreak of Covid-19 in December 2019, The World Health Organization (2020), has been collecting and summarising data in real time. This has also been done by the GIS & Data tracker (2020), which is managed by the Johns Hopkins Center for Systems Science and Engineering (CSSE). The reports on GIS & Data are interactive and updated by the Johns Hopkins CSSE and all information is factual. This factual information is important, as “proper ways of presenting data ensure easier communication with the scientific public” (Pupovac & Petrovecki 2011:106).

Inferential statistics

Although inferential statistics involve the use of descriptive statistics, the focus is different. Inferential statistics first start with a sample after which generalisations are made to the population. Because it is practically impossible to examine individual members of a population, scientists select a representative subset of the population, called a statistical sample. Through complex statistical calculations, they are able to determine more about the population from which the sample originated. Because data cannot be obtained from the population as a whole, the values of the parameters for that population cannot be determined. However, once you have a sample, it is possible to calculate estimates of these parameters, which are called 'statistics'. According to Keller (2017), a parameter is a descriptive measurement about a population, and a statistic is a descriptive measurement about a sample. In other words, a statistic estimates a parameter. In the sampling process, there will always be fluctuations due to naturally occurring random variables. This variation between samples indicates that information from any one sample will not be an exact presentation of the population. This random discrepancy between measurement from a sample and the population is called sampling error (Croucher 2012:377).

The role of inferential statistics is to use sample evidence to identify population measures. According to Wegner (2016:179), "one approach is to calculate the most likely value for the population parameter based on the sample statistic. This is known as an estimation approach". Two methods are used to estimate the true population parameter, which are point estimation and confidence interval estimation (Wegner 2016:179). According to Anderson *et al.* (2010:252), a point estimator is a sample statistic used to estimate a population parameter. If the value of the sample is considered to be the true value of the population parameter, a point estimate is made (Wegner 2016:179). The sample mean, for example, is a point estimator of the population mean (Wegner 2016:67):

$$\hat{\mu} = \bar{X} = \frac{1}{n} \sum_{i=1}^n X_i$$

Here after, the mean is calculated from the sample x_1, \dots, x_2

$$\hat{\mu} = \bar{X} = \frac{1}{n} \sum_{i=1}^n X_i$$

But how is the sample mean (\bar{x}) related to the population mean (μ)? In order to understand how close sample statistics lie to their population parameters, it is important to understand a sampling distribution. The distribution of sample means is called the sampling distribution of \bar{x} with the following properties (Wegner 2016:167):

- It has a normal distribution.
- It has a mean which is equal to the population mean.
- It has a standard deviation, called the standard error

$$\frac{\sigma}{\sqrt{n}}$$

The standard error thus indicates how much the observed sample statistic may fluctuate if the same experiment is repeated a large number of times. While the standard error focuses on the sample, the confidence interval focuses on the population, as it shows the range expected to include the true population parameter.

On the basis of these three properties and using normal probability distribution theory, it is possible to conclude the following about how sample means behave in relation to their population means. For example,

- 68.3% of all sample means will lie within one standard error of its population mean.
- 95.5% of all sample means will lie within two standard errors of its population mean.
- 99.7% of all sample means will lie within three standard errors of its population mean (Wegner 2016:167).

“This implies that any sample mean which is calculated from a randomly drawn sample has a high probability (up to 99.7%) of being no more than three standard errors away from its true, but unknown, population mean value” (Wegner 2016:167). By relating the sampling distribution of \bar{x} to the z distribution, these probabilities can be found. Any sample mean, \bar{x} , can thus be converted into a z-value through the following z transformational formulae:

$$\frac{\bar{x} - \mu}{\frac{\sigma}{\sqrt{n}}}$$

A sample point estimate, however, is a highly unreliable measure of a population parameter. This is because the probability that the sample point will be exactly equal to the true value of the population parameter is extremely small. As such, a point estimate is seldom used to estimate a population parameter. It is therefore better to offer a range of values in which the population parameter is expected to fall so that the reliability of the estimate can be measured (Wegner 2016:179). This is the purpose of interval estimation and is discussed later on.

Measures of central location

“In order to investigate a set of quantitative data, it is useful to define numerical measures that describe important features of the data” (Walpole 1990:23). Three major sample characteristics are normally presented for each variable: the distribution, measures of central location, and measures of dispersion (variation). According to Walpole (1990:23), “any measure indicating the centre of a set of data, arranged in an increasing or decreasing order of magnitude, is referred to as a measure of central location or tendency”. The most commonly used measures of central location are the mean, median, and mode (Brown 2017; Salkind 2016a).

The mean

The most widely known descriptive statistic is the mean (Vetter 2017:1798). Also referred to as the arithmetic mean, the mean is defined as the total sum of observations divided by the number of observations (sample size n) (Mendelhall & Beaver 2013; Urdan 2017a).

$$\hat{\mu} = \bar{X} = \frac{1}{n} \sum_{i=1}^n X_i$$

For a sample, the symbol for the mean is denoted by \bar{x} , while for a population it is presented with the Greek letter μ and pronounced ‘mu’ (Brown 2017). Chen, Zhou, Dong, Qu, Gong, Han, Qiu, Wang, Liu, Wei, Yu, Zhang and Xhang (2020a) investigated the epidemiological and clinical characteristics of 99 pneumonia cases in Wuhan and found that the average age of people infected with the virus is 55.5 years. For the first 116 confirmed Covid-19 infections in South Africa, the mean age is $\frac{4760}{116} = 41.03$. Age is a variable that is often responsible for confounding in epidemiology, partially because the incidence of many diseases varies with age. According to the Department of Health (DoH 2018), “age adjustment is a statistical process applied to rates of disease, death, injuries or other health outcomes that allow communities with different age structures to be compared”. Adjusting age is necessary as many diseases occur at various levels across different age groups. Recent research also reported that the coronavirus seems to be more prevalent among older individuals (Wang, Tang & Wei 2020). By determining the incidence mortality rate, such as the coronavirus, the trend of health outcomes in a community can be examined. The mortality rate is a measure of the frequency of occurrence of death in a defined population during a specified interval (Centers for Disease Control and Prevention (CDC) 2011:1). For example, a population with a greater number of older individuals would have a higher incidence of Covid-19 infection than one with younger individuals. This is referred to

as ‘confounding’ by epidemiologists. In the context of epidemiology, confounding is a source of bias in estimating causal association and it corresponds to a lack of comparability between the exposed and non-exposed groups (Greenland & Morgenstern 2001). This occurs when the calculation of the interaction between exposure and disease is associated with the influence of some external factor (confounding variable). Age adjustment is a statistical way of removing age-related uncertainty (DoH 2018). The age adjustment process changes the amount so that each age group contributes to the overall age in a community, allowing the overall rates to be based on the same age structure. Sun, Chen, and Viboud (2020) illustrated the use of age adjustments in an article that was published in the *Lancet* recently. According to researchers, only 3% (13 out of 507) of Covid-19 patients reported between 13 and 31 January 2020 were younger than 15 years of age. The age profile of Chinese patients has been modified and the basic demographics have reported a deficit of Covid-19 infections among children.

According to Vetter (2017:1798), “the mean is typically reported for continuous data (for example age) that have a normal (Gaussian) distribution”. According to Anderson *et al.* (2010:193), the normal probability distribution is the most important probability distribution for describing continuous random variables, such as age. The form of the normal distribution is a bell-shaped curve, where the highest point on this curve is at the mean, which is also the median and mode of this distribution (Anderson *et al.* 2010:194). The curve of the normal distribution is symmetric, and the tails of the curve extend to infinity in both left and right directions of the mean. As the normal distribution is symmetric, it is not skewed and its skewness measure is 0 (Anderson *et al.* 2010:194). If a distribution is symmetrical, all three measures of central location (mean, median, and mode) will be equal. However, when there are a few extremely small or large data values relative to other data values in a sample, the distribution will become “skew” (Wegner 2016:85). If the data does not follow a normal distribution, the median is used. One drawback of the mean is that it can be greatly influenced by outlying values, particularly if they are extreme (Salkind 2016a). Graphically, the mean would then be ‘pulled’ in the direction of the extreme values, which would make the distribution skewed.

The median

According to Williams, Sweeney and Anderson (2012:101), “the median is the observation in the middle when the data are arranged in ascending order”, “which marks the 50th percentile of the data distribution” (Vetter 2017:1798). “For a symmetric distribution, the mean and median are equal” (Williams *et al.* 2012:121). By comparing the values of the mean and the median in a set of data, one can determine the direction in which the data is skewed; the mean is drawn or pulled away from the median in the direction of the extreme values. Williams *et al.* (2012:121) explain that “[i]f the mean is higher than the median, the distribution of data is

skewed to the right. If the mean is lower than the median, then the distribution is skewed to the left.” As such, the median is a more representative measure than the mean when the data tends to be skewed. For epidemiological descriptive purposes, researchers regularly present the median for incubation times, duration of illness and age of subjects examined (Griffin *et al.* 1999). A recent study by Li, Guan, Wu, Wang, Zhou, Tong, Ren, Leung, Lau, Wong and Xing (2020), estimated the median age of patients who were infected with the novel coronavirus as 59 years. For the first 116 positive Covid-19 cases in South Africa, the median age is 38. The mean, discussed previously, was 41.03. In this case, the mean (41.03) is more than the median (38). Therefore, the distribution is skewed to the right. In another study, patients developed dyspnoea with a median of eight days after onset of illness (Huang *et al.* 2020). The median of people who died from the virus was 75 years (Wang *et al.* 2020). Sun *et al.* (2020) collected data of 507 patients with Covid-19 between 13 and 31 January 2020 and the findings of the study showed that the age distribution was skewed towards older individuals with a median age of 45 years. The researchers of this study also reported that the median delay in finding hospital treatment was two days in mainland China., and one day for international travellers.

The mode

The mode is the number that occurs the most in a data set (Wegner 2016:70). The majority of data distributions have only one mode and are thus referred to as unimodal. However, if the data distribution has two modes, it is referred to as bimodal (Brown 2017; Urdan 2017a). As the mode is not typically used in more complex statistical calculations, it is the least useful measure of central location. However, the mode can be illustrated as follows: for the first 116 confirmed Covid-19 cases in South Africa, the mode was 38 years. Another example of the mode includes the following: when looking at European countries with the most Covid-19 deaths at the time of writing this article, the United States of America had the highest score with 90 978 fatalities (Worldometers 2020).

Measures of dispersion

Apart from measures of central location (mean, mode and median), another essential aspect of a data set is its variability or dispersion. (spread) (Urdan 2017b). Both Vetter (2017) and Salkind (2016b) explain that variability refers to the degree to which individual reported scores or observed values vary from one another. The most general measure of variability is the total range, which is defined as “the difference between the largest and smallest number in the set of data” (Walpole 1990:31). For example, the age range of people who tested positive for Covid-19 would be the oldest person infected minus the youngest. For the first 116 confirmed Covid-19 cases in South Africa, the range is $79 - 2 = 77$. Furthermore, because the

data can be split in half, it can also be divided into smaller parts such as quarters. Statisticians refer to these quarters as quartiles, denoted from low to high, as Q1, Q2 (median) and Q3. As such, the lower quartile (Q1) contains the quarter of the dataset with the lowest values, while the upper quartile (Q4) contains the quarter of the dataset with the highest values. Therefore, the interquartile range is defined as $(IQR) = Q_3 - Q_1$. Just as the median is a robust measure for central location, so is the interquartile range for variability, especially when it comes to distorted distributions. The median age for the first 116 confirmed Covid-19 cases in South Africa is 38 years with an interquartile range of (IQR 32–53). Sun *et al.* (2020) found that the age distribution of Covid-19 was skewed towards older individuals with a median age of 45 years with an interquartile range (IQR 33–56). According to the researchers of this particular study, the interquartile range for seeking treatment at a hospital or clinic was between two and five days in mainland China (IQR 2–5 days) and one day (IQR 0–3) for international travellers. Chen *et al.* (2020) reported on the duration of antibiotic treatment with a median of five days (IQR 3–7).

Confidence intervals as a measure of the precision of a point estimate

Epidemiologists are also conducting research not only to analyse the characteristics of the studied subjects, but also to make generalisations about the broader population from which these subjects emerged (Centres for Disease Control 2011). This process is referred to as inference, which demands some consideration of the accuracy / precision of the measurement. In epidemiology, the common way to demonstrate the precision of the measurement is to provide a confidence interval. According to Vetter (2017:1799), “a confidence interval can be estimated for any variable or outcome measure in an experimental, quasi-experimental or observational research design”. Since a point estimator cannot be assumed to provide the exact value of the population parameter, an interval estimate is often computed, by adding or subtracting a margin of error (Anderson *et al.* 2010:252). The purpose of an interval estimate is therefore to provide information about how close the point estimate is to the value of the population parameter (Anderson *et al.* 2010:252). As such, the interval estimate is the point estimate \pm margin of error. To compute interval estimates for the population mean (μ), the following can be calculated: $\bar{x} \pm$ margin of error.

Another important consideration in calculation sampling error is the confidence level. Since these estimates are not always correct, one builds into statistical inference a measure of reliability, which entails the confidence level and the significance level (Keller 2017). “The confidence level specifies the probability that the confidence interval will cover the true population mean” (Wegner 2016:181). The most commonly used confidence levels in statistics are 90%, 95% and 99%. The following Table shows the z-limits associated with these different confidence intervals.

Table 1: Typical confidence limits and associated z-limits

Confidence level	z-limit	Level of significance
90%	± 1.645	0.10 (10%)
95%	± 1.96	0.05 (5%)
99%	± 2.58	0.01 (1%)

Source: Wegner (2016:181).

According to Wegner (2016:182), the width of a confidence interval is a measure of its precision. From Table 1 it can be seen how the width of the confidence interval varies, and thus the accuracy of the estimate, based on the confidence level selected. As the confidence level increases, the interval becomes wider and hence less precise. The narrower the confidence interval, the more precise the interval estimate is (Wegner 2016:182). In other words, large confidence intervals indicate low accuracy, while narrow confidence intervals indicate high accuracy. Furthermore, risk increases if confidence intervals are underestimated. Confidence intervals are about risk, and in cases such as the novel coronavirus, researchers aim to reduce risk of the epidemic. When results are reported without confidence intervals, risk is not reduced. With confidence intervals, the sample size and population variation are taken into account, which gives an indication of the range of actual response. According to Duncan (2015), one of the major challenges in decision analysis is to make a realistic assessment of data uncertainty and, most often, there is a tendency to estimate the range of confidence intervals too narrowly.

Most commonly, the 95% confidence interval is used, and “the value of 0.95 is referred to as the confidence coefficient” (Williams *et al.* 2012:329). In the field of public health, investigators typically want to have a higher level of confidence and normally set the confidence level at 95%. The 95% means that 95% of experiments like this will contain the true mean, but 5% of the remainder do not. Simply put, there is a 5% risk that the estimated confidence interval does not contain the true mean. The DoH (2018) explains the 95% confidence interval as follows: “If the measurement were conducted 100 times, 95 times the true value would be within the calculated confidence interval and 5 times the true value would be either higher or lower than the range of the confidence intervals.”

Confidence intervals are constructed using confidence levels and significance levels. The significance level associated with the estimate of the interval is indicated by the Greek letter alpha (α). In a hypothesis test, which is beyond the scope of this article, the significance level is the probability of making the wrong decision when the null hypothesis is true (Croucher 2012:649). Wegner (2016:203) purports that, “a Type I error is called the level of significance and is represented by the symbol α (alpha)”. Usually, a significance level of 5% (0.05) is set, however, 1% (0.01) and

10% (0.10) are also used in statistics. For example, if a 5% significance level is used, it means that an event (or sample) that occurs less than 5% of the time is considered unusual (Croucher 2012:649). Significance levels are related to confidence intervals. To determine α , the confidence level is subtracted from one.

$$\alpha = \text{Level of Significance} = 1 - \text{Confidence Coefficient}$$

The level of significance is the probability (area) in the “tails” of a sampling distribution, as this is where the rejection area is located (Wegner 2016:203). According to Wegner (2016:204), “the critical limits for the region of acceptance are always expressed in terms of a test statistic such as the z-statistic”. These z-limits are shown in Table 1. A confidence interval that contains the true value of μ with probability 0.95, is called a 95% confidence interval for μ (Croucher 2012:470). The z-limit associated with a 95% confidence interval is ± 1.96 (see Table 1).

As such,

$$\begin{aligned} 0.95 = 1 - \alpha &= P(-z \leq Z \leq z) = P\left(-1.96 \leq \frac{\bar{X} - \mu}{\frac{\sigma}{\sqrt{n}}} \leq 1.96\right) \\ &= P\left(\bar{X} - 1.96 \frac{\sigma}{\sqrt{n}} \leq \mu \leq \bar{X} + 1.96 \frac{\sigma}{\sqrt{n}}\right) \end{aligned}$$

Confidence intervals are often calculated for epidemiological measures, such as the mean. The confidence interval for the mean is based on the mean itself as well as the standard error of the mean (CDC 2011). By using the formula for the confidence interval, a 95% confidence interval for the first 116 confirmed Covid-19 cases in South Africa can be calculated as follow:

$$\begin{aligned} &= P\left(\bar{X} - 1.96 \frac{\sigma}{\sqrt{n}} \leq \mu \leq \bar{X} + 1.96 \frac{\sigma}{\sqrt{n}}\right) \\ &= P\left(41.03 - 1.96 \frac{16.595}{\sqrt{116}} \leq \mu \leq 41.03 + 1.96 \frac{16.595}{\sqrt{116}}\right) \\ &= P(41.03 - 1.96 \times 1.541 \leq \mu \leq 41.03 + 1.96 \times 1.541) \\ &= P(41.03 - 3.02 \leq \mu \leq 41.03 + 3.02) \\ &= P(38.01 \leq \mu \leq 44.05) \end{aligned}$$

The lower endpoint of the 95% confidence interval is:

$$\text{The lower endpoint} = \bar{X} - 1.96 \frac{\sigma}{\sqrt{n}} = 38.01$$

and the upper endpoint of the 95% confidence interval is:

$$\text{The upper endpoint} = \bar{X} - 1.96 \frac{\sigma}{\sqrt{n}} = 44.05$$

In order to find a 95% confidence interval for the mean, the mean and standard error has to be calculated first. Multiply the standard error $\left[\frac{\sigma}{\sqrt{n}} \right]$ by 1.96. The

lower limit of the 95% interval = $\bar{X} - 1.96 \frac{\sigma}{\sqrt{n}}$, while the upper limit of the interval = $\bar{X} + 1.96 \frac{\sigma}{\sqrt{n}}$.

By interpreting these values, one can conclude that, with a probability of 0.95, there will be a confidence interval in which the value of the parameter μ will fall. This interval is between the two stochastic endpoints (38.01; 44.05). Other examples of confidence intervals in literature with regard to Covid-19 include the estimated mean incubation period for Covid-19, which was found to be 4–5 days (95% CI 3.0–5.5) (Sun *et al.* 2020) and 5.2 days (CI 4.1–7.0) (Li 2020). Several teams also estimated a mean incubation period to be 5–6 days (95% CI 2–11) (Backer, Klinkenberg & Wallinga 2020; Lauer, Grantz, Bi, Jones, Zheng, Meredith, Azman, Reich & Lessler 2020; Zhao, Lin, Ran, Musa, Yang, Wang, Lou, Gao, Yang, He and Wang 2020; Li *et al.* 2020).

CONCLUSION

A key feature of public management and administration is understanding data and analysis that is widely used by public managers to support decisions. This includes the extent of social and public health challenges, such as the recent Covid-19 pandemic which has dominated news worldwide. Analysis and data are often used to explain problems, strategies and policies; help monitor and make decisions that may make them more effective or efficient; and to assess results. Analysis is therefore crucial as it helps to provide reliable and empirical guidance in situations where the severity of problems should be determined, such as the Covid-19 pandemic.

Statistical methods provide tools that can access the relative magnitude of pandemics. However, the effective use of analysis and data requires expertise in areas such as the ability to collect one's own data, to interpret the data and to communicate the findings. Public managers and administrators therefore need to understand basic statistics so that they can be educated consumers of statistical information for successful implementation of their mandate. The aim of this article

was therefore to review measures of central location and dispersion, as well as confidence intervals, and its application for interpreting data during a pandemic such as Covid-19. An explanation of these measures could help public administrators and managers who may not have a statistical background to understand the use of data for application in a health crisis. First, the difference between descriptive statistics and inferential statistics was described, after which data from the Covid-19 pandemic was used to explain measures of central location and variation, as well as measures of precision. The statistics on Covid-19 data provided insight into measures such as the mean age of patients infected with Covid-19, or the median age in cases where the data is not normally distributed, as well as the mode. Confidence intervals, which form part of measures of precision, were also discussed.

The use of statistical methods is imperative to interpret data and draw accurate conclusions that stakeholders may understand. Using a scientific approach to investigate the available evidence may on the one hand lead to policy decisions that are more effective in achieving the desired outcomes when decisions are based on accurate and meaningful information. Misinformation, on the other hand, can have a devastating effect on containment efforts. For example, a government could fail due to initial reluctance to act on early warning signs about the potential risk of the virus.

A simple explanation of statistical methods may promote understanding among public administrators and managers regarding epidemiological data. Insights into these aspects could contribute to managers' ability to describe the extent of a pandemic and its characteristics, and to formulate effective strategies within their context and mandate. Furthermore, the examples provided in this article may also be used in educational settings, such as higher education institutions, to illustrate how epidemiological data can be used in other academic areas such as management and public administration.

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Peace Education

A Viable Tool for Peacebuilding in Africa

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ABSTRACT

The article explains the viability of peace education in peacebuilding, and elaborates on its role in addressing conflict and facilitating a culture of real peace. Peace education is the process of acquiring values and knowledge, and developing the attitudes, skills and behaviour required to live in harmony with oneself, with others and with the natural environment. However, the continent continues to witness the recurrence of conflict, whether in bloody xenophobic attacks on black foreigners in South Africa, bloody riots in Zimbabwe and Cameroon, or suicide bombings and terror attacks in western and northern Africa, and the Horn of Africa. The article found that peace education resulting from colonial education continues to breed a Eurocentric culture and perspective and has not led to sustainable peace in Africa. The article also found that individuals living without their own culture have no sense of values, and easily succumb to their base instincts, which ultimately jeopardises peace. For peace education to lead to real peace, the article recommends institutional frameworks and curriculum reforms that involve the transformation of faculty members. To arrive at these assertions, the article adopted a qualitative research design that followed an explorative approach.

INTRODUCTION

The achievement of a culture of sustainable peace represents the humanising process of people at individual levels managing their violent attitudes, behaviour, perceptions and inclinations. Peace education being the process of acquiring values and knowledge, and developing the attitudes, skills and behaviour needed to live in harmony with oneself, with others and with the natural environment;

is critical in peacebuilding in Africa. According to Išorait'e and Kolegija (2019:1), peace education helps young people to gain knowledge, it enhances their skills in the area of peace, and it enables them to form an attitude about the meaning of peace in human life. It prevents the emergence of conflicts and creates conditions for peace (Išorait'e and Kolegija 2019:1).

The recurrence of conflicts in South Sudan and Mali, the conflicts and terror attacks in Somalia, and the human rights violations in Zimbabwe result from the failure to understand peace education as a viable tool for peacebuilding in Africa. Conversely, there has been a lack of understanding among scholars of the impact of the existing universities in Africa that were formed by colonialists, and that used a Eurocentric syllabus to deliver a colonial education. Cohen (1995) asserted that “the sources and consequences of Africa’s internal conflicts have their roots in colonialism”. The syllabus inculcates a colonial education, which does not support the prospects of peacebuilding that will ultimately lead to a culture of real peace (Mart and Toker 2010). Okoyo says that Africa’s post-colonial conflicts are the legacies of colonialism and that any resolution of those conflicts must involve education free from colonialism (Okoyo 1977:94). That means that colonial education propagates conflicts by rendered gross inequities in power relations and ethnic divisions. However, this has not been the focus of scholars and peace practitioners in Africa. The impact of colonial legacies in education continues to affect peace education in Africa. The significant impact of peace education and its outcomes on peacebuilding in Africa remains an unexplored area. Hence, the aim of this article is to present the viability of peace education as a significant tool for peacebuilding in Africa, and explains the impact of colonial education on the peacebuilding initiatives.

The United Nations Educational, Scientific and Cultural Organisation (UNESCO) states that political violence starts in the minds of people (UNESCO 2011). This indicates that sustainable peace depends on changing people’s mindsets, consciousness and worldviews that are rooted in their cultures and values. This transformation needs to be achieved to move from a culture of war to a culture of peace. Education, as a transformation tool, has failed to lead to peace in Africa. The principles of divide and rule, and assimilation have dominated the education systems in Africa (Chazan, Lewis, Mortimer, Rothchild and Stedman 1999).

The legacies of colonialism in education systems in Africa have made it impossible to produce a balanced educated populace that would embrace peace and stability as a core African value. The presence of Western universities in Africa breeds conflict in that they impose Western values, culture and customs on Africa. It is argued that education in Africa is characterised by direct violence, although corporal punishment has no place in education anymore (Tchombe 2006). Unfortunately, education has indoctrinated the mindset of the youth with specific ideologies, and stereotypes and disparities are reinforced (Agnihotri 2017:915).

Agnihotri (2017:915) argues that education is an objective medium, which can be used to promote either conflict or peace. Instead of education leading to sustainable peace, it has created a culture of violence that in turn, has led to violence and conflict in Africa.

For example, uneven access to resources, political power, education, health care, or legal standing are forms of violence (Christie, Wagner and Winter 2001:1–6). Christie, *et al.* (2001:38) state that, “when inner-city children have inadequate schools while others do not, when gays and lesbians are fired for their sexual orientation, when labourers toil in inhumane conditions, when people of colour endure environmental toxins in their neighbourhoods, violence exists”. As these major problems are ubiquitous in Africa, peace education strives to raise the level of thinking so that these problems can be solved during peacebuilding endeavours.

This article proposes that peace education remains an indispensable and viable tool for resolving conflict, which will thus lead to sustainable peace and security in society. While peace education has contributed to peacebuilding and has led to a culture of peace in other places, this has not been the case in Africa (Navarro-Castro and Nario-Galace 2010:21). This is because of the presence and prevalence of the colonial education being offered by Western universities in Africa that continues to breed colonised minds and their understanding continues to propagate colonialism. This has made it impossible to achieve successful peacebuilding that will lead to a culture of peace in African society.

The article is structured according to four main sections that explain the factors that make peace education a viable tool for peacebuilding, and that detail the impact of colonial education on peacebuilding in Africa. The first section defines the concepts of peace education and peacebuilding. The second section explains how peace education is a viable tool for building peace in Africa, and it discusses the viability of peace education and its role in creating a culture of peace that will lead to the creation of sustainable peace in society. The third section explains how the presence of colonised universities presents a barrier that prevents peace education from leading to a culture of sustainable peace in Africa. The fourth section consists of the concluding remarks for this article.

DEFINING PEACE EDUCATION

The term ‘peace education’ consists of two words: peace and education. In the Roman Empire, the word peace meant both a cessation of fighting, and the rule over subject races. Hicks (2004) posits that the concept of peace does not merely imply the absence of overt violence (sometimes referred to as “negative peace”). Hicks argues that peace encompasses the presence of social, economic and political justice, which is essential to the notion of “positive peace” (Hicks 2004).

However, peace is a dynamic, not a static process and is an active process, not a passive state. It is vital to note that passive coexistence is not a viable path to peace, and that building and maintaining peace requires active commitment. Furthermore, peace is “the opposite of war and conflict between and among states” (Pitanguy 2011:561–566). Galtung (1967) argues that peace is a vital concept of law and order, while Hartmann (1973:15) explains that peace, like security, law, order and stability, is a relative condition in international relations.

However, the absence of war does not necessarily mean the existence of peace and stability. This means that a forced peace can exist, especially when political leaders are dictators and citizens have decided to become happy slaves. In the case of such a forced peace, society is hit by structural violence that leads to systematic oppression and injustices. This has been notable in Africa, where political leaders ascend to political power and cling to it through coercion and dictatorship (Chazan *et al.* 1999).

Galtung (1990:291–305) says that peace practitioners should be able to address the root causes of conflict, such as the uneven systems of governance that lead to inequality, segregation and power incongruences. Galtung (1990:298) further states that “peace is the absence of violence, not only personal or direct but also structural or indirect violence, and the presence of justice”. For example, during a mediation process that involves all the parties in the process of finding a mutual solution, peace is made more achievable and sustainable.

The term ‘education’ comes from the Latin word “*e-ducere*”, meaning “to lead out” (Narayan 1979:38–40), and/or to bring forth. It is “a process of development in which consists the passage of human being from infancy, to maturity, the process by which he adopts himself gradually in various ways to his physical and spiritual environment” (Narayan 1979:38–40). Article 26 (2) of the Universal Declaration of Human Rights (UDHR 1948) articulates the following:

“Education shall be directed to the full development of the human personality and to the strengthening of respect for human rights and fundamental freedoms. It shall promote understanding, tolerance and friendship among all nations, racial or religious group, and shall further the activities of the United Nations for the maintenance of peace.”

Education plays a vital role in bringing peace in conflict-affected countries and is significant for ending poverty. Education should neither uproot people’s values, nor impose new values on them. It rather shapes people’s values and makes them constructive and beneficial to society. Thompson argues that education further gives awareness that helps transform the security systems, political institutions, and economic regeneration from worse to better (Thompson 2015:2). This means that adequate education raises awareness that changes people’s values, culture,

standards and practice. It transforms people's mindsets from being destructive to becoming constructive in society. It helps people address the legacies of wars through the promotion of related long-term economic development processes.

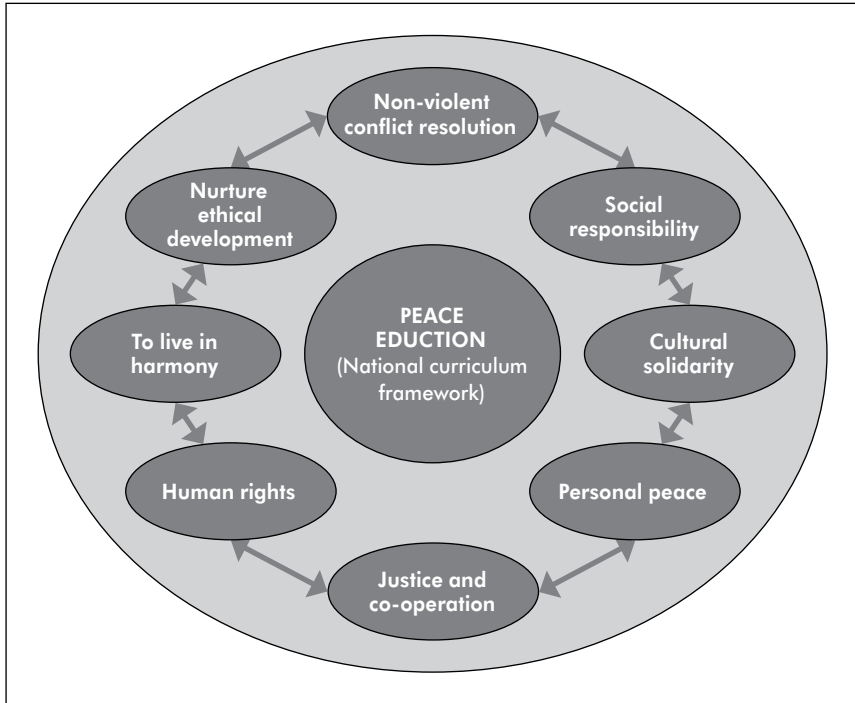
Thompson (2015:3) argues that "a country's ability to provide its population with an all-inclusive education system that leads to adequate education reduces the probability of violence occurrence in the society". A report of the UK's Department for International Development (DFID) indicates that "if the expectations of the population for essential services, such as education, are met, peace is more likely to prevail" (DFID 2010). Scholars have argued that education "gives skills to the people to enable them to support economic regeneration, sustainable livelihoods; and helps them deal with the legacies of conflict" (Smith, McCandless, Paulson and Wheaton 2011:8). Although this may be true in developed countries, it is not the case in Africa.

Conversely, education can lead to conflict and deadly wars. Many examples across the globe affirm that education has led to conflict and intractable violence. Bush and Saltareli (2000:15) argue that "education has served to divide and antagonise groups both intentionally and unintentionally". Education systems that lead to unequal and inefficient education lead to situations of injustices that breed conflict (Thompson 2015:3). Seitz (2004:9–13) states that "education policies that exacerbate the impact of direct gender-specific, structural and cultural violence, combined with badly-organised education, whether intended or not, can contribute to the escalation of societal conflicts". Education can similarly drive economic and social exclusion, and social fragmentation along ethnic or religious lines (UNICEF 2014).

Peace education can be understood as the process of promoting the knowledge, skills, attitudes and values needed to bring about behaviour change. To be more precise, peace education invites young people and adult learners to become aware of and to understand the consequences and root causes of violent conflicts. It also enables them to understand the impact of peace on their lives and livelihoods, and it appeals to them to abolish those values that propagate conflicts among themselves (Navarro-Castro and Nario-Galace 2010:14–15).

The concept of peace education is grounded in the theory that education can lead to peace (Thompson 2015:6). It encourages "peaceful means such as non-violence and reconciliation among people, activities and lessons on sharing, working in groups, interacting with others, and dealing with emotional stress positively" (Thompson 2015:6). Schilling (2012:36) maintains that "peace education is built mainly on two pillars: peace and conflict research, and recipient oriented practice which involves teaching peace in the classroom and beyond". It focuses on acquiring the capacities, skills, values and knowledge that contribute to the establishment of a global and sustainable culture of peace. Peace education is therefore, concerned with all the stages of the individual and the social lives of human beings (Schilling 2012:37).

Figure 1: The role and meaning of peace education



Source: (Education for Peace 2018)

Peace education denotes the theory and practice of education in terms of peace and non-violence, and contains a commitment to building a peaceful society. Peace education practitioners prepare people to learn the values, skills and knowledge about peace, and to develop the attitudes and behaviours needed to live in harmony with oneself, with others, and with the natural environment (Navarro-Castro and Nario-Galace 2010:21). It is a pedagogical proposal that contributes to improving not only the teaching-learning process but also the world (Lirola 2016:102–111). Furthermore, it helps students to learn, understand and know how to transform conflict in their own lives from something that is destructive to something constructive. It is part of all learning areas and is reinforced by people treating each other in constructive ways in classrooms, playgrounds, and in their family settings and communities.

Page (2008:9) describes peace education as “a commitment to peace that enhances the confidence of the individual to act as an agent of peace, to inform students on the repercussions of war and social injustices, train students on the value of peaceful and just social structures”. Peace education “upholds such social structures

and encourages students to love the world and to imagine a peaceful future by caring for others” (Page 2008:10). In a similar vein, Fountain (1999:1) declares that peace education is “a process that creates conditions conducive to peace, whether at an intrapersonal, interpersonal, intergroup, national or international level”.

The in-depth role of peace education in achieving a culture of peace that can lead to sustainable peace and security is clearly explained in Figure 1.

Education that focuses on human values prepares students and people to reject violence, to search for alternative peaceful means of dealing with conflicts when they arise, and to engage amicably and politically. Schilling argues that such values are not acquired only from lectures, but should also be an integral part of daily life (Schilling 2012:37). Peace education is therefore significant because it provides people with education that enables them to take more responsibility for their own actions, and to show more abhorrence towards biased institutions (Schilling 2012:37).

Peace education explains “the roots of violence, teaches alternatives to violence, adjusts to cover different forms of violence, teaches people to live in harmony” (Ramsbotham, Woodhouse and Hugh 2011:109–126). This will lead to personal peace, justice and cooperation, respect for human rights, cultural solidarity, and social responsibility.

DEFINING PEACEBUILDING

Smith *et al.* (2011:13) argue that “peacebuilding is distinct from peacemaking and peacekeeping, and involves addressing and removing the root causes of violence, the structural and the cultural violence that feed into and enable direct violence”. Peacebuilding has been described as a medium- to long-term process of rebuilding conflict-affected societies (Murithi 2009:3). Boutros-Ghali (1992) defines it as the “action to identify and support structures which will tend to strengthen and solidify peace to avoid a relapse to conflict”. The concept has “gradually expanded to refer to integrated approaches to address violent conflict at different phases of the conflict cycle” (Necla 2003:1). Murithi (2009:4) further argues that peacebuilding includes the process of rebuilding the political, security, social and economic dimensions of a society emerging from conflict.

For the purpose of this article, peacebuilding is understood as people working together to deal with conflict and establish measures that make this world a better place for humanity. It centres on building healthy relationships, and this is an individual and collective duty to attain peace for ourselves and all humankind. Its tasks involve addressing the root causes of the conflict and helping the parties to a conflict to revert to peaceful ways, such as mediation and negotiation, to find solutions to their conflicts. These tasks may include managing the process of

demobilisation, disarmament and reintegration (DDR), and security-sector reform as well. For this reason, Schilling (2012:29–30) sees “peacebuilding as a process that consists of a wide range of activities associated with capacity building, reconciliation and societal transformation”.

LINKING EDUCATION AND PEACEBUILDING

Education plays an immense role in a society and remains the cornerstone of the peacebuilding process. For example, Thompson (2015) argues that education leads to peace and is at the core of security and sustainable development. It delivers knowledge and skills that enable people to play a significant role in peacebuilding. It guarantees stability and sustainable development in the society and hence, becomes a great contributor to real peace. Education is compatible with the idea of sustainable peace because it transforms not only direct violence, but also structural violence from their root causes. Therefore, schools and institutions of higher learning are significant vehicles for successful peacebuilding that leads to real peace.

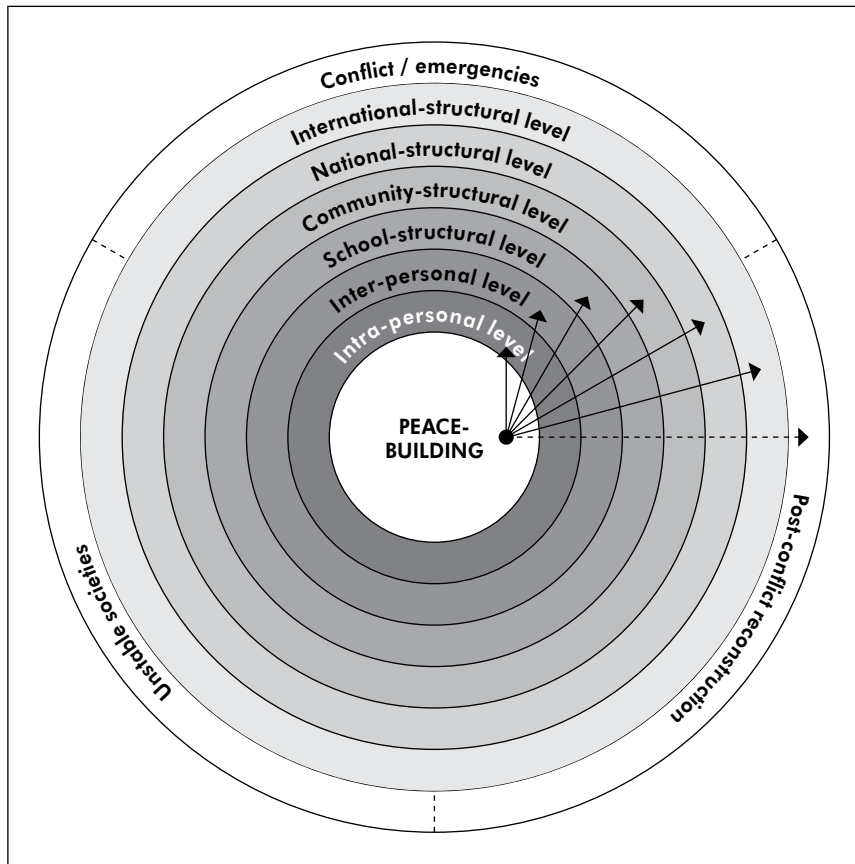
The impact of education on earnings, and thus on poverty, works largely through the labour market, though education can also contribute to productivity in other areas, such as subsistence farming (Orazem, Glewwe and Patrinos 2007:5). A study by Miguel, Satyanath and Sergenti (2004:725–53) found that poverty leads to violence in less developed countries. At the intersection of poverty and conflict, countries are more prone to civil wars, and armed conflict weakens governance and economic performance (Goodhand 2001).

Furthermore, poverty lowers the resilience to conflict by weakening governmental institutions, reducing the capacity for the provision of public goods, and limiting the projection of power and authority (Marks 2016:16–18). Moreover, poverty compounds the vulnerability to insurgency at the individual, community and national levels by lowering the opportunity costs of mobilising for violence (Marks 2016:19). Similarly, according to Humphreys and Weinstein (2008:12), high rates of unemployment and inequality, in combination with low levels of, or inadequate education; softens the ground for recruitment and provide motives for conflict to arise.

Linking education and peacebuilding, Smith and Vaux (2003:34) argue that:

“Education is a fundamental right that should be maintained at all times, even in the most difficult circumstances. Where education is maintained in the midst of conflict it may provide an important mechanism for the protection of children against abuse. It is an essential tool for human development and eradication of poverty. Where the opportunity of education has been lost due to conflict, it is not just a loss to the individual, but a loss of social capital and the capacity of a society to recover from the conflict.”

Figure 2: Peacebuilding themes



Source: (Cardozo 2008)

The nexus between peacebuilding and education is presented in Figure 2 that illustrates the peacebuilding themes.

Figure 2 illustrates that in peacebuilding settings, education is crucial in all of the phases, in that post-conflict reconstruction depends on it. During the peacebuilding processes, education is a powerful tool through which social and cultural values are transmitted from one generation to another. It imparts good attitudes to people, and shapes their skills that enable them to address conflict at intra-personal and interpersonal levels. Fundamentally, the role of education in peacebuilding is to deal with the inherent violence, and to teach people to respect one another. Thus, peacebuilding promotes peace at local, national and international levels.

THE VIABILITY OF PEACE EDUCATION IN PEACEBUILDING

Formal education helps people to return to a sense of tolerance, stability, normality and confidence. It has a particular symbolic significance for many communities and helps to restore faith in the state (Page 2008:9). A good educational curriculum offers quality education that encourages critical thinking which ultimately makes people less likely to follow the lure of charismatic leaders into armed conflict (Save the Children 2008:13).

Johnson and Johnson (2006:34) postulate that an effective curriculum for peace education is characterised by the “establishment of a compulsory education system to gather social diversity; existence of a mutual dependence as the basis of a peaceful society and helping students develop the competencies and attitudes necessary for cooperation”. They also argue that this curriculum must be defined by “the initiative of teaching students how to make peaceful political speeches while making certain difficult decisions, teaching them how to demonstrate peaceful attitudes, and be able to inculcate citizenship values in the students” (Johnson and Johnson 2006).

Peace education during peacebuilding leads to freedom, harmonious living, happiness, confidence and tranquillity. Real peace is built on the principles of happiness and independence, freedom and democracy. Scholars have referred to real peace as a state of living together confidently, in freedom, peace and tranquillity (Gurdogan-Bayir and Bozkur 2018:148–164). Hence, the lack of a quality education system that reflects Africa’s values and culture is an obstacle to the success of peacebuilding in Africa.

COLONIAL EDUCATION: A BARRIER TO SUCCESSFUL PEACEBUILDING IN AFRICA

Educational systems can be a driving force for either peace, or conflict and violence. In the 1980s the then government of Burundi manipulated the educational system to favour one community (the Tutsi) while disfavoured other communities (the Hutu and Twa). This educational system became tribalised and teachers were manipulated to practise tribalism in the schools. This created social tension that contributed to intractable conflict that ravaged the country.

Before discussing the impact of colonial education on the search for peace and security in Africa via peacebuilding initiatives, there is a need to understand what colonial education was all about. During the period of colonisation, education was based mainly on a curriculum that promoted Western history and values to the colonised, be it in Africa, or elsewhere around the world. As a result, education consisted of a colonial curriculum of education that advanced the interests of the colonialists, while discarding the history and many facts relevant to the colonised territories.

Kelly and Altbach (1984:117–36) maintain that the colonising nation implemented its own form of education and curriculum within its respective colonies. These scholars argue further that colonial education is a process that assists in the consolidation of foreign rule in colonised states (Kelly and Altbach 1984:117–36). Moreover, Brett (1973:230–231) argues that the colonial education system subjected the colonised states to political, psychological, economic and moral harm. The unpleasant impact of colonial education is destructive and is so persistent that it continues to turn the lives of all its victims, upside down and inside out (Oba and Onyije 2011:626). Rodney (1972:56) feels that the impact of colonialism on education reduced Africans to a state of nothingness. The fact is that colonial education distorted African history, and many of the subjects taught in the schools are not for Africans, but speak about Africa.

Cheeseman and Fisher (2019) declare that colonial education committed Africa to fragile authoritarianism and reinforced the authoritarian elements in African societies, while undermining the inclusion and accountability that once balanced the societies. Colonial education strips the colonised people away from their indigenous learning structures and draws them towards the structures of the colonisers (Frantz 1952:45–48). This means that colonial education has assimilated Africa's indigenous learning cultures and systems that would promote and enhance the success of peacebuilding in Africa. Africans are, therefore, seen to be assimilated and encultured in the educational cultures, values and traditions of their colonialists.

The colonial education system is a barrier to the achievement of real peace because it reproduces Eurocentric values and cultures in Africa, while peacebuilding should be based on the values and cultures of the local people in the region where conflict has occurred. Viswanathan (1988:85) argues that

“Cultural assimilation is the most effective form of political action because cultural domination works by consent and often precedes conquest by force. It is important to note that colonial education has made colonialists to gain strength over the colonisers through mental control. This mental control is a barrier to peacebuilding in Africa because it is implemented through a central intellectual location, the school system or ideological state apparatus.”

Kelly and Altbach (1984:117–36) argued that colonial schools sought to extend foreign domination and economic exploitation of the colony. These scholars (Kelly and Altbach 1984:117–36) further argued that colonial education is “directed at absorption into the metropole and not separate and dependent development of the colonised in their own society and culture”.

Colonial education has also spread the idea of divide and rule, which remains embedded in the political leadership in Africa. This means that colonial education breeds scholars and leaders that lean towards dividing communities, along either

tribal lines, or political party affiliations. Bethke (2012) argues that many African political leaders have relied on divide-and-rule politics to survive in office. This has by and large bred conflicts and wars and led leaders to sustain power by breaking up rival concentrations of power into pieces that weaken the citizens so that they cannot take charge of their country.

Ngũgĩwa Thiong'o (1981:16) argued that colonial education makes the colonised nation see their past as a wasteland of non-achievement and makes them distance themselves from that wasteland. He further argued that colonial education makes them identify with that which is furthest removed from themselves (Ngũgĩwa Thiong'o 1981:18–19).

It is vital to reiterate that education started in Africa, and that the first university to offer degree certificates was established in Africa. This means that education started in Africa before reaching the first world. It existed in the pre-Atlantic slave trade and pre-colonial Africa. Rodney (1972:44) identified different features that characterised formal education systems in pre-colonial Africa as follows:

- it had close links with social life both in a material and spiritual sense;
- it was collective in nature;
- it was many-sided;
- it was development-oriented;
- it was also available at later stages in life, such as on the occasion of passing from one age grade to another or of joining a new brotherhood;
- there was a specific programme and a conscious division between teachers and pupils;
- educational practices were based on communal value (communalism);
- it was also directly connected with the purposes of the society;
- there was no separation of education and productive activity or any division between manual and intellectual education.

From the above facts, one can argue that pre-colonial African education matched the realities of the people in the society. It produced well-rounded personalities to fit into that society. This is the education that recognised the needs of the people, and therefore, it remains a strong foundation for peacebuilding in Africa. Regrettably, this education was destroyed during the transatlantic slave trade and colonialism.

The colonialists introduced a new set of educational institutions that supplanted and replaced those which were there before (Oba and Onyije 2011:2). Oba and Onyije (2011:3) further held that the colonial educational system:

- stimulated the values and practices that amounted to informal education;
- never grew out of the African environment or one that was designed to promote the most rational use of the material and social resources;
- was not designed to give young people confidence and pride as members of African society; and

- was not rooted in African culture, and therefore, could not foster any meaningful development within the African environment because it had no organic linkage.

Such an education cannot serve as the foundation for peacebuilding in Africa. Therefore, education in Africa faces a crisis because of its non-responsiveness to the setting of its offerings (Tchombe 2006:7). Colonial education introduced an unfamiliar system of education which aimed to ensure that African nations were subjugated and exploited (Oba and Onyije 2011:2). Furthermore, colonial education was essentially literary; it had no technological base, and was therefore antithetical to real or industrial development, and was not rooted in the people's culture in Africa (Ocheni and Nwankwo 2012:50).

It is important to note that culture is meaningful in peacebuilding processes. For example, culture defines the way human beings live and interact with each other and their environment, and it emerges as an essential factor for both sustainable development and lasting peace (UNESCO 2013:2–4). Culture informs people's relationship with sustainable development, conflict and reconciliation in a distinct, but direct manner. It determines and creates paths for sustainable conflict transformation and healing. According to UNESCO (2013:2–4): "culture is significant in our daily lives in that it is an essential part of conflicts and conflict resolution". The everyday life of citizens concerning their local cultural norms and traditions becomes the basis of the fourth generation of peacebuilding (Piotrowska 2015:10). Cultures are like underground rivers that run through our lives and relationships, giving us messages that shape our perceptions, attributions, judgements and ideas of self and each other (LeBaron and Grundison 1993).

Colonial education supplanted Africa's cultures and values, and imposed a foreign culture on the people. This has led to the failure of the peacebuilding efforts on the continent, and a culture of violence has become a norm. This is because a society without its own culture and values is dead. As argued earlier, good quality of education rooted in people's culture is paramount to peacebuilding and a major contributor to sustainable development (Lewin 2001). However, as seen in Africa, colonial education supplanted Africa's cultures, and failed to promote local knowledge. For example, Bush and Salterelli (2000) said that colonialists used education:

- as a weapon in cultural repression of minorities and to provide unequal access to education;
- to suppress language, traditions, art forms, religious practices and cultural values;
- to segregate a community to maintain inequality between groups within society;
- as a colonial tool and weapon of war;
- to manipulate Africa's history and textbooks for political purposes; and
- to divide Africans and instil in the Africans a sense of inferiority.

This kind of education has continued in the post-independent Africa. Education continues to breed scholars who know little about their continent, values and customs. Africa is challenged with irrelevant knowledge that disempowers rather than empowers individuals (Ndlovu-Gatsheni 2013:12). Colonial education in Africa has led to inequality in many parts of the continent, while inequality is the bitter enemy of peace. Inequality leads to organisational violence and to structural violence when part of the population is prohibited from acquiring the needed resources for a healthy life and environment (Chasin 2018:81–90). Inequality breeds violence that endangers workers, consumers, and the public. Moreover, Chasin argued that domestic repression and militaristic organisational violence can be used to maintain and further inequality (Chasin 2018:81–90). People direct their anger about an unjust social order against the weaker and more vulnerable sectors of society (Chasin 2018:81–90). An increase in income inequality has the significant and robust effect of raising crime rates (Fajnzylber, Lederman and Loayza 2002).

According to Shizha (2005), colonial education perpetuates the elite cultural values of the colonisers and fosters racism and divisions. In all African schools, both primary and universities, Eurocentric knowledge is used as a system of control (Shizha 2005). This type of education continues to fill African minds with abnormal complexes, which dehumanise and de-Africanise them, ultimately leading to alienated mindsets. Furthermore, colonial education policymakers established an educational curriculum that promotes inequality. This education system is divisive and promotes hatred and disharmony between African communities. Colonial education demeans Africans and gives rise to a separatist racial system. Rodney (1972:263) points out that:

“The main purpose of colonial school system was to train Africans to participate in the domination and exploitation of the continent as a whole... Colonial education was education for subordination, exploitation, and the creation of mental confusion and the development of underdevelopment.”

In addition, colonial education enabled colonialists to form a class that serves as interpreters between them and the millions of people in the colonies. This class of people has remained the agents of the colonialists in taste, opinions, morals, as well as intellect. Colonial education has been a significant tool that still facilitates colonialism. It has assimilated Africa’s cultures, values and morals, and created divisions within the communities. Growing up in the colonial education system, many colonised children enter a condition of hybridity, in which their identities are created out of multiple cultural forms, practices, beliefs and power dynamics.

Colonial education creates a blurring of the lines that makes it difficult to differentiate between the new, enforced ideas of the colonisers and the formerly accepted

indigenous practices. Ng g wa Thiong'o (1981:24) asserts that educational systems in Africa "annihilate a people's belief in their names, their languages, their environment, their heritage of struggle, their unity, their capacities and ultimately in themselves".

Language is a prominent tool in peacebuilding initiatives. For example, Ngabonziza (2013:36) argued that language is a critical tool in conflict management and also in mediation processes. Language also has a strong link with culture, as the existence of culture is dependent on the ability of people to create and understand symbols (Tobalase and Ogbonna 2017:5). Colonial education has destroyed the cultural heritage and many indigenous African languages. This makes it impossible for foreign languages that bring foreign cultures and values to lead to real peace.

Furthermore, colonial education in Africa disassociates people from their native cultural heritage. It also impacts on the individual and creates a sense of inferiority complex that leads to the loss of self-confidence. Ngũgĩwa Thiong'o (1981) argued that colonial education instils a sense of inferiority and disempowerment within the collective psyche of a colonised people. Building sustainable peace that is characterised by good governance requires an education system that reflects Africa's values, culture, and heritage.

CONCLUSION

Peace education is a viable tool that can lead to the success of peacebuilding, which will ultimately lead to a culture of real peace and security. Peace has an immense impact on education, and at the same time, education has an effect on peace. During peacebuilding, peace education acts as a preventive mechanism and promotes values such as respect for human rights, freedom and confidence. The article found that peace education during peacebuilding transforms people's mindsets, attitudes, values, and behaviour from being destructive or violent to being constructive and peaceful. The article also found that colonial education has supplanted the African cultures, values and traditions that would inform any peacebuilding initiatives. It also continues to entrench the divisions among African scholars, leaders and local communities. There is need for a radical transformation of schools and/or universities into African universities that teach African realities and history. These universities must be based on the culture, values and traditions of Africans. There is a need to decolonise the Eurocentric perspectives, values, cultures, and traditions that control the curricula in universities in Africa. The current formal education in Africa marginalises African values, culture, and traditions, and imposes Eurocentric values. Peace education remains a viable tool for building sustainable peace in Africa, but this must be informed by an education system that is built on the African culture, values and heritage.

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The Nexus Between Public Service Motivation and the Use of Co-production as an Alternative Service Delivery Arrangement by South African Municipalities

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ABSTRACT

Global service delivery challenges in the 21st century, which include a decrease in public resources while citizens' needs continuously increase, oblige public sector organisations to find alternative strategies to public service delivery without compromising the quality of services. Among these strategies are the use of alternative service delivery arrangements (ASDAs). Though proven as an effective strategy to deliver services amid resource and capacity challenges, their use will depend partly on the motives in which public service motivation is grounded. These motives (rational, norm-based, and affective), on which the Public Service Motivation Theory (PSMT) is premised, could influence the municipal administration's and politicians' decision whether to adopt ASDAs such as co-production. Although the motives underpinning PSMT could encourage municipal officials and politicians to act in the interest of providing improved and quality service delivery, it could also result in officials and politicians adopting ASDAs that promote their social or personal interests. As such, this article provides insight into the motives of PSMT as a set of context variables that provides conditions under which the municipal administration and politicians might adopt co-production as an ASDA. Thus, through a qualitative research design, this article explores the nexus between these motives and the use of co-production as an ASDA in South African municipalities.

INTRODUCTION

Challenges of financial pressures and resource constraints as well as service delivery protests are global phenomena that have made it contingent upon governments and public sector organisations, including municipalities, to consider innovative alternative service delivery options and strategies (Van Baalen, Schutte and Von Leipzig 2015:3; Gawlowski and Modrzy ski 2019:39). Of these options and strategies, public sector organisations in both developed and developing countries worldwide are using ASDAs. Among the developed countries, the United Kingdom, the United States of America, and New Zealand have been leaders in the use of ASDAs such as public-private partnerships, contracting out, commissioning, and co-production (Islam 2015:115). Developing countries that have been successful in the use of ASDAs include South Korea, Taiwan, Botswana, Indonesia, Mozambique, and Tanzania (Garcia-Zamor 2015:35). This indicates that globally the public sector is experimenting with innovative forms of ASDAs to improve efficiency and optimise the use of limited public sector resources.

The use of ASDAs by South African municipalities has become important amid challenges of resource constraints, a lack of municipal responsiveness to service delivery needs, and a disconnect between citizens' service delivery needs and services provided by municipalities (Ndevu and Muller 2017:18; Alexandra, Runciman, Ngwane, Moloto, Mokgele and Van Staden 2018). From the state of municipal service delivery in the country, it is evident that South African municipalities are struggling to provide quality and sustainable services, which makes it prudent for affected municipalities to explore ASDAs as fundamental to their strategies to improve service delivery. Even so, it seems that ASDAs are not optimally used to address service delivery challenges and resource constraints hampering service delivery in some South African municipalities. This raises the question of the extent to which this lack of the use of ASDAs is influenced by the motives (rational, norm-based, affective) underpinning PSMT.

Notably, social or personal interest that can be aligned with the motives of PSMT could become a determining factor for officials and politicians to use ASDAs (Andersen, Jensen and Kjeldsen 2020:4). However, research that evaluates how PSMT motives inform the adoption of ASDAs such as co-production seems to be lacking in the South African municipal environment. This makes it prudent to consider how decision-making processes regarding service delivery can be either objectively or subjectively grounded in the motives of PSMT. As such, this article aims to explore the nexus between the motives underpinning PSMT and the use of co-production as an ASDA by the administration and politicians in South African municipalities. The research question posed in this regard is: How could the motives of PSMT influence decision-making processes by the administration and politicians to use co-production as an ASDA? The significance of the

aim and research question is also underscored by the fact that, as a set of context variables, the motives of PSMT could provide conditions under which the municipal administration and politicians may be inclined to adopt co-production as an ASDA. Given the nascence of co-production's use as a contemporary ASDA, it is deemed beneficial to understand how these motives as context variables could influence its adoption in practice, since service delivery decision-making processes in themselves are complex and the outcome of using co-production is not simply positive or negative.

Against this background, the first section of this article delineates PSMT and its motives in the context of ASDAs. This is followed by the conceptualisation of ASDAs and co-production. The article concludes by explicating the nexus between the motives underpinning PSMT and co-production's use as an ASDA by the administration and politicians.

PUBLIC SERVICE MOTIVATION AND ITS MOTIVES FOR ALTERNATIVE SERVICE DELIVERY ARRANGEMENTS

The 21st century brought about complex challenges that public sector organisations in developed and developing countries face during the delivery of services. These challenges extend to the affordability of services, budget constraints, leadership issues, operating in vulnerable, uncertain, complex, and ambiguous (VUCA) environments, growing and ageing populations, technological changes, and a fast-changing world (Gill, Pride, Gilbert, Norman and Mladenovic 2010:33; Bel and Warner 2015:52). Thus, in an era where resources have decreased while citizens' needs are increasing, public sector organisations have turned towards ASDAs as solutions that will allow them to still provide efficient and quality services within the scope of limited resources (Leavitt and Morris 2007:325). Given these challenges, the administration within public sector organisations is at the centre of using strategies such as ASDAs that will make scarce resources go further, and that improve public service delivery amid resource constraints and citizens' growing service delivery demands. The utilisation of ASDAs as strategies during service delivery could be driven by underlying motives that drive those who adopt such an approach to service delivery. In this regard, theories with an internal organisational focus, such as PSMT, and that influence the decisions exercised by the administration and politicians when using ASDAs are explicated in this section.

The theory of public service motivation by Perry and Wise (1990) is about the motivation of the administration to contribute to and help society (Perry and Hondeghem 2008:4). According to Andersen *et al.* (2020:3), public service motivation can be defined in terms of the beliefs, values, and attitudes

that motivate employees to act in the best interest of the larger population. Therefore, public service motivation can be characterised as a type of extrinsic motivation internalised by an employee, since the objective of the motivation will be a result that benefits society (Kjeldsen 2012:26). Such extrinsic motivation is of particular relevance in the 21st century, where public sector organisations have limited funding for service delivery, and it therefore becomes a challenge for public sector organisations to find alternative ways to motivate their employees (Austen and Zacny 2015:23–24). Research on public service motivation thus allows public sector managers to shed light on work values and motivation of prospective employees who might join and remain in the public sector, and allow the development of systems to gain and retain suitable employees (Christensen, Paarlberg and Perry 2017:529). With its focus on the internal organisation, this theory applies to the administration and politicians who constitute the internal actors of public sector organisations (Kim 2016:8). As such, the motives underpinning PSMT are fundamental to the agenda of the administration and politicians during the delivery and improvement of services, whether or not this is done through the adoption of ASDAs.

Three motives underpin public service motivation, namely rational motives, norm-based motives, and affective motives (Leisink, Knies and Van Loon 2018:3). Rational motives allow the administration and politicians to participate in political processes and to collaborate regarding issues of social or personal interest (Perry and Wise 1990; Berry 2002, as cited in Vaisvalaviciute 2009:325; Andersen *et al.* 2020:4). These rational motives include the participation of the administration in policymaking, commitment to public programmes due to personal identification with issues addressed by these programmes, and private interests concerning services delivered within their communities (Kim 2016:8). Hence, by participating in policymaking processes for the delivery of public service, politicians and the administration can use these platforms to advocate personal interests other than merely the delivery of services, such as financial gain (Kjeldsen 2012:8). To summarise, issues of social or personal interest for either politicians or the administration are important constructs in which rational motives are grounded.

Norm-based motives are influenced and underpinned by the desire to serve the public, a sense of duty to public sector organisations, and achieving social equity (Kim 2016:8; Andersen *et al.* 2020:4). This motive is grounded in internalised loyalty and the duty of politicians and the administration to serve societal and public sector interests (Kjeldsen 2012:33; Stazyk and Davis 2015:633). This could also mean that the administration and politicians perform service delivery duties based on the fact that it is what they are paid to do. Affective motives are grounded in human emotions and the willingness to help people (Perry and Wise 1990; Berry 2002, as cited in Vaisvalaviciute 2009:325). Affective motives include patriotism of benevolence and commitment to a cause based on its social

importance (Kim 2016:8). In addition to these constructs, the administration as well as politicians can express the desire to do good for society because of personal identification with citizens affected by a particular service or an emotional connection to the situation in question (Kjeldsen 2012:26; Stazyk and Davis 2015:628). Significantly, the constructs associated with affective motives are therefore patriotism of benevolence, commitment to a cause based on its social importance, the desire to do good for society because of personal identification with citizens affected by a particular service, and an emotional connection to the situation. In addition to these motives, the application of PSMT also makes several contributions, as discussed next.

Steen and Rutgers (2011, as cited in Van Loon 2015:246) contend that public service motivation results in the administration focusing on outcomes that go beyond their own interests and those of their organisation and focus on how they can best serve the public interest. Thus, the motives underpinning PSMT are expected to shape the ethical behaviour and decision-making of the administration in the process of service delivery (Meyer-Sahling, Mikkelsen and Schuster 2018:445). Van Loon (2015:60) states that PSMT serves as a means through which public sector organisations can enhance service delivery, but with a focus on the internal organisation. This internal focus contributes to making the public service administration more public service motivated if public sector values have been internalised (Stazyk and Davis 2015:628). The level of motivation of an organisation's workforce can affect job choice, performance, and how effective the organisation is (Austen and Zacny 2015:24). In terms of service delivery, one could thus argue that if a public sector organisation's administration is motivated to perform well in the interest of service delivery, this could motivate the use of ASDAs as a method to be more responsive to the needs of their communities.

CONCEPTUALISING ALTERNATIVE SERVICE DELIVERY ARRANGEMENTS AND CO-PRODUCTION

Even though discussions concerning ASDAs date as far back as the 1970s, it was introduced in South Africa in the 1990s (Nyamukachi 2005:47). The improvement of service delivery in the public sector became a priority, and the core functions of public sector organisations therefore had to be re-examined (Crous 2002:7). ASDAs thus entailed that the functions of public sector organisations had to transform to be more citizen-oriented (Ford and Zussman 1997, as cited in Crous 2002:6). Consistent with this focus on transformation, ASDAs are defined by Armstrong (n.d.:1) as the outcomes of public sector reforms. According to Furlong and Bakker (2010:6), ASDAs are defined as a set of alternatives brought

about by reforms and used by public sector organisations in the delivery of public services. Therefore, an ASDA is a concept used to describe the delivery of public services to citizens through arrangements other than the public service or sector (Kiggundu 2016:284).

Since the introduction of ASDAs, there has been a growing perception of public sector organisations as being more like a governing body and not a supplier of goods and services (Sarig 2013:48). This implies that public sector organisations are more involved in the administration of their departments than in physically delivering services to citizens. This results in either the outsourcing of service delivery or the delivery of services through collaboration between public sector organisations and stakeholders such as the private sector and citizens (Sarig 2013:48; Potier 2018:7). To this effect, in some instances, ASDAs have an element of risk transfer from a public sector organisation to an external or private party. These risks include financial risk as the private party uses its financial resources to deliver the service and is remunerated by public sector organisations for services rendered (Knapp, Clayton, Fackenthal, Hixson, Leaning and Tanovic 2020:5). However, accountability and democratic responsibility for service delivery remain in the hands of the public sector organisation (Armstrong n.d.:2; Potier 2018:8).

In addition to transferring risks, ASDAs have proven to have several benefits in the delivery of public services. For public sector organisations, the benefits associated with alternative service delivery include cost reduction, improved service quality, increased effectiveness and efficiency, better use of government assets, and increased responsiveness to citizen's needs (Khumalo, Ntlokonkulu and Rapoo 2003:6). As a result of these benefits, public sector organisations globally utilise ASDAs to enhance the use of limited resources through cost reduction, lowering debt, and increasing tax revenues (Sarig 2013:48). Thus, efforts to use ASDAs have emerged as part of collaborations between various stakeholders such as public sector organisations and private, non-profit, and public entities (Hilvert and Swindell 2013:240). This collaboration could assist municipalities and public sector organisations worldwide to deliver quality services in a cost-efficient and effective manner as they respond to the ever-changing needs of citizens within their jurisdiction (Hilvert and Swindell 2013:241). From these benefits, it is evident that the drivers behind why public sector organisations embark on ASDAs include making services accessible to service users, cost-saving, cost-effective and efficient service delivery, and resource limitations. ASDAs therefore seem to involve and require new management practices such as co-production, collaborative relationships, and network governance by a public sector organisation, all of which often necessitate a shift in the governance of service delivery (Nemec, Potier and De Vries 2018:3). Without detracting from the importance of collaborative relationships, network governance and other forms of ASDAs, for this article, co-production, which is regarded as one of the main forms of ASDA in contemporary

public sector service delivery (De Vries and Nemec 2018: 16), is considered due to its nascence in the South African municipal service delivery environment.

The co-production of service delivery is not a new phenomenon as its discourse and practices date back to the early 1970s (Sorrentino, Sicilia, and Howlett 2018:279), and its introduction coincides with the time frame when the principles of traditional Public Administration Theory were predominantly applied by public sector organisations to deliver services. The reign of traditional Public Administration Theory was associated with public sector organisations being the sole providers of services to the public with limited citizen participation (Sorrentino *et al.* 2018:279). The introduction of co-production thus came as an alternative to the bureaucratic and hierarchical structures of traditional Public Administration Theory that dominated service delivery, along with the belief that the delivery of services would be less difficult with the active participation of citizens as the recipients of services (Ostrom 1996, as cited in Sorrentino *et al.* 2018:279). While citizens' participation in policy was at the centre of co-production's introduction, in recent years it has developed to include individual citizens as well as organisations (non-governmental organisations and citizen groups) that collaborate with public sector organisations in the design, management, and delivery of services (Poocharoen and Ting 2013:590). To this extent, apart from co-production being absent from service delivery during the period of traditional Public Administration Theory, the trajectory of co-production's relevance in service delivery in the 21st century is also prioritised in theories such as the New Public Management (NPM), and New Public Governance (NPG).

The NPM's (latter part of 1970s) focus on improving service delivery culminated in, among other things, the introduction of alternative mechanisms to deliver improved public sector services. The significance of these ASDAs that NPM introduced lies in the use of co-production, which locates citizens and other stakeholders as central to public sector service delivery. Since co-production has been highlighted by NPM, it has remained relevant in the 21st century and in more contemporary approaches to public sector services delivery. Similar to the NPM, the NPG (2006) recognised co-production as a viable strategy to improve public sector service delivery (Sorrentino *et al.* 2016:279–280). The NPG, however, focused on the building of relationships with citizens and politicians that would emanate from the co-production of services for improved service delivery (Pyun and Gamassou 2017:254). As such, the NPG theory emphasises the role of citizens as fundamental co-producers during public sector service delivery. This thus highlights the importance of citizen participation in the respective co-production stages during the delivery of public services. In the trajectory of how the use of co-production progressed from traditional Public Administration Theory to becoming a prominent feature of NPM and NPG, citizens became a distinct role player in the use and application of co-production by public sector organisations in the 21st

century. In other words, globally the role of citizens has changed in public sector service delivery that is underpinned by co-production (OECD 2011:37). This progression of co-production, however, has not only culminated in a more distinct role for citizens but has also changed the traditional role of the administration and politician in service delivery and the co-production service delivery stages.

The use of co-production during service delivery occurs through various stages, such as co-planning, co-design, co-delivery, and co-evaluation (OECD 2011:37). Co-planning, the first stage, entails identifying and prioritising public service needs, outcomes, and users (Nabatchi, Sancino and Sicilia 2017:17), as well as determining resources. All role players work together to determine which services will be prioritised and the resources that will be used to deliver these prioritised services. According to Bovaird and Loeffler (2013:8), co-planning demands that role players (citizens, administration, and politicians) discuss priorities. In the municipal context, during co-planning, the administration is responsible for creating platforms for citizens to participate in the planning of services while the role of politicians can be demarcated as having regular engagements with citizens to reach consensus regarding service delivery priorities and ways in which these priorities can be addressed (Biljohn 2018:192). The citizens' role in co-planning relates to expressing their service delivery needs and preferences as well as suggesting solutions to service delivery priorities or challenges (Biljohn 2018:192).

Co-design, the second stage, refers to creating, planning, and arranging public services (Bovaird and Loeffler 2013:9). This stage is about more than just traditional consultation, and more about bringing the experience of service users and communities to the design of public services (Bovaird and Loeffler 2013:9; Sorrentino *et al.* 2018:281, 285). Thus, the co-design stage could enhance the relationship between citizens, politicians, and public sector officials through building trust and through positive engagements (Bradwell and Marr 2008:10, cited in Blomkamp 2018:736). In the municipal context, during the co-design stage the administration has to consult citizens when designing the service that was identified during co-planning (Biljohn 2018:193). To facilitate participation during this stage, the administration should develop a database to list citizens' expertise and skills (Biljohn 2018:193). Politicians, meanwhile, should adopt policies to create platforms for citizens' participation in service delivery processes and ensure that the administration implements these plans (Biljohn 2018:193). The role of citizens during this stage encompasses expressing their choice about how they prefer services to be delivered (Biljohn 2018:193; Bovaird and Loeffler 2013:9). The co-design stage thus allows politicians, the administration, and citizens to have discussions about how services can best be delivered (Blomkamp 2018:733).

Co-delivery, the third stage, involves the delivery of public services by the administration, politicians, and citizens in collaborative ways (Bovaird and Loeffler 2013:19; Sorrentino *et al.* 2019:281). According to Sorrentino *et al.* (2018:279),

co-delivery is about citizens and public sector organisations taking action to achieve policy objectives through the management of people, projects, and assets and the implementation of projects. During municipal service delivery at the co-delivery stage, the administration partners with citizens to deliver services by identifying services that citizens can deliver. In this regard, on the one hand, politicians have to ensure that policies, plans, and municipal by-laws promote citizen participation during co-delivery (Biljohn 2018:194). Citizens, on the other hand, have to take the initiative by submitting proposals to the municipality to deliver services as well as establishing community cooperatives to deliver services (Biljohn 2018:194).

Lastly, co-evaluation, which is stage four, comprises the monitoring and evaluation of delivered public services (Nabatchi *et al.* 2017:196; Sorrentino *et al.* 2018:281). This stage, which entails evaluating service quality and outcomes (what works and why), includes asking questions, role players giving feedback, and the administration and politicians interpreting evidence (Loeffler and Bovaird 2017:410). In the municipal context, during the co-evaluation stage, the administration ensures the evaluation of services and the participation of citizens as part of such evaluation to improve the delivery of services (Biljohn 2018:194). Politicians in turn play an oversight role during this stage and have to engage with citizens to determine their satisfaction with the services they received and provide feedback on how decision-making was influenced by citizens' input and feedback (Biljohn 2018:194). The role of citizens during this stage can be demarcated as understanding how their inputs in decision-making about and evaluation of services made an impact on service delivery and making suggestions about how services could be improved (Biljohn, 2018:195).

The use of co-production for service delivery purposes has various benefits for public sector organisations (Bovaird, Flemig, Loeffler and Osborne 2019:230). The first benefit of co-production relates to the fact that its use can improve efficiency through building trust and commitment between role players as well as establishing mechanisms to ensure citizen accountability (Ostrom 1996, as cited in Poocharoen and Ting 2013:591). A second benefit relates to the outcome or impact of using co-production during service delivery. It is argued that a better outcome can be achieved when the inputs, such as ideas and resources, of both the public sector organisations and communities are collaboratively used for service delivery (Bovaird *et al.* 2019:230). Co-production is therefore deemed an important concept in public management due to its focus on the delivery of effective and efficient public services in which the inclusion of society and citizen participation are central to service delivery practices (Osborne, Radnor and Nasi 2012:145). A third benefit relates to how citizen participation in the co-production of services results in the nature of service delivery improving because of the contribution of citizens, which in turn results in

greater citizen satisfaction (Verschuere, Brandsen and Pestoff 2012:1092). Lastly, co-production can form part of service delivery arrangements in an attempt to improve service delivery and potential value for money for both citizens and government (Sorrentino *et al.* 2018:279).

Despite its benefits, there are also shortcomings associated with the use of co-production. The first, as highlighted by the OECD (2011:50), relates to insufficient resources and a lack of knowledge and skill by certain role players to co-produce. A second shortcoming is that exclusion of the community during decision-making, but subsequently involving them during co-production, could be perceived as a lack of impact by citizens (Gabauer *et al.* 2013, as cited in Vanleene, Verschuere and Voets 2015:8–9). A third shortcoming is that some role players who are abler and more resourceful may dominate proceedings during co-production (Poocharoen and Ting 2013:590). Together with this, some role players might be resistant to relinquish their power (a fifth shortcoming) (Bovaird 2007, as cited in Poocharoen and Ting 2013:590). Lastly, co-production may also dilute public accountability on the expected policy outcomes and public sector organisations may shift blame and not take sole responsibility for the failure of public policies (Poocharoen and Ting 2013:590). In this regard, the delineation of specific roles for role players – such as the administration, politicians, and citizens – during the respective co-production stages is deemed important.

THE NEXUS BETWEEN PSMT MOTIVES AND CO-PRODUCTION AS AN ASDA

From the rational, normative, and affective motives underpinning public service motivation, it can be deduced that these motives also influence the extent to which co-production may be considered an ASDA. The nature of such influence could have either positive or adverse implications for whether co-production should be considered an ASDA. Given the rational motives' focus on issues of social or personal interest for either politicians or the administration, such interest could consequently influence decision-making processes concerning as well as the outcomes of ASDAs. It thus raises the pressing question of "How rational are rational motives?" and whether the rationality of issues of personal or social interest does not instead subject the administration and politicians to subjective decision-making when adopting an ASDA such as co-production. In light of this, on the one hand, it could thus be argued that the extent to which the administration and politicians decide to use co-production as an ASDA could be strongly motivated by whether they would socially or personally benefit from such co-production. On the other hand, if social or personal benefits are not evident from co-production's use during service delivery, it could result in co-production not

being considered as an approach to service delivery. A counter-argument to this is that when the co-production of service delivery results in the outsourcing of service delivery (co-delivery stage), procurement processes could be manipulated for social or personal benefit by the administration or politicians. To remain rational, a disposition that could be adopted is that the objective of using co-production during municipal service delivery should focus on facilitating citizen participation through the respective service delivery stages and achieving the creation of public value. This in turn would facilitate citizen participation in the governance of service delivery and could restore the trust deficit between municipalities and citizens while restoring service delivery confidence in the municipal administration.

Norm-based motives, which are influenced by the desire to serve the public, inculcate a sense of duty in public sector organisations and of achieving social equity (Kim 2016:8). Unlike the rational motives, which could result in bias and subjective decision-making concerning the use of co-production as an ASDA, norm-based motives lend themselves to objective decision-making by the administration and politicians. Such objective decision-making is based on the premises of these motives, namely to serve the public and to achieve social equity, which are consistent with being a public servant. Moreover, through the use of an ASDA such as co-production, not only is this norm maintained, but social equity could be achieved by making citizens equal participants regarding the distribution, planning, designing, delivering, and evaluation of services. It should, however, not be accepted that, in principle, all decision-making concerning municipal service delivery is grounded in norm-based motives where the norm is a sense of duty and the goal of social equity. The question that could be posed is: To what extent does this norm withstand the pressures of internal and external political interference in organisational supply chain processes? Given cases of financial maladministration, tender corruption in municipalities, and irregular municipal supply chain processes, this norm is often exploited for issues in which the administration and politicians have a social or personal interest. This demonstrates that the rational motives of public service motivation have the ability to influence decision-making that is underpinned by the municipal administration and politicians' exercising of the norm-based motives. It could be argued that, to mitigate the influence of the rational motives during decision-making, the objective of using co-production during municipal service delivery should always focus on serving the public and, most importantly, to achieve social equity through the respective co-production service delivery stages.

Concerning affective motives, a desire to do good for society, patriotism, and benevolence (Kim 2016:8) in which the affective motives are grounded could be associated with an inclination to serve the public. While this resonates with the norm-based motives, personal identification with citizens affected by a particular service or an emotional connection to the situation in question (Kim 2016:8)

could result in subjective decision-making during municipal service delivery decision-making processes. Such personal identification, as well as an emotional connection due to the affective motives, seem to bear similarities with the focus of the rational motive, which is grounded in issues of personal or social interest for the municipal administration or politicians. From this it is apparent that the service delivery decision-making processes of the administration and politicians could be influenced by affective motives during the respective co-production service delivery stages. Hence, it becomes important to contemplate how the municipal administration or politicians can guard against an affective motive turning into a rational motive that may result in subjective decision-making during service delivery decision-making processes. In this regard, the affective motives grounded in doing good for society, patriotism, and benevolence – which are consistent with serving the public – could result in more objective decision-making. With regard to affective motives, the municipal administration and politicians' adoption of co-production as an ASDA should thus be with a focus on doing good for society, patriotism, and benevolence.

Against this background it can be concluded that all three motives of PSMT could be regarded as variables that could potentially influence the decision-making processes of the municipal administration and politicians when co-production is considered as an ASDA. Such influence could either be in terms of one motive or a combination of them, or the constructs underpinning these motives as variables. The outcome of co-production's use during municipal service delivery could therefore be influenced by which motive drives the administration's or politician's decision to adopt co-production as an ASDA. As such, as explicated in the preceding discussion, a definitive nexus exists between the motives underpinning PSMT and the use of co-production as an ASDA during municipal service delivery. From the three motives underpinning PSMT it is apparent that the norm-based motives' focus on serving the public as well as achieving social equity, and the affective motives' focus on doing good for society, patriotism, and benevolence should be the drivers of public service motivation in the municipal service delivery environment when ASDAs such as co-production are considered and undertaken. This recommendation is predicated on the constructs of the norm-based motives and affective motives, which are linked to more objective decision-making by the administration and politicians as compared to the constructs of the rational motives, which are seemingly grounded in subjective decision-making.

CONCLUSION

This article has demonstrated that all three motives of PSMT could be regarded as variables that could potentially influence the decision-making processes of

the municipal administration and politicians when co-production is considered as an ASDA. Notwithstanding that citizen participation is fundamental to the co-production of service delivery, their participation is in partnership with the municipal administration and officials, which creates an opportunity for the mentioned motives to influence decision-making processes as variables. Moreover, citizens' participation is not isolated from the administration or politicians, who could influence (i) the outcomes of the respective co-production service delivery stages, and (ii) whether co-production will be adopted as an ASDA.

The aim of this article was to explore the nexus between the motives underpinning PSMT and the use of co-production as an ASDA by the administration and politicians in South African municipalities. This was achieved by discussing PSMT and its motives in relation to ASDAs, conceptualising ASDAs and co-production, and contemplating the nexus between the PSMT motives and co-production's use as an ASDA. This article has argued that the objective of using co-production as an ASDA during municipal service delivery should be with a focus on facilitating citizen participation through the respective co-production stages to facilitate citizen participation in the governance of service delivery. Moreover, it should aim to rebuild the trust deficit between municipalities and citizens and restore service delivery confidence in municipal governance. This article proposed that the norm-based motives' focus on serving the public and achieving social equity, as well as the affective motives' focus on doing good for society, patriotism, and benevolence, should be the drivers of public service motivation in the municipal service delivery environment when ASDAs such as co-production are considered and undertaken. This was proposed in light of the outcome of co-production's use during municipal service delivery being influenced by which motive drives the administration's or politician's decision to adopt co-production as an ASDA.

The research question posed by this article was: How could the motives of PSMT influence decision-making processes by the administration and politicians to use co-production as an ASDA? In response to this research question, this article concluded that there is a nexus between the three motives of PSMT and the decision-making processes that the municipal administration and politicians undertake regarding co-production's use as an ASDA. As such, these motives are regarded as variables that, combined or solely, could influence the decision-making processes of the municipal administration and politicians. From this it is apparent that, although co-production is a viable governance strategy and ASDA in the 21st century, its success depends in part on the public service motivation of the municipal administration and politicians who are key decision-makers regarding service delivery processes. Given this important role played by the municipal administration and politicians in the adoption of ASDAs, empirical research that demarcates a framework of variables that influence future decision-making is deemed beneficial.

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New Public Management and Effective Social Service Delivery

The Case of Mutare City Council, Zimbabwe

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ABSTRACT

The intent of this article is to explore the New Public Management (NPM) phenomenon and how it affects social service delivery. Using the Mutare City Council in Zimbabwe as a case analysis, the article interrogates if public administration reform packages under NPM constitute a sufficient antidote to the social service delivery crisis in Zimbabwe against the background of a complex socio-economic and political context. Zimbabwe is plagued with an urban governance and poor governance crisis, manifesting through erratic service provision in the realm of health service provision, education, public works, irregular refuse collection, poor road networks, bursting of sewer pipes, and congested urban spaces. This is augmented by a lack of accountability and corruption by urban local authorities. In response to this predicament, urban local authorities in Zimbabwe, like the Mutare City Council, adopted some NPM strategies as a stimulus for public sector efficiency and effective social service delivery. The key NPM reforms adopted and implemented by the Mutare City Council include, contracting out and outsourcing, performance management, civic engagement, e-governance and m-governance through the M-DATA platform, civic participation, accountability, and decentralisation through the use of ward development committees and subcommittees at ward level. Despite the Mutare City Council's implementation of the above, this article advances the argument that fractional, paltry, unconscious, and unsystematic application of the NPM by the Mutare City Council specifically, and Zimbabwe at large, rendered the NPM reforms ineffective.

INTRODUCTION

Local authorities, if well managed, are key public sector institutions indispensable for effective and efficient social service delivery, which is critical for sustainable development at local level. In global efforts towards advancing public sector reform, global actors like the Bretton Woods Institutions encourage developing countries to adopt the New Public Management (NPM) in improving public sector performance as well as ushering in effective social service delivery. This article interrogates the adequacy of the NPM in effective social service delivery using the Mutare City Council in Zimbabwe as a case analysis. The research answers the fundamental question of why a recommended international stimulus for public sector reform like the NPM has fallen short in promoting good governance and effective social service delivery in Zimbabwe in general, and in the city of Mutare specifically. The central idea is weighing the degree of effectiveness of the NPM in ushering in effective social services, thus instituting good governance and local sustainable development. Theoretically, the article uses the theory of good governance, coupled with the NPM conceptual framework, as theoretical avenues of analysis. Further, the article adopts a qualitative methodology, employing in-depth semi-structured interviews, and participant observation.

In essence, the article contends that there is piecemeal implementation of NPM owing to institutional capacity shortfalls of the local authority. Piecemeal implementation of the NPM by the Mutare City Council specifically and in Zimbabwe at large rendered the NPM reforms ineffective. The NPM reforms implemented were weakened by corruption, meagre political will, power struggles, inadequate technical capacity, poor human resources, economic decay in Zimbabwe, and limited monetary resources. The problem that prompted this research is the social service delivery crisis in the city of Mutare. The crisis has manifested through the poor road network, irregular refuse collection, the health service crisis in local clinics, corruption at the local council and poor water supply in the city. Muchadenyika (2014:4) contends that Zimbabwe is plagued with a governance problem and urban crisis. The core of these problems is an urban governance and administration crisis and the piecemeal adoption of a concept to solve the crisis, yet only partially implementing the concept.

Further, the social service delivery concerns of residents in Mutare are caught between the politics of local city authorities who are predominantly aligned to the opposition political party, the Movement for Democratic Change-Alliance (MDC-A) and the central government which is predominantly constituted by the ruling party, the Zimbabwe African National Union-Patriotic Front (ZANU-PF). The net effect of this has been problematic social service delivery and impingement of all efforts to remedy the predicament. The Bretton Woods Institutions like the World Bank (WB) and the International Monetary Fund (IMF) had prescribed

the developing countries to adopt this new model in the reforms of public sector management. The WB and the IMF imposed some programmes such as Structural Adjustment Programmes (SAPs) on the developing countries. Taking cognisance of the economic character of developing countries like Zimbabwe, topical questions include, Is the NPM model relevant to the needs of the developing countries where there are huge economic and political lags? and Is it fit for the socio-economic conditions of the developing nations? It is against this background and questions that this research is justified and significant (Zhou and Zvoushe 2017).

According to Chigudu (2014:43), Zimbabwe began to implement administrative reforms in the public sector, based on the NPM, in the mid-1990s. Chigudu (2014:43) further asserts that, this was owing to the need to change from colonial administrative structures to post-colonial structures (Chigudu 2014:43). This means that the NPM concepts have formed the bedrock of Zimbabwe's urban governance and public administration legislative framework since independence. Such legislative framework includes, Zimbabwe Prime Minister's Directive of 1984, the Provincial and Administration Act of 1985, Urban Councils Act of 1996, Rural Councils Act of 1996, the Traditional Leaders Act of 2000, the 2013 Constitution of Zimbabwe as well as the Zimbabwe Agenda for Sustainable Socio-Economic Transformation (ZIMASSET) of 2013–2018. Even though the NPM is comprehensively laid out implicitly and explicitly on paper, its implementation, has in reality been elusive, passive and largely rhetoric in Mutare and Zimbabwe. Therefore, the following research questions posed in this research have to do with: the significance of the NPM in social service delivery in Mutare; the adequacy of the NPM in ushering in effective social service delivery in Mutare; the drivers of poor social service delivery in Mutare; and recommendations to improve social service delivery in Mutare using the NPM. The article first will examine NPM conceptually and theoretically, and then look at the methodology employed in the research. Furthermore, it will analyse and discuss the empirical results.

THE NPM IN THEORY AND PRACTICE

Hood and Jackson (1991:12) propounded the NPM as a quartet of conventional administrative practices signifying certain concepts concerning the essence of administration and management. It is not founded upon a single theory, but draws from new institutional economics, managerialism, classical economics, public choice theory, principal-agent theory and neoliberal theory (Kaboolian 1998; Batley and Larbi 2004). It operates on the Washington Consensus and the SAP paradigm and practices privatisation, deregulation and liberalisation. While there are accepted definitions of the NPM, its implementation varies with contexts, political dynamics and the governance regime of implementing institutions (Haque

2017:19). This article uses good governance theory in the belief that the impact on communities should dictate how governance operates.

Major proponents of the good governance theory are Kaufmann *et al.* (1999), the WB (1989:55; 1992:1), and the United Nations Development Programme (UNDP 1997). In the words of Jessop (1995:318), "...governance theory tends to remain at the pre-theoretical stage of critique: it is much clearer what the notion of governance is against than what it is for". While indeed, some public administration scholars view good governance as an approach, Peters and Pierre (1998:232) contend that, essentially, governance is a political theory and that it is about process, while the NPM is about outcomes (1998:232). This article asserts that the theory of good governance is in fact inclusive of process and outcome.

According to Björk and Johansson, (2001:14), the theory of governance is about the state governing the society with new means and methods, which create new prerequisites for organising societal actors. They point out that actors are coordinated in other ways than through traditional hierarchies and that it is not primarily about the outcome, but about processes in a more or less static political system. In the same way, the NPM focuses on input and output by reconfiguring actors in a new and supposedly scientific way.

Good governance, furthermore, is about participatory, consensus-oriented, accountable, transparent, responsive, effective, and efficient, equitable and inclusive governance that follows the rule of law (UNDP 1997). It assures that corruption is minimised, the views of minorities are considered and that the voices of the most vulnerable in society are heard in decision-making (UNDP 1997). It is also responsive to the present and future needs of society (UNDP 1997). It combines the administrative and political imperatives of governance and service delivery. If the process of governing is inclusive and participatory by understanding the needs of communities and including them in decision-making, the outcome has greater buy-in and success.

Even though good governance might explain the drive behind the NPM, in practice its implementation has not always been a success. The imposition of the Bretton Woods institutions of SAP and the NPM has not been conducive to the context of certain African countries, its implementation has been problematic or did not benefit the communities it is supposed to help. Maladministration and corruption were reasons why it was imposed upon countries in the first place. However, it failed to avoid the previous follies. The analysis and subsequent discussion in this article support such an assertion. It does not mean that there are no instances of success. Haque (2017:23) has analysed the implementation of the NPM in several countries and identified common features like facilitating, down-sizing, agencification, result-based budget, user fee, managerial autonomy, and performance targets (measurement). Agencification in this context refers to the delegation of authority and tasks and services previously executed and delivered

by the public service to semi-autonomous agencies (Moynihan 2006:1033). Zimbabwe has implemented some of these features in its public administration and service delivery.

METHODOLOGY

To generate empirical data for this article, a qualitative research methodology was adopted with a special delimitation of the city of Mutare in Zimbabwe. Management and administration of the city by the Mutare City Council was of special interest. Therefore, a qualitative research design was adopted owing to the politico-administrative nature of the research.

To identify research participants for in-depth semi-structured interviews, the researchers used purposive sampling. Purposively selected and interviewed for this study, the mayor and 10 city councillors, were central to understanding how they adopted and implemented the NPM as well as the motivations behind this decision, the successes, failures and its role in effective social service delivery. The respondents of the study as identified through purposive sampling were the mayor of Mutare, the former mayor, the Mutare City Council public relations officer, and 10 ward councillors. One of the councillors was a member of the council finance committee and another served on the general purposes committee. In addition, two members from the residents' associations, two members from civil society organisations and three resident opinion leaders were identified.

Using secondary data review, the researchers also used document analysis. According to Bowen (2009), document analysis is a form of qualitative research in which documents are interpreted by the researcher to give voice and meaning around an assessment topic. Documents reviewed and analysed in this research include: the 2016 Social Audit Report for Mutare; United Mutare Residents and Ratepayers Trust (UMRRT) community workshop reports; Catholic Commission for Justice and Peace in Mutare (CCJP-M) social service delivery dialogues; the City of Mutare Clients Charter; and newspaper articles on NPM and social service delivery in Mutare. This was coupled with literature by public administration scholars on NPM, urban governance, and social service delivery issues in Zimbabwe and Africa at large.

The documents were thoroughly reviewed, interpreted, and coded into themes in relation to findings from the in-depth structured interviews. The researchers organised the collected data into NPM-related themes as generated from the empirical findings. The main theme was the NPM strategies used by the Mutare City Council. These were subdivided into civic engagement and participation, accountability, decentralisation, contracting out, performance appraisal,

privatisation, and outsourcing. Following data interpretation and conceptualisation through coding, the researchers developed a codebook of the main ideas that emerged. The codebook was then used as a guideline for the presentation of the empirical findings. A comparative analysis of the recurring themes was also carried out by the researchers, guided by the codebook. As Miles and Huberman (1994:254) aptly point out, comparative analysis of data entails generating, validating, and establishing conclusions in qualitative research.

RESEARCH RESULTS AND DISCUSSION

The research results will be discussed along the thematic areas identified in the research and it will first interrogate the NPM strategies in Mutare.

Interrogation of the city of Mutare NPM strategies

The Mutare City Council has discharged efforts meant to improve social service delivery in the city. Among the efforts are various NPM-oriented reforms. Addressing socio-economic needs of urbanites requires shifts in urban governance thinking and approaches (Muchadenyika 2014:2). Although piecemeal in nature, the adoption of the NPM by the Mutare City Council constituted such an attempted shift in urban administration and governance thinking. Indeed, the NPM culture is yet to be deeply and consciously entrenched in the Mutare City Council. The findings suggest the disorganised and fragmented application of NPM reforms by the Mutare City Council against a backdrop of technical incapacity, administrative capacity shortfalls, economic crisis, and pseudo-political will coupled with power struggles. As argued by Zungura (2014:246), “patchy implementation of NPM reforms without political as well as administrative will do not yield results”.

The key NPM reforms adopted and implemented by the Mutare City Council, according to the city councillors and other sources, include contracting out and outsourcing; performance management; civic engagement; e-governance and m-governance through the M-DATA platform; civic participation; accountability; and decentralisation through the use of ward development committees and sub-committees at ward level.

Notwithstanding the aforementioned reforms the research further established that the Mutare City Council focused on consumers as ‘clients’ and were trying to streamline their complaints procedures. The complaints mechanisms included a WhatsApp platform, a hotline number and a fully-fledged public relations office specifically established for handling complaints and ensuring clients in Mutare are well satisfied with services delivered by the council.

To this effect, in 2016 the Mutare City Council designed a Clients Charter with the primary objective of ensuring improved social services and standards for client satisfaction, coupled with guaranteeing user-involvement in the running of the council. The Clients Charter (MCC 2016) is a management tool established through consultations with stakeholders and clients with the view to improve service delivery and enhance good corporate governance. The NPM strategies implemented by the Mutare City Council are discussed in-depth in the following sections.

Decentralisation

The Mutare City Council has also adopted decentralisation as one of its vital NPM reforms. This is in line with Farooqi (2013:96) who cites decentralisation as a key feature of the NPM. The Mutare City Council employs the concept of decentralisation by decentralising the duties of the councillor to ward development committees. Each ward in Mutare has residents or ward development committees. In particular by setting ward development committees, the council and councillors were decentralising the duties of the councillor.

The ward development committees are a great decentralisation strategy by council as they facilitate citizens' involvement and participation in local planning and governance. Proponents of decentralisation and local government thinking, like Mill and Bentham (1987:2357) hold that local public institutions offer a congenial avenue for enhanced participation of local people. Ultimately, participation necessitates responsiveness of council as well as its efficiency and effectiveness in local service delivery.

The Mutare City Council has also been decentralising the role of full council by clustering and organising councillors into different committees to look at different aspects of running council. The committees include the finance committee, budget committee, and general purposes committee. This kind of decentralisation has been regarded as being detrimental to the organisation (Jonga and Chirisa 2009:168), for promoting transparency and efficient running of council. A councillor indicated that the existence of committees like the budget committee also helps in ensuring that there is citizen and resident ownership of council processes like budgeting.

Councillors interviewed in this study concurred that the establishment of ward development committees has been a very effective NPM reform. One councillor noted specifically that the ward development committees have been very effective and adequate in curbing suspicion and promoting transparency. In the same vein, another councillor highlighted that ward development committees were "trying their best" especially with aiding local planning. Muchadenyika and Williams (2016: 272) concluded that decentralisation in general as a means of effecting social change through urban governance has not

succeeded in Zimbabwe as the central government resorts to imposing strict control for political purposes.

Contracting and outsourcing

According to Zungura (2014:246), contracting and outsourcing are among the main features of the NPM. Contracting can be conceptualised as the subcontracting, outsourcing, and/or procuring of services from other private actors and not-for-profit organisations (Walsh 1997; Larbi 1998; Minogue *et al.* 1998). With the intention of reducing service and administrative pressure on itself, the Mutare City Council has been contracting out services like refuse collection, financial accounting, auditing, water engineering, and roads servicing.

In some instances, instead of contracting out, the council would do collaborative partnerships with stakeholders like residents' associations and non-governmental organisations to do civic engagement and institutionalise participatory democracy. For example, the Mutare City Council partnered with the Media Institute of Southern Africa (MISA), and other organisations, who facilitated and funded the workshops which culminated in the formation of the Clients Charter of the Mutare City Council.

Contracting out financial accounting and auditing to private players has been another key NPM reform by the Mutare City Council. Such a reform has been key in enhancing residents' access to information on financial issues. Critical civic organisations indicated that the relationship between the Mutare City Council and residents was marred with suspicion; partly owing to the council's refusal to publicise financial records as well as its unwillingness to do an audit since 2013. Against this background, the engagement of private firms to do financial auditing of the council was key in restoring faith in the local council and a gesture of transparency, responsiveness, and accountability. From this, the merits of NPM reforms like contracting out, are evident.

Despite the merited benefits of contracting out and collaborative partnerships in reducing financial and administrative pressure on council as well as promoting accountability and transparency, this kind of NPM reform was not perennially effective in Mutare. Farooqi (2013:104) emphatically questions if contracting out necessarily guarantees a responsive local authority and enhanced service delivery. Contracting out and tendering made the Mutare City Council a hub of corruption. Contracting out exposes and makes the local authority vulnerable to corruption.

Performance appraisal

Interview participants were unable to confirm with certainty the performance appraisal techniques used by the Mutare City Council. One interview participant vaguely indicated that the council was still looking into performance appraisal while other key informants pointed out that the council conducted review

meetings and feedback meetings in which residents evaluated where they were coming from, and raised further expectations and concerns with their councillors. Suffice to say, this kind of performance appraisal is very weak and insufficient. It has no clearly defined performance indicators, let alone time frames and stated agreed expectations or strategic plans.

Through documentary analysis, this article established that a key basis for performance appraisal at the Mutare City Council is the Clients Charter. The Clients Charter is the benchmark for performance expectations and standards and the yardstick for all council operations, mandates, staff members and councillors. According to the Mutare City Council Clients Charter (MCC 2016:6) the local authority delineates its commitments, standards, and clientele expectations. The Mutare City Council has fallen short in meeting its own standard commitments and guaranteeing that the rights of its clients are well met, and that the clients are well satisfied. A councillor aptly pointed out that the people were not happy with the service delivery situation in Mutare. The council's meeting with the clients was tense and council had not been adequately and sufficiently providing all services because of the economic situation in Zimbabwe. Therefore, the performance appraisal within the Mutare City Council is very weak. By and large, the Mutare City Council is not using performance data in its planning processes, highlighting a weak capacity for planning at the local level.

Further, the council has no performance indicators which are specific, quantifiable, qualifiable and realistic. Moreover, the current performance appraisal through review meetings and feedback meetings is not institutionalised.

Factors affecting NPM strategies in Mutare

The NPM is not a self-sufficient process and concept. It is contingent on context, administrative and institutional factors. This section considers the contextual, institutional, and administrative factors that have affected the implementation of the NPM at the Mutare City Council. These factors include meagre political will, administrative incapacities of the Mutare City Council, politics and power struggles, the economic crisis in Zimbabwe, corruption coupled with jurisdictions, and policy inconsistencies.

Administrative incapacities of the Mutare City Council

One key administrative incapacity at the Mutare City Council is the shortage of workers. This is due to a ministerial directive, which has frozen all posts until further notice. This has left some critical posts, such as in the Health Department, without any doctors and most of the administrators are working in an acting capacity. According to an interview participant, the Mutare City Council is understaffed because it does not offer competitive salary packages.

The question of administrative incapacities of the Mutare City Council is not only evident through staff shortages but extends to incompetence and lack of skills among existing staff members and councillors. According to Madzivanyika (2011:8) senior officials and management at the Mutare City Council were allegedly recruited on political partisanship grounds and not based on their competence. The same thoughts were echoed by eminent civic organisations, which argued that most council members are political appointees who serve the interests of the ruling party and this has made the council susceptible to all kinds of corruption.

Power struggles

This research also established that the greatest threat to service delivery in Mutare is politics. An interview participant observed that, “polarisation, political polarisation, remains the biggest challenge to proper service delivery...I think Zimbabwe, in general, is too polarised”. This thinking goes hand in hand with Muchadenyika’s assertion that, “urban areas in principle are hives of service delivery but in the Zimbabwean case, they are sites of political struggles” (2014:3). Likewise, Robinson (2006:166) comments that, “cities are sites of contestation” characterised largely by “deeply contested politics”. In the context of Mutare, the political contestation extends to serious in-fighting between the City Council management and councillors. At the end of the day, politics and power struggles have strained the NPM reforms by the Mutare City Council. The net effect has been deteriorating social service delivery.

Corruption

Another factor that has affected the holistic application of NPM reforms by the Mutare City Council has been rampant corruption. While some researchers have deemed corruption as a contributing factor to the rise of the NPM (Teehankee 2003), this research found that corruption can be an after-effect of the NPM. A councillor posited that corruption is the biggest challenge at the Mutare City Council, citing the siphoning of funds from the local authority by well-connected politicians. A council audit report analysed in this research revealed deeply systemised corruption and the practice of unscrupulous financial management and illicit money flows by senior council management. The financial audit report explicitly exposed that salaries and incentives of 11 senior management did not conform to the budgeted amounts. Further, the salaries and incentives were beyond the salary and incentive scale pegged by the Ministry of Local Government.

Evidence from this research also pointed to rampant corruption in the allocation of stands in the city of Mutare. This is corroborated by an article titled, “Stop the rot at Mutare City Council”, in which the *Daily News* reported that the forensic land audit for the financial period ending March 2019, exposed rampant corruption in the sale of stands by the Mutare City Council (*Daily News* 2019).

The same article reports on the sale of stands which the Mutare City Council had not assessed as per city by-laws. Muchadenyika (2014:52) asserts that corruption results in institutions like the Mutare City Council failing to efficiently discharge its constitutional mandate of providing social services like potable safe water, sewer reticulation, housing, and refuse collection.

Economic crisis

For NPM reforms to be holistically implemented and equally effective, the reforms require adequate funding and fiscal stability. NPM reforms in Mutare are being implemented in a period of massive economic turmoil in Zimbabwe. The economic crisis in Zimbabwe has manifested in an inflation rate of over 99%, unaffordable prices, currency crisis, government liquidity crisis, social service delivery crisis and acute food insecurity (Kairiza 2009:2). The economic crisis has apparently crippled the Mutare City Council's ability to provide social services adequately. A key informant of the study, a councillor, explained the situation as "...things are tough also because of our economic situation, so council cannot really effectively provide social services, much to the dissatisfaction of everyone..." (Kariza 2009:3).

An interview participant concurred that most of the plans to improve social services by the Mutare City Council, including rolling out the NPM strategies, are derailed by the economic meltdown in the country. This slows down council responsiveness and financial capacity to provide urban services efficiently.

Funding the NPM requires a constant and consistent funding source. The economic predicament Zimbabwe is plunged into dwindles the financial coffers of the Mutare City Council so much that the local authority cannot adequately finance all its intended reforms. An interview participant councillor asserted that, "Council is operating under difficult circumstances, economically". Such circumstances are exacerbated by the fact that council has operating costs like fuel for refuse trucks, water cleaning chemicals, wage bills, and other general running costs. The net effect of this, according to another councillor, is "slow reactive response" and general incapacitation. Consequently, there is regression from good governance and the NPM's effective implementation.

Political will and policy inconsistencies

Another factor that has hampered the success of the NPM in Mutare is limited political will, exacerbated by policy inconsistencies and contestation of jurisdictions between central and local government. The WB (in UNCHS 1996:161) stresses that local government could play a greater role if allowed more autonomy and regular, independent sources of revenue. This is especially pertinent in managing the expanding urban networks that link the towns to their hinterlands. In the case of Mutare, the autonomy of the Mutare City Council, run by the MDC, is

being stifled by the central government run by ZANU-PF. With the latter, there is meagre, if no, political will to devolve and decentralise all powers to local government for fear of further losing political currency in urban areas. This view is supported by Farooqi (2013:99), who points to empirical and anecdotal evidence from developing countries that illustrates that reforms are located in an “existing centralized bureaucratic system” characterised by rent-seeking political bigwigs and office holders who are unenthusiastic and unwilling to “relinquish their control on the justification that they have weak technical capacity and greater devolution of financial control may lead to more corruption at the local level” (Farooqi 2013:99).

There have also been policy inconsistencies between central government and local government in Zimbabwe, which have impacted social service delivery and genuine attempts at reforms. One key residents’ association member interviewed in this research contended that,

“Well, this is where we have the biggest challenge in policy formulation and implementation at local level. You’ve got a local authority that is dominated by opposition councillors, and a central government that is being run by another political party. That on its own, without devolution, is detrimental to local authority development, and local area development. So, there is policy discord at local authority level, and also at central government level (CS01).”

This suggests that there is no harmony of development agendas, political ideologies, and operational frameworks between central and local government, mostly due to politicking in the case of Mutare. Subsequently, there has been deteriorating social service delivery and political will to implement the necessary reforms holistically to address the problems. When the MDC controlled urban local authorities, the ruling party did not accept the fact and did their best to undermine it or run a parallel system to it (Muchadenyika and Williams 2017:38).

The above is worsened by the lack of clarity in Zimbabwe’s legislation about jurisdictions of central and local government. Zimbabwe’s constitution is not explicit on the definition of the powers that should be assumed by the Minister of Local Government (Jonga and Chirisa 2009:178). Wellington and Innocent (2009:178) explain that the local government system in Zimbabwe “...is not entrenched in the constitution as in other countries like South Africa”. The absence of an effective and certain legislative framework for local government is an obstacle to service delivery (Madzivanyika 2011:7). A typical example of this is the case of ward 15, Gimboki, in Mutare. In this case, the Mutare City Council was not providing social services to ward 15, arguing that it was under the jurisdiction of central government and not the City Council of Mutare. Central government

was also not providing services to this area since it was under the jurisdiction of the Mutare City Council. This inconsistency is supported in the following response of an interview participant:

“City of Mutare had no obligation to provide services to that area because it was not... physically it is in Mutare but administratively it was not under the city of Mutare. It was under a cooperative, it was called (...) It was created by the local government, and the long-gone local government Minister, and 182 people were swindled of their money. So, city of Mutare’s hands were tied to provide services administratively, and people were yet demanding services from city of Mutare (CS02).”

The confusion ultimately affects residents who go without services for long periods of time because of limited political will and policy as well as intertwined jurisdiction inconsistencies. Legal certainty enables Urban Local Governments (ULGs) to exercise their powers and functions (Madzivanyika 2011:18).

Service delivery contradictions and tensions within the urban political community threaten effective and efficient service delivery (Muchadenyika 2014:3). Further, due to urbanisation, “the urban is shapeless, formless and apparently boundless, riven with new contradictions and tensions that make it hard to tell where borders reside and what’s inside and what’s outside” (Merrifield 2012:2). The city of Mutare is a site of political fighting between central and local government that has exposed policy inconsistencies in urban governance and how it has impacted on the NPM reforms and social service delivery.

Realities of social service delivery in Mutare

Owing to the piecemeal application and implementation of the NPM in Mutare and the digression from principles of good governance, the city of Mutare has been marred with a social service delivery crisis. The service provision function has been identified as the *raison d’être* for the existence of local governments (Jonga and Chirisa 2009:170). Apart from that, urban governance is also an important determinant of urban services delivery (Muchadenyika 2014:iii). Based on this, the Mutare City Council has failed dismally in its core mandate of providing social services to the people of Mutare under its jurisdiction.

Some of the social service delivery concerns registered in Mutare include: failure to provide clean potable water; poor road network; poor solid waste management; dilapidated footbridges; poor sewer reticulation; irregular and erratic refuse collection; understaffed clinics; dilapidated recreational facilities like swimming pools and playgrounds; malfunctioning streetlights and traffic lights; and overcrowded cemeteries and burial yards.

It emerged consistently in this research that water supply was a major social service challenge in Mutare. Executive management at the Mutare City Council admittedly pointed out that, “we are unable to offer water supply 24/7...” explaining that Mutare does not have adequate water infrastructure to ensure and guarantee a regular supply of clean, safe, and potable water for areas like Dangamvura.

Similarly, residents’ associations lamented that, water was not only in poor supply but the water that is being supplied in parts of Mutare, like Dangamvura, is unfit for human consumption. The same residents’ association member revealed that the water in Mutare was not safe for residents, so much so that most residents suffered stomach pains after drinking the water for more than a month. This is against the tenets of the Zimbabwean constitution and the Urban Councils Act, which stipulates that citizens have a right to clean, safe, and potable water (Republic of Zimbabwe 2015). The right to water (Section 77 of the Zimbabwe Constitution, 2013) entitles every citizen to sufficient, safe, acceptable, physically accessible, and affordable water for personal and domestic use. The right further entails that the water supply for each person and household must be sufficient and continuous for personal and domestic use. The water required for each person and household must be safe and free from micro-organisms and chemical substances that constitute a threat to a person’s health. The current water situation in Mutare does not conform to all these requirements concerning regularity of water supply, quality, and acceptability of the water. The supply of water which is unsafe for human consumption exhibits the Mutare City Council’s disregard for client satisfaction, which is a key cornerstone of the NPM.

Another social service challenge in Mutare, as found by this research, is the shortage of nurses and a poor health service. The health sector has challenges such as the lack of medicines and is limited to the provision of services like antenatal care and general consultations. This prejudices the whole community who suffer from other chronic and critical ailments and requires urgent assistance. By failing to deliver on its full mandate, the Mutare City Council is violating the people’s right to health as enshrined in the Constitution of the Republic of Zimbabwe (2013). Further, the African Charter on Human and People’s Rights (ACHPR) (AU 1986) of which Zimbabwe is a signatory, guarantees the right to health (Murray and Wheatley 2003). In this regard, the council is not only violating a human right but it is also disregarding the principles of good governance of responsiveness to people’s needs, efficiency, and discharging all efforts to adhere to the rule of law.

It emerged consistently in this research that an assortment of challenges pertaining to health service delivery, ranging from poor infrastructure, inadequate and incompetent staff that lack professionalism, drug shortages, corruption, outdated medical equipment, and lack of ambulance services, have resulted in the undermining of effective governance and public service delivery. The research further found that Mutare also faces challenges of poor road networks. A resident

opinion leader and senior projects officer at a local civil society organisation emotionally revealed that, “I was in 12 Chikanga phase 2 on Saturday, the roads there, you try to wonder, is this road in a city or are we in a place so remote? It’s so deplorable”. He indicated that most of the roads are not passable because of potholes. Chirisa (2013) attributes the poor state of service delivery to weak institutions, urban mismanagement, and the reluctance of central government to promote good urban governance. An executive at the Mutare City Council blamed the state of the roads on the limited and overburdened purse of the council. Therefore, the state of the roads in Mutare and the financial incapacity of the council to fix the roads shows a lack of innovativeness to consider new strategies, for example, e-tolling and local toll gates or the full implementation of NPM reforms to redress the challenges.

The above social service delivery challenges expose an urban governance crisis in Mutare and the failure of the NPM reforms to facilitate effective social service delivery. Munzwa and Wellington (2010:140) trace the social service delivery crisis to the politico-economic breakdown of the principles of good governance between 2000 and 2008, which led to “unemployment, environmental pollution and destruction, non-development and maintenance of infrastructure, shortages of urban transport, inadequate supply of water”. The literature as well as sources interviewed during this research attributed the social service delivery crisis to the absence of good governance in Mutare; born of massive corruption and lack of transparency. There is evidence that transparency in budgeting, expenditure and procurement processes leads to increases in service delivery (UNDP 2014:6). It is therefore plausible to contend that, the deteriorating social service delivery in Mutare is linked to the absence of good governance, particularly concerning transparency in budgeting and procurement. Result-based budgeting features of the NPM would have helped in this case if it had been implemented properly. However, the realities of urban politics override the principles of transparent governance, making formal institutions weak and susceptible to manipulation, and corruption (Muchadenyika and Williams 2020:2).

The Mutare City Council’s modus operandi and the status quo of social service delivery point to a local authority suffering from a good governance deficiency syndrome. It is immersed in a social service delivery crisis due to the patchy application of NPM reforms and the digression from good governance. In the words of Hill (1974), “...to be an effective provider of services local authorities must be more than efficient. They must still be judged by justice, fairness, equality, and openness by which democratic society as a whole is judged” (Hill 1974:236). By failing to fulfil its constitutional mandate of guaranteeing access to health, adequate safe water supply, road maintenance, street lighting and other social amenities, the Mutare City Council has fallen way short of being efficient. In general, Zimbabwe has implemented the NPM features of facilitating role,

downsizing, result-based budget, and managerial-autonomy (Haque 2017:23), with minimal success.

CONCLUSION

While many developing countries have taken up elements of the NPM agenda, they have not adopted the full package NPM. Findings of this research point to the unconscious, half-baked and piecemeal application of the NPM reforms by the Mutare City Council against a backdrop of technical incapacity, administrative capacity shortfalls, economic crisis, power struggles, and pseudo political will. The findings of this study could be applied to several other municipalities in Zimbabwe as the context is similar. The absence of political will and structural deficiencies leads to unsuccessful implementation of the NPM. The Mutare City Council has not committed itself institutionally to the full and thorough implementation of the NPM reforms.

While some of the NPM strategies implemented by the Mutare City Council, like the creation of ward development committees, have been effective in bringing the council closer to the people and coordinated the identification of community needs, this research concludes that the selected NPM reforms adopted did not yield the desired results concerning improving social service delivery in Mutare. The NPM reforms by the Mutare City Council were undermined by lack of funding, power struggles between the ruling ZANU-PF and the opposition MDC, the economic crisis in the country, and policy inconsistencies. Platforms like the e-governance initiatives overlooked the fact that not all people in Mutare have access to the internet and smartphones. Similar platforms also disenfranchised demographic groups like the elderly population and the techno-illiterate. Further, the accountability mechanisms used by the Mutare City Council are not institutionalised and lack the user-involvement principle. This diminishes the potency and potential of NPM reforms.

Considering the application of selected NPM reforms by the Mutare City Council, this research also concludes that the NPM reforms are not systemised and their implementation was unconscious in some cases. Performance management is a typical example. Performance appraisal is done through review meetings, which are not fixed, systemised and have no definite procedure. In addition, the executive management at the council professed ignorance of the technical components of the NPM. This begs the question: How does an institution implement a complex concept that it does not comprehend? The net effect of this has been the scrappy, fractional, and uncoordinated implementation of the NPM.

However, it is important to acknowledge that the complexity of the NPM as a reform strategy also makes it more complicated for the Mutare City Council to

understand and implement it holistically. Key informants and senior management of the Mutare City Council interviewed in this research indicated that they were not aware of the technicalities of the NPM even though they were implementing the concept. This raises the question of the problem of operationalisation of the NPM in most developing countries against the backdrop of administrative and technical capacity shortfalls. The NPM was supposed to be preceded by institutional and administrative capacity building and backed by a fiscal facility that would guarantee its successful roll-out.

The Mutare City Council is the primary stakeholder entrusted with the holistic implementation of the NPM at local level and for the stimulation of effective social service delivery. The crucial point of departure in inculcating a culture of NPM at the Mutare City Council is multi-stakeholder engagement to set up an NPM strategic plan and a strategic technical task force. Engaging committed, serious and technically competent stakeholders ranging from public administration experts, civil society organisations, resident opinion leaders, business leaders, churches, youth, and women to collectively map an NPM strategic framework and set up a task force to oversee the strategy, would be a critical step towards the full roll-out of the NPM reforms with minimal problems.

Additionally, the central government needs to ensure that an enabling environment is created for the success of local government initiatives, chief among them, the NPM reform strategies. The enabling environment should be conducive to the implementation of this policy and should also be capable of ironing out bureaucratic hurdles, limiting ministerial powers, and prioritising development and social services over politics.

As argued previously, the NPM is contingent on factors including institutional, contextual, economic, legal, and technical, all grounded in political will. It is the responsibility of the Ministry of Local Government to ensure that all the relevant stakeholders are included in the planning and execution of this crucial policy, in order for the implementation and roll-out of the NPM to succeed.

Commitment in terms of funding, complemented by increased accountability, are prerequisites of the NPM. The Ministry of Local Government should play a leading role in the process of institutionalising accountability mechanisms for urban councils since a culture of accountability is crucial in ensuring the sustainability of an NPM culture. Based on this study's research findings, there are limited checks and balances on urban councils in Zimbabwe. This is evident from the level of corruption in many councils, including the Mutare City Council, as found in this research. There is a strong need for the parent ministry to ensure checks and balances on urban councils in coordination with citizens. The checks and balances should include monitoring spending, verifying tenders, reviewing all contracted out projects and contracts and bi-annual audits seconded to independent private firms. All these recommendations, if well implemented, could

facilitate the effective implementation of the NPM and the resultant effective social service delivery.

NOTE

- * The article is partly based on a master's dissertation by P N Fungurai, "An interrogation of the adequacy of new public management in effective social service delivery Case of Mutare City Council, Zimbabwe", under the supervision of Dr M A Okbandrias, 2020. Unpublished Master of Public Administration (MPA) degree, Cape Town: University the Western Cape.

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Assessing Resource Allocation for Efficient and Effective Community Policing in the Daveyton Township, South Africa

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ABSTRACT

Chapter 7 of the South African Police Services Act 68 of 1995, deals with Community Police Forums (CPF) and Boards with a provision in Section 19(1) for CPFs to be established at police stations that should be broadly representative of the community. An essential element of the successful implementation of any programme is communication and establishing understanding between various parties in the partnership. The purpose of this article is to assess resource allocation for efficient and effective community policing in the Daveyton Township, South Africa. The four key resources, namely: period of service in the CPF, employment status, orientation and training, and transportation means of the members of the CPF are addressed. A mixed-method approach was followed during CPF meetings in the form of questionnaires and observation of their operations. Feedback from the questionnaire and meetings is highlighted in the closing section and recommendations are made on how to improve the relations and adequately provide resources to the CPFs. The South African Police Service (SAPS) needs to be more considerate of the challenges faced by the CPFs concerning resources and try to put measures in place to assist them in executing their duties.

INTRODUCTION

The term “community policing” is mostly used to define the activities of the community and other related efforts to prevent crime, which occurs within our communities, together with the policing of the formal police agency. In South Africa,

community policing was formalised in the 1993 Interim Constitution, with the aim of democratising and legitimising the police. In 1997, there was a shift towards improving service delivery and tackling crime. Yet, the impact of community policing has been limited by the fragmented nature of South Africa's communities and a lack of capacity (Pelser 2008:24). Given this backdrop, community policing programmes have become the cornerstone to approaches of modern societies in the new dispensation in South Africa. Perceived community support and participation in crime prevention have always been previously scrutinised concerning service orientation, job satisfaction, training and resource allocation to police work. While efficiency implies that resources allocated to policing should be spent thereon and not drained off for corrupt personal-organisational benefits or wasted through negligence, poor planning or inconsistent execution as espoused by Marenin (1998). Effectiveness implies that resources should be expended to achieve the greatest impact on the identified goals (Marenin 1998). The purpose of this article is to assess the resource allocated for efficient and effective community policing in the Daveyton Township. For this purpose, the researcher obtained opinions and perceptions of CPF members in 11 municipal wards around Daveyton Township.

This article is structured into four main parts. First, it reviews literature on community policing. The subsequent two sections discuss research design and methodology, analysis and interpretations. Lastly, it provides suggested improvements in the operations of community policing forums in the Daveyton Township and conclusions.

LITERATURE REVIEW: THEORETICAL PERSPECTIVES ON COMMUNITY POLICING

The *Constitution of the Republic of South Africa, 1996*, is the supreme law of the country. It states that the SAPS has a responsibility to prevent, combat and investigate crime, maintain public order, protect, and secure the inhabitants of the Republic and their property (Constitution 1996). Similarly, Maslow (1998:18) shares the sentiment that safety and security is by nature one of the basic needs of all living beings. Maslow's hierarchy of needs puts safety at the second bottom level of the hierarchy of needs as security of body, of employment, of resources, of morality, of a family, of health and property (Maslow 1998:18). Community policing has since involved the use of collaborations between municipal agencies, businesses and private security companies, individual citizens, non-profit groups and the media; to develop methods to police the community. These organisations work together to address criminal matters and reduce crime. However, Kelling and Coles (1996:48) argue that as safety and security problems mostly occur at a

local level, the police officers responsible in a particular area must decide which policing action should be taken. This endeavour must be delegated to the local levels of policing to ensure that the police officers are responsive to community needs. Trojanowicz and Bucqueroux (1990:18) held a view that the significance of posting an officer permanently in a specific area rests on allowing that person to 'own' that particular 'space'. The goal was to keep the geographic area small enough so that the police officer can move around often enough to maintain direct contact. Instead of simply leaving it to the police force, community policing revolves around a philosophy that the entire community can help take measures to prevent crime, as alluded to by Ferreira (1996). In his assertion, community policing is a philosophy of full-service personalised policing, where the same officer patrols and works in the same area permanently, from a decentralised place, working in a proactive partnership with citizens to identify and solve problems.

According to Gaffigan (1994) "community policing mainly consists of two complimentary core components; community partnership and problem solving". This re-thinking of policing according to Peak and Glensor (2012) "assumes that the police cannot successfully prevent or investigate crime without the willing participation of the public, an assumption that advances that the police need to transform the community from a passive consumer of police protection to an active co-producer of public order and security". Stevens and Yach (1995:30) assumed that problem-solving requires a partnership of neighbourhood police officers, government agencies, residents, business owners and their employees, and everyone with a stake in the quality of life in the community. In the same understanding, the National Institute of Justice (1999) argued that democratic policing depends on a shared vision of policing and does not take place unless the community feels that it can have trust in the local police officers. Friedmann (1992:32) purports that accountability is a fundamental principle of a democratic society when solving problems; which also implies that the police officers and the community should be able to account for their actions. In addressing crime and other social disorder, CPFs should always constitute the most common mechanism for accountability in community policing (Nalla and Newman 2013:53). The establishment of CPFs is seen as "a way to formalise the dialogue between the police and the residents of local communities which consists of regular formal meetings between the police and the residents and promotes a new channel for participation by residents" (Bénit-Gbaffou, Didier, and Morange 2008). In formalising the dialogue between the police and the community, Davis, Henderson and Merrick (2003) attest that "through the establishment of CPFs empowers the community in the way that it gives community actors the ability to take part in and to manage their own challenges through sponsorship of and participation in crime preventive programs". The dialogue is enhanced through effective leadership as working with and through individuals and groups to accomplish organisational

goals (Bennett and Hess 2004:52). Cummings and Worley (2001:56) explain that leadership is a critical element and influence in an organisational environment or performance, due to the four significant domains that leadership could affect, namely the strategic/organisational goals and objectives, the work processes, interdependent social subsystems and the individual in such an institution. Allander (2004) furthermore suggests that leaders must be guided by values and beliefs such as respect for and protection of human rights, transparency and openness in relation to activities and relationships, both inside and outside the institution. Lynham and Thomas (2006:104) elaborate on the definition of leadership and equates it to an interactive, interdependence and focused system, wherein continuous interaction; influence; dialogue and discussions regarding organisational procedures, performance outcomes, inputs, processes, output and feedback take place within a learning environment.

In South Africa, the history of street committees, informal dispute settling structures and the informal police forces and self-defence units goes back to the creation of townships. In the 1970s, Rakgoadi (1995:6) corroborates that the “Lekgotla played a crucial role in instilling discipline among youth as well as in maintaining order in the townships”. The Lekgotla became unpopular primarily because of the excessive use of force by members in dealing with crime and criminality. It was also perceived to be politically aligned and membership tended to be ethnically based (Rakgoadi 1995:6). Brogden and Nijar (2005:149) allude to the notion that South Africa inherited a dysfunctional policing force of considerable size and resources that is primarily committed to public order regime maintenance rather than to bandit catching.

The development of CPFs in South Africa must be understood in the context of the apartheid legacy for police. Cawthra (1993:41) suggests the renaming of the SAPS as an icon of white-minority rule. Both critics and defenders of the SAPS presumed that its role in ordinary crime prevention and control was a distant second to enforcing the apartheid regime. The democratic elections of 27 April 1994 demanded a fundamental reassessment of the nature of policing in South Africa. Van Vuuren (1994:100) attests that the rising crime and social instability, together with an increase in the socio-economic stimuli of crime and growing evidence of the shortcomings and inefficiency of the traditional policing approach in providing long-term answers to crime and problems of disorder in South Africa, have led to a worldwide search for a new policing approach. According to Fox, Van Wyk and Fourie (1998:168), one of the first reforms introduced by the ANC-led government was partially to replace the top structure of so-called “deadwood” and replace officials who resisted reform with enlightened managers. The amalgamation of the 11 police agencies into one police service as opposed to a “force” was the next major reform. The Police Act, the Bill of Rights, and the introduction of

rules and standards are factors that have had a major effect on the transformation of the police service in South Africa (Fox *et al.* 1998:168).

Although community policing involves a proactive approach to policing with community involvement in addressing the causes of crime and disorder, Adams (1994:894) attests to the notion that community policing refers to a shift from a military-inspired approach to fighting crime, to one that relies on forming partnerships with constituents. Stipak (1994:115) perceives community policing as a management strategy that promotes the joint responsibility of citizens and the police for community safety, through working partnerships and interpersonal contact. Mmako, Obioha and De Vries (2014:107) corroborate the above statements in that the aim of community policing, according to the Guidelines for Community Policing Forums (DSS 2001) is two-fold. First, the community policing structures should assist the communities they serve; and second, they should make policing the responsibility of all South Africans, which in turn will lead to the respect of the law.

Similarly, the concept of self-defence units emanated due to inadequate policing in black townships. The SAPS was, at the time, seen as politically aligned to the ruling party, inefficient and ineffective because most of the cases that were reported to the SAPS were not properly recorded and followed up. Moreover, the communities did not have “confidence in the criminal justice system, which took several months if not years, to bring the perpetrators of violence and crimes to justice” (Rakgoadi 1995:7). The then Minister of Safety and Security, S. Mufamadi (2001) proposed in a draft policy document that community policing providing a reasonable level of community safety was necessary for the success of the Reconstruction and Development Programme (RDP). Conversely, the success of the RDP would result in enhanced community safety. However, development initiatives may have generated conflict within and between communities. The SAPS was called in to manage tense situations in the communities. For this reason, according to Mufamadi (2001), the SAPS would play a role in local development forums.

Taylor (1998:38) identified a number of major challenges faced by CPFs as being insufficient holistic research programmes, general implementation of programmes, involvement of politics, protecting community policing from criticism and difficulty in determining the intricate relationship between community policing and crime. Oliver and Bartgis (1998) argue that community policing represents a revolution or a paradigm shift; one that deserves sponsorship of new research and fresh theory development. The two authors suggest that the concept of community policing is itself a paradigm, not in the one large scale theory sense, but rather as an evolving mix of theories that enhances methods to deliver police services. Watson, Stone and Deluca (1998:134–135) denote trust as a reasonable faith in the goodwill of others. Trust rests in the assumption that most people,

most of the time, speak and act honestly and with good intent, not necessarily out of virtue so much as out of rational self-interest.

Pelser (2008:60) attests that as South Africa converted to a democracy in 1994 with most of the police officers that served under the apartheid regime still in service, the legitimization and oversight of the SAPS was critical. In his assessment of the implementation of the community policing policy, he further argued that the CPFs had “very little public reach in their present incarnation and were poorly placed to establish community safety needs and jointly develop a responsibility and capacity for addressing crime”. Pelser’s assertion points our attention to the importance of human and physical resources for the operation of CPFs and the fulfilling of their mandates. Therefore, it was mostly questions related to the allocation and availability of key resources that were asked to the participants in the survey. The key resources are mentioned under the research design and methodology.

RESEARCH DESIGN AND METHODOLOGY

Survey design

Data for this study was obtained from members of the 11 CPFs in Daveyton Township including other interest groups based on larger perceptions of safety and security, including the police’s role in local security provision as observed by the researcher and from living among the community of Daveyton. A data collection questionnaire was constructed to ask several questions about the period of service in the CPF, employment status, orientation and training, including transportation means allocated for their activities. The respondents were asked to select their preference on a 3-point scale ranging from “Yes”, “No” or “Somehow”. The purpose of the questions presented was to provide an understanding of the lack of resources for the efficient and effective community policing within the Daveyton Township.

The questions in the questionnaire designed and distributed to the participants are related to four key resources, namely: period of service in the CPFs, employment status, orientation and training, and transportation means of the members of the CPFs. These resources are explained further in the section below.

First, the period of service relates to the insight and knowledge acquired for some time within the CPFs and thus becomes an institutional retention. This factor had a negative impact on the sustenance and operations of the CPFs in the township since individuals are not retained within the structure (Rakgoadi 1995:7).

Second, the employment status of individuals involved in the CPFs has been a concern to SAPS management as individuals were promised full-time employment

within the formal SAPS structures. Most members of the CPFs were job seekers and the SAPS management did not provide for stipend or allowances to members of the CPFs. Members of the CPFs accepted the call to duty with prospects of seeking permanent employment in the formal police service. This is in light of the station managers having recruited individuals to participate in community policing with the sole intention of securing funding from the National SAPS Head Office for the establishment of CPFs (*Benoni City Times* 2018).

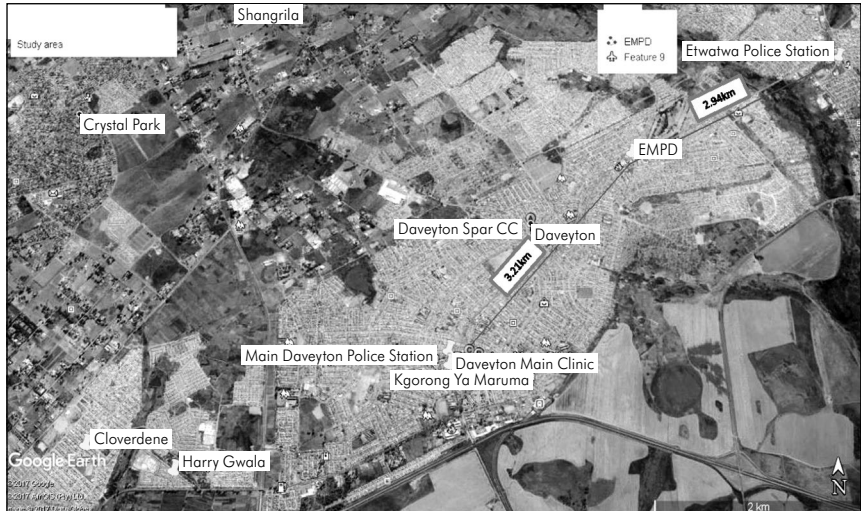
Orientation and training as a third factor, was not adequately provided to members of the CPFs. The newly recruited members were provided with manuals and literature on community policing as part of induction. A police constable would be entrusted with the supervision role and handling of the CPF's members. This practice has since resulted in scanty progress in addressing crime and CPFs withdrawing their services as asserted by Pelser (2008–61), with little effort being made to develop a comprehensive approach, or to provide adequate training for police officers and CPF representatives.

Finally, transportation means has been a factor because the SAPS management did not provide for this during crime awareness and prevention exercises. These resources include allocation of training funds, provision and functioning of vehicles, equipment, and infrastructure appropriate to the area. The lack of basic resources affects the ability of CPF members to contribute in a meaningful manner to the work of their force. The scarcity of resources is visible in the lack of accessible police stations, lack of transportation to and from the police stations, and the absence of communication means, hence, Pelser (2008:62) attests that community policing has proved most successful in rich (often white) areas, due to financial donations and the desire of citizens to prevent crime.

Case study – Daveyton CPFs

The focus area for the study is the Daveyton Township which falls within the Ekurhuleni Metropolitan Municipality's jurisdiction. It borders Etwatwa to the north, Springs and Brakpan to the east, Benoni to the south, Boksburg to the west and Kempton Park to the north. The nearest town is Benoni, which is 18 kilometres away. Daveyton is considered to be one of the largest townships in comparison to Tembisa Township in the north with a considerably high number of residents including Etwatwa, Harry Gwala and Cloverdene. The Daveyton CPF was established in terms of Section 18 of the South African Police Act, 68 of 1995. The Executive committee of the Daveyton CPF comprises of members from the four sectors namely, Etwatwa police station, Ekurhuleni Metropolitan Police Department (EMPD), Cloverdene and Harry Gwala sectors. The appointed Executive committee will coordinate the activities of the 11 CPF formations in the abovementioned sectors. The Etwatwa sector has four CPFs with 60 active

Map 1: Location of CPFs around Daveyton Township



Source: (Surveyor-General Office, Pretoria (South Africa))

members, EMPD has three CPFs with 40 active members, and Cloverdene and Harry Gwala have two CPFs with 30 active members respectively. These members are spread across the CPFs to complement the work and activities of all CPFs operating under the respective sector. The service rendering and visibility of the CPFs' members cut across the sector.

The map below depicts the location and establishment of the CPFs in and around Daveyton Township with specific reference to the CPFs operating from Etwatwa police station, Harry Gwala and Cloverdene location, the EMPD establishment and the Daveyton business hub located under Daveyton Spar CC.

The *Benoni City Times* (2019) emphasises the duties and responsibilities of the Executive committee of the CPFs as enshrined in the constitution of the CPFs. The duties and responsibilities are:

- To establish and maintain a partnership between the communities and the SAPS.
- To promote communication between the communities and the SAPS.
- To promote cooperation between the community(s) and the SAPS in fulfilling the needs of the community regarding policing.
- To improve the rendering of police services to the community(s) at local level.
- To improve the transparency in the service and accountability of the SAPS to the community(s).
- To promote joint problem identification and problem-solving by the SAPS and the community(s) in relation to *inter alia* crime, public service delivery, the disorder in general and poor community-police relations.

- To monitor the effectiveness and efficiency of the SAPS.
- To evaluate the provision of visible policing in the sector area.
- To promote the aims and objectives of the community policing and facilitate the functioning thereof.
- Implement projects in the interest of improving the community safety (*Benoni City Times* 2019:3).

Notwithstanding the above, the challenge for the Daveyton CPFs has always been the recruitment and budgeting exercise for the CPFs which is handled by the police station manager. The means of transportation presented some challenges to the CPFs' members since they could not attend to public concerns and community meetings against crime awareness and prevention. CPFs' members were barred from using SAPS vehicles to prevent litigation from accidents during operations. This practice had a negative impact in the reduction of crime in the Daveyton Township since members of the CPFs withdrew their services and most of them were placed in the police station to assist with certification of documents, drafting affidavits for members of the public, messenger services to the station commander and manning the police station facilities such as replacing electric bulbs, plumbing and gardening services at the police station.

The following crime statistics were compared to the previous statistics, for the period April 2017 to March 2018 in Daveyton Township. These are some of the numbers reflecting an average of 10% increase from the previous period, i.e. April 2015/2016 to March 2016/2017 respectively:

Murder – 42; Rape – 76; Carjacking – 90; Robbery at residential premises – 28; Drug-related crime – 326; Driving under the influence of alcohol or drugs – 97 (*Benoni City Times* 2019).

In this instance, the Benoni CPFs recorded a reduction in crime for the period of April 2017 to March 2018. These are some of the numbers:

Murder – 10; Rape – 15; Carjacking – 30; Robbery at residential premises – 15; Drug-related crimes – 150; Driving under the influence of alcohol or drugs – 44 (*Benoni City Times* 2019).

Sample and data collection

A questionnaire was administered among a random sample of current and serving members of the CPFs in the Daveyton area and among other interest groups such as religious groups, youth associations, the business sector, unemployed persons, and professionals such as teachers. After basic explanation and instruction by the researcher, the questionnaires were distributed to the respondents and then collected for analysis. The analysis of the focus groups' feedback was complemented

by the researcher's own observations during the group discussions and patrols with CPFs and SAPS.

The random sample included Daveyton residents aged 18 to 55 years. Within the 11 existing CPFs around the Daveyton area, 150 questionnaires were administered and 140 were completed and returned. The reasons that 10 questionnaires were not returned were because some respondents became disinterested, and others withdrew from CPF activities. The respondents participated willingly and responded to the questions relating to the activities of the CPFs within their area. Initially, the researcher assured the respondents that their anonymity would be preserved and confidentiality ensured. Both the researcher and the respondents signed informed consent forms.

ANALYSIS AND INTERPRETATION OF RESULTS

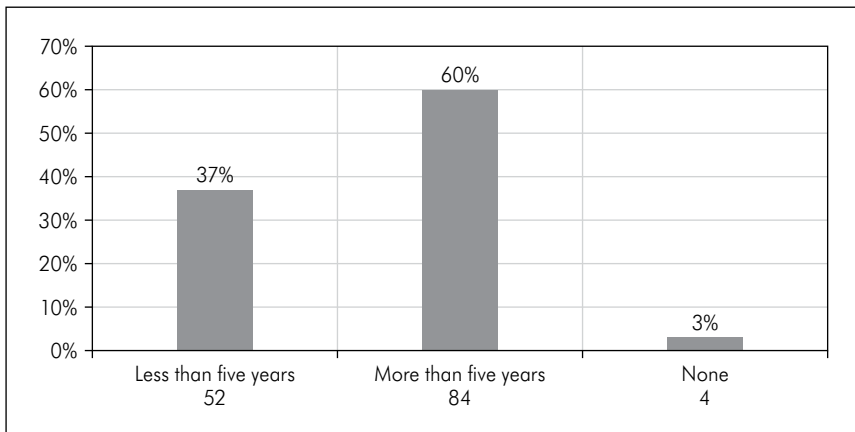
The analysis and interpretation of data are based on the results of the questionnaire, which is quantitative, and the observation of the focus groups, which is qualitative interpretation. For the purposes of this article, only specific questions pertinent to the topic were analysed and interpreted. These questions emanate from the researcher's observation and benchmarking with other effective, efficient and economically viable CPFs within the municipality of Ekurhuleni within which Daveyton is situated. The CPFs in the surrounding areas such as Benoni are adequately resourced to execute their duties as compared to the Daveyton CPFs, which, according to the research results, are under-resourced. The Benoni CPFs' operations are well-resourced with two-way radios, patrol vehicles and they receive donations from local business owners. In further benchmarking, the Benoni CPFs have received a positive audit report for the work done and the involvement of the communities in preventing crime. An impact on crime reduction has been realised since there have been reports on the reduction of car hijacking, house break-ins, and business robberies as mentioned above. The Benoni police station, which is 30km away from the Daveyton Police Station, has managed and succeeded in strengthening the capacity of its CPFs through improved funding and cooperation between police and communities. The budget allocation for the Benoni CPFs is R3,2 million with support from the local business sector. The Benoni CPFs demonstrate an effective and efficient operation since it can realise objectives such as crime prevention and reduction, outreach and awareness progress, provide input in the planning, staffing and resource allocation for CPFs, enhance the relationship between the police and the communities and request the station commander to provide crime information analysis, police response and quarterly statistics on policing when it is required. The budget allocation for the Daveyton CPFs is approximately R1million with 50% allocated for uniforms

and equipment such as whistles, handcuffs and reflector jackets. The 40% allocation is geared towards transportation including office furniture and stationery. The remaining 10% is allocated to training needs. The allocation is earmarked to serve the estimated 1,5 million population of Daveyton. Furthermore, the allocation of financial resources becomes a deep-seated concern in many police stations in South Africa, as it is related to the subsequent allocation of resources to CPFs whereby police station managers are given discretionary rights to allocate resources to CPFs.

Period of service in the CPF

The purpose of this question was to determine the extent to which the respondent has insight into and experience with their CPF's activities. This was intended to establish relations and to gauge the respondent's know-how regarding other activities conducted by various CPFs around the Ekurhuleni municipality. Members who had been involved in the CPF for more than five years could easily respond to the ensuing question about orientation and training, including resource allocation. These members with long service in the CPFs informed the researcher that they will be listed permanently in the formal police service at the Daveyton police station when resources are made available for them to join SAPS. Such resources will include salaries and allowances given to the members per year of service to guarantee sustainability and continuity of the service. This will have a great impact on the programme and contribute to reaching its intended goals since these members are yet to be listed permanently in the police service.

Figure 2: Period of service in a CPF



More than 90% of the respondents had a combination of five years of participation in the CPFs while 3% had never participated therein. The 3% could be attributed to the lack of information and knowledge on the existence of CPFs in the area or simple ignorance.

Employment status

The researcher's observation during informal discussions with the participants revealed that most of the young adults involved in the CPFs were temporarily active within the CPF. Most of the members were promised monthly stipends for their involvement in CPF operations when resources are allocated to the police stations. The Daveyton police station is under-resourced due to poor planning and budgeting and private sector and business support is lacking as compared to Benoni CPFs. This has a vast and negative impact on the operations of the Daveyton CPFs. The Benoni CPFs receive stationery and monthly airtime from surrounding business owners. This has resulted in new members volunteering in the operations of the Benoni CPFs.

The results address the perception that individuals see their participation in the CPFs merely as an opportunity to "market" themselves and eventually acquire employment. The 19% seeking employment had their plight discussed with the researcher during the completion of the questionnaire. The respondents raised concerns about lack of job opportunities, which resulted in them getting involved in the CPFs. The Daveyton CPF members also held the view that they should be compensated financially for the services rendered. Several individuals had served as volunteers in the CPFs for more than five years without compensation or incentives.

Figure 3: Employment status

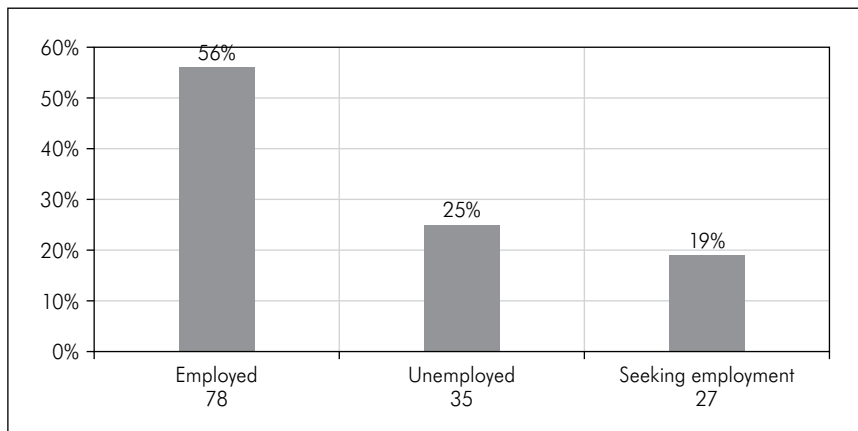
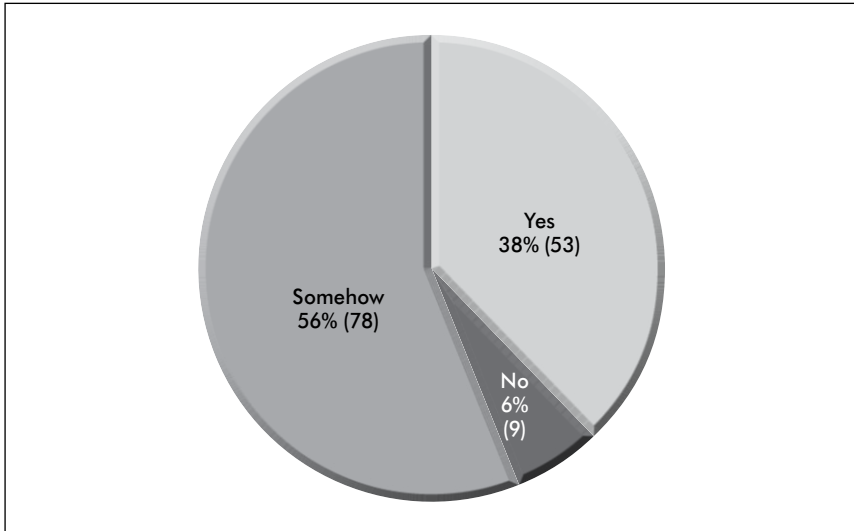


Figure 4: Orientation and training



Orientation and training on community policing and safety matters

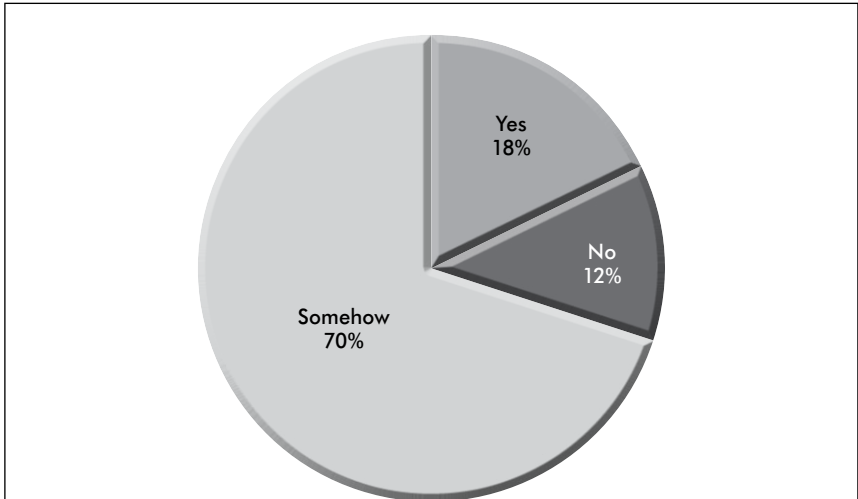
The question was asked to establish whether training is offered to members of the CPFs after recruitment by the station commander.

It was observed that there is a lack of adequate training on policing matters for over half of new CPF members. It is imperative that training is provided after recruitment by the station commander and that it should include ongoing and in-house training to keep members abreast of current patterns of crime and how to manage it. Training reinforces policies, principles and value-driven discussion, and bolsters community expectations in their work-relations with the police. The respondents indicated that they were mostly subjected to administrative duties at the police station only, unlike addressing actual crime and civilian protection. They had to serve as “messengers” for police officers and this negates the guiding principles enshrined in the CPF’s constitution.

Means of transportation

It was revealed that the police station commander at the Daveyton police station did not wish to commit SAPS vehicles to be utilised by the Daveyton Township’s CPF members due to insurance and indemnity concerns. Certain CPF members preferred to utilise their private vehicles with which to execute CPF duties.

Figure 5: Transport



Considering the above, the high response under “somehow” which is equal to 70% is attributed to the limitation on the powers of the CPFs such as the fact that no member of a CPF may be allowed to utilise a police vehicle and no equipment or SAPS inventory items may be issued to a member of a CPF. Members cannot fully execute their mandate of protecting and serving communities without essential policing equipment.

DISCUSSION

The starting point in addressing the existing challenge for community policing is the allocation and availability of basic resources required by the police and those they serve in a locality. For the SAPS, this challenge refers to a lack thereof or inadequate allocation of the resources mentioned above, which are required for undertaking basic policing tasks. For example, the Equality Court in Cape Town ruled in 2018 that police resource allocation unfairly discriminates against black and poor people. Allocation favours white, rich and privileged neighbourhoods.

Second, even though communities with unique and diverse policing needs and priorities in general tend to work against the formation of effective and efficient partnership policing, it is not impossible to find shared values for cooperatives. This was revealed in focus group findings related to the data depicted in Figure 4, as regards CPF members serving as messengers for police officers rather than partaking in actual crime prevention and civilian protection.

Third, the continuing lack of a coherent and integrated orientation and training of new members, development, and succession strategy geared towards enhancing sustainable CPFs, means that police departments do not have any systemic incentives for rewarding innovative and effective practices by the CPFs. The results of the study posit new thinking about the role of community policing in combating crime around the Daveyton area and how to align and provide adequate resources for efficient and effective community policing in collaboration with police officers.

Finally, the optimal use of technology, such as CCTV cameras, SMSs and two-way radios in areas around Benoni should also be considered for Daveyton CPFs. The means of transport for meetings and sharing of information between neighbouring CPF structures may further build exemplars of best practices that can be replicated in other areas as appropriate models of community policing. Effective leadership and management are of paramount importance, including sound financial management and robust measurements to achieve targets in all areas of operation. The Daveyton police station commander consequently decided in January 2017 that each of the contact crimes should be reduced by 7–10% per annum from 16–20% starting with the 2018/2019 financial year. These targets relate to crimes such as murder, rape, theft and robbery and serious assault.

SUGGESTED IMPROVEMENTS IN THE OPERATIONS OF COMMUNITY POLICING FORUMS IN THE DAVEYTON TOWNSHIP

Based on the results from the analysis, the researcher formulated the following recommendations, which if implemented, could improve the allocation of resources of CPFs and hence, their efficiency and effectiveness:

- Patrol systems must promote more personalised contact between SAPS and the public. They should include foot patrols for crime analysis and mapping to identify local crime hotspots within the Daveyton area. There should be a subsequent collaboration with local organisations and citizens to address problems such as the snatching of ordinary citizen's wallets and cellular phones by OVL gang members. Hence, the allocation of resources must address the indemnity challenge always faced by CPF members, who are driven around in police vehicles during patrols.
- Decentralised police stations are needed that are more visible and accessible to the public. This can include, for example, police service and crime reporting mobile units that are manned by both the SAPS and CPFs around hotspot areas. This would be a driving principle of the CPFs in assisting and collaborating

with the police in the Daveyton area since it would provide for efficient and effective community policing once adequate resources are allocated to the CPFs.

- There should be an appointment of officers to specific positions that focus on community liaising and problem-solving activities. The Daveyton community radio station should provide slots to SAPS and CPFs for crime awareness campaigns. This would contribute to a better orientation and training of new CPF members and allow for the sustenance of such activities.
- More public outreach and education programmes should be launched that inform the public about police operations and assist citizens to improve their own security while advancing open communication between CPFs and police units in the Daveyton area.
- Finally, structured consultations and partnerships between the police and communities about local problems, social order, priorities, and strategies are essential. The overall goal of structured consultations and partnerships between the police and the community should be to enhance the capacity of the police to combat and prevent criminal activities, social disorder, and fear, and to address other community needs and priorities in partnership with the affected community. To achieve this goal, structured consultations should aim to improve the delivery of policing services, strengthen the partnership between the community and its local police officers, and promote joint problem identification and sustainable problem-solving and making adequate resources available to the CPFs.

CONCLUSION

In this article, the author has highlighted the lack of or inadequacies in the allocation of resources to CPFs in the Daveyton Township in South Africa, which would make them more efficient and effective in combatting crime together with local police officials. While expressed in different ways, the flipside of adequate resource allocation is the major objective of community policing which is to establish an active partnership between the SAPS and the community through which crime fighting, police service delivery, and police-community relations can be enhanced, and appropriate solutions can be designed and implemented. This, however, requires the police to consciously strive to create an atmosphere in which potential community partners can be identified, convinced to join forces, and trained to cooperate effectively. Community partnerships must be established and maintained through mutual trust between the members of the SAPS in the area and the communities they serve. Founding effective and sustainable community-police partnerships was defined as the core component of the new policing strategy by previous South African Police Ministers, but some of the challenges

discussed have been faced since this definition. These would include trust and integrity, accountability, lack of resources to police units, and mainly the involvement of communities in such partnerships.

The allocation of adequate resources should serve as the central goal between communities and the police service as the first core component of the existence of effective, efficient and cost-effective community policing. De Guzman and Kim (2017) acknowledge that police do respond to community needs but are sometimes hampered by the realities within their organisations. The Daveyton police station is not immune to this analogy; however, community consultation and community empowerment are necessary ingredients for effective and sustainable programme implementation and closely linked with police trust and integrity, accountability, and open communication. There is also a need for co-existence between the CPFs and police officials in handling and managing allocated resources to the degree whereby they are willing to cooperate and collaborate in community-policing activities. What the community thinks about the police's attitude in the relationship and their drive to eradicate crime and uphold civilian protection also matters.

NOTE

- * This article is based on an unpublished Doctoral thesis by S. Tsoabisi: Community Policing: Ekurhuleni Metropolitan Municipality, Daveyton Township (2018) submitted to the University of South Africa, UNISA, under supervision of Prof E J Nealer.

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The Fourth Industrial Revolution and its Implications for World Order

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ABSTRACT

Humanity continuously embarks on unparalleled technological developments. The future will present significant opportunities and problems. The public sector, scholars, the private sector, and businesses are all seeking a road map to navigate these profound transformations in the world. The preceding industrial revolutions had a big influence on the world order, whether by combining that order like the First Industrial Revolution by consolidating the position of developed countries as the main world central powers, or like the Second Industrial Revolution that marked the gradual replacement of one developed state with another by challenging their pre-eminent order. The Fourth Industrial Revolution plays the role of an amplifier for either detrimental or beneficial impacts, which is a characteristic that needs much more endurance and prudence than manifested.

INTRODUCTION

The Fourth Industrial Revolution (4IR) is the term utilised to explain the blurring of boundaries between digital, biological, and physical worlds (McGinnis 2018). It is a synthesis of developments in the Internet of Things (IoT), genetic engineering, artificial intelligence (AI), three-dimensional (3D) printing, quantum computing, and other new technologies. It is the fusion force behind many services and products that are fast becoming indispensable to urbanised life (Schwab 2016; McGinnis 2018). While the 4IR, also known as Industry 4.0, is set to transform

societies like never before, it develops on basics laid by the first three industrial revolutions. In the 18th century, the advent of the steam engine led to the First Industrial Revolution (1IR), permitting production to be mechanised for the first time, and leading societal transformation as individuals became increasingly modern (Xi, David and Kim 2018:90). Scientific advances and electricity in the Second Industrial Revolution (2IR) led to mass production (Levin 2018). In the 1950s, the Third Industrial Revolution (3IR) commenced with the emergence of digital and computer technologies (Prisecaru 2016:57). This led to the cumulative automation of manufacturing and the interruption of industries such as communications, banking, and energy (Prisecaru 2016:57).

The World Economic Forum's (WEF) executive chairman and founder, Klaus Schwab, wrote in 2016 that "like the revolutions that preceded it, the Fourth Industrial Revolution has the potential to raise global income levels and improve the quality of life for populations around the world. In the future, technological innovation will also lead to a supply-side miracle, with long-term gains in efficiency and productivity. Transportation and communication costs will drop, logistics and global supply chains will become more effective, and the cost of trade will diminish, all of which will open new markets and drive economic growth". According to Schwab (2016), the transformation is so profound that, from the human history perspective, there has never been an era of greater potential peril or promise.

FRAMING THE IDEA OF A TRANSITIONAL WORLD ORDER

The world order is not a frequently discussed subject, particularly in the field of international relations research (Bonciu 2019:51). This is because transition of the world order is a bit consistent. The world order topic comes up in the era of fundamental transformation when there is a general perspective that some imperative elements related to the international actors and the nature of their connections are no longer as they were before (Bonciu 2019:51). The beginning of the 21st century, specifically in the aftermath of the 2008 financial crises, is increasingly characterised by the insight that a transition is only temporary. There are others who are sure that the transition is definitive, but all are in agreement that the Bretton Woods system that clarified to a large extent the world economy subsequent to World War II (WWII) is no longer functional.

People still have doubts that the world order has been transitioning when compared to events that happened after WWII in 1945. It is evident that the world economy since 1990 is no longer bipolar, that is, under the overbearing influence of the former Soviet Union and the United States (Bonciu 2019:54). The United States of America no longer serves as the main centre of power, and is being confronted in distinct ways by the Chinese and is, of late, often in divergence

with the European Union. In certain geographical areas, or in certain military and scientific domains, Russia is asserting itself as a significant player. China has officially become the largest credit provider of the World Bank and International Monetary Fund (Horn, Reinhart and Trebesch 2019). India surpassed the GDP of Great Britain in 2019, and became the fourth state to land a space vehicle on the moon in September 2019 (Carter 2019).

In essence, the world order shows the distribution of power amid main players, based on particular rules and institutions that may be implicit (Kissinger 2014). Based on its intrinsic factors, the world order has a historical character due to the distribution of power among the main players; their guidelines of interaction and even the players themselves are transitioning after relatively long intervals (Bonciu 2019:55).

Geography influences the world order, which determines the intensity of connections among players and has many nuances as these intensities of connections are quite distinct. A particular world order, at a given historical period, is more evident in geographical areas with robust relations among players, and is more relative and less evident in geographical areas with less intense relations. Kissinger (2014) provided an explanation for this characteristic by stating that a world order has never truly existed.

Currently, the world order has been mostly associated with state power, demonstrated mainly as military and economic power (Farazmand 2006). The past decades have added a new element to this equation, signified by technologies and science or knowledge (Farazmand 2006). This new element has assumed an entirely new dimension in relation to the emergence and gradual age of the 4IR and certainly with one of its main components, namely AI (Long 2018). The last decades of the 20th century and the initial decades of the 21st century have been categorised by globalisation in the sense of increasing connections and interdependences of economic players on a global level (Long 2018). Also, transformational corporations, from the point of view of the world order states, are still main players that build to a meaningful extent the nature, intensity, and direction of international relations, and these characteristics seem to remain valid for the probable future.

Clarification is needed in relation to the connection between states and transitional corporations (United Nations Conference on Trade and Development (UNCTAD) 2017). As economic power accurately impacts on political power, there is a rather robust reciprocal influence among transitional corporations and states, while in some instances the transnational corporations themselves are state-owned, for instance in South Korea, Malaysia, Russia, and China; or with the state participating, for example, in many Western European nations where there are well-known companies such as Enel, Engie, OMV, Airbus, Deutsche Telekom, Renault, and Volkswagen in which the particular states own between 15% and

32% of the capital, which makes the state-transitional corporation connection even more apparent (UNCTAD 2017).

The power of states may be established within a provided world order as hard power, which is coercive in its crux; or soft power, which is appealing; and power that is smart, which is holistic and more than an amalgamation of the previous two; while the manifestation of power is constantly transitioning from one time to another due to shifts in a multitude of elements (Nye 2011). The 4IR has gained so much attention in the preceding years, being fostered, among others, by the WEF and its creator, Klaus Schwab, as a change of what we are doing, but also of what we are on a level that has never been experienced before (Schwab 2016).

Schwab's statement may appear somewhat robust and some parts of what he mentioned are useful: "Elon Musk announced in July 2019 that his company, Neuralink, is working for developing a brain-machine interface and it has already obtained some significant results" (Hitti 2019). In July 2019, Facebook offered outcomes of its programme for a brain-reading computer interface (Robertson 2019), while a group of researchers from the University of Massachusetts' Medical School showed that they may be able to provide infrared vision to humans by injecting nanoparticles into their eyes (Waghorn and Curtis 2019), and research on bio-printing such as 3D printing of bodily organs and parts is quite enhanced (Kent 2019).

The motive of the 4IR is distinct and this difference matters for rebuilding the world order. This means instead of replacing the primacy of one sector of activity with another, for example, agriculture with industry as it transpired with the 2IR and 3IR (WEF 2017). The 4IR is categorised by a synthesis of "physical, biological and digital worlds", which affect all sectors of human activities, and at the same time is transforming its very substance and nature (Schwab 2016). Experts agree that the 4IR technologies, such as robotics, 5G communications, 3D printing, quantum computing, genetic engineering, and AI, will improve, transform, and replace most, if not all, areas that define societies and the economy for the next 50 years by creating realities that we previously thought to be unthinkable (Hinton 2018).

To be able to determine how the 4IR may impact the world order, it is useful to review the factors of power at the state scale and to adapt their content to the modern situation. In general, the power of states, as demonstrated in relation with other states at the global, regional, and continental scale, is impacted by determinants such as:

- the eminence and quantity of resources, such as population, land, and natural resources;
- the ability to change resources for military and fiscal purposes;
- technologies, science, education, and knowledge;
- the ability to produce and distribute data at a regional and global scale;

- the search for state long-term interests by means of diplomacy in every format; and
- the motivation, appearance, and richness of spiritual and cultural values (Ferne 1993; Saran and Malik 2017).

The following are two additional determinants that are somewhat generic and commonly utilised:

- Geography, in terms of the geographical setting of a state. This determinant influences the availability of natural resources in a broad sense, which include sunlight and wind, but also mountains and rivers. Moreover, it includes the existing neighbouring states at a given period in history; an element that may be beneficial.
- History, in relation to the wealth that is accumulated and the experience that may offer a state a crucial mass of expertise, skills, and capital that may be useful in attaining a favourable connection with the rest of the global economy in a certain period. Based on this view, history may be compared in a favourable case with a “savings bank”, where previous knowledge, know-how, capital, and beneficial relations with other main actors may be accumulated from preceding historical levels. It is, however, accurate that this historical heritage may in some instances be beneficial or detrimental, and enforce on existing generations the constraint of overcoming past obligations and prejudices (Ferne 1993; Saran and Malik 2017).

The power of states is highly dependent, at any given moment, on the type of resources they have and how they utilise them for attaining long-term interests. From a historical perspective, it appears that the most problematic part is defining interests that are long-term and following them in a coherent, consistent, and flexible way over a long period of time (Malnight, Buche and Dhanaraj 2019).

Implications of the 4IR for the world order

With the complexities of the power of states and difficulty in defining the term as influenced by a high volume of determinants (Cline 1977), there is a proposed formula that permits at least an approximation of it by merging tangible factors such as C, E, and M with intangible factors such as S and W. This formula, which provides a qualitative interpretation, is indicated below:

$$“Pp = (C + E + M) \times (S + W)”$$

Where:

Pp is the apparent power of a state

- C is the perilous mass related to population, territory, and resources
- E is the fiscal ability
- M is the military ability
- S is the tactical rationale of that state (Bonciu 2019:55).

Based on the formula, it is apparent that the 4IR will influence both the palpable and the imperceptible elements in a considerable way. The 4IR will influence the world order in the following respects:

- The manner in which states utilise resources, such as capital, land, labour, and knowledge, and which resources are utilised, including both natural resources and those resources that are created as an outcome of the developments in science, knowledge, and technology.
- The way states retrain, educate, and utilise labour as a main determinant in capitalising the potential of the 4IR.
- The capabilities of states to transition input resources into fiscal and military resources that include the expansion of fiscal and military actions to outer space.
- The efficacy and effectiveness of utilising diplomacy and foreign relations in order to reshape the spheres of influence or to take part in a beneficial manner in the new architecture of the world order.
- The ability to produce and disseminate data to the point of influencing the decision-making and behaviour of individuals and leaders (Ndung'u and Signe 2020).

The 4IR's impacts will be transformational, with complexities and a pace that will contest our governance structures at each level, from the regional level to the global level (Centre for Strategic and International Studies (CSIS) 2019:6). For developing and industrialised nations alike, digitisation holds vast potential to drive long-term economic growth, entrepreneurship, and job creation, as well as traditional innovative solutions to societal problems (CSIS 2019:6). It has gradually become evident that technologies bring not only incredible opportunities but also real-life threats and risks to democratic communities across the world. As the public perspective of platforms and the tech industry has transformed, the urgency of this mission will increase. Shaping and balancing the inherent opportunities and risks in people-centred approaches to high tech is one of the pivotal activities of our time, and is one that will reshape geopolitics for centuries to come (CSIS 2019:7).

THE IMPACT OF THE 4IR ON THE LABOUR FORCE

The 4IR upheaval will be felt more in the workplace than anywhere else (CSIS 2018:33). As with preceding industrial revolutions, the 4IR will most definitely impact the lives of people as AI and augmented automation will see many categories

of occupations fade. On the other hand, new types of occupations are emerging. Bernard Marr, a strategic business and technology advisor, indicated that automation and computers will come “together in an entirely new way, with robotics connected remotely to computer systems equipped with machine-learning algorithms that can learn and control the robotics with very little input from human operators” (CSIS 2018:33). Moreover, Marr indicated that “Industry 4.0 introduces what has been called the ‘smart factory,’ in which cyber-physical systems monitor the physical processes of the factory and make decentralized decisions” (CSIS 2018:33).

As the workforce is reshaped by the 4IR, businesses must plan to prepare their people for the emerging world that lies ahead. This could mean an increase in the focus on continual learning, building more on-ramps to new categories of occupations, and an obligation to diversity (CSIS 2018). It will be requisite for businesses to have the right mix of skill sets in their labour market to keep up with the pace of transitioning technologies. Employees will most likely be required to update their capabilities and skills. This should not be once off, but continually throughout their careers (Paus 2018). The government and businesses will be required to work together and share responsibilities to ensure that employees are upskilled. In this era of the 4IR, it will be imperative to create non-traditional pathways to building skills; an example of this is the 2017 Salesforce Pathfinder training programme in partnership with Deloitte (World Bank 2019).

The impact of the 4IR on the economy

Enterprise, labour, land, and capital are the four factors of production that fuel economic growth (Schwab and Davis 2019). The world is currently achieving only 52% of its entrepreneurial capacity and this percentage decreases every year. Larger and established enterprises will have a more noteworthy advantage in the future labour market than small businesses. Nevertheless, this is not a formula for sustainable and long-term economic success (Cunningham 2018). The world should focus on supporting independent entrepreneurs, as small and medium businesses are currently the engine of many economies of the world. The economy will be influenced by the 4IR by discovering new materials such as “graphene with applications from energy to electronics to biomedicine”, and new sources of energy. This may enable attaining cheap hydrogen from oil fields that include exhausted ones and oil sands (Harris 2018).

The impact of the 4IR on urbanisation

Cities have always been at the centre and melting pots of economic and innovation activities (PwC 2017:1). They have the ability to attract increasing numbers of individuals and provide transitional economic opportunities. Urbanisation in South

Africa increases productivity, enhances innovation, and improves the economy. Many developing nations view the challenge of sustainable urbanisation as a defining one. Swift and poorly managed urbanisation often proceeds at the expense of both the setting and liveability (Schwab 2017). It cannot be overlooked that cities are often not well planned, funded, or even managed, and the supply of urban services and infrastructure has subsequently not met the needs of the people and the economy. The dire consequences include alarming levels of poverty, inequality, disease, and environmental damage (PwC 2017:2). With increased levels of urbanisation, cities struggle to meet demands for existing traffic and transport systems, let alone enhanced connectivity within and between places, as well as with the significant, well-documented effect on air quality and public health (Madangombe 2019). The outcome is no longer only costlier commutes and firms not being able to take advantage of close markets for logistical efficacy gains. Without technological transformation, car-dominated and traditional cities of the 20th century will not survive rapid urbanisation and increasingly stringent air pollution regulations (Schwab 2016).

Exploiting the technologies of the 4IR could change not only people's daily commute, but also the delivery of logistics, productivity, and inclusion. Self-driving cars that provide on-demand mobility services are a much-debated choice (WEF 2017). Deploying AI and sensors also offers choices. These are based on the IoT, to enable real-time and predictive traffic flow and pollution management, developed materials for low-carbon and clean fuel options, drones for deliveries, and virtual reality for remote meetings (Baatjies 2019). Technologies of the 4IR may provide new efficiencies in energy generation through the IoT and cloud-based opportunities for more reliable power supply, decentralised networks of energy storage, and quad-generation (PwC 2017:4).

CONCLUSION

With immense problems and opportunities presented by the 4IR, it is up to citizens to work together to ensure that the 4IR benefits everyone. Citizens are required to be proactive in reshaping these interruptive technologies. There is a need for global cooperation and shared understanding of the manner in which technology is reshaping our economic, societal, cultural, and individual lives. In this era of the 4IR, businesses at the forefront that drive both societal interruptions and innovation should play a crucial role in ensuring that the needs of all stakeholders are met and not just those of shareholders. The 4IR plays the role of an amplifier for either detrimental or beneficial impacts, which is a characteristic that needs much more endurance and prudence than currently manifested.

The 4IR impacts the economy at a regional, national, and global level, with many positive consequences, but also with the danger of promoting

inequality and development gaps between groups of nations, as well as within nations. Capitalising on the positive impacts of the 4IR and reducing the negative impacts depend substantially on human resources. The manner in which human resources will be trained and educated during lifelong learning processes will influence the ability to utilise the knowledge currently available and will further improve science and technologies through continuous research.

NOTE

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The Application of Project Management Methodology for Municipal Infrastructure Grant Projects

The Case of Ramotshere Moiloa Local Municipality

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ABSTRACT

South Africa is commonly regarded as a developing country with significant infrastructure development backlogs. In demonstrating accountability and transparency in the implementation of legislation associated with infrastructure development, it is essential that government institutions, including municipalities, develop the necessary capacity to successfully design and implement infrastructure-related projects. To this end, the South African Government implemented the Municipal Infrastructure Grant (MIG) to serve as overarching regulatory and financial framework for municipal infrastructure projects. In this respect, it is essential for municipalities to employ established project management methodology for the successful operationalisation of the MIG programme. The purpose of this article is to report on findings of an empirical survey conducted at Ramotshere Moiloa Local Municipality (RMLM) to determine to what extent its Project Management Unit (PMU) utilises project management methodology for the design and execution of MIG projects, inclusive of its operational challenges and institutional capacity to effectively execute infrastructure projects. Recommendations follow to address identified performance gaps and to improve the overall functioning of the PMU.

INTRODUCTION

It is estimated that South Africa currently has an infrastructure development backlog of about R20–R40 billion in each of the water, sanitation and electricity sectors in municipalities, while investment in capital renewals is only R600 to R800 million per year (Palmer *et al.* 2018:3). Municipalities also face a significant challenge as far as ageing infrastructure is concerned. The bulk of municipal infrastructure requires urgent maintenance, refurbishment or replacement. Essential infrastructure is deteriorating faster than expected and is presently failing to meet increased demand for municipal services (Ntjatsane 2017:2). This state of affairs requires urgent project management capacitybuilding interventions to enable municipalities to construct new and maintain existing infrastructure. The South African Government established the Municipal Infrastructure Investment Framework (MIIF) in 2009 as the first national strategic plan to outline the nature and extent of basic infrastructure backlogs. This Framework incorporates various strategic options, which serve as guidelines for the provision of basic municipal services. This Framework also serves as overarching agenda for the MIG programme (2004–2007).

Municipalities in South Africa increasingly utilise project management as an instrument to render services on time, within budget, and according to quality and performance specifications. Municipal projects typically emanate from Integrated Development Plans (IDPs) and top-layer Service Delivery Budget and Implementation Plans (SDBIPs) of municipalities (Van der Waldt 2014:853). Each municipal department is therefore responsible to design and execute projects aligned with these plans. In the case of infrastructure development, the infrastructure directorate of municipalities is typically assigned the mandate to ensure that MIG projects are planned and executed in rendering particular infrastructure-related services. Authors such as Tshishonga and Mafema (2010) and Van der Waldt (2014) lament the fact, however, that IDPs and SDBIPs are generally not operationalised successfully due to the absence of an adequate project-based approach and proven methodologies in municipalities. Furthermore, the general lack of competencies and skills of municipal officials and relatively low organisational capacity levels of municipalities cause projects to not be completed according to quality specifications and schedule and budget parameters.

The purpose of the article is to reflect on findings of a survey conducted at RMLM (Rustenburg) to establish the status of project management praxis in general and the extent to which its PMU applies proven project management methodology for the design and execution of MIG projects in particular. The empirical investigation also identified operational challenges and inadequate institutional capacity of the PMU to effectively design and execute infrastructure projects. Based on the analysis of the findings, recommendations are made to address identified challenges and to improve the overall functioning of the PMU.

PROJECT MANAGEMENT: CONCEPTUAL CLARIFICATION

According to Cleland (2004:9), Kerzner (2004:1), and Klastorin (2004:1), a project can be regarded as any undertaking that has a defined objective, a cost parameter and a time element for its development. Clements and Gido (2006:4) and Meredith and Mantel (2013:8) add that a project can be regarded as a temporary endeavour undertaken to create a unique product or service. Knutzen and Blitz (1991:2) and Van der Walddt (2014:854) focus on the managerial dimensions of projects by regarding project management as the optimal utilisation of resources to ensure that project deliverables comply with time (schedule), financial (budget) and quality (performance standards) parameters. This requires robust planning, a dedicated and competent team, and effective management. In a similar vein, the Guide to the Project Management Body of Knowledge (PMBOK®), published by the Project Management Institute (PMI 2013:5), defines project management as “the application of knowledge, skills, tools, and techniques to project activities to meet project requirements”. PMBOK® outlines five process groups or life cycle phases that define the generic life cycle of projects, namely initiation, planning, execution, controlling, and closing. The PMBOK® Guide (PMI 2013:192) defines a project life cycle as a collection of generally sequential project phases which are determined by the control needs of the organisation involved in the project.

Project management is globally recognised as an established profession. In South Africa two main professional bodies, the Project Management Institute of South Africa (PMISA) and Project Management South Africa (PMSA), were established to promote compliance with accepted project management practices and standards such as the PMBOK®, BS-6079, ISO-10006, and IEEE STD 1490–2003. This body of knowledge and these project standards guide industry, commerce and government to operationalise their strategic objectives and to address business, operational and service delivery challenges. In this regard, Martinsuo *et al.* (2006:89), Srivannaboon and Milosevic (2006:495), and Zandhuis and Stellingwerf (2013:15) emphasise that a formalised project management methodology significantly strengthens the capacity of host organisations to conceptualise projects, conduct feasibility studies, identify resources required, determine quality metrics, and foster coordination and alignment between various organisational units for the successful operationalisation of projects.

Project life cycle methodologies

Since the emergence of the PMBOK®, various attempts have been made to design a comprehensive methodology for the repeated successful application of project life cycle processes in all settings and applications. Due to the fact that projects differ significantly as far as their application, context, role players,

deliverables and resource constraints are concerned, it is often necessary to utilise only some aspects of a generic methodology. For municipalities, for example, it may be required to design their own unique methodology for infrastructure development projects based on combined best practices extracted from various methodologies. Some of the most common internationally recognised and utilised methodologies are briefly outlined below.

The PMBOK®

The PMBOK® life cycle methodology is globally the *de facto* leader to outline best practice associated with each life cycle phase. PMBOK® can be regarded as the corpus of knowledge that guides the profession of project management, and there is widespread consensus about its value and usefulness (PMBOK® 2013:3).

Maturity modelling

Fox and Van der Waldt (2007:16) describe project maturity as the capabilities that must be grown over time in order to produce constant and repeatable success in organisational projects. Maturity models are generally utilised as assessment tools to identify organisational strengths and weaknesses, as well as to provide benchmarking information regarding project applications and capacities. According to Turner (2007:188) and Khalema *et al.* (2015:14), project maturity models guide project host institutions to reach the most advanced levels of performance as far as project applications are concerned. Yazici (2010:1) identifies the Capability Maturity Model (CMM) and the Project Management Maturity Methodology (PMMM), as some of the most widely applied methodologies since they provide assessment frameworks and systematic means to perform benchmarking interventions in organisations.

PRINCE2

Turner (2007:135) describes PRINCE2 as a methodology covering the organisational, managerial and control dimensions of projects. It was developed in 1989 as a UK Government standard for project management. Chan *et al.* (2015:16) add that PRINCE2 describes three processes namely 'product-based planning', 'quality review' and 'change control', with 45 subprocesses supporting all project life cycle phases. The PRINCE2-based PMMM was developed by integrating various maturity models that measure the project capacity levels of organisations.

Waterfall

Jiang and Eberlein (2008:9) describe Waterfall methodology as a generic instrument to manage projects. To this, Fox and Van der Waldt (2007:23) add that waterfall methodology is widely used by novice project managers since it is relatively simple to apply and it provides a basic process map that can be used in

any type of project. Fox and Van der Waldt (2007:23) further emphasise that it outlines the development of a project plan as flowing or cascading incrementally downwards through the respective phases of a project. Progress flows from the top to the bottom, like a waterfall, and proceeds from one phase to the next in a sequential manner.

OPM3

Turner (2007:190) defines OPM3 as the application of knowledge, skills, tools, and techniques to achieve the strategic objectives of an organisation through projects. Van der Waldt (2019:39) further clarifies that OPM3 refers to Organisational Project Management at three levels, namely portfolio (strategic), programme (tactical) and project (operational) levels.

These and other methodologies, both individually and collectively, serve as valuable parameters or frameworks that could guide municipalities in designing and executing infrastructure development projects.

MIG-RELATED PROJECT APPLICATIONS IN LOCAL GOVERNMENT

In terms of Section 152 of the *Constitution of the Republic of South Africa, 1996*, municipalities are obligated to ensure that municipal services, as provided for in Part B of Schedule 4 and Part B of Schedule 5, are delivered in an effective, efficient, and sustainable manner. The White Paper on Local Government (1998) furthermore advocates that municipalities should establish innovative ways of providing and accelerating the delivery of municipal services. Further impetus to the establishment of a legal framework for infrastructure projects was provided by the White Paper on Municipal Service Partnerships (2004), which provides for healthy community engagement as core mechanism to render basic municipal services.

In view of the severe infrastructure development backlog that the country experiences, the South African Cabinet approved the establishment of the National Conditional Grant, which evolved into the MIG on 5 March 2003 (DPLG 2004:1). The MIG programme is executed by means of projects. These projects are generally infrastructure development in nature and include the construction of roads, storm water pipes, and houses; the building of water purification and reticulation plants, the construction of reservoirs and dams, as well as the installation of high-mast lighting. The MIG Booklet (DPLG 2004:6) outlines the MIG as a 'municipal infrastructure funding arrangement' which combines all existing capital grants for municipal infrastructure into a single consolidated grant. The MIG is a conditional grant and therefore municipalities must conform to the conditions laid down by the Municipal Infrastructure Task Team (MITT), as administered by the

Department of Co-operative Governance and Traditional Affairs (Cogta), through the national MIG Unit. There are three types of conditions that apply to the MIG, namely Division of Revenue Act conditions, cross-cutting conditions, and sector conditions. The main purpose of these conditions is to ensure that municipalities address the objectives outlined in the MIG policy. The approach propagated by the MIG is that all basic infrastructure grants are integrated and that infrastructure planning and execution should be done by municipalities themselves (DPLG 2007; Modipane and Sebola 2012:398). To this effect, participating municipalities must establish PMUs to take responsibility for infrastructure projects (DPLG 2007:26). Once a project has been approved through municipal IDP processes, the PMU is responsible for the overall management of the project through its entire life cycle. According to the DPLG (2004:26) and Van der Waldt (2014:852), the role and responsibilities of PMUs generally include the following:

- coordinate all infrastructure projects identified in the IDP planning process by liaising with municipal support departments;
- conduct environmental impact assessments and feasibility studies of infrastructure projects and design appropriate project business plans;
- establish and approve contracts with contractors and consultants for each project;
- ensure that projects meet planning objectives, quality specifications and standards, as well as performance targets;
- manage MIG funding within the municipal accounting system;
- manage contracts with contractors and consultants for each project;
- conduct project-related capacity building in municipal departments; and
- undertake project monitoring, evaluation, impact assessments, and reporting.

The Director: Infrastructure of Municipalities is typically the senior manager responsible for the planning and implementation of municipal infrastructure projects. The Director is usually responsible to establish healthy working relations with contractors and consultants in the infrastructure development domain. Executive mayors, municipal managers, councillors, and senior officials are furthermore mandated to play an important oversight and administrative support role in the allocation and management of municipal resources to these projects. Van der Waldt (2014:853) further highlights that national and provincial structures should inform municipal infrastructure development projects through related planning instruments and frameworks such as the Provincial Growth and Development Plan, the Integrated Waste Management Plan, the Environmental Management Framework, the Spatial Development Framework, and the Capital Investment Programme. The five-year Infrastructure Capital Plan that emanates from this information, should offer opportunities for the community and other interested parties to provide input regarding the prioritisation of

infrastructure projects. Project management thus plays a vital role in IDP and SDBIP execution and fosters a municipality's service delivery and community participation obligations.

RESEARCH METHODOLOGY

By following a qualitative, case study design and by utilising semi-structured interviews as data collection method, an empirical study was conducted at RMLM to investigate the ways in which projects are administered by the PMU as unit of analysis. An interview schedule was designed and piloted (pre-tested) to uncover perceptions, opinions and impressions of purposive-sampled participants. According to Maree (2012:176) and Creswell (2013:147), purposive sampling is especially suitable to obtain rich, reliable and relevant information from participants who are knowledgeable about the phenomenon under investigation. The full cohort of the unit of analysis, namely PMU staff of RMLM, was selected, namely:

- the Director: Infrastructure;
- the PMU Manager;
- the PMU Technician; and
- the MMC for Infrastructure, as a political head.

The empirical research and findings of the participants' responses assisted to conduct a gap analysis by comparing international project best practice methodologies with current project management praxis at RMLM. The particular focus of the interviews was to determine the extent to which the PMU utilises internationally-recognised project management methodologies to address infrastructure backlogs. The aim was to isolate key challenges and to make recommendations that may assist the PMU in adopting more appropriate methodology to design and execute MIG projects. Participants were informed about the purpose of the study and were requested to sign a consent form. Approval was also obtained from the Office of the Municipal Manager to interview the participants during office hours by appointment. The stipulations of the Protection of Personal Information Act 4 of 2013 regarding informed consent and protection of personal information, were further adhered to in conducting the survey.

Case study analysis: PMU of Ramotshere Moiloa Local Municipality

In congruence with the scientific principles of case study designs, as outlined by Yin (2012), Leavy (2014), and Corbin and Strauss (2015), an analysis of RMLM was conducted to uncover contextual and underlying dynamics associated with

infrastructure development projects. RMLM is located in the North-West Province and is part of the Ngaka Modiri Molema District Municipality. The vast majority of the population live in a rural or peri-urban environment, which is for the most part, poorly serviced (RMLM IDP 2018/2019:10).

Service delivery protests often sporadically erupt in various villages that are generally indicative of the fact that the municipality is not adequately addressing its infrastructure backlogs. One of the most pertinent issues raised by communities as the reason for their protest is the fact that there are inadequate access roads to their residential areas. Furthermore, according to the RMLM IDP (2018/2019:21) the tarring, paving and maintenance of roads were raised as priority challenge in almost all municipal wards.

Preliminary interviews with stakeholders and a document analysis of official reports revealed that the general problem that faces the RMLM is the absence of appropriate project management methodology to address backlogs in terms of MIG projects. The 2017/2018 Council Annual Report, for example, shows that MIG projects are typically incomplete and run concurrently with projects of the previous financial year. In view of this perceived problem, the study intended to confirm the extent of the issue and to make key recommendations regarding the adoption of appropriate project management methodology for the improvement of MIG project implementation.

RESEARCH RESULTS AND ANALYSIS OF FINDINGS

This section reflects the research results emanating from interviews conducted at RMLM. The section is divided into two sections: Section A contains the biographical profile of participants, and Section B entails responses of participants to questions posed. This is followed by an analysis of the findings.

Section A: Biographical profile of participants

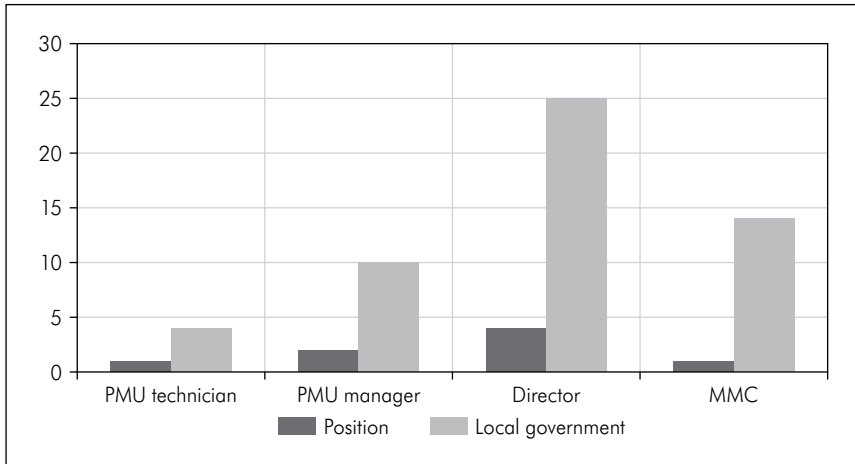
All participants were requested to respond to the following:

- current position;
- number of years in their current position;
- total number of years' experience in the local government, and
- project management experience and expertise.

Figure 1 illustrates the current position of participants and their experience in the field of project management.

All staff, except for the Director, has very limited experience in project management in general and MIG projects in particular. Their overall experience in

Figure 1: Position description and experience profile



---local government is, however, more or less on par with the profile of general employees of the municipality.

Section B: Interview questions and responses

This section reports on the responses obtained from participants per question posed. The first four questions mainly dealt with contextual concerns.

Regarding the first question, pertaining to the extent to which MIG projects are aligned with the municipality's IDP process, all participants confirmed that they are indeed fully aligned. Participants also confirmed that there are adequate monitoring and evaluation mechanisms in place for MIG projects. However, it is evident that a standardised project monitoring, evaluation and oversight methodology has not been adequately established. Therefore, although there are monitoring, evaluation and oversight mechanisms, standardised processes and procedures that should be followed by these mechanisms, are not adequately formalised and outlined. Regarding the general role and responsibilities of the PMU to oversee MIG projects, all participants confirmed that the PMU has extensive responsibilities as far as project oversight is concerned. It is yet again evident, however, that clear roles and responsibilities are not coupled with standardised methodology that specify performance targets, operational guidelines and procedures, and quality parameters. Due to capacity challenges the PMU also complies with only some of the typical responsibilities as outlined above. It does not, for example, conduct environmental impact assessments and feasibility studies of infrastructure projects.

A positive aspect as far as the standardisation of project control is concerned, is the fact that a nationally standardised management information system, namely the Municipal Infrastructure Grant Municipal Information System (MIGMIS), is utilised to manage all PMU projects. The MIGMIS enables national and provincial government to ensure that all projects comply within certain specifications before they can be funded. The system makes provision for project registration documentation, consultant and contractor registrations, monthly payments, and monthly council reporting. It furthermore prompts the PMU to conduct site inspections and technical meetings per project phase. The minutes of these meetings are loaded onto the MIGMIS for national and provincial oversight. In addition, RLMM has two official committees, the PMU Committee chaired by the PMU Manager and the Committee of Directors chaired by the Chief Financial Officer. These committees deliberate on all project activities and check all project documentation and transactions. The PMU Manager is also responsible to coordinate all project-related operations and to report regularly to the Provincial MIG Office and the National MIG Office. The Supply Chain directorate of the municipality oversees all PMU procurements and appointments of consultants and contractors.

All the participants confirmed that the PMU fully complies with community participation obligations of the municipality. There is regular community engagement regarding the impact of the project on their lives. Such engagement is mainly facilitated by councillors and the *Kgosi* (Tribal Chief, traditional leader). In addition, the PMU consults communities by means of the CLO (community liaison officer) and respective project steering committees.

Participants were requested to elaborate on the particular project life cycle methodology that RMLM follows to implement MIG projects. The theoretical exposition confirmed that life cycle methodologies such as PMBOK and PRINCE2 are essential to ensure that adequate control and monitoring systems and management processes are in place to manage life cycle phases. From the responses of participants, it is, however, evident that such a globally recognised methodology is not in place. Instead, rather *ad hoc* processes are followed and there is limited knowledge of existing methodologies and understanding for the necessity to adopt and adapt such methodologies for project success in the PMU. These responses further confirm the research problem. On a more positive note, it seems that the MIGMIS does make provision for particular in-house, construction-specific methodology. This methodology charts the typical processes that the PMU must follow, from project registration to its sign-off phase. All participants were able to map these processes. In this regard, one participant reflected on the chronology of these processes by indicating that projects are usually identified by the community during the IDP process, but when it gets to the feasibility study stage, geographical and demographical project realities are often incongruent with community expectations. This often leads to frustration and protest.

Participants were requested to identify and elaborate on their perceived five most significant challenges as far as PMU project design and implementation are concerned. Their responses in terms of priority and frequency are listed below.

Priority	Challenges identified	Frequency
1	Budget constraints: the PMU is simply not in a position to satisfy all the infrastructure development demands from all the wards in the municipality. As one participant observed: 'We can only partially address the needs identified. This leads to more tension between communities and the municipality, and between councillors and us. Government grants do not fit the needs on the ground'.	4
2	Political interference in especially high-profile projects and in the appointment of preferred service providers. One participant observed that councillors are simply not educated about their role in the administration of the municipality.	2
3	Inadequate project management capacity, including institutional capacity of both the municipality and the PMU to successfully execute projects. One participant suggested that all municipal staff should attend basic project management courses to enhance the overall project capacity of the municipality.	2
4	Shifting of priorities leading to the rescheduling or termination of existing MIG projects, often leading to violent community protests.	2
5	Poor contract management leading to non-performance of consultants and service providers. There is also limited consequence management as a result.	1

The responses revealed that budget constraints are identified as the most significant challenge. Financial challenges further exacerbate infrastructure development backlogs. In this regard, one participant made the following suggestion: 'We must come up with an approach whereby we address all infrastructure concerns one ward at a time. We can then be able to address all the wards at the end of the term. We can make sure that we prioritise certain wards to finish all the roads, for example, in that ward before we go to the next ward. If we can work in that way and not try to do bits and pieces, then we can have good approach because everything is just scattered; there is no coherence in the way we work'. In addition, another participant responded as follows: 'We need to integrate the Government. Public Works and municipalities must coordinate projects, because together we can make a difference. Government is working in silos. We may find that a particular road is owned by Public Works and we cannot work on it. If we can integrate, align and coordinate all work, we will be able to remedy some of the issues'.

The empirical investigation revealed that there is inadequate planning, execution, controlling and monitoring of MIG projects. This is primarily caused by the lack of project management skills, experience and sound methodology applied by PMU officials. Due to these challenges, contractors typically do not fully adhere to predetermined project specifications provided for in tender documentation. It is further evident that PMU staff experience difficulties to work with contractors. Their general lack of experience and limited project monitoring and oversight often lead to projects not being completed on time, within budget and according to project specifications. These factors often cause friction and tension between the PMU and contractors.

KEY RECOMMENDATIONS

Based on the triangulation of different data sets (i.e. interviews, statutory pre-cripts, theoretical orientation, and project methodologies), the purpose of this section is to make recommendations to address the identified challenges. It should be noted that all these recommendations entail certain aspects or dimensions of the adoption of standardised project management methodology for the PMU at RMLM. This methodology should not only make provision for standardised life cycle methodologies such as PMBOK and PRINCE2, but should also ensure that projects are aligned with the IDP and SDBIP, and that monitoring, evaluation and oversight are effectively conducted.

Recommendation 1: Proper project feasibility studies

The interviews revealed that MIG projects at RMLM are designed, approved and executed without following feasibility study best practice. The feasibility of projects in terms of municipal capacity, resources, expertise, available budget, as well as environmental impact should be conducted by the PMU. It is thus recommended that existing project challenges can be addressed by conducting thorough feasibility studies prior to the submission of detailed project proposals and plans to Council for approval. Feasibility studies should be conducted as part of the initiation phase of a project's life cycle. The initiation phase should thus be incorporated in project methodology of the PMU to justify the project and to ensure that all required community participation processes were followed. The methodology should also make provision for needs analyses, environmental impact assessments, and the setting of standardised criteria for the prioritisation of projects. The feasibility study should also enable the PMU to determine the most suitable project strategy, the required expertise and capacity required, as well as to ascertain operational details such as accountability and responsibility arrangements, the appointment of contractors, and

the involvement of councillors in the process of setting project objectives and deliverables. The PMU should coordinate project feasibility by involving other municipal departments where appropriate.

Recommendation 2: Capacitating the PMU function

It is recommended that the municipality build the existing capacity of the PMU and by doing so, refrain from using consultants. The appointment of consultants places an additional financial and management oversight burden on the municipality in general and the PMU in particular. PMU staff should preferably possess the same qualifications and expertise as those of consultants generally appointed. Capacity building interventions such as training and development initiatives should receive urgent attention. A capacitated PMU will further lessen the burden currently experienced by the municipality to determine realistic budgets, deliverables and timelines for infrastructure projects. The National MIG Unit should extend its support to the PMU by funding such capacity building initiatives. The types of interventions will obviously depend on the qualifications and experience of existing and newly appointed PMU staff, but may include the following:

- MIG orientation workshops (eg. nature, purpose, structures, processes, and systems of the MIG);
- technical training (eg. planning, budgeting, risk assessments, feasibility studies, etc.), and
- legal services training (eg. contract compliance management, legal ramifications, and accountability and reporting arrangements).

It is further recommended that the PMU Manager involve the Head of Human Resources to ensure that the training and development needs of staff are adequately absorbed in the human resources plan of the municipality. Training should not only focus on project-specific skills such as utilisation of the knowledge areas and the management of project life cycle phases, but should also include generic management skills such as organising, planning, coordination, communication, and control.

In order to implement and execute projects successfully within RMLM, it is further recommended that the PMU increase its staff complement by appointing the following additional personnel:

- Director: Infrastructure, with engineering qualifications and project management expertise;
- two additional project managers;
- an electrical as well as a civil engineer;
- two project technicians (electrical and civil), and
- an occupational health and safety staff member.

It is recommended that RMLM consults with sector departments which are responsible for ensuring that the PMUs are competent to plan and implement projects to assist in this regard.

Recommendation 3: Ring-fencing of MIG funds

The empirical investigations revealed that the budget allocated to MIG projects is currently insufficient. Funding should cover capital costs for every infrastructure project and municipalities must ensure that they also have sufficient equitable share or other revenue to fund the operating costs of the project's deliverables. If the operating costs are not sufficiently covered, the services emanating from project deliverables will not be sustainable. PMUs should be regarded as a ring-fenced project management function which should be funded from the MIG grant allocation made to the municipality. There is a tendency of politicians to interfere with the budgets allocated for MIG projects and they often try to divert the funding for other purposes. These purposes may include the payment of salaries of employees or the funding of high profile, politically-prioritised initiatives. This has detrimental implications for infrastructure projects, causing significant budget deficits and even the termination of existing projects. It is therefore recommended that the budget allocated for a specific MIG project must be ring-fenced to ensure that it is utilised for its intended purpose. It is further recommended that affected municipalities liaise with the MIG National Office to politically assist with the demarcation and utilisation of MIG project budgets.

Recommendation 4: Appointment of capable and experienced contractors

There is a tendency among politicians (i.e. councillors) to interfere in the supply chain directorate by influencing the processes to be followed in the appointment of contractors. Consequently, the integrity of tendering and procurements processes are compromised. This often leads to a situation whereby incapable and incompetent contractors are appointed, leading to low quality of projects, non-compliance with tender specifications, and ultimately poor service delivery. It is therefore recommended that incidences of, and potential for favouritism, fraud and corruption be eliminated.

Recommendation 5: Establish standardised project management methodology

This recommendation can be regarded as the culmination of the main research findings and in essence combine all other recommendations made to remedy the

identified MIG project challenges as well as the main research problem. This recommendation consists of three layers: layer one concerns a macromethodological approach; layer two pertains to the institutional and organisational dimensions of project management, and layer three refers to the internal functioning of the PMU at RMLM.

As far as the macromethodological approach (layer one) is concerned, infrastructure projects on their own cannot bring about socio-economic growth and prosperity envisaged as part of the developmental mandate of municipalities. Hence, it is recommended that an integrated and holistic approach to community development should be pursued. Such an approach should take into account institutional, social, financial, environmental and technical dimensions of local governance. It is important that the IDP process follows a more standardised methodology in the identification, prioritisation and execution of projects earmarked for addressing community needs. This also entails a participatory project management methodology that does not only ensure that the IDP process in itself is regarded as an annual project, but that continuous community engagement in the design and execution of projects is fostered. This will improve the overall legitimacy of development-related decisions and advance community ownership of projects aimed at improving their lives.

Layer two of this recommendation pertains to the institutional and organisational dimensions of project management. The analyses of MIG, the case study (RMLM), and the functioning of the PMU, revealed a number of challenges. It is argued that most of these challenges can be addressed by following a standardised organisation-wide methodology that promotes the implementation of the IDP and SDBIP by means of projects. Such an organisational-wide project-based methodology should adjust municipal systems, structures, policies, processes, procedures, and responsibility and accountability arrangements to make them more favourable for project identification, prioritisation, approval, monitoring and oversight, as well as optimal resource allocation and utilisation. It is envisaged that such a project-based methodology will improve the overall project readiness and maturity of the municipality, leading to higher performance, productivity and ultimately better service delivery.

The final layer refers to the internal functioning of the PMU. As confirmed by Van der Waldt (2009:743) and Kster (2010:45), it is important to set up a central project management entity staffed with people who are capable of taking on the day-to-day operations of project administration and management. In the case of MIG, such a central entity takes the form of the PMU. It is recommended that the existing PMU of the RMLM be extended to gradually evolve into a Project Management Office (PMO) that will not only service infrastructure projects, but also all other service delivery projects such as housing, electricity, roads, and so forth. The PMO should be staffed with qualified and experienced

project managers that will deal with all project-related functions such as feasibility studies, risk assessments, planning, budgeting and the general coordination and management of municipal projects. It is further recommended that the PMU of RLML adopt a standardised project management life cycle methodology such as PMBOK, PRINCE2 or Waterfall. Such a standardised methodology can be adjusted to suit the particular circumstances of the municipality, but should establish best practices for the management of the initiation, planning, execution, controlling, and closing phases of projects. This will ensure specification and operational compliance, promote oversight by means of standardised performance indicators and reporting arrangements, as well as ensure that the roles and responsibilities of all stakeholders and role players are clarified. A standardised project management methodology will thus foster the overall tracking and management of municipal infrastructure projects.

CONCLUSION

The purpose of this article was to report on the findings of an empirical study conducted at RMLM regarding the application of recognised project management methodologies for the management of infrastructure development projects. In this respect, the PMU should play an instrumental role. The RMLM annual reports continue to show that MIG projects are not completed per schedule, quality parameters are not adhered to and there are constant budget overruns. The annual reports also highlight the fact that there is inadequate planning, execution, controlling and monitoring of MIG projects. This is exacerbated by the general lack of project management skills, experience and methodology applied in the PMU. Because of these challenges, contractors do not adhere to the project specifications provided for in tender documents. There are also inadequate financial controls, leading to disclaimers or qualified audits; lack of monitoring mechanisms for the implementation of MIG projects; lack of strong and effective project governance (i.e. PMU) structures, and officials appointed do not meet the minimum competency requirements and project skills for their positions. These challenges were confirmed by the empirical investigation.

In view of these challenges, the article made recommendations regarding the adoption of project management methodologies for the successful implementation of MIG projects. To this end, project management principles, life cycle methodology and international best practice should be adopted and adapted to suit the particular circumstances of the municipality. It is suggested that the adoption of these recommendations will go a long way to address most of the challenges currently experienced as far as infrastructure backlogs are concerned.

NOTE

- * Mr Mokgethi is Senior Education Specialist: Civil Technology Subjects, Department of Basic Education. This article is based on his Master's dissertation under the supervision of Prof Gerrit van der Waldt, titled "The application of project management methodology for Municipal Infrastructure Grant projects: The case of Ramotshere Moiloa Local Municipality".

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 - **Book:** Gildenhuis, J.S.H. and Knipe, A. 2000. *The Organisation of Government: An Introduction*. Pretoria: Van Schaik.
 - **Article:** Auriacombe, C.J. 2007. Deconstructing the public interest for application in South Africa. *Administratio Publica*. November 2007. 15(1):28–52.
 - **Official publication:** Public Service Commission. 2008c. Report on the Audit of Reporting Requirements and Departmental Monitoring and Evaluation Systems within National and Provincial Government. Public Service Commission. Pretoria: Government Printers.
 - **Internet reference:** Patton, M.Q. 1999. Utilization-Focused Evaluation in Africa, training lectures presented at the African Evaluation Association, 13–17 Sept. 1999. Nairobi. Kenya. Available at: www.afrea.org/documents/document.cfm?docID=64 (Accessed on 25 March 2009).
 - **Title of acts in italics** e.g. *Public Service Act, 1994* (Act 103 of 1994) or *Public Service Act 103 of 1994*. Be consistent with the referencing.
 - **Full reference:** South Africa (Republic). 2000. *Local Government: Municipal Systems Act, 2000* (Act 32 of 2000). Pretoria: Government Printers.
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