

**Research Article**

An analysis governance challenges in Covid-19 response operations in Malawi: A wicked problems theoretical perspective

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ABSTRACT

This paper examines the governance challenges in the management of Covid-19 response operations in Malawi. The paper contrasts inefficiencies within the Malawi Public Sector Covid-19 response system (PSCRS), against a more efficient but resource-constrained citizens' initiative. Utilising a wicked problems theoretical perspective in the background, this qualitative study collected data from official government publications on the one hand, and from social media platforms – Facebook, and official records of the citizens' initiative known as the Covid Response Private Citizens (CRPC), on the other hand. We undertook a comparative analysis of resources at the disposal of each initiative and their respective outputs. The findings show that the citizens' initiative was accountable, with more efficient and transparent humanitarian response operations than the PSCRS. Further, the PSCRS demonstrated systemic deficiency and wickedness, characterised by misappropriation and other forms of abuse of public funds meant for the pandemic. Thus, the citizens' initiative achieved more with far limited resources than the public sector initiative. This paper argues that in the fight against the pandemic, public funds could have been saved and needless loss of lives averted had the PSCRS operated with the same level of efficiency, responsiveness and accountability as the CRPC in the procurement and disbursement of essential Covid-19 supplies and other interventions. The paper concludes that the PSCRS is in itself a wicked problem that requires a solution before it can be deployed to deal with a more wicked problem, the Covid-19 pandemic.

Keywords: Covid-19; Humanitarian Logistics Operations; Governance; Wicked Problems; Public Sector

1. INTRODUCTION

The last couple of decades has seen a high rise in both the number and magnitude of humanitarian disasters. From earthquakes in Haiti and Indonesia; flooding in Pakistan, bush fires in Australia and the United States of America (USA), to wars in Somalia, Syria, Iraq and Yemen. In short, the world has moved from one disaster to another in rapid if not forgettable succession. In many cases, disasters unfold with little warning – effectively zero in the case of earthquakes and, perhaps, a maximum of 72 hours for wind events such as cyclones, hurricanes or typhoons (Kovács & Sigala, 2021; Regnier, 2008). For Covid-19, under the watch of the world, what started as a Chinese crisis soon became an Italian, then

American to then become a global disaster, a wicked problem (Klasche, 2021; Angeli et al., 2021) and a super wicked problem (Auld et al., 2021).

The Covid-19 pandemic is a health or socio-economic crisis as much as it is a governance crisis that has tested the resilience of governance systems and exposed weak institutional structures at all levels of governance in Africa (ACET, 2022). While there are good examples of rapid and effective responses to COVID-19 by governments, the pandemic has also exposed governance failures in several countries across the continent (ACET, 2020). Whereas governance challenges in managing previous pandemics on the continent may have been hidden due to the direct involvement of international humanitarian organisations and other multilateral development partners, the global nature of the Covid-19 pandemic completely exposed the deficiency and vulnerabilities of governance systems on the continent. International disaster response organisations have themselves been busy with events in their backyard or were themselves potential victims of the pandemic. ACET, (2020) observes that the pandemic exposed the vulnerabilities of public institutions with regard to insufficient and weak governance systems.

The dual public health and economic crisis caused by COVID-19 has resulted in hundreds of millions of dollars being allocated by governments to cushion vulnerable populations. While corruption in public spending and in the health-sector have always presented a significant governance challenge, the need for an immediate response to the pandemic potentially increased opportunities for abuse and misappropriation. Transparency International (2019), estimates that over US\$500 billion in health resources are lost to corruption annually, contributing to the death of some 140,000 children every year. Thus, owing to the prevalence of corruption and related governance challenges, millions of dollars meant for managing the Covid-19 pandemic may have been abused in many African countries including Malawi (National Audit Office, 2021). This paper therefore examines the governance challenges in the management of Covid-19 humanitarian response operations in Malawi. Further, the Covid-19 pandemic has largely been researched from a Western, educated, industrialised, rich and democratic (WEIRD) societies' context with adequate resources for dealing with the pandemic (Mollenkopf, Ozanne, & Stolze, 2020). This paper therefore, contributes a developing country perspective of the pandemic.

In Malawi, a developing southern African country, questions have been raised on the effectiveness and efficiency of the PSCRS in the management of Covid-19 resources. In principle, the public healthcare supply chain in Malawi may be a victim of inefficiencies and bureaucratic malady of the entire public sector infrastructure. For example, since the onset of the pandemic, the IMF twice approved a relief package in May and October 2020 for Malawi's Rapid Credit Facility worth a total of US\$193 million, for mitigating against the economic impact of COVID-19 (IMF, 2021). Yet, public hospitals in Malawi continued to struggle in containing the pandemic largely due to the lack of essential equipment and supplies for the treatment of Covid-19 patients.

Notwithstanding funding from public resources and international donor partners, public hospitals in Malawi struggled to deal with the pandemic due to inadequate essential supplies occasioned by corruption and misappropriation of public resources (National

Audit Office, 2021). Given that Malawi experienced a much flatter Covid-19 curve with a manageable number of hospital admissions compared to other parts of the world, efficient management and allocation of available resources through procurement and other humanitarian logistics operations could potentially avert the crisis and prevent needless loss of lives. In contrast, a private citizens' initiative with far limited resources was able to reach out and equip nearly all public hospitals in a manner that exposed inefficiencies of the PSCRS (Masina, 2021).

While Malawi faces wicked problems such as the COVID-19 crisis as does the rest of Africa, the geographical foci of studies in this perspective have been from South Africa, Kenya, Tanzania and six other African countries – Malawi excluded (Niskanen et al., 2021). Further, within the developing country context, the Covid-19 pandemic has mostly been researched from a public health perspective with little if any focus on governance. The purpose of this paper is therefore to analyse the governance challenges in Covid-19 response operation in Malawi's public sector. The study answers the following research question:

1. What are the key governance challenges in managing Covid-19 humanitarian response operations in Malawi?
2. What are the key governance lessons from the successful citizen-led Covid-19 response operations in Malawi?

The rest of the paper is organised as follows: Section two reviews the theoretical framework and the literature. The methodology is described in section three and is followed by results and discussion in section four. The study conclusions and limitations are presented in section five.

2. LITERATURE REVIEW

2.1. THEORETICAL FRAMEWORK: WICKED PROBLEMS

The Covid-19 pandemic has become a global crisis with no clear solution. In fact, all efforts towards containing the crisis were trials that represented various risks of unknown magnitudes. Owing to the complex nature of the pandemic, this paper employs the wicked problem theoretical perspective to properly contextualise the pandemic. A wicked problem is generally defined as one that is difficult or impossible to solve due to the incomplete, contradictory, and changing requirements including the number of people and opinions involved. The concept of a wicked problem was first coined by Rittel & Webber (1973). Wicked problems are known to have multiple causes and actors, are difficult to describe, are politically complex and have tough answers (Kutor et al., 2021). In fact, wicked problems are so wicked that it is difficult to define them except with reference to their common characteristics (Camillus, 2008; Ney & Verweij, 2015; Rayner, 2016). Some of the characteristics of wicked problems reviewed hereunder, are reflective of the nature of the Covid-19 pandemic:

2.1.1. Wicked problems are never understood until a solution is found.

In many ways, this feature exemplifies the complex and multifaceted nature of wicked problems. It is often through the exploration of potential solutions that people gain a better understanding of the problem (Tatham & Houghton, 2011). This description is a perfect fit for the Covid-19 pandemic which until now, is only partially understood.

2.1.2. The search for solutions to wicked problems never ends:

Since wicked problems are never thoroughly understood, the search for solutions can be frustrating. The search for solutions only ends not because an optimal solution has been found but when the problem becomes structured to the satisfaction of key stakeholders (Marttunen, Lienert, & Belton, 2017; Mingers & Rosenhead, 2004).

2.1.3. Solutions to wicked problems have no immediate and ultimate test.

Unlike solutions to ordinary problems whose effectiveness can be quickly established, solutions to wicked problems generate unexpected consequences over time, making it difficult to measure their effectiveness (Camillus, 2008; Termeer, Dewulf, & Biesbroek, 2019).

2.1.4. Every solution to wicked problems is a one-shot, with no opportunity for trial and error.

Unlike ordinary problems, solutions to wicked problems cannot be trialled without consequences that may also change the problem itself and its ultimate solution (Tatham & Houghton, 2011). In this regard, indeed the 'planner has no right to be wrong' and must endeavour to get the solution right at the first attempt notwithstanding the limited understanding of the problem (Rittel & Webber, 1973, p. 166). The Covid pandemic appears to have no clear solution. The complexity and wickedness of Covid-19 has also meant that every solution is a one-shot, with no room for trial and error (Schieffloe, 2021).

2.1.5. Every wicked problem is unique, and therefore, experience becomes unnecessary in dealing with them.

Although Covid-19 may be likened to similar corona virus outbreaks in history such as the severe acute respiratory syndrome of the first decade of the 21st century (Kahn & McIntosh, 2005), the impact of this pandemic is incomparable with any other similar respiratory disease in living memory. Even where there is stark similarity between wicked problems such as in humanitarian disasters, the realities surrounding each disaster often requires a different approach to the problem (Tatham & Houghton, 2011; Waddock et al., 2015).

2.1.6. A super wicked problem lacks central governance, faces a catastrophic deadline, has solutions that ignore the future and is solved by those causing it (Levin et al., (2012).

The Covid-19 crisis meets this criterion as does the climate crisis. Solutions to it have to be adapted to national peculiarities, delays exacerbate the negative impact, mitigation measures are not long-term and, while people will want it to end, their own actions actually prolong it (Auld et al., 2021). It becomes more difficult to solve Covid-19 because of the additional features mentioned.

Indeed, the Covid-19 pandemic displays characteristics of a wicked problem. For example, with so many mutations and variants, it has become extremely difficult to comprehend and manage Covid-19. Similarly, the search for better solutions is on-going and may never be concluded until the pandemic is eradicated. Further, due to the nature of the pandemic, there was no room to adequately test the vaccines and consequently, the developers of the vaccine had no opportunity for trial and error (Schiefloe, 2021). Any substantial errors in the development of the vaccines could potentially catastrophic consequences on humanity. Finally, resolution of the Covid-19 pandemic required no prior experience as evident in the challenges experienced in dealing with different variants of the virus. The wickedness of the pandemic has important governance implications.

Notwithstanding their wickedness which makes it impossible to impose prescriptions in managing them, wicked problems can be managed through three broad approaches: i) competitive; ii) authoritative; and iii) collaborative (Head, 2019; Waddock et al., 2015). The competitive approach occurs when stakeholders try to resolve a problem by pulling in different directions (Head, 2019; Head and Alford, 2015; Tatham & Houghton, 2011). In contrast, the authoritative approach requires the existence of an authority figure who can impose his or her will on the rest of the stakeholders (Tatham, 2011). Collaboration, entails agreement and consensus among stakeholders in developing solutions to wicked problems (Head & Alford, 2015; Conklin, 2006). This paper examines the relevance of the collaborative approach which is evident within the successful CRPC interventions, as opposed to an authoritative approach reflected in the PSCRS.

2.2. GOVERNANCE CHALLENGES IN COVID-19 RESPONSE OPERATIONS

The COVID-19 pandemic exposed longstanding governance challenges in low- and middle-income countries (LMICs) across the world, with catastrophic instances of market failure within healthcare supply chains (Cramton et al., 2020; Williams, 2020). Research has revealed massive outages of essential supplies such as personal protective equipment (PPE) and medical masks and oxygen due to a sudden surge in global demand and lockdowns as a result of the pandemic (Cramton et al., 2020). In many cases, such market failure was expounded by chaotic governance and policy responses with limited if any evidence of public-private partnerships within the healthcare delivery supply chains. Consequently, it has been argued that such market and governance failures have been long in the making and reflect decades of neoliberal policies within the healthcare sector in many LMICs (Sparke, 2020).

Most African governments have taken commendable measures to impede widespread community transmission of COVID- 19 within country borders, although the lower than predicted number of covid-19 cases and fatalities cannot be fully attributed to government interventions (Badu et al., 2021). Perhaps the biggest governance problem facing African governments has been appropriate prioritization of resources and customized control measures (Kulohoma, 2021). While resources were available through locally mobilised funds and grants from international organisations such as the World Bank, many developing African countries struggled with the pandemic due to governance challenges especially regarding the management of available resources (ACET, 2020). Overall, the public sector

faces complex problems in an increasingly turbulent social environment, having to manage uncertain and unpredictable scenarios under pressure, without sufficient knowledge. This requires political leaders to improve their responsiveness by quickly developing and executing sound governance strategies (Martinez-Cordoba, et al., 2021).

Perhaps the single most problematic concept in governance literature is accountability, which is defined as being answerable or taking responsibility for one's action (Rana et al, 2019). With the growth of New Public Management, accountability has become an imperative as much as it is an indicator of good governance. For example, governance in public administration has become a global issue that is marred with fraud, inefficiency, corruption and lack of adequate internal controls (Azziz et al., 2015; Rana et al, 2019). The citizenry in many countries are increasingly pressuring their governments and demanding greater transparency and accountability in the use of public resources as well as improved service delivery (Aziz et al., 2015). Given that public organisations draw their mandate from central governments, accountability has assumed a higher level of importance in managing such organisations (Aleksavska et al., 2019). Accountability is a necessity in ensuring efficiency in public service delivery and is particularly crucial in maintaining public confidence in elected officials (Rana et al., 2019). In the absence of accountability, public institutions lose legitimacy, making it increasingly difficult to enforce compliance measure among the citizenry (Word Bank, 2020).

Accountability is closely associated with good governance and implies that public organizations conduct public matters, and manage public funds without abuse and corruption, as well as adherence to the rule of law (Aziz et al., 2015). Accountability entails that all players in a system are answerable for their actions or omissions to others. Consequently, accountability mechanisms are among the most important means with which systems including governments protect and improve their own performance.

The literature identifies several typologies of accountability such as mandatory and voluntary; formal and informal, hierarchical and horizontal as well as political, administrative, and performance accountability (Romzek et al., 2012; Koop, 2014; Schillemans, 2011; Aleksavska et al., 2019). Notwithstanding the variations in perspectives, the impact and role of accountability in policy discourses is evident in governance and administration literature Aleksavska et al., 2019).

Although existing systems for enhancing governance in the public sector, monitoring the transparency and efficiency of the public sector is now considered a public right. Consequently, public sector governance issues have become a trendy agenda in public discourse including on social media. Regardless of such levels of scrutiny, governance challenges continue to haunt many public sectors including in Malawi. To ensure good governance, understanding the way to improve accountability in public sector is very essential. Within the developing world, lack of accountability has perpetually been cited as one of the main reasons for the continent's problems. For example, the management of the Covid-19 pandemic in some countries such as Malawi has been a governance issues as much as it has been a public health nightmare (See National Audit Office, 2021).

A common challenge in managing humanitarian logistics response operations is ensuring efficiency in the allocation of limited resources to priority areas (Awasthy et al., 2019). Some of the challenges emanate from differences in the scope of stakeholders which translates into even wider differences in their Key Performance Indicators (KPIs) (Awasthy et al., 2019; Dubey & Gunasekaran, 2016). Notwithstanding the focus on saving lives and alleviating suffering, humanitarian logistics is there are disagreements regarding key priority activities, and differences in size, location and interests with relationships often characterised by a lack of trust between parties (Awasthy et al., 2019; Paciarotti, Piotrowicz and Fenton, 2021). Thus, governance remains a key focal area in ensuring successful humanitarian response operations.

2.3. THE NATURE OF HUMANITARIAN RESPONSE OPERATIONS

Unlike routine commercial logistics and operations, the context of humanitarian response operations, within which the Covid-19 interventions fall, has unique imperatives for success. From historic times, pandemic outbreaks and disasters have affected millions of people, disrupting global business, and reducing societies (EM-DAT, 2017) underscoring the need for humanitarian logistics (Hermovic, 2019). Experts have argued that general lifestyles and other human activities such as urbanisation have propelled pandemics and concluded that modern man is living in the age of pandemics (Chin et al., 2020). Humanitarian logistics (HL) plays a vital role in the quest to save lives and alleviate human suffering by moving materials from the point of origin to the point of consumption in an effective and efficient manner when disaster or epidemics fall (Habib et al., 2016; Friday et al., 2021).

Humanitarian logistics management presents unique managerial challenges and, in many ways, falls within the description of wicked problems. First, humanitarian operations have a primary objective of saving lives or alleviating human suffering, as opposed to the business operations which seek to maximise profits (Gupta et al., 2016; Kovács & Sigala, 2021). Second, humanitarian organizations operate under high levels of uncertainty with respect to a wide range of areas including the timing, place, and quantity of demand; resource availability; destabilization of transportation and communication infrastructure (Burkart et al., 2016; Grass & Fischer, 2016; Kovács & Sigala, 2021). Further, humanitarian operations are more variable and unpredictable in terms of the number and behaviour of stakeholders including beneficiaries, thereby making HL operations more reactive than strategic.

Developing nations, specifically those from Africa have seen some worst pandemics in the 21st century and HL has been instrumental in the alleviation of suffering and saving of lives (Singh et al., 2020). The demands of the Covid-19 pandemic have particularly brought to light the significance of HL which was tasked with ensuring availability of essential equipment and supplies, contributing not only towards the fight against the pandemic but also the recovery of supply chains from Covid-19 induced disruptions (Hobbs, 2020; Choi, 2020).

The context of HL poses a different environment from the commercial logistics (Dewi et al., 2020). Working in a turbulent and volatile environment calls for creation of capability to

respond to events as they happen (Beall et al., 2016). Christopher and Tatham, (2011), acknowledge that both commercial and humanitarian operations face uncertainty and hence unpredictability. However, Kovacs and Moshirani (2019) argue that HL is context specific, and the type of challenges faced are more complex and dependent on the geography, intensity, timing, and type of the happening as evident in the Covid-19 pandemic. More specifically, Kovacs and Sigala (2021), contend that pandemic supply chains employ HL mechanisms that are apt to be disruptive and spontaneous compared to CL. For example, the Covid-19 induced lockdowns had significant implications for landlocked nations such as Malawi as lockdowns in some countries made it potentially difficult for the country to access essential medical supplies (UN-OHRLS, 2021).

Traditionally, the main difference between CL and HL has been in terms of the profit motive that underpin the former and the social motive that characterise the latter (Kovacs & Sigala, 2021). The context within which the two operate has important implications for effective implementation and cannot be ignored. For example, CL capitalises on its stable environment and availability of information to forecast, plan, and optimise its operations, while HL is punctuated with unpredictability and volatility which in many cases does not allow for adequate planning and forecasting necessary for avoiding and reducing human deprivation (Kovacs & Sigala, 2021; Stumpf et al., 2017). The high levels of uncertainty that characterise HL operations requires a robust governance system that is transparent, efficient and responsive to the HL context where both time and resources are limited and lives, are at stake (Malmir & Zobel, 2021; Dewi et al, 2020; Holguín-Veras et al., 2012). In fact, the actual demand for goods and services in HL cannot be effectively determined until a pandemic or disaster strikes, at which point there is limited time to react (Tatham et al., 2017; Dubey et al., 2014; Manuj & Mentzer, 2008). In the case of Covid-19, even after the first cases were reported in countries such as Malawi, planning and forecasting remained problematic due to the uncertainty about the potential magnitude of the pandemic; thus, attesting to the wickedness of HL in contrast to CL.

3. METHOD

Data for the research were collected through two broad sources namely document and social media content analysis (Yin, 2003). Specifically, the data were collected through two main sources – official government documents such as speeches of the President of Malawi on Covid-19 interventions, as well as other documents such as the Audit report from the National Audit Office. Such data primarily represented the perspective of the public sector led humanitarian response operation on the one hand. On the other hand, further data was collected from social media posts especially from the Facebook wall of Onjezani Kenani, the founder and leader of the CRPC initiative. This data was complemented by a partial report from the CRPC regarding the progress of its operations and how receipts and donations had been used. The data for both the public and citizens' initiatives was moderated by social media posts by the general public in reaction to both CRPC and PSCRS activities. Such posts often involved outright comparisons of the two initiatives and thus, provided rich insights regarding the extent of the pandemic and the perceived success of the two humanitarian response initiatives.

While the Covid-19 pandemic started earlier than January 2021 and continues to date, for purposes of a meaningful comparison, the data for this research was limited to social media posts and official government statements in the period beginning 12th January, when the Malawi Government declared a state of National Disaster following the death of two government ministers on the same day, to Covid-19. The cut-off date for the data was 30th June 2021, when the death toll from Covid-19 had stabilised in Malawi and the CRPC activities had been substantially scaled down with limited operations and social media visibility. In fact, the CRPC officially closed down and stopped the active request for donations towards the Covid-19 containment on 28th February 2021. However, the initiative continued to receive unsolicited donations several months following its official closure. Notwithstanding, some of the documents analysed such as the Audit report, contained historical data relating to decisions and disbursements that were made in 2020 but nonetheless extended into 2021 and were published within the said period.

The data collection process largely involved the collection of random Facebook posts, updates and reactions thereof from the Facebook page of the CRPC leader and founder. Facebook posts by the CRPC leader became the official and probably main source of information regarding the operations of the CRPC. The CRPC page was a platform for private citizens, corporate organisations who largely sponsored the initiative, international donors, as well as government officials. The page, therefore, presented a near one-stop platform with competing views regarding the contrast between the two initiatives. Whereas information on the CRPC operations was readily available through regular (almost daily updates on social media), data from the PSCRS, particularly with regard to utilisation of resources, was hardly available. The research, therefore, relied on the regular presidential briefings on the pandemic and other official circulars as the main source of information on PSCRS activities. However, even the presidential speeches and other communications from the official communications lacked detail and other official circulars often lacked detail on how public resources had been spent. Such lack of information is in essence, part of the main problem characterising the lack of transparency and accountability in the PSCRS, as revealed by the investigative report of the National Audit Office (2021) coupled with resource lack in hospitals.

3.1. DATA ANALYSIS

Data for the research was analysed using thematic and content analysis (Erlingsson & Brysiewicz, 2017). First, because the data in question was unstructured and largely without predetermined themes, the data were allowed to speak for itself. As such, few themes were developed and much of the inspiration emanated from content analysis (Bryman, 2008). Second, data from official government communications on Covid-19 interventions, largely comprising presidential statements, were reviewed to determine the level and extent of government interventions towards containing the pandemic. The documents contained details regarding the amount of public resources channelled towards the Covid-19 pandemic as well as evidence of abuse and mismanagement of the said resources (National Audit Office, 2021). The data was also interrogated using emerging constructs from thematic analyses, which led to the production of summary tables for purposes of

comparative analysis of the public and private citizens led humanitarian response initiatives. This process began with identifying emerging themes from the data and clustering various statement, observations and quotes around the themes.

Beyond the data from official government statements and publications, the thematic and content analysis process was repeated in analysing the data for the CRPC operations which largely consisted of social media posts by the CRPC leader, public reactions to such posts, as well as a partial official summary of CRPC operations. Overall, the data analysis process was an iterative endeavour that entailed back and forth movements between the available data sets for purposes of refining the analysis and allowing the data to speak for itself (Bryman, 2008; Kanyoma, Agbola, & Oloruntoba, 2018; Sweeney, Grant, & Mangan, 2015).

4. FINDINGS AND ANALYSIS OF THE COVID-19 HEALTHCARE RESPONSE

4.1. COMPETITION FOR RESOURCES:

The study reveals the existence of intense competition for resources between the PSCRS and the CRPC. Whereas the CRPC launched an aggressive international fund-raising campaign largely through social media, the Malawi government ran a similar campaign mostly through formal communication channels including newspapers, television, and diplomatic channels. Many local organizations and individuals had to decide whether to donate to government or to the CRPC or both. Donations to CRPC were valuable to donors due to the high publicity through acknowledgement on social media. In contrast, donations to government were attractive due to stronger political significance for those seeking business deals from government. Notwithstanding, the key question that remained was of transparency, accountability and efficient utilization of the donations. It is evident in the findings that the CRPC initiative operated with higher degrees of transparency, accountability and efficiency than the PSCRS as one donor observes:

Donating to the Government appears more attractive because you don't want to be seen to be against government. Political alignment matters....In terms of contribution towards the pandemic, donations to Onjezani Kenani are more impactful. You know every coin you donate will be put to good use and could help save a life. Not so with donations through the government.

Thus, whereas there was no competition for beneficiaries, the PSCRS and CRPC initiatives competed for donor funding. Perhaps one clear difference in the donations received was the publicity. Unlike CRPC donors, those donating to government had to beat their own drum to get media attention.

4.2. EFFICIENT UTILISATION OF RESOURCES

An obvious aspect of the CRPC initiative was perhaps the perceived efficiency with which they managed resources. The initiative was focussed at ensuring efficient resource utilisation. Over the course of its operations, the CRPC delivered essential medical supplies including biomedical and PPE to nearly all major public hospitals, and a few 'non-profit'

hospitals in Malawi. In one intervention the CRPC procured essential equipment and arranged the repairing of existing essential equipment at various public hospitals such as power back-up generators essential in Malawi due to erratic power supply as reported by CRPC on Facebook:

I am happy to report that the back-up generator for Rumphi has been fixed and is now working. The District Health Officer for Rumphi District Hospital has informed me that this morning, when there was no electric power, they used the generator. This generator, by the way, has not been working in the last five years. This has all been possible due to your support.

Thus, the repair maintenance work was by itself a departure from the malaise in the public sector as evident in the failure to fix a broken generator over a five-year period. All this was achieved with a limited budget of roughly K500 million Malawi Kwacha (US\$610,000). In contrast, the Malawi Government has spent more than 25 billion Malawi Kwacha (over US\$30 million) with limited accountability and impact (Malawi Government, 2021b; 2021c). The real impact of such interventions may be fully appreciated only by the beneficiaries or those who have in one way or another experienced adversity due to related infrastructural deficiencies. Therefore, the life-saving potential of these CRPC interventions was evident in reactions from the general public:

What the citizens' initiative has done - repairing the generator at Rumphi District Hospital - may appear small, but it is not. Three years ago, my cousin was on life support, then the power went off. We lost him. If the generator had been working, maybe, only maybe.

4.3. TRANSPARENCY AND ACCOUNTABILITY

The social media analysis revealed a stark contrast in the levels of transparency and accountability between the CRPC and the public sector driven initiative, the PSCRS. It is evident from the analysis that transparency, accountability and responsible use of donor resources do not only excite the donors but encourage more goodwill from the general public as evident in the following quote from CRPC:

'In numerous updates, we informed you that we ordered zeolite from Kentucky, USA. The zeolite has arrived today. It is going to be used to repair more than 200 oxygen concentrators in hospitals across Malawi. We have handed over the consignment to the Global Health Informatics Institute, based in Lilongwe, who are volunteering the repairs. Thank you very much for your support.'

In contrast to the free services received by the CRPC, the Audit report (National Audit Office, 2021), revealed that government ministries and departments paid higher than market prices for their Covid-response operations. Further, the PSCRS lacked transparency and accountability on how Covid-19 funds were utilised, forcing the president to demand accountability from all public institutions that had received Covid-19 disbursements:

To this date, there are controlling officers in various ministries and heads of various clusters of the Covid-19 response team who have not submitted reports

of how they spent their allocation of the 6.2 billion that Treasury disbursed to them last year. This is completely unacceptable. I have therefore summoned all controlling officers and heads of clusters to meet my Taskforce in 48 hours and account for how they used that money (Malawi Government, 2021b, pp.8-9).

At a time when the Malawi Government was running a parallel campaign to raise funds for the Covid-19 interventions amidst concerns of abuse of Covid-19 funds in the PSCRS the CRPC became a symbol of hope in terms of the resolve by Malawians to save themselves from the pandemic through a more transparent and responsive system. Thus, CRPC transparency and efficiency attracted support from all sections of society from ordinary citizens, to ruling party zealots and government officials as evident in donations from members of the ruling Malawi Congress party to the CRPC who should naturally be expected to donate their contributions through the Malawi Government led initiative.

'Wow, Malawi Congress Party (MCP) Platinum Members, thank you very much!... We have just received your donation of the following towards the Covid-19 relief initiative: K1, 087,000 cash [roughly equivalent to US\$1450 at the time of the donation]; 40 boxes of face masks (50masks/box); 96 bottles of 60mls hand sanitizer; 50 face shields. We deeply appreciate!' (Kenani, 2021).

The CRPC earned praise and support from the Malawi Minister of Health who publicly commended the initiative for its contributions. Similarly, President Lazarus Chakwera acknowledged the contribution of CRPC, notwithstanding his disappointment with the dismal performance from the PSCRS (Malawi Government, 2021a). Overall, CRPC was attracted a lot of support and resources through transparency, accountability and perceived efficiency in resource utilisation.

4.4. ABUSE OF COVID-19 RESOURCES

Despite the excitement of many Malawians at the immense contribution of the CRPC in fighting the pandemic, there was so much frustration following failure of the Malawi Government to effectively respond to the pandemic. Although the Malawi Government had released funds to fight the Covid-19 pandemic, public hospitals continued to lack capacity and essential medical supplies which resulted in loss of lives and patients being asked to buy own oxygen cylinders. Consequently, evidence of abuse and misappropriation of public funds attracted so much anger from the general public prompting the President of Malawi to demand an audit of the Covid-19 funds (National Audit Office, 2021).

Following the release of the audit report by the Auditor General, frustration was rife from different sectors of society given the extent of plunder and misappropriation of public funds exposed by the report, as Kenani laments:

'We ...were promised good governance and that there would be serious attempts to end corruption. The audit report, however, has shown that corruption is alive and well, and that there seems to be no serious effort to end it. There is a business-as-usual attitude with no respect to public resources. The

promissory note we were given is worthless. The promise of hope that we had is now confronted with the grim and sober reality that the fight against corruption appears to remain no more than a mere lip service.'

Kenani adds:

Malawians scrambled to help one another because they were aware that in the hospitals, there was lack of basic tools and equipment that were required to fight COVID. At the time, there was no sign that the K6.2 billion the government had released in August 2020 had made any difference. This is a betrayal of trust and failure of leadership in a time of need (Kenani, 2021).

The lack of accountability and unrestrained plunder of public resources revealed by the audit report attracted unmistakable frustration from the general public as evident in some social media comments:

This is what makes me so angry. They didn't steal money - they stole people's opportunity to survive. They literally cut off their oxygen supply. How did they spend over K5 billion and not a single oxygen cylinder was purchased? They must all stop playing with our money.

The audit report confirmed fears that the PSCRS and the entire public sector had in many ways become a more wicked problem than the pandemic itself. The level of abuse, misappropriation and lack of purpose and prioritisation in using public resources was so high that no amount of resources channelled through the public sector would suffice in containing the pandemic:

We Malawians have to pause and reflect. A small oxygen plant able to generate oxygen costs \$40,000. Twenty-eight of them could have provided sufficient oxygen for each district. That is K900 million... A Bilevel Positive Airway Pressure (BiPAP) machine - used to treat conditions that affect your breathing - costs between \$1000-\$2000. Our hospitals had none. Twenty per district could have been less than K450 million. A basic ventilator costs less than K5 million in China. We could have afforded 20 per city and five per district. All this could have cost us no more than K2 billion. The K6.2 billion could have been adequate for an effective response to Covid-19, had it been used for its intended purpose (Kenani, 2021).

When this foregoing reality became obvious, there were more calls for the Government to consider channelling its interventions through the CRPC given that the public infrastructure (PSCRS) had failed to deliver:

'Why can't the Ministry of Health humbly surrender its COVID19 Procurement to Citizens Initiative on COVID19? You have procured and delivered with barely MK200m [200 million Malawi Kwacha] 1000 times more than MoH [Ministry of Health] has done with billions!!!! MoH Procurement Department/Service must be sent to jail...'

Indeed, the audit report (National Audit Office, 2021) revealed that nearly 10 percent of the mismanaged Covid-19 resources (over US\$600 000) had been spent through misprocurement. Throughout the pandemic, perhaps the single largest shortfall by the PSCRS was the lack of purpose and intent to protect public funds. In many cases, government was willing to disburse more funds before accounting for earlier disbursements and without due process for safeguarding the same:

I have therefore directed the Minister of Finance to release 17.52 billion Kwacha to the Covid-19 Task Force for distribution to nine clusters to meet the demands of the current disaster....I want to make it clear that I expect no excuses and delays from the Treasury in availing the funds as a matter of urgency. I will entertain no bureaucratic and administrative justifications for delaying the release of these funds (Malawi Government, 2021a, pp7-8).

Yet again, the government was more concerned with the speedy release of extra funds without a clear budget on how such funds would be used. The foregoing confirms a lack of intent and commitment to account for and protect public funds. Based on insights from the successful citizens' initiative (CRPC), the paper argues that the abuse of public resources was inevitable in the absence of an intent from government. Indeed, efficiency and accountability are deliberate rather than accidental. The comparison between the CRPC and PSCRS is presented in Table 1.

Table 1. Comparisons between the PSCRS and CRPC

Dimension	PSCRS	CRPC
Source of Funds	Public funds and private donations	Private donations with some government support
Amount of funds available	Over 25 billion Malawi Kwacha (Over US\$30 million). **	About 0.5 billion Malawi Kwacha (about US\$600,000).
Focus of operations	No clear focus. All sectors of the economy without a proper needs assessment	Primarily public hospitals with limited extension to other hospitals
Level of transparency	Very secretive. Difficult to get information.	Very transparent with constant daily updates regarding receipts and expenses.
Level of accountability	Receipts and expenses not accounted for. Very difficult to match receipts with expenses.	Highly accountable. All receipts and expenses traced, reported, and accounted for. Expenses matched with activities and beneficiaries.
Perceived impact of the initiative	Minimal and unsatisfactory given available resources	Very efficient and impactful.
Procurement cycle	Complex and restricted to the PPDA provisions. Often indirect and wasteful.	Purposeful, quick, and direct procurement from manufacturers or their agents

*** The actual amount could be much higher, given the lack of transparency. The estimate is based on disbursements by government and donations declared in February 2021.*

5. DISCUSSION

The findings show many contrasts between the CRPC and the PSCRS. The main difference in resource utilization efficiency between the two initiatives lies in intent and the role of planning as opposed to resource availability. While both initiatives aimed at resolving the same wicked problem, the PSCRS was more competitive than collaborative (Head, 2019; Tatham & Houghton, 2011). Thus, the authoritative approach headed by government proved

a failure and private citizens took the matter in their own hands to resolve it without reaching a consensus with government (Head & Alford, 2015). The CRPC identified medical equipment and related supplies in real time and alleviated the wicked problem by saving lives. The CRPC demonstrated commitment in ensuring value for money by procuring at competitive prices. Thus, the perceived efficiency with which the CRPC operated was not accidental but intended. Contrary to the predictions from ‘super wicked problems’ scholars, (Auld et al., 2021; Levin et al., 2012), the CRPC achieved success by collaborating with individual citizens, private sector organizations, local tax authorities and government ministries and departments to ensure effective and efficient response to the pandemic.

Covid-19 being a super wicked problem could not be resolved by an authoritative approach alone. Rather, a collaborative one is hereby suggested since the competitive approach leads to wastage of resources and fails to overcome the wickedness of the authoritative figure. Thus, the arguments of Auld et al. (2021) and Schiefloe (2021) to use an authoritative approach when resolving super wicked problems need to be modulated in that the authoritative figure should be accountable, transparent and efficient – none of which was demonstrated in Malawi’s PSCRS. Had the PSCRS, which had access to more resources, collaborated with the more responsive and efficient CRPC, more excellent results would have been achieved.

Even though HL is complex, intense, disruptive and spontaneous as it works within a narrow timeframe (Kovacs & Moshirari, 2019; Tatham et al., 2017), the CRPC showed that HL can achieve efficiency and effectiveness reminiscent of CL if managed by duty-bound stakeholders. The evidence of plunder of public resources under the PSCRS with its accompanying lack of transparency and accountability suggests a well-developed plan to abuse public funds. This was evident in that while there was misappropriation of funds before a larger disbursement was made and later recalled, the focus of government investigation was on how approximately 2 billion Malawi Kwacha was used in local councils. The bulk of embezzlement remains unaccounted for and un-investigated. In short, the main lesson from the two Covid-19 response initiatives is that efficiency when resolving a wicked problem is achievable and deliberate as demonstrated in the CRPC operations and reports.

5.1. THE STRUCTURE OF PROCUREMENT OPERATIONS AND ROLE OF EMERGENCY PROCUREMENT

Procurement and Supply Chain Management structures in many institutions regardless of sector are designed to respond to routine demands as opposed to crises such as the Covid-19 pandemic. Consequently, such structures may fall short of requirements for flexibility and responsiveness when applied under humanitarian logistics contexts that require record levels of proactivity, responsiveness, and efficiency to save as many lives as possible using dwindling resources (UN-OHRLS, 2021; da Costa et al., 2012; Bealt, Barrera and Mansouri, 2016). In such contexts, it is recommended that procuring functions be organised for both cost efficiency and risk reduction (Bhusiri et al., 2021).

One of the key challenges in procuring for humanitarian response operations is the requirement to balance between compliance with existing regulatory frameworks such as the Public Procurement and Disposal of Public Assets (PPDA) Act of 2017, and expedited procurement processes (Malawi Government, 2017). The PPDA Act of 2017 prescribes lengthy public procurement processes that ensure competition and cost efficiency but do not allow for the responsiveness and risk reduction as required in humanitarian response operations (Bhusiri et al., 2021).

Therefore, regarding Covid-19 response operations in Malawi, the authoritative approach has failed. On the basis of evidence from the comparative analysis of the CRPC and PSCRS in this paper, we argue that the authoritative figure itself (the government) needs cleansing before it can be entrusted with HL operations. Given that government is the authority of last resort, we cannot expect accountability unless private initiatives bring about competition or cooperation. Hence, although the authoritative approach is generally speedy, in Malawi, it has proven to be exacerbating the problem. Therefore, this paper argues that the authoritative approach to dealing with wicked problems, could be instrumental in ensuring efficiency and responsiveness in the PSCRS only if cleansed first by putting in place mechanisms for monitoring and evaluation even in disasters and emergencies (Rittel & Webber, 1973; Tatham & Houghton, 2011). Thus, any lack of responsiveness of the PSCRS cannot be attributed to restriction of the regulatory framework. However, typical of wicked problems (Rittel & Webber, 1973), the emergency procurement protocols were suspended by following reported abuse of the same (National Audit Office, 2021).

5.2. CONCLUSION AND RECOMMENDATIONS

The reality is that accounting for public funds in Malawi is in itself a wicked problem. As with all wicked problems, it is very difficult and imprudent to make prescriptions. Notwithstanding, a few broad recommendations drawn from the CRPC operations, may offer useful insights to the management of future government driven humanitarian response operations.

Given that wicked problems do not fit within the existing bureaucracies, they require wicked solutions that may sometimes have undesirable consequences as it becomes necessary to create a conducive environment for countering such wickedness (Rittel & Webber, 1973). The Malawi Government in general and the PSCRS in particular, could consider bypassing existing systems and protocols and instead, create ad hoc, more flexible, swift and wicked systems to respond to the unique demands of the Covid-19 humanitarian crisis. A quick needs assessment could be carried out at district and health centre level. The requirements could be aggregated and the related procurement activities expedited by an ad hoc humanitarian disaster procurement hub.

First, more urgent supplies could be locally acquired (decentralised procurement), where feasible, and deployed for immediate use. Second, the rest of the supplies could then be procured at negotiated prices, direct from manufacturers or their agents as was the case under the CRPC. The latter approach entails centralisation of procurement. Although,

centralised procurement has its own limitations (Lysons and Farrington, 2016), it could enable the PSCRS bargain for prioritised delivery from suppliers at a time when the global logistics chain was struggling and may also reduce the number of procurement transactions and associated costs which led to abuse at many cost centres.

Finally, this paper notes that the existing systems within which the PSCRS operates have characteristics of wicked problems. Even in the absence of a crisis, the Malawi public sector has perennially struggled with transparency and accountability in the use of public funds. Public procurement transactions have been the bedrock of fraud as evident in the audit report. Therefore, we argue that because the Malawi public sector is in many ways a wicked problem of its own magnitude, it cannot be deployed to resolve other wicked problems such as Covid-19 because wicked problems may not be successfully deployed to help resolve other wicked problems. Instead, a more collaborative approach integrating the PSCRS and private sector initiatives such as the CRPC could be more responsive, transparent, accountable and effective in managing the Covid-19 response operations in Malawi. In this case, the Malawi public sector in general and the PSCRS in particular need to fix their own wickedness, before they can be deployed as weapons for resolving other wicked problems of the magnitude of the Covid-19 pandemic. Indeed, given the extent of wickedness as exposed in the plunder of public funds, no amount of funds would have been adequate for managing the Covid-19 pandemic in Malawi.

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Reference:

- ACET (African Center for Economic Transformation), (2022). Covid-19 and Governance in Africa: Threats, opportunities and the way forward. <https://acetforafrica.org/publications/policy-briefs->
- ACET (2020). Reform partnership governance and COVID-19: Global review of COVID-19 related governance reports. www.acetafrica.org
- Aleksovska, M., Schillemans, T., and Grimmelikhuijsen, S. (2019). Lessons from five decades of experimental and behavioral research on accountability: A systematic literature review. *Journal of Behavioural Public Administration* Vol.2 (2): 1-18.
- Altay, N., Kovács, G. and Spens, K. (2021), "The evolution of humanitarian logistics as a discipline through a crystal ball", *Journal of Humanitarian Logistics and Supply Chain Management*, Vol. 11 No. 4, pp. 577-584. <https://doi.org/10.1108/JHLSCM-06-2021-0056>
- Angeli, F., Camporesi, S. & Dal Fabbro, G. (2021) The COVID-19 wicked problem in public health ethics: Conflicting evidence, or incommensurable values?. *Humanities Social Sciences Communications*, 8, 161. <https://doi.org/10.1057/s41599-021-00839-1>
- Ataseven, C., Nair, A., & Ferguson, M. (2018). An Examination of the Relationship between Intellectual Capital and Supply Chain Integration in Humanitarian Aid Organizations: A Survey-Based Investigation of Food Banks. *Decision Sciences*, 49(5), 827-862.

- Auld, G., Bernstein, S., Cashore, B., and Levin, K. (2021). Managing pandemics as super wicked problems: Lessons from, and for, COVID-19 and the climate crisis. *Policy Sciences*, 54, 707–728 (2021). <https://doi.org/10.1007/s11077-021-09442-2>
- Awasthy, P., Gopakumar, K. V., Gouda, S. K., & Haldar, T. (2019). Trust in humanitarian operations: a content analytic approach for an Indian NGO. *International Journal of Production Research*, 57(9), 2626-2641.
- Aziz, M.A., Rahman, H.A., Alam, M.M., & Said, J. (2015). Enhancement of the Accountability of Public Sectors through Integrity System, Internal Control System and Leadership Practices: A Review Study. *Procedia Economics and Finance Vol.28*. 163–169
- Badu, K., Thorn, J., Goonoo, N., et al., (2021). Africa's response to the COVID-19 pandemic: a review of the nature of the virus, impacts and implications for preparedness [version 1; peer review: awaiting peer review], *AAS Open Res.* 3, doi: 10.12688/aasopenres.13060.1 .
- Bealt, J., Barrera, J. C. F., & Mansouri, S. A. (2016). Collaborative relationships between logistics service providers and humanitarian organizations during disaster relief operations. *Journal of Humanitarian Logistics and Supply Chain Management*.
- Besiou, M., & Van Wassenhove, L.N. (2021). System dynamics for humanitarian operations revisited. *Journal of Humanitarian Logistics and Supply Chain Management Vol. 11 (4)* pp.599-608.
- Bhusiri, N., Banomyong, R., Julagasingorn, P., Varadejsatitwong, P. & Dhami, N. (2021), "A purchasing portfolio model for humanitarian supply chain resilience: perspectives from a development aid context", *Journal of Humanitarian Logistics and Supply Chain Management*, Vol. 11 No. 4, pp. 639- 660. <https://doi.org/10.1108/JHLSCM-06-2021- 0053>
- Bryman, A. (2008). *Social research methods* (Third ed.). Oxford: Oxford University Press.
- Burkart, C., Besiou, M., & Wakolbinger, T. (2016). The funding—Humanitarian supply chain interface. . *Surveys in Operations Research and Management Science*, 21(2), 31-45
- Camillus, J. C. (2008). Strategy as a wicked problem. *Harvard business review*, 86(5), 98.
- Choi, T.-M. (2020). Risk Analysis in Logistics Systems: A Research Agenda During and After the COVID-19 Pandemic. In: Elsevier.
- Conklin, J. (2006). *Wicked problems & social complexity*. CogNexus Institute San Francisco, CA.
- Corbin, J., & Strauss, A. (2008). *Basics of qualitative research: techniques and procedures for developing grounded theory*. California: Newbury Park, Sage Publications, Inc.
- Cramton, P., Ockenfels, A., Roth, A.E., and Wilson, R.B., (2020). Borrow crisis tactics to get COVID-19 supplies to where they are needed. *Nature*, 18 June, 582: 334–336.
- da Costa, S.R.A., Campos, B.V.G., and de Mello Bandeira, R.A., (2012). Supply Chains in Humanitarian Operations: Cases and Analysis. 15th meeting of the EURO Working Group on Transportation. *Procedia Social and Behavioural Sciences Vol.54*. 598-607
- Dubey, R., & Gunasekaran, A. (2016). The sustainable humanitarian supply chain design: agility, adaptability and alignment. *International Journal of Logistics Research and Applications*, 19(1), 62-82.
- Easterby-Smith, M., Thorpe, R., & Jackson, P. R. (2015). *Management & Business Research* (Fifth ed.). London: Sage Publications.
- Erlingsson, C., & Brysiewicz, P. (2017). A hands-on guide to doing content analysis. *African Journal of Emergency Medicine*, 7(3), 93-99.

- Fawcett, S. E., McCarter, M. W., Fawcett, A. M., Webb, G. S., & Magnan, G. M. (2015). Why supply chain collaboration fails: the socio-structural view of resistance to relational strategies. *Supply Chain Management: An International Journal*, 20(6), 648-663.
- Ferris, E. (2014). Ten Years after Humanitarian Reform: How Have IDPs Fared?
- Grass, E., & Fischer, K. (2016). Two-stage stochastic programming in disaster management: A literature survey. *Surveys in Operations Research and Management Science*, 21(2), 85-100.
- Guerrieri, V., Lorenzoni, G., Straub, L., & Werning, I. (2020). *Macroeconomic Implications of COVID-19: Can Negative Supply Shocks Cause Demand Shortages?* (0898-2937). Retrieved from <https://www.nber.org/papers/w26918.pdf>
- Gupta, S., Starr, M. K., Farahani, R. Z., & Matinrad, N. (2016). Disaster management from a POM perspective: Mapping a new domain. *Production and Operations Management*, 25(10), 1611-1637.
- Head, B. W. (2019). Forty years of wicked problems literature: Forging closer links to policy studies. *Policy and Society*, 38(2), 180-197.
- Head, B. W., & Alford, J. (2015). Wicked problems: Implications for public policy and management. *Administration & society*, 47(6), 711-739.
- IMF (2021). Press release No. 20/303. Retrieved from: <https://www.imf.org/en/News/Articles/2020/10/02/pr20303-malawi-imf-executive-board-approves-us-million-disbursement-under-rcf-covid-19-pandemic>
- Ivanov, D. (2020). Predicting the impacts of epidemic outbreaks on global supply chains: A simulation-based analysis on the coronavirus outbreak (COVID-19/SARS-CoV-2) case. *Transportation Research Part E: Logistics and Transportation Review*, 136, 101922.
- Ivanov, D., & Das, A. (2020). Coronavirus (COVID-19/SARS-CoV-2) and supply chain resilience: A research note. *International Journal of Integrated Supply Management*, 13(1), 90-102.
- Kahn, J. S., & McIntosh, K. (2005). History and recent advances in coronavirus discovery. *The Pediatric infectious disease journal*, 24(11), S223-S227.
- Kanyoma, K. E., Agbola, F. W., & Oloruntoba, R. (2018). An evaluation of supply chain integration across multi-tier supply chains of manufacturing-based SMEs in Malawi. *The International Journal of Logistics Management*, 29(3), 1001-1024.
- Klasche, B. (2021). After COVID-19: What can we learn about wicked problem governance? *Social Sciences & Humanities Open* Volume 4, Issue 1, 2021, 100173, 100173, 2590-2911, <https://doi.org/10.1016/j.ssaho.2021.100173>.
- Koop, C. (2014). Theorizing and explaining voluntary accountability. *Public Administration*, 92(3), 565-581.
- Kovács, G., & Sigala, I. F. (2021). Lessons learned from humanitarian logistics to manage supply chain disruptions. *Journal of Supply Chain Management*, 57(1), 41-49.
- Kulohoma, W.B (2021). COVID-19 risk factors: The curious case of Africa's governance and preparedness. *Scientific African* (13), e00948. <https://doi.org/10.1016/j.sciaf.2021.e00948>
- Kutor, S.K., Amoak, D., Owusu, B., & Kyeremeh, E. (2021). Theorizing "Wicked Concept" and reconceptualizing wisdom as wicked. *The Professional Geographer*, 73(4), 632-640, DOI: 10.1080/00330124.2021.1933553
- Levin, K., Cashore, B., Bernstein, S., & Auld, G. (2012). Overcoming the tragedy of super wicked problems: constraining our future selves to ameliorate global climate change. *Policy Sciences*, 45, 123-152. <https://doi.org/10.1007/s11077-012-9151-0>

- Malawi Government (2021a). National Address on the War against Covid-19 by His Excellency Dr Lazarous McCarthy Chakwera, President of the Republic of Malawi Delivered on 17th January 2021
- Malawi Government (2021b). Fifth National Address on the War against Covid-19 by His Excellency Dr Lazarous McCarthy Chakwera, President of the Republic of Malawi Delivered on 7th February 2021
- Malawi Government (2021c). Eighth National Address on the War against Covid-19 by His Excellency Dr Lazarous McCarthy Chakwera, President of the Republic of Malawi Delivered on 28th February 2021
- Martínez-Córdoba, P., Benito, B., & García-Sánchez, I. (2020). Efficiency in the governance of the Covid-19 pandemic: political and territorial factors. *Globalisation and Health*. <https://en.x-mol.com/paper/article/1440760942221389824>
- Marttunen, M., Lienert, J., & Belton, V. (2017). Structuring problems for Multi-Criteria Decision Analysis in practice: A literature review of method combinations. *European journal of operational research*, 263(1), 1-17.
- Masina, L. (2021). Malawi COVID-19 response gets Commonwealth award. Voice of America, May 01, 2021. Available at: https://www.voanews.com/a/covid-19-pandemic_malawi-covid-19-response-gets-commonwealth-award/6205311.html
- Mingers, J., & Rosenhead, J. (2004). Problem structuring methods in action. *European Journal of operational research*, 152(3), 530-554.
- Mollenkopf, D. A., Ozanne, L. K., & Stolze, H. J. (2020). A transformative supply chain response to COVID-19. *Journal of Service Management*.
- Nacoti, M., Ciocca, A., Giupponi, A., Brambillasca, P., Lussana, F., Pisano, M., . . . Naspro, R. (2020). At the epicenter of the Covid-19 pandemic and humanitarian crises in Italy: changing perspectives on preparation and mitigation. *NEJM Catalyst innovations in care delivery*, 1(2).
- National Audit Office, (2021). Investigative report on the usage ad accountability of K6.2 billion Covid-19 disbursement. Available at: <https://times.mw/wp-content/uploads/2021/04/Part-1.pdf>
- Ney, S., & Verweij, M. (2015). Messy institutions for wicked problems: How to generate clumsy solutions? *Environment and Planning C: Government and Policy*, 33(6), 1679-1696.
- Nicola, M., Alsafi, Z., Sohrabi, C., Kerwan, A., Al-Jabir, A., Iosifidis, C., . . . Agha, R. (2020). The Socio-Economic Implications of the Coronavirus and COVID-19 Pandemic: A Review. *International Journal of Surgery (London, England)*.
- Niskanen, V.-P., Rask, M., & Raisio, H. (2021). Wicked problems in Africa: A systematic literature review. *SAGE Open*. <https://doi.org/10.1177/21582440211032163>
- Otley, David (2016). The contingency theory of management accounting and control: 1980– 2014. *Management Accounting Research* Vol. 31 pp.45-62
- Paciarotti, C., Piotrowicz, W.D. & Fenton, G. (2021), "Humanitarian logistics and supply chain standards. Literature review and view from practice", *Journal of Humanitarian Logistics and Supply Chain Management*, Vol. 11 No. 3, pp. 550- 573. <https://doi.org/10.1108/JHLSCM-11-2020-0101>
- Peters, B.G. (2017). What is so wicked about wicked problems? A conceptual analysis and a research program. *Policy and Society*, 36:3, 385-396, DOI: 10.1080/14494035.2017.1361633
- Queiroz, M. M., Ivanov, D., Dolgui, A., & Wamba, S. F. (2020). Impacts of epidemic outbreaks on supply chains: mapping a research agenda amid the COVID-19 pandemic through a structured literature review. *Annals of Operations Research*, 1-38.

- Rana, F., Ali, A., Riaz, W., & Irfan, A. (2019). Impact of Accountability on Public Service Delivery Efficiency. *Journal of Public Value and Administration Insights* 2(1): 7-9
- Rayner, S. (2016). Wicked problems. *International Encyclopedia of Geography: People, the Earth, Environment and Technology: People, the Earth, Environment and Technology*, 1-2.
- Regnier, E. (2008). Doing something about the weather. *Omega*, 36(1), 22-32.
- Rittel, H. W. J., & Webber, M. M. (1973). Dilemmas in a general theory of planning. *Policy Sciences*, 4(2), 155-169.
- Romzek, B. S., LeRoux, K., & Blackmar, J. M. (2012). A preliminary theory of informal accountability among network organizational actors. *Public Administration Review*, 72(3), 442-453.
- Schiefloe P. M. (2021). The Corona crisis: A wicked problem. *Scandinavian Journal of Public Health*, 49(1), 5–8. <https://doi.org/10.1177/1403494820970767>
- Schillemans, T. (2016). Calibrating public sector account-ability: Translating experimental findings to public sector accountability. *Public Management Review*, 18(9), 1400- 1420.
- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research* (Vol. 15). California: Newbury Park, Sage Publications.
- Sweeney, E., Grant, D. B., & Mangan, D. J. (2015). The implementation of supply chain management theory in practice: an empirical investigation. *Supply Chain Management: An International Journal*, 20(1), 56-70.
- Tatham, P., & Houghton, L. (2011). The wicked problem of humanitarian logistics and disaster relief aid. *Journal of Humanitarian Logistics and Supply Chain Management*.
- Termeer, C.J.A.M., Dewulf, A., & Biesbroek, R. (2019). A critical assessment of the wicked problem concept: Relevance and usefulness for policy science and practice. *Policy and Society*, 38:2, 167-179, DOI: 10.1080/14494035.2019.1617971
- Transparency international. 2019. *The Ignored Pandemic: How corruption in healthcare service delivery threatens Universal Health Coverage*. UK: Transparency International.
- UN-OHRLLS (2021). Impact of Covid-19 and responses in Lndlocked less developed countries. Retrieved from https://www.un.org/ohrlls/sites/www.un.org.ohrlls/files/impact_of_covid19_and_responses_in_ldcs.pdf:
- Waddock, S., Meszoely, G. M., Waddell, S., & Dentoni, D. (2015). The complexity of wicked problems in large scale change. *Journal of Organizational Change Management*.
- WHO, W. H. O. (2020, 26th August 2020). Covid-19 Essential supplies forecasting tool
- WHO, W. H. O. (2021). WHO Covid-19 Dashboard. Retrieved from <https://covid19.who.int/>
- World Bank (2020). An opportunity to build legitimacy and trust in public institutions in the time of COVID-19. Research and policy briefs from the World Bank Malaysia Hub, No. 32. <https://openknowledge.worldbank.org/bitstream/handle/10986/33715/An-Opportunity-to-Build-Legitimacy-and-Trust-in-Public-Institutions-in-the-Time-of-COVID-19.pdf?sequence=5>
- Yin, R. K. (2003). *Case study research: Design and methods*. London: Sage Publications.