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Delivering public value by selected government departments in South Africa – Perceptions of senior managers

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Background: Over the years, the expectations of both the public and private sectors regarding value have changed significantly, thereby increasing the need for government departments to revisit their public-value creation model.

Aim: This study sought to explore perceptions of senior managers in selected national government departments in South Africa with regard to the influence of information sharing, process innovation, stakeholder analysis and engagement in the relational governance and public value.

Setting: The respondents were 230 senior managers from the five national government departments who, over time and in various groups, attended the Executive Development Programme hosted by the National School of Government.

Methods: A quantitative research approach involving a cross-sectional survey design was followed in the study. Data were analysed by means of structural equation modelling (SEM).

Results: In the study a strong, positive relationship was found between information sharing, process innovation, stakeholder analysis and relational governance. Further, a strong positive relationship between relational governance and public value was also established.

Conclusion: Based on the perceptions of senior managers, government departments seeking to deliver superior public value need to focus primarily on managing their relational governance. To that end, it is vital that they develop their information-sharing and process innovation, as well as stakeholder analysis and engagement.

Keywords: information sharing; process innovation; stakeholder engagement; relational governance; public value.

Introduction and background

There is relentless pressure on governments to deliver public goods and services of value to their citizens (Link & Scott 2019). The rising expectations of citizens, limited resources, as well as changing social, environmental and economic conditions exert pressure on governments across the world to continue to find new and innovative ways of delivering public services (Taylor 2018). For the South African government, the delivery of many such services is a matter enshrined in the Constitution of the Republic of South Africa, 1996 (Cordella & Bonina 2012). Lues (2007) stresses that the main function of public service in South Africa is service delivery. The White Paper on Transforming Public Service Delivery (South Africa 1997) puts all public sector managers in the driving seat of service delivery and consequently urges them to strive for excellence. Yet, the effective delivery of goods and services remains a real challenge (Epp & Baumgartner 2017; Makoti & Odeku 2018). Yotawut (2018) believes that the best way to get public managers to think about what the most valuable aspect is of the services provided by government and how they can best manage the effective delivery of such services is through the 'public value' lens.

According to Meynhardt, Brieger and Andere (2017), the question of public value, which is far more difficult to measure than mere financial performance, preoccupies public sector managers. Grant et al. (2014) add that the role of public managers in public value creation is to steer networks of delivery and maintain the overall capacity of the system. That said, since government services are widely utilised, the notion of public value places the broader community at the centre as a collective beneficiary availing themselves of government's collected provisions (OECD 2019). Yotawut (2018) defines public value theory as 'an approach that explores how public organisations operationalize the principles of public value by focusing on the role of public engagement which

distinguishes public services from private competitive markets'. Public value could be viewed as the kind of values the public sector aspires to and the value added by government services (Benington 2015; Benington & Moore 2011; Moore 2013).

While Mazzucato and Roy (2019) argue that there is a strong need to rethink the nature and character of value chain creation, especially in the public sector, there are many factors that contribute to the inefficiency of governments, thereby compromising their ability to deliver public value to their citizens. The sheer size of governments, which has in general increased over time, could threaten the delivery of goods and services of public value (Higgs 2008; Lee, Kim & Borcherding 2013; Nyasha & Odhiambo 2019). As noted by DeMattos, Miller and Park (2012), such complexity may affect a government department in a number of ways. Firstly, the ability to share information within the complex system of government may prove to be a challenge (Perrin, Barrigar & Gellman 2015). Particularly in the public sector, information sharing is central to the ability to influence the planning and deployment of public services (Clark, Brudney & Jang 2013; Clark et al. 2020). The ability to share information within the government system often proves to be a challenge (OECD 2014; Perrin et al. 2015). Secondly, despite the efforts to innovate, following the embrace of New Public Management by many governments, the nature of the public sector and its governance requires that process innovation receives attention (Khodadad-Saryazdi 2022). However, the ability to process new and innovative ideas may be throttled (OECD 2014).

Thirdly, the huge and complex government system may force the departments to be inward-looking and thereby neglect meaningful engagement with stakeholders (Haarhoff 2019; Kolk & Pinkse 2006). According to Meynhardt (2009:212), public value creation 'is situated in relationships between the individual and society'. In this regard, Turrel (2017) posits that co-production is core to the creation of public value, so that public organisations work along with service providers to design and deliver services. Many government programmes and projects require a high level of expertise in stakeholder engagement (MOSAIC 2020) without which the delivery of goods and services of public value may be threatened (Higgs 2008; Lee et al. 2013; Nyasha & Odhiambo 2019). Fourthly, delivering public value also requires that processes facilitating relationship building and mutual respect among stakeholders be well designed to establish better communication and conflict management (Keast et al. 2004). Such network settings become fertile ground for the co-creation and co-production of a number of outcomes and innovations, and consequently enhanced public-value propositions (Page et al. 2015). Bryson et al. (2017) add that governance structures also play an important part in public value management.

The study investigated perceptions of public managers since Grant et al. (2014:1) stress that managers cannot, on their own, decide what public value is; rather, they need to canvass the views of all elected officials and other stakeholders. Against this background, this study sought to explore perceptions of senior managers in selected government departments with regard to the influence of information sharing, process innovation, and stakeholder analysis and engagement on relational governance and the public value. The remainder of the article is organised as follows: The next section reviews the literature by reflecting on the concepts key to the study. Based on the literature review, hypotheses are postulated and the conceptual model posited. The sections that follow explain the research methodology employed in the study and discuss the research findings. The article concludes by discussing the implications of the study, its limitations and directions for future research.

Literature review

Perceived public value

Bryson, Crosby and Bloomberg (2014:446) define public value as 'something that is valued by the public or is good for the public as assessed against various public value criteria'. According to Grant et al. (2014:1), public value creation is 'the process of adding value to the public sector through the exercising of managerial authority – all the time'. As it became evident that the New Public Management (NPM) which emerged in the UK in the 1980s was not an answer to the challenges of public administration, Moore's (1995) notion of public value management (PVM) was generally well received (Meynhardt et al. 2017). Hence, public values research was welcomed as a breath of fresh air in the development of public administration theory and practice (Bozeman 2007; Rutgers 2015). The Public Value framework is based on networked governance whose objective is to achieve public value (Moore 2005). According to Meynhardt (2019:11), public value does not suspend 'the profit motif, but enquires about its legitimate cause in society and how it interacts with other values'. Public value creation represents mental images of community and society, as valued by the public (Meynhardt 2019). Public value emphasises the attainment of composite and socially shared expectations like fairness, trust, and legitimacy over and above economic viability (Uyarra, Ribeiro & Dale-Clough 2019). Thus, public value stresses the need for interaction and exchange between public managers and stakeholders such as politicians and others for value creation.

Public value creation can be defined as 'the process of adding value to the public sector through the exercising of managerial authority' (Grant et al. 2014:2). Although public value creation is described as a process, its measurement can be regarded as a mix of process and outcome. According to Meynhardt et al. (2017:142), public value creation is realised 'when people perceive a positive contribution to what they regard as society'. Public value is defined by the European Commission (2008:42) as the 'total societal value that cannot be monopolized by individuals, but that is shared by all actors in society and is the outcome of all resource allocation

decisions'. Meynhardt (2015:148) also describes public value as value from and for the public and that its assessment involves measuring subjective meaning and value. Hence, Grant et al. (2014) posit that public value should be measured at different points along the public value chain, which they define as a map of organisational production, including inputs, activities or projects, partners, outputs, client satisfaction, and outcomes.

Public value is often context-specific and highly influenced by political processes and the collective expectations of various stakeholders (Rose, Flak & Sæbø 2018). This suggests that shared value is greater than the sum of individual values, stressing the collective significance of what is good for society (Cordella & Bonina 2012). The public value notion can be distilled to citizens' shared expectations regarding government and public services. While private entities are concerned with profit maximisation, the value public entities deliver to their stakeholders goes beyond economic gains (Marques & Simões 2020). Public entities, including government departments, are accountable to citizens to achieve political and social objectives such as proficiency in public service delivery, equity, social inclusion, honesty, community regeneration and well-being, stewardship, and accountability. As a result, public entities not only expedite efficiency and sustainability but also concern themselves with accountability as to public value (Twizeyimana & Andersson 2019). Enhancing public value has been accepted as a viable channel to address the socio-political complexities associated with the public sector.

Perceived relational governance

The literature identifies two governance mechanisms, namely contractual governance and relational governance. Contractual governance relies on rules, performance indicators, sanctions, and risk allocation to govern exchanges, while relational governance stresses the role of trust, flexibility, and interdependence in ensuring partners' commitment and performance (Benítez-Ávila et al. 2018; Mu, Wu & Haersham 2021; Warsen, Klijn & Koppenjan 2019). Relational governance refers to the more 'human' elements (description follows) of the relationship, which serve to coordinate activities and mitigate the risks of opportunistic behaviour (Lioliou et al. 2014). Previous studies have operationalised relational governance in different ways. These are mainly relational norms and trust, the former relating to values and social rules shared by the partners, such as communication, mutual dependence, inclusion, and conflict resolution, among others (Benítez-Ávila et al. 2018; Kern & Willcocks 2000; Poppo, Zheng Zhou & Ryu 2008). Scholars generally agree that focusing on partnership quality and relational quality is key to establishing decent relationships with stakeholders (Odongo et al. 2016; Parks 2017).

Poppo et al. (2008) observed that trust and the relational norms have the effect of decreasing transaction costs and improving knowledge transfer. All the more so, considering that collaborative networks between public, private and non-profit organisations have become crucial to enhancing governments' ability to 'develop the necessary capacity to address complex problems and achieve collective goals' (Goldsmith & Eggers 2004:6). In fact, Ekuma (2017:12) argues that 'a shift in focus to "relationality" reflects changes in the wider global political economy, including emerging complex and multi-faceted policy problems that require heterodox and context-sensitive responses from governments and greater collaboration among key stakeholders'. Relational governance also enables public entities to provide citizens with services that are ordinarily accessible only from private markets (Frasure & Jones-Correa 2010).

Relational governance is rooted in both social ties and formal contracts (Castro & Roldán 2015). Relationality enhances the reflexive capacity of partners involved in various forms of exchange within the network, and this should contribute to improved performance (Vincent-Jones 2012). Thus, the importance of relational governance between government departments and their stakeholders cannot be overstated. Appreciation and maintenance of relationships over time lie at the core of the relational governance perspective. Hence, for organisations to facilitate superior relational governance, they need to recognise and satisfy the needs of stakeholders (He et al. 2018). Scholars have argued that focusing on partnership quality and relational quality is considered key to establishing decent relationships (Odongo et al. 2016; Parks 2017).

Perceived relational governance and perceived public value

The existence of trusted relationships with business partners enables the creation of solid inter-organisational integration structures that could facilitate the exchange of information across disparate entities. Through superior relations, an organisation could obtain high-quality information, better service, and reliable deliveries, which in turn enable the organisation to achieve its mission, objectives, and strategies. Based on this dimension, organisations that initiate and manage superior relationships can leverage for improved innovativeness and better service delivery (Mitrega et al. 2017). In the public sector, superior relational capabilities have been credited with enhancing collaboration and the exchange of problem-solving ideas and resources which allow for good governance and citizen satisfaction (Aldama-Nalda & Gil-Garcia 2011).

Stewart (2020) notes that public value is created in the policy development process and, as such, the work of public servants in achieving policy outcomes should be recognised by public services as a whole and those in the political sphere. Since policy development may call for adjustments in the process of public value creation, such a reorganisation may call for developing governance structures that involve improved participation by citizens, civil society or other

stakeholders (Bloom & Sancino 2019). Considering that networked governance of public, private and third sector providers and co-production are central to the creation of public value (Turrel 2017), and that different stakeholders often experience public value differently, relational governance becomes especially crucial. In this regard, Williams (2002) notes that complex policy challenges require the forms of governance that promote collaboration, partnership and networking and that such challenges require public managers with a relational style, inclined to build social capital. Hence, the study postulates:

> Senior managers' perception of relational governance positively and significantly influences their perception of public value in a government department.

Perceived information sharing and perceived relational governance

By sharing information governments are able to discharge their responsibilities effectively while establishing a networking government which facilitates a synchronised government response to emergencies (Estevez, Fillottrani & Tomasz Janowski 2010). De Tuya and De Tuya (2019) hold that sharing information effectively and efficiently means that organisations results in creating certain social–technical conditions that facilitate a more fluid and productive interaction of stakeholders, thereby reducing lead times in the decision-making process. Yet, while government agencies know the importance of information sharing when addressing policy issues, they also realise that it can be a complex task (Yang & Maxwell 2011). In their study, Kamal, Singh and Ahmad (2012) identified individual factors (such as trust and reciprocity), organisational factors (policy, top management support, and resource allocation) and technological factors (IT capability and information security) as critical in contributing to the success or failure of interdepartmental information-sharing practice among government agencies.

Pardo, Gil-Garcia and Luna-Reyes (2008) argue that the new generation of public servants need to understand the important role of information and technology in creating conditions for collaboration in delivering effective public service. Two dimensions of information sharing exist, namely human-to-human interaction and human-to-information interaction. Human-to-human interaction relates to the extent to which human beings use information to connect with others, for instance on social media, while human-to-information interaction denotes the acquisition and sharing of information through information and communication technologies (Fidel 2012; Lu et al. 2010). In today's complex governance environment, information-sharing initiatives between organisations face many challenges. However, generating an information-sharing culture results in several benefits that may lead to improved operational performance and customer satisfaction (Fawcett et al. 2011).

Pardo et al. (2008) believe that an improved understanding of what constitutes cost to society has led to the prioritisation of collaborative governance and information sharing in public administration. In the public sector an efficient process for sharing information gives public entities a better understanding of stakeholders' needs and expectations (Wong et al. 2015). Information sharing is useful in promoting the building of better partnerships and integration between stakeholders, leading to better performance (Khan, Hussain & Saber 2016). However, a more recent study investigating a multiple department collaboration on integrating key informational resources found that, in most cases, information sharing is still an exception rather than the rule (Park 2022). Mu et al. (2021:13) argue that repeated contacts and communication between stakeholders are beneficial for 'removing ambiguities, improving mutual understanding, and most importantly, increasing perceived mutual interdependence'. Yet, a study by Sayogo and Gil-Garcia (2014) found that public managers, who typically spend 80% – 85% of their total work time on routine tasks, find it particularly hard to build an environment where information is easily shared between stakeholders. Hence, the following hypothesis is advanced:

> Senior managers' perception of information sharing positively and significantly influences their perception of relational governance in a government department.

Perceived process innovation and perceived relational governance

De Vries, Bekkers and Tummers (2014:12) define public sector innovation as 'the introduction of new elements into a public service – in the form of new knowledge, a new organisation, and/or new management or processual skills, which represents discontinuity with the past'. The types of innovation include (1) process innovations, (2) product or service innovations; (3) governance innovations, and (4) conceptual innovations (Bekkers & Tummers 2018). This paper focuses on process innovation. The key difference between private and public sector innovation is that the former is driven by a narrower interest of competitive advantage, while the latter is driven by the broader enhancement of public value through improved governance and service delivery (Buchheim, Krieger & Arndt 2020; Hartley 2005). Process innovation is defined as 'the implementation of a method for the production and provision of services and goods that is new or significantly improved, compared to existing processes in the organisation' (Bloch 2011:14).

Process innovation represents the capacity of an organisation to lower the costs of production by altering the production function, thereby allowing an organisation to position its products and services at competitive prices (Li & Ni 2016). It is divided into efficiency process innovation, the introduction of new ways of delivering services for operational efficiency and cost reduction, and quality process innovation, which is the introduction of new processes that produce better quality goods or services (Chai et al. 2020). This form of innovation is achieved through integration

mechanisms, which represent the complementarity between product and process innovation (Hullova et al. 2019). Given that resources are scarce and need to be effectively managed for value maximisation, organisations need to come up with a process innovation strategy and support organisational innovativeness (Diéguez-Soto, Garrido-Moreno & Manzaneque 2018).

In their study, Bland et al. (2010) found that the intentional design, development, and institutionalisation of several mechanisms to facilitate the completion of the innovation process will increase the capacity for public sector innovation, through the network form of governance. Although this most recent study by Liu and Zhang (2021) was conducted in the private sector, it is one of the few studies that investigated, in part, the relationship between relational governance and innovation. The study found that relational governance has a positive impact on firms' open innovation. For government institutions, United Nations (2006) posits that innovations in governance have a number of positive results, which include regaining people's trust and restoring legitimacy. A previous study found that, properly managed, the network form of governance should increase the capacity for innovation (Bland et al. 2010). Yet, in a network setting between various stakeholders characterised by high levels of complexity, problems associated with coordination can undermine the innovation process (Goldsmith & Eggers 2004). Part of the problem relates to ideas about relational governance, the role of social capital and trust within this network and the role of senior managers, whose role is to link people, resources and ideas (Bekkers & Tummers 2018; Klijn & Koppenjan 2015). A recent study by Australian public service revealed that innovations with external target groups are more likely to be built on ideas from external stakeholders (Boon, Wynen & Callens 2021). Hence, the following hypothesis is postulated:

> Senior manager's perception of process innovation positively and significantly influences their perception of relational governance in a government department.

Perceived stakeholder engagement in strategic planning and perceived relational governance

A stakeholder refers to any group or individual affected by or able to influence the attainment of an organisation's objectives. Stakeholder analysis and engagement refers to the means and organisational activities and arrangements that are undertaken to involve external stakeholders in the organisation's operations and decision-making (Greenwood 2007; Passetti et al. 2019). By definition, stakeholders are in a position in which they can influence the organisation to achieve its objectives (Brugha & Varvasovszky 2000). This process is primarily concerned with the involvement of all key actors and the management of interactions and co-creation or solution development processes. Stakeholders have become key actors in the operation of organisations, and understanding their dynamics implies capturing their peculiarities and complexities. These peculiarities and complexities include the interests they represent, their values, culture, knowledge, and other attributes unique to them. The stakeholder engagement process varies in dimensions, depending on the type of participants, which could be government, civil society organisations or citizens, the scale of the process, and the degree to which participation will lead to decision outcomes (Lumpkin & Bacq 2019; Herremans, Nazari & Mahmoudian 2016). According to Alford, Douglas, Geuijen and t'Hart (2017:590) generating public value involves 'managing down' and 'managing out': managing down a specific government department or entity, and managing out to the broader value chain of stakeholders.

These stakeholders must be actively involved in the organisational planning process and in the development and improvement of services. As part of stakeholder analysis and engagement, organisations have focused their efforts on defining, identifying, measuring, categorising, and engaging stakeholders, including those less obvious and otherwise marginalised (Colvin, Witt & Lacey 2016). Stakeholder engagement in the strategic planning process ensures the legitimacy of the decisions, especially made with a view to prioritise public services (Manny 2012). Although some critics have questioned the significance of stakeholder analysis and engagement, owing to its potential for stakeholder conflict, it has generally been lauded for adding value to organisations (Derakhshan, Turner & Mancini 2019).

In public entities, stakeholder engagement processes are more complex and allow for the inclusion of a wider selection of stakeholders (Crow & Albright 2019; Crow, Albright, & Koebele 2016). According to Bovaird (2004), public services are usually delivered through a range of public, private and voluntary sector organisations. Mannya (2012) identifies external stakeholders as crucial for strategic planning and management particularly for their ability to bring about fresh ideas and perspectives necessary for assessing opportunities and organisational capabilities for effective delivery of public services. Leimenstoll (2011) also adds that stakeholders may well be the dominant force in driving strategic action. External public sector stakeholders, such as regulatory authorities and local communities, have a direct influence on the success and value creation of public service initiatives. Cairns, Goodwin and Wright (2016) emphasise the need to introduce strategic measures to address the diverse expectations and perceptions of stakeholders sustainably. It is thus a process that requires a deeper understanding of the characteristics of those stakeholders, as well as their role in transforming the organisation (Jacobs et al. 2017). It is therefore important that both private and public entities identify their key stakeholders and the role they play in the organisation to optimise and improve their operational performance and deliver public value.

Building and maintaining strong relationships with stakeholders has the potential to increase value for

organisations; hence organisations must effectively deploy resources towards stakeholder relationship management (Obeng 2019). In their study of a large public construction project, Karlsen, Græe and Massaoud (2008) found that trust between stakeholders could be built by improving communication skills, showing commitment and sincerity, establishing common goals and working towards reaching them. In fact, in a recent study, Haarhoff (2019) found that developing mutually beneficial relationships with external stakeholders leads to public value and societal legitimacy. Having found a significant and positive relationship between stakeholder involvement and service delivery, a recent study by Keranga et al. (2021) attributed the strong association to communication and meaningful stakeholder involvement in strategic planning – attributes which characterise relational governance. From the arguments above, it may be noted that continual engagement and analysis of the various public stakeholders could provide valuable insights which facilitate the creation of organisational competencies and superior strategy. This leads us to the following hypothesis:

> Senior managers' perception of stakeholder engagement in strategic planning positively and significantly influences their perception of relational governance in a government department.

Conceptual model

The initial and most critical stage in the analysis of data using the structural equation modelling (SEM) techniques is the pictorial representation of the hypothesised relationship. As such, based on the theoretical grounding provided in this study and a review of the literature, the relationships between the variables in this study are depicted in Figure 1.

Research methodology

This study adopted a quantitative approach using a cross-sectional survey method as a research design. Data were collected by means of a self-developed questionnaire from literature and some previously validated instruments. This study was conducted among senior managers from the five national government departments in the public sector in South Africa. These senior managers were enrolled for an Executive Development Programme (EDP) hosted by the National School of Government. They attended the EDP in various groups over the period May 2018 to April 2019. Specifically, the respondents completed the questionnaires after they had attended a 3-day session for the Strategic Planning and Management module. The EDP mainly catered for senior managers at deputy-director, director and chief-director levels. The five departments have some 950 senior managers. Of some 300 questionnaires issued, 230 were returned, duly completed, to be included for analysis. This amounted to a response rate of 76.7%. This was largely due to the convenience nature of the sampling method. That said, participation in this study was voluntary and respondents were assured of the confidentiality of their responses.

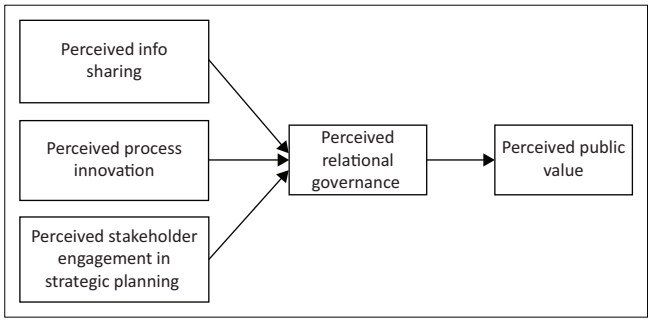

FIGURE 1: Conceptual model.

In this study, data were analysed, first, by means of exploratory factor analysis (CFA) and confirmatory factor analysis (CFA). SEM was implemented for CFA and hypothesis testing, using the EQS structural modelling software. EQS software provides a platform for conducting a variety of statistical procedures, including multiple regression, multivariate regression, CFA, and path analysis. SEM is a statistical methodology, grounded in theory, which employs multivariate analysis to examine the relationships among variables. This analytical method has an advantage over conventional multiple regression, because when using this technique, models developed from theory can be evaluated and validated with room to make the necessary changes in the model. It is performed in a two-stage process involving CFA and path analysis. Following a recommendation by Anderson and Gerbing (1988), two-step staged SEM was performed, involving a confirmatory analysis and a structural model and hypotheses testing. CFA encompasses reliability and validity tests conducted to evaluate the measuring instrument and measurement model evaluation tests, which are meant to evaluate how well the data fit the model. Structural modelling and hypothesis testing are carried out to enable decision-making with regard to the hypothesis in question. The results of this study are presented for CFA and structural model and hypothesis testing.

Results

Table 1 shows the profile of the respondents as follows:

From the results presented in Table 1, it can be noted that most of the respondents (51.7%) held the position of director in their departments. This was followed by the position of deputy director, which represented 34.3% of the total number of respondents. The remainder of the respondents held the posts of chief director (9.6%), deputy director general (0.4%), and other posts (3.9%). The 'other' category was made up of assistant directors, a chief engineer, a production engineer, a scientist, and a senior legal administrative officer. These are the principal positions in the public sector, which enhance the richness of the responses provided in this study. Regarding educational qualifications, most of the respondents held a Bachelor's degree (35.7%), an Honours degree (29.6%) or a Master's/Ph.D. (23.9%). Those holding a certificate, diploma or national diploma made up 8.3% of the total number of respondents, while other qualifications accounted for the remaining 2.6%. Because of the levels of education

TABLE 1: Respondents' profile.

Demographic	Frequency	Percent	Cumulative percent
Position in Department			
Deputy Director	79	34.3	34.3
Director	119	51.7	86.1
Chief Director	22	9.6	95.7
Deputy Director General	1	0.4	96.1
Other	9	3.9	100.0
Total	**230**	**100.0**	-
Highest Qualification			
Certificate/Diploma/National Diploma	19	8.3	8.3
Degree	82	35.7	43.9
Honours	68	29.6	73.5
Master's/PhD	55	23.9	97.4
Other	6	2.6	100.0
Total	**230**	**100.0**	-
Age			
Between 31 and 35 years	12	5.2	5.2
Between 35 and 40 years	54	23.5	28.7
Between 41 and 50 years	113	49.1	77.8
Between 51 and 60 years	49	21.3	99.1
Over 60 years	2	0.9	100.0
Total	**230**	**100.0**	-

recorded, it should be noted that the respondents were sufficiently educated to understand the concepts under study and interpret the questionnaire well. Forty-nine point one per cent of the respondents were between the ages of 41 and 50 years. This is an age group that is deemed to have acquired substantial work experience, which is instrumental in ensuring the richness and quality of responses obtained in the study. In addition, 23.5% were between 35 and 40 years of age, which added to the work experience needed in a study like this. Respondents between the ages of 51 and 60 years (21.3%) were also well represented. Those between the ages of 31 and 35 years and those over 60 years only constituted small proportions of the respondents, namely 5.2% and 0.9% respectively.

Exploratory factor analysis

EFA allows for exploration, and is useful to test an empirical measurement instrument, that is, one that has not been previously tested and used (Finch 2013; Williams, Onsman & Brown 2010).

The suitability of the data for EFA had to be established before factor extraction and rotation could be conducted. Factorability of the data set refers to the suitability of data for factor analysis. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy determines the strength of the relationship between variables for factorability of the variables, and is an indication of the sample adequacy (Beavers et al. 2013:6). A KMO value of 0.5 is acceptable; more desirable, though, is above 0.6 (Kaiser 1974). The results of the KMO and Bartlet tests are shown in Table 2.

According to Table 2, KMO = 0.898, which indicates that the sample is adequate and factor analysis may be conducted. The Bartlett's test of sphericity must be significant ($p < 0.05$)

TABLE 2: KMO and Bartlett's test.

Measure	Value
Kaiser-Meyer-Olkin measure of sampling adequacy	0.898
Bartlett's test of sphericity	
Approx. chi-square	3060.036
df	496
Significance	0.000

to indicate that data are suitable for factor extraction, and in this case $p = 0.000$ (Pallant & Manual 2007). This is determined, based on the relationship between variables, where correlations must be significantly different from 0 to continue with EFA (Maskey, Fei & Nguyen 2018). The rotation method used was Varimax rotation with Kaiser normalisation. All items had loadings above 0.4. The factor loadings are presented in Table 3.

Reliability and validity assessments

In this study, the process of ensuring the reliability and validity of the research scales culminated in a rigorous review of the literature and the adoption of previously validated construct items. This was followed by a statistical evaluation of the construct items. The Cronbach's alpha (α) coefficient and the composite reliability (CR) measure were used to evaluate the reliability of each construct in the measuring instrument. The factor loadings and the average variance extracted (AVE) were used to evaluate the reliability of the measuring instrument. The results are presented in Table 3.

To establish the reliability of a measuring instrument, both the α and the CR values should exceed 0.7. In this study, the α values ranged between 0.788 and 0.890 while CR values were between 0.808 and 0.845, satisfying reliability requirements. Table 3 shows factor loading for constructs; all the items (except for PPI4 and PSESP5) had factor loading above 0.5, which is a requirement for convergent validity (Anderson & Gerbing 1988). Items PPI4 and PSESP5 were excluded for further analysis because they had loadings of 0.476 and 0.448, which were lower than the benchmark. In addition, the table shows AVE scores ranging from 0.518 to 0.560, satisfying the recommended criteria that AVE values should be above 0.5 for discriminant validity to hold good (Fornell & Larcker 1981).

Correlations and discriminant validity

The validity of the measuring instrument was also tested through discriminant validity, which evaluates the extent to which a construct's items differ from those of another construct. This was done following the procedure recommended by Hair et al. (2010), which involved comparing the correlation between the latent constructs and the square roots of AVE for the constructs. Using this procedure, validity is achieved when the square root of the AVE exceeds the correlation coefficients associated with each latent variable in a measurement model.

From the results presented in Table 4, it appears that all the latent constructs demonstrated satisfactory discriminant

TABLE 3: Validity and reliability assessments.

Construct items		FL
Perceived information sharing (PIS) α = 0.890, CR = 0.834		
PIS1	We share proprietary departmental information regularly and widely.	0.816
PIS2	We exchange internal management information timeously.	0.809
PIS3	Information is available and accessible in a format that can be easily utilised.	0.732
PIS4	We share information about the environments in our networks.	0.619
Perceived process innovation (PPI) α = 0.838, CR = 0.808		
PPI1	We often try different procedures to speed up the realisation of our department's goals.	0.704
PPI2	Our department often acquires new skills or equipment to improve operations or processes.	0.823
PPI3	Our department has the flexibility to meet the changing demands of customers.	0.763
Perceived stakeholder engagement in strategic planning (PSESP) α = 0.886, CR = 0.817		
PSESP1	The department conducts a comprehensive stakeholder analysis.	0.578
PSEP2	Stakeholder analysis is linked to strategic planning in the department.	0.684
PSEP3	The department reaches an agreement with the key stakeholders about the purpose of strategic planning before starting the process of strategic planning.	0.900
PSEP4	The department reaches an agreement with the key stakeholders about who should be involved in the process of strategic planning.	0.722
Perceived relational governance (PRG) α = 0.848, CR = 0.845		
PRG1	Our department analyses what it would like to achieve with each stakeholder.	0.634
PRG2	We hold regular discussions with stakeholders on ways to support each other to achieve success.	0.887
PRG3	The stakeholders engage in joint problem-solving while resolving conflicts.	0.791
PRG4	We always make an effort to formalise our network relationships.	0.714
Perceived public value (PPV) α = 0.788, CR = 0.841		
PPV1	Our department is responsive to the public preferences (wants and needs).	0.716
PPV2	Our department often undertakes activities that shape public preferences.	0.769
PPV3	Our department has the capacity to listen to and engage with the public as users and as citizens.	0.607
PPV4	Our department has created platforms to educate others about what the department does.	0.855
PPV5	Our department has a measurement framework in place to enable politicians, managers, and the public to recognise when and the extent to which public value is created.	0.623

FL, Factor loading; α, Cronbach's alpha; CRm, Composite reliability; PRG, perceived raltional governance.

validity properties. The square root of AVE for each latent construct was greater than the correlations between pairs of the constructs as suggested by Hair et al. (2010). In addition, Brown (2015) argues that discriminant validity is problematic when inter-construct correlations are above 0.85 (large effect), but the results in Table 4 show that the correlations ranged between 0.407 and 0.709, and hence did not give rise to any discriminant validity concerns. Because the validity assessment showed satisfactory psychometric properties for the latent constructs, there was no need to modify the original model and no new variables were formed. After satisfactory reliability and validity assessments, there was a need to proceed to measure model goodness of fit evaluation and various indices were used such as the CMIN, the normed fit index (NFI), the incremental fit index (IFI), the goodness of fit index (GFI), and the root mean square error of approximation (RMSEA).

Measurement model evaluation (goodness-of-fit indices)

As part of CFA, the goodness of fit indices were computed to evaluate how well the model fits the data. The results presented in Table 5 indicated that the model fits the data reasonably well, suggesting an acceptable model fit.

To evaluate the goodness of fit of the model, the $\chi 2/df$ ratio, the comparative fit index (CFI) and the RMSEA, inter alia, were computed. To achieve goodness of fit, the value of the $\chi 2/df$ ratio must be below the threshold value of 3, according to Carmines and McIver (1983). As such, a satisfactory fit was obtained because the value of the ratio in this study was 1.815. Fit was also obtained using other indices shown in Table 3. The values of the CFI were observed to be 0.931, which was greater than the 0.90 minimum required, and the RMSEA value was also within the acceptable value range of ≤ 0.05 (Hu & Bentler 1999). Conclusively, CFA confirmed the adequacy of all the construct items and there was a need to evaluate the structural model to confirm the hypothesised structure.

Structural model and hypothesis testing

Once the reliability and validity of the scales had been assessed, and the goodness of fit of the model obtained, the parameters of the structural model were assessed. The structural model in the form of the conceptual model shown in Figure 1 was evaluated with the aid of EQS structural modelling software. The model has 5 unobserved latent factors, and 22 observed variables, and these were used to estimate the path coefficients, the explanatory power, and the relationships between the constructs in the structural model. Table 6 presents the path coefficients and resultant decision of the hypotheses testing.

Discussion

As presented in Table 5, perceived information sharing (PIS) was positively related to perceived raltional governance (PRG) with a β value of 0.238 (at 5% level of significance) while perceived process innovation (PPI) is at the same level of significance. In the conceptual model and hypothesis

TABLE 4: Correlations and discriminant validity.

Construct	AVE	PIS	PPI	PSESP	PRG	PPV
Perceived information sharing (PIS)	0.560	**1.000**				
Perceived process innovation (PPI)	0.585	0.581	**1.000**			
Perceived stakeholder engagement (PSESP)	0.533	0.554	0.709	**1.000**		
Perceived relational governance (PRG)	0.581	0.638	0.559	0.685	**1.000**	
Perceived public value (PPV)	0.518	0.593	0.704	0.433	0.407	**1.000**

The major diagonal and bold figures show the square root of average variance extracted (AVE).
RMSEA, root mean square error of approximation; CFI, comparative fit index; AVE, average variance extracted; NFI, normed fit index; PRG, perceived raltional governance.

TABLE 5: The goodness-of-fit indices.

Statistic	Cases	Chi-square	df	Chi2/df	*p*	NFI	NNFI	CFI	RMSEA
Result	230	263.146	145	1.815	0.000	0.866	0.919	0.931	0.062
Acceptable	-	-	-	≥ 3	≥ 0.000	≤ 0.9	≤ 0.9	≤ 0.9	≤ 0.05

TABLE 6: Structural model and hypothesis testing.

Hypotheses	Hypothesised path	Path coefficient	Decision
H1	PIS→PRG	0.238*	Supported
H2	PPI→PRG	0.252*	Supported
H3	PSESP→PRG	0.443*	Supported
H4	PRG→PPV	0.606*	Supported

PRG, perceived raltional governance.
*Statistics significant at the 5% level.

development, it was proposed that PIS positively and significantly influences PRG and that PPI positively and significantly influences PRG. The results presented show that both hypotheses were supported. The results are in line with previous studies. In their study, Johnston and Hansen (2011) found that in the public sector context, sharing information is critical for improvement in governance infrastructures, thereby enhancing the public sector's ability to fulfil the service provision mandate to citizens. Mu et al. (2021) also found that information asymmetry, opportunism, and distrust make the relationship commitment between stakeholders challenging. While this study found a positive and significant relationship regarding the perception of senior managers with regard to the relationship between PPI and PRG (β = 0.252), another study found that a network form of governance, properly managed, should increase the capacity for innovation (Bland et al. 2010). This result also finds resonance in Bekkers and Tummers's (2018) observation that public sector innovation increases legitimacy and trust in government.

The study also found that senior managers perceive stakeholder engagement as being positively and significantly related to relational governance (β = 0.443 at 5% level of significance). This finding concurs with Lieutenant (2021) who posited that 'stakeholder engagement is all about humanising the relationship between an organisation and those who are impacted by, interested in, or have influence over its activities' and that 'effective engagement builds healthy, trusted relationships that benefit everyone'. In turn, the hypothesis that PRG positively and significantly influences perceived public value (PPV) was supported, with β = 0.606. The result obtained is in line with the arguments raised by Schoenherr and Swink (2012), that superior relationship management capabilities enhance an organisation's ability to create sustainable value. These results are further supported by Oppong, Chan and Dansoh (2017) in their study on the prioritisation of stakeholder management in the quest to enhance the public value. In a nutshell, all four hypotheses proposed in the conceptual model (Figure 1) were supported.

Conclusion

This study sought to investigate perceptions of senior public managers with regard to the influence of information sharing, process innovation, stakeholder analysis and engagement on relational governance, as well as the public value in selected national government departments. Although some individual relationship have been explored in some previous studies, the grouping of these relationships are unique in this study as postulated in the conceptual model.

This study's results indicate that from the senior managers' perspective, government departments could greatly improve their public value by focusing on relational governance. This suggests that government departments that seek to deliver superior public value, need to focus primarily on managing their relational governance. To that end, it is vital that they develop their information sharing, process innovation, as well as stakeholder engagement.

The networks that flow from stakeholder engagement will strengthen relational governance, which the results of the study have shown to be important for public value creation. The relational nature of government activities becomes the core attribute of the process of public value creation (Mendoza & Vernis 2008). These relationships stem from diverse drives such as the need to access additional competences and resources, to increase productivity and quality and to reduce costs and risk (Wallenburg & Schäffler 2016). Public managers are urged to use ICT tools to facilitate participation between the different stakeholders in ways that are flexible, easy to use and attractive to use (Osmani 2014). There is a need for governments to transform their digital platforms for the co-creation of public value and efficient utilisation and management of public resources (Cordella & Paletti 2019: Meijer & Boon 2021). Turkel and Turke (2016) also posit that it is important to create management systems that distribute internal accountability for public value creation across the public managers. A recent survey also indicates that for information sharing, specifically institutional mechanisms such as incentives for sharing, a quality information system, and a flexible structure, permitting work autonomy, does matter (Park 2022).

Increasing the capacity for public sector innovation, through relational governance, requires the 'intentional design, development, and institutionalisation of several mechanisms to facilitate the completion of the innovation process' (Bland et al. 2010). This is critical for government departments since the legitimacy of governments is determined by the manner and extent to which they are able to develop and implement new services, technologies, organisational

structures, management approaches, governance processes and policy concepts when dealing with societal challenges (Bekkers, Edelenbos & Steijn 2011). The increasing enormity and complexity of government requires it to continually redefine its vision and mission and innovate its business processes as it strives to deliver public services efficiently and effectively. Investment on information sharing platforms, and the improvement in the quality and quantity of information shared with the various stakeholders by government departments, will go a long way in enhancing trust, commitment and communication – all of which are essential for improved relational governance. Improved relational governance will lead to perceptions of enhanced public value by stakeholders.

Notwithstanding the theoretical and practical relevance of this study, the study is not without its limitations. Data in this study were collected on a cross-sectional basis and, therefore, failed to ascertain the in-depth views of senior managers in regard to the objectives of the study. Although CFA confirmed the reliability and validity of the measuring instrument, the directional nature of the relationships among variables should be viewed with caution, due to the cross-sectional nature of the data. Since the study used non-probability sampling, the results cannot be generalised to all senior managers in government. Future studies could employ a mixed method of data collection which includes a qualitative approach in which the qualitative views of senior managers in the form of interviews or focus groups are considered to enrich the study. Also, resources permitting, future studies could consider probability sampling techniques that would help justify the generalisability of the findings. Finally, future research could also compare the difference that other variables such as the size, sector, cluster, experience and education levels of senior managers will make to the results of the study.

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Author's contributions

D.P. conceptualised the study, designed the questionnaire and wrote the article. W.M. analysed the data and contributed towards the literature review.

Ethical considerations

This article followed all ethical standards for research without direct contact with human or animal subjects.

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Data availability

The data that support the findings of this study are available on request from the corresponding author, D.P. The data are not publicly available due to restrictions (e.g. their containing information that could compromise the privacy of research participants).

Disclaimer

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