

INVESTIGATING COMPLIANCE OF DEMAND MANAGEMENT PRACTICES WITH SUPPLY CHAIN POLICIES AND REGULATIONS IN GAUTENG PUBLIC HOSPITALS

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AGENDA

Introduction

Research Gap

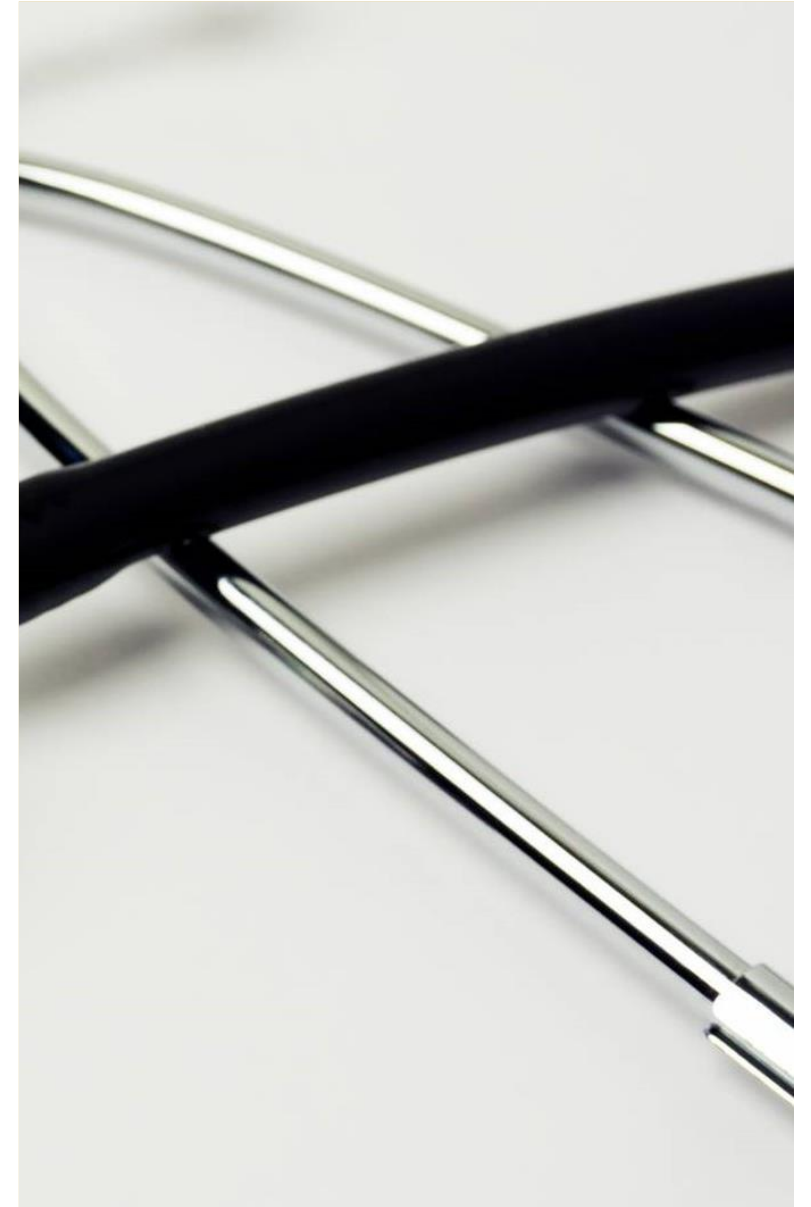
Aim AND Research Questions

Literature Review

Research Methodology

Findings

Conclusion and Recommendations



INTRODUCTION

- Demand management forms a significant component of the supply chain management (Lysons & Farrington, 2016:227).
- Demand management is critical to the SCM framework & is critical for efficient service delivery (Owuoth & Mwangangi, 2015:2; Naidoo, 2019).
- The SCM policy, Preferential Procurement Policy & BBBEE.
- Demand management compliance is a significant challenge for South African government agencies (Murphy & Moosa, 2021).
- Fraud and corruption, increased irregular expenditure, and high operational costs (Ezeanyim et al., 2020:129).
- Effect of COVID-19 on Demand management and SCM practices globally, specifically, the South African healthcare [Ivanov and Das (2020:1)]

RESEARCH GAP

- Most studies on demand management frameworks have been conducted globally such as Burt (2010), Hilletofth, Ericsson and Christopher (2010), Rampedi (2010), Sollish and Semanik (2012), Lambert (2014), and Van Weele (2016), focused on the private sector.
- Previous studies on supply chain practices identified several challenges. The studies of *Migiro and Ambe (2008)*, *Ambe (2009, 2016)*, *Ambe and Badenhorst-Weiss (2011, 2012a)*, *Aku Kokor (2014)*, *Nzau and Njeru (2014)*, *Bizana et al. (2015)*, *Maleka (2016)*, *Selomo and Govender (2016)*, *Odero and Ayub (2017)*, *Masete and Mafini (2018)*, *Omanji and Moronge (2018)*, *Ezeanyim, Uchenu and Ezeanolue (2020)*, and *Matloko (2021)* are a case in point. The mentioned studies revealed that:
 - Non-implementation of demand management practices,
 - Non-compliance with the SCM policies and regulations, and
 - Non-alignment between demand planning, strategic objectives, and budget.
 - Fraud and corruption, increased irregular expenditure, and high operational costs.
 - Lack of supplier capacity to deliver.
 - Lack of skills and capacity.
- Studies did not focus on demand management and not within the Gauteng public health Department.
- Furthermore, the effect of the Covid-19 pandemic.

RESEARCH AIM AND QUESTION

This paper seeks to investigate the extent to which demand management practices comply with supply chain policies and regulations in Gauteng Public Hospitals, South Africa.

To address the problem, this paper aims to answer the research question:

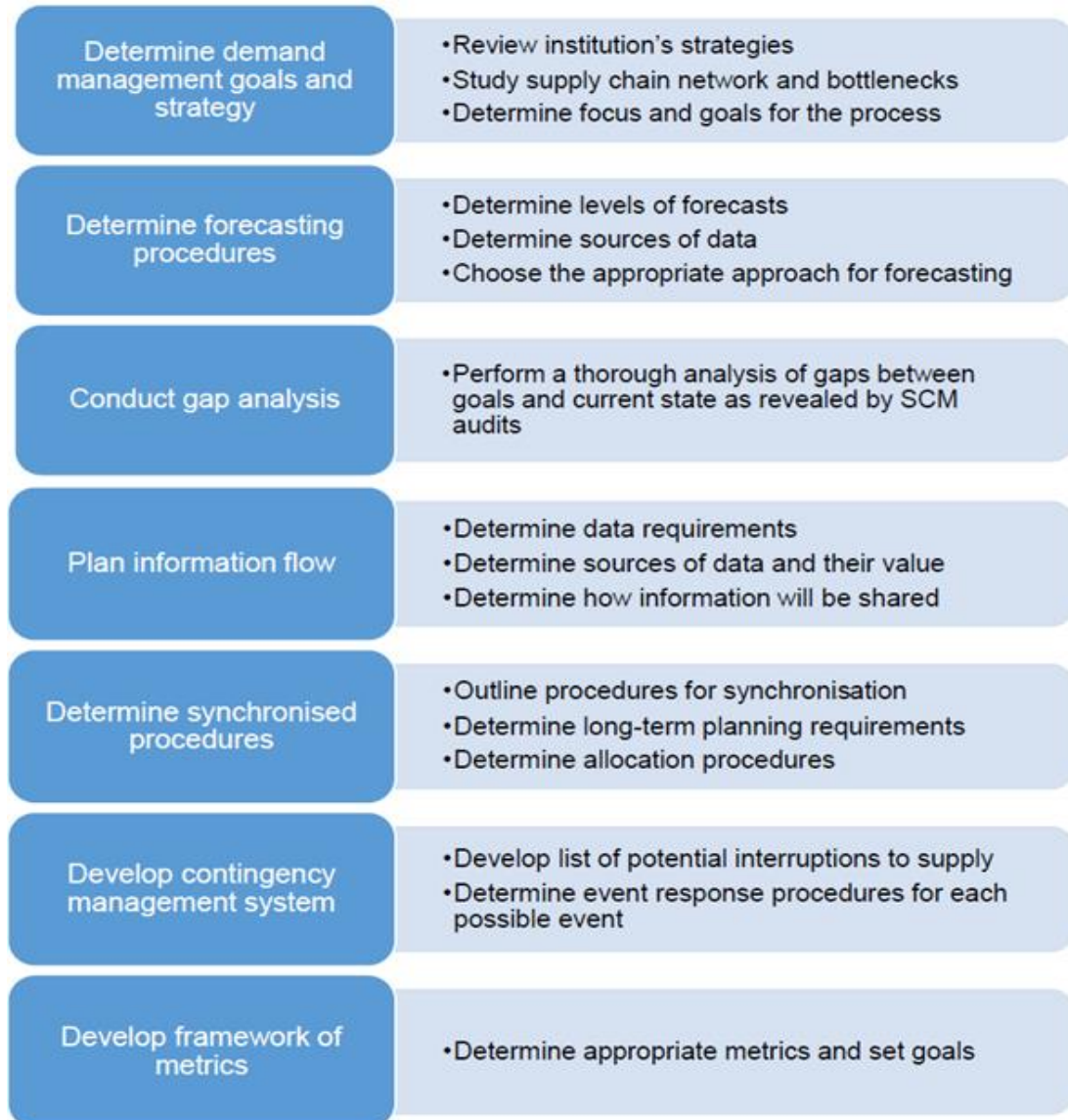
- What are the demand management practices employed in Gauteng public hospitals?
- What challenges do demand management practitioners in Gauteng public hospitals faced?
- To what extent are demand management practices compliant with SCM policies and regulations in Gauteng public hospitals?



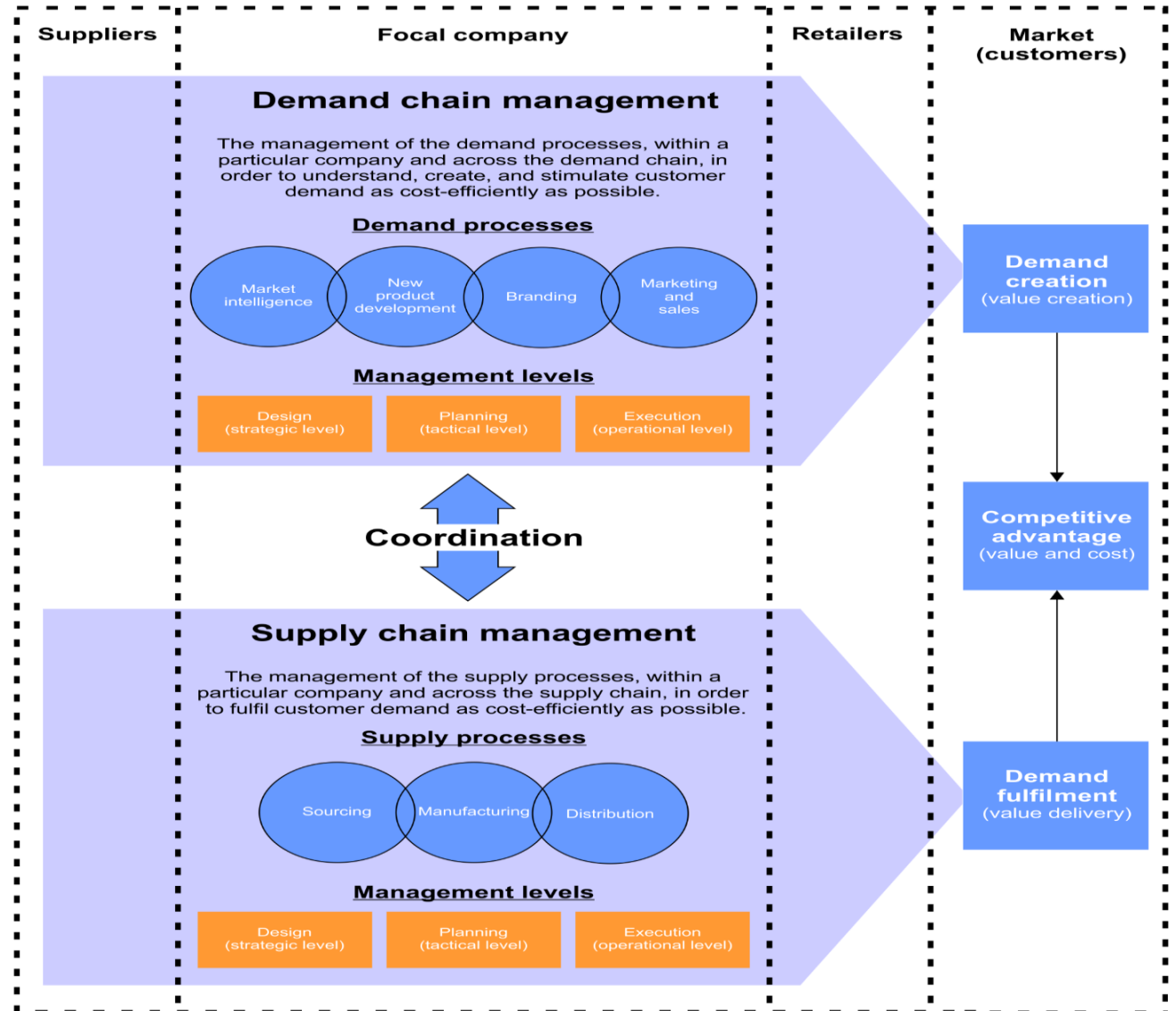
LITERATURE REVIEW AND RESEARCH HYPOTHESIS

- Understanding Demand Management and Supply Chain Management
- Integrating Demand Management in the South African Public Health Sector
- Demand Management Practices
- Compliance of Demand Management with Supply Chain Policies and Regulations
- Research Hypothesis

Understanding Demand Management and Supply Chain Management



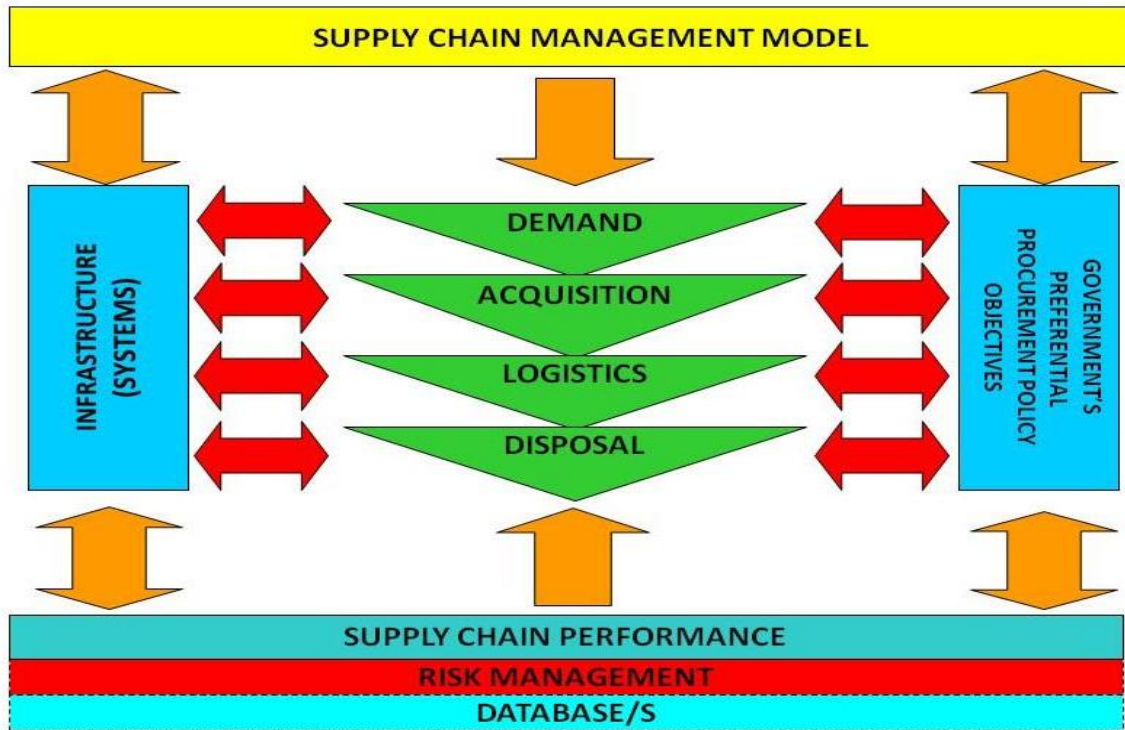
Seven steps in the operational demand management process



Demand management as a component of supply chain management

Integrating demand management within the South African Public Health Sector

The Gauteng Department of Health (GDoH) provides healthcare to 14.6 million citizens in the Gauteng Province through hospitals, clinics, and community health centres (Gauteng Provincial Government, 2020/21:8). (Gauteng Provincial Government, 2020/21:7).



Category of hospital	Type of healthcare provided	Count of hospital
District hospital	Generalist care	13
Regional hospital	Specialist care	8
Specialised hospital	Specialised care for certain specialised groups of patients	19
Tertiary hospital	High specialised care	3
Central hospital	Very high specialised care for multi-speciality clinical services, innovation and research	4
Total Hospital		47

A baseline study conducted by the National Treasury (2017), South Africa revealed that 44% of National Department's SCM practitioners have the relevant SCM qualification, while 41% in the Provincial Department and 18% in Municipalities.

Demand Management Practices

Practices	Descriptions	Sources
Demand management	<ul style="list-style-type: none"> Understanding end users' specific requirements. 	Ambe, 2009:429
Considerations	<ul style="list-style-type: none"> Analysis of BAS reports weekly/ Analysis of SAP reports daily. Implementation of effective sourcing strategies/ Identification of suppliers for sub-contracting opportunities. Analysis of suppliers' cost structures/ Quarterly consulting with contracted suppliers. 	<p>Burt et al., 2010:21</p> <p>Bailey et al., 2015:201</p> <p>National Treasury, 2017a:53</p>
Specifications and terms of reference	<ul style="list-style-type: none"> Compilation of specifications according to the SMART principles. Compilation of terms of reference according to the SMART principles. Specifications drafted in an unbiased manner. BSC members appointed by HOD/ BSC members attend meetings regularly. Specifications include acceptable standards/ Fruitless and wasteful expenditure reported to Loss Control unit/ Irregular spending reported to the Loss control unit. 	<p>Van Weele, 2010:34</p> <p>Sollish et al., 2012:29</p> <p>Gauteng Provincial Government, 2018:12</p> <p>Ambe, 2012:251</p>
Role players	<ul style="list-style-type: none"> HOD approves contracts above R1million/ CFO is appointed as the chairperson of BAC. Cost centre managers approve all procurement requests. Demand plan utilised for procurement of all goods, works and services. Only goods listed on demand plans are procured/ BSC compile evaluation criteria. BEC evaluated bids according to pre-determined criteria. BAC members are conversant with SCM prescripts. 	<p>Swink, 2011:358</p> <p>National Treasury, 2017a:58</p> <p>Ambe, 2011:81</p>

Compliance of demand management with with supply chain policies and regulations

Prescripts	Descriptions	Sources
The Constitution	<ul style="list-style-type: none"> ▪ Procurement is conducted fairly. ▪ Procurement opportunities are provided to previously disadvantaged individuals. ▪ Tenders advertised on the National Treasury eTender portal. ▪ Bids are requested from suitably qualified suppliers. ▪ Prices are negotiated with prospective suppliers. 	<p>Owuth & Mwangangi, 2015:20</p> <p>Tshamaano, 2012:10</p> <p>Khandija & Kibert, 2015:128</p> <p>Mauki, 2014:9</p> <p>Khadija & Kibert, 2015:128</p>
Public Finance Management Act (PFMA)	<ul style="list-style-type: none"> ▪ The SCM unit reports to the CFO. ▪ Prospective bidders complete SBD forms. ▪ Evaluation criteria are stipulated in bid documents. 	
Preferential Procurement Policy Framework Act (PPPFA)	<ul style="list-style-type: none"> ▪ 80/20 price point up to R50 million. ▪ 90/10 price point system more than R50 million. ▪ Sub-contracting a pre-requisite above R30 million. 	



Research Hypothesis

In order to answer the 3rd research question, the following hypothesis was developed:

Null hypothesis: There is no significant difference between the categories of the hospitals in GDoH about the compliance of demand management practices with SCM policies.

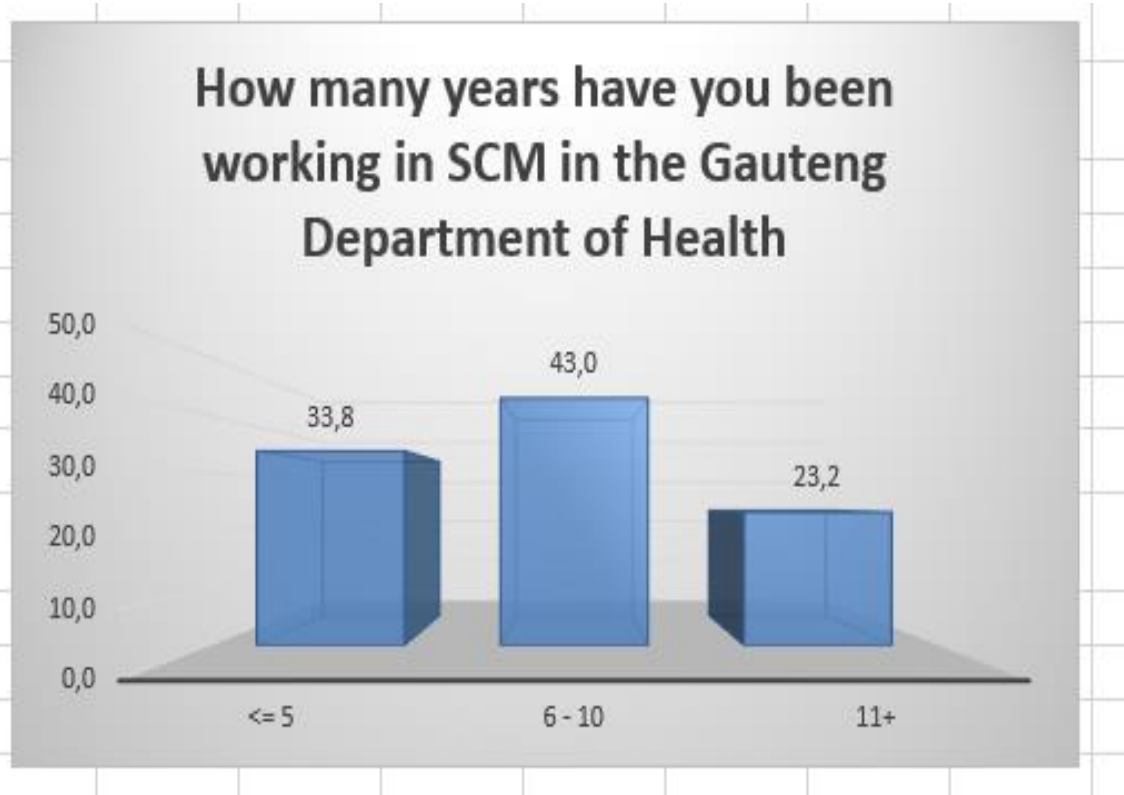
Alternative hypothesis: There is a significant difference between the categories of the hospitals in GDoH about compliance of demand management practices with SCM policies.

RESEARCH METHODOLOGY

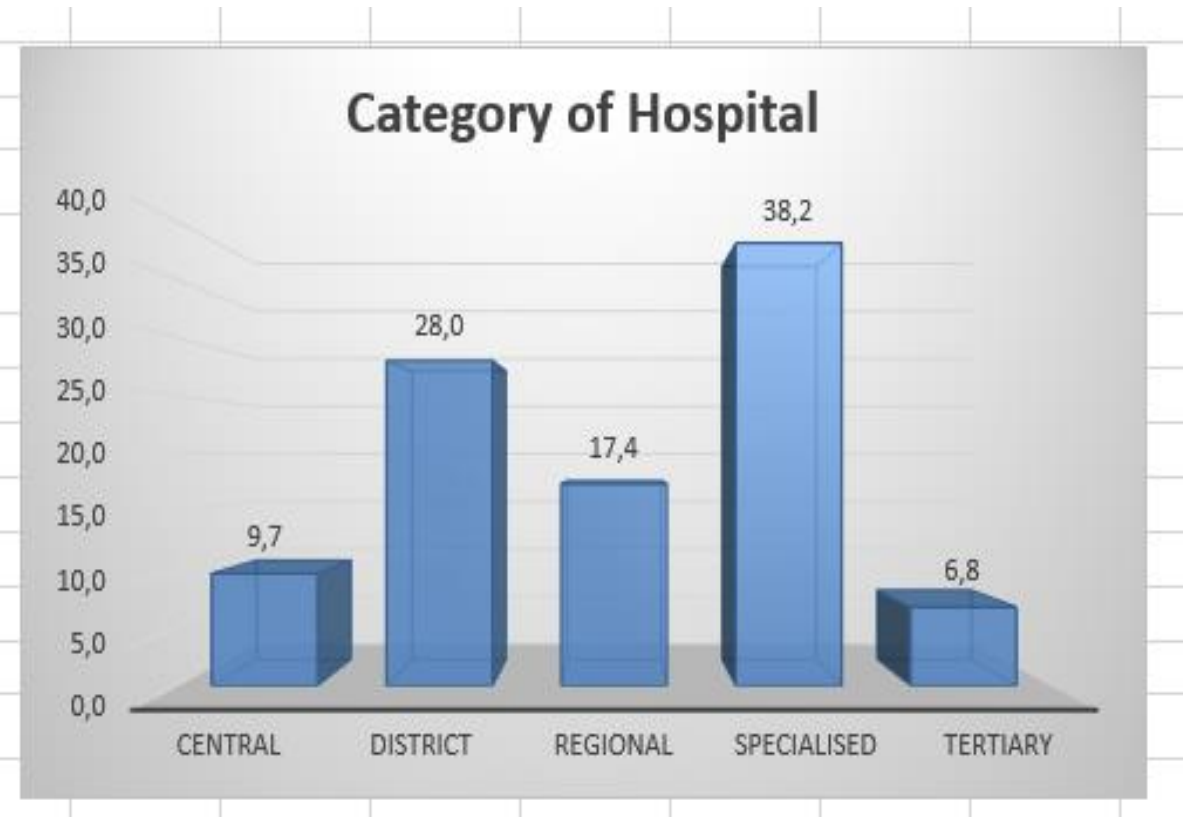
- We employed a combination of exploratory and descriptive research, based on an online survey.
- Gauteng's 47 public hospitals, according to the GDoH statistics, employ 5,300 SCM practitioners (Gauteng Department of Health, 2022: 38).
- The total sampling method, purposive sampling which examines the entire population, was used to reduce the sample size to 235.
- We focused on demand management practitioners at post-level seven and above as per the human resource grading system used by the sector.
- Because of its size and accessibility, the study focused on the Gauteng Department of Health (Zack et al., 2019).
- A semi-structured questionnaire was used to gather data for the research, distributed to 235 demand management practitioners based at various institutions within the Gauteng Department of Health (GDoH), measured using the Likert scale response format.
- The collected data was organized and analyzed descriptively using the Statistical Package for Social Science (SPSS).
- We present the descriptive statistics using frequencies, expressed as percentages, and all associations between pairs of categorical variables were established using Pearson's chi-squared test (Van Druten, 2019).
- All inferential statistics were interpreted at a 0.05 error rate.
- With a cut-off point of 0.7, Cronbach's alpha was used to test for internal consistency and factor analysis was used for data reduction.

4 FINDINGS

Distribution of respondents' experience in SCM in the GDoH



Category of hospital in GDoH



4 FINDINGS

Descriptive Statistics

Demand management practices employed

Practice	Mean	Median	Std. Dev.	Skewness	Kurtosis
Key role players in the demand management process	4.54	5.00	0.652	-1.304	1.416
Demand management considerations	4.48	5.00	0.723	-1.636	3.062
Development of specifications and terms of reference	4.17	4.00	0.993	-1.277	1.144

4 FINDINGS

Descriptive Statistics

Challenges with the implementation of demand management

Statements	SD	DA	DN	A	SA
Our organizational structure has not made provision for demand management.	3.9%	8.7%	20.3%	29%	38.2%
We experience challenges implementing demand management practices.	2.9%	5.3%	16.9%	34.8%	40.1%
We are allocated insufficient budget.	1.0%	3.4%	16.9%	37.7%	41.1%
We experience challenges in aligning demand plans to strategic objectives.	2.9%	2.9%	24.2%	34.3%	35.7%
We experience challenges in complying with SCM policies and regulations.	3.4%	7.7%	24.2%	34.8%	30.0%
We experience challenges in compiling specifications according to the SMART principles.	3.4%	9.2%	9.7%	38.2%	39.6%

4 FINDINGS

Descriptive Statistics

Compliance with Constitutional Requirements

Practice	Mean	Median	Std. Dev.	Skewness	Kurtosis	t(206)	p-value	Null Hypothesis
We advertise tenders on the National Treasury e-Tender portal.	4.23	4.00	0.789	-0.487	-1.047	16.97	< 0.001	The Mean is equal to the hypothetical value.
We provide procurement opportunities to previously disadvantaged individuals.	4.15	4.00	0.882	-0.897	0.739	12.08	< 0.001	Mean is equal to the hypothetical value.
We request bids from suitably qualified suppliers.	4.05	4.00	0.944	-0.726	0.064	9.68	< 0.001	Mean is equal to the hypothetical value.
We conduct price negotiations with prospective suppliers.	3.99	4.00	0.900	-0.616	0.010	7.86	< 0.001	Mean is equal to the hypothetical value.
Our procurement is conducted fairly.	3.97	4.00	0.900	-0.297	-1.001	7.27	< 0.001	Mean is equal to the hypothetical value.

4 FINDINGS

Descriptive Statistics

Compliance with Public Finance Management Act (PFMA)

Practice	Mean	Median	Std. Dev.	Skewness	Kurtosis	t(df)	p-value	Null Hypothesis
Ensure prospective bidders complete SBD forms	4.27	4.00	0.802	-0.746	-0.077	4.54	<0.001	The Mean is different from the hypothetical value
SCM unit reports to the CFO	4.25	4.00	0.740	-0.512	-0.766	3.78	<0.001	The Mean is different from the hypothetical value.
BSC ensure bid evaluation criteria are stipulated	4.15	4.00	0.773	-0.274	-1.276	1.95	0.052	The Mean is not different from the hypothetical value

4 FINDINGS

Descriptive Statistics

Compliance with the Preferential Procurement Policy Framework Act (PPPFA)

Practice	Mean	Median	Std. Dev.	Skewness	Kurtosis	t(df)	p-value	Null Hypothesis
80/20-point system transactions between R30m – R50m	4.15	4.00	0.930	-0.997	0.830	-0.262	0.794	Mean is equal to 4
Sub-contracting pre-requisite transactions above R30m	4.14	4.00	0.944	-1.028	0.522	-0.441	0.660	Mean is equal to 4
90/10-point system for transactions above R50m	4.02	4.00	0.887	-0.502	-0.236	-2.304	0.022	Mean is equal to 4

4 FINDINGS

Inferential Statistics – ANOVA (Kruskal-Wallis, TEST)

Differences in the compliance of demand management practices with the Constitution between the categories of hospital

Practices	Hospital	N	Mean Rank	Kruskal-Wallis H	df	p-value
BSC compiles specifications according to SMART principles	Central/ District/ Regional/ Specialised/ Tertiary	207	104.18	4.434	4	0.350
BSC compiles terms of reference according to SMART principles	Central/ District/ Regional/ Specialised/ Tertiary	207	100.25	2.726	4	0.605
BSC drafts specifications in an unbiased manner	Central/ District/ Regional/ Specialised/ Tertiary	207	86.95	4.850	4	0.303
BSC are appointed by the HOD	Central/ District/ Regional/ Specialised/ Tertiary	207	86.40	9.019	4	0.061
BSC attends meetings on a regular basis	Central/ District/ Regional/ Specialised/ Tertiary	207	96.15	0.751	4	0.945
BSC include acceptable standards in specifications	Central/ District/ Regional/ Specialised/ Tertiary	207	94.23	2.932	4	0.569
Fruitless and wasteful expenditure is reported to the Loss Control unit	Central/ District/ Regional/ Specialised/ Tertiary	207	86.85	2.472	4	0.650
Irregular expenditure is reported to the Loss Control unit	Central/ District/ Regional/ Specialised/ Tertiary	207	80.20	4.570	4	0.334

- Null hypothesis: There is no significant difference between the categories of the hospitals in GDoH regarding compliance with demand management practices with SCM policies.
- Alternative hypothesis: There is a significant difference between the categories of the hospitals in GDoH regarding compliance with demand management practices with SCM policies.

4 FINDINGS

Inferential Statistics – ANOVA (Kruskal-Wallis, TEST)

Differences in compliance of demand management practices with the PFMA and PPPFA between the categories of the hospital

Hospital	Category	N	Mean Rank	Kruskal-Wallis H	df	Asymp. Sig.
Our procurement is conducted in a fair manner	Central/ District/ Regional/Specialised/ Tertiary	207	99.48	3.212	4	0.523
We provide procurement opportunities to previously disadvantaged individuals	Central/ District/ Regional/Specialised/ Tertiary	207	80.90	6.582	4	0.160
We advertise tenders on the National Treasury eTender portal	Central/ District/ Regional/Specialised/ Tertiary	207	94.80	3.291	4	0.510
We request bids from suitably qualified suppliers	Central/ District/ Regional/Specialised/ Tertiary	207	87.23	7.776	4	0.100
We conduct price negotiations with prospective suppliers	Central/ District/ Regional/Specialised/ Tertiary	207	88.63	2.716	4	0.606
The SCM unit reports to the CFO	Central/ District/ Regional/Specialised/ Tertiary	207	97.40	2.046	4	0.727
We ensure SBD forms are completed by prospective bidders	Central/ District/ Regional/Specialised/ Tertiary	207	93.75	4.323	4	0.364
BSC ensure the bid evaluation criteria is clearly stipulated in bid documents	Central/ District/ Regional/Specialised/ Tertiary	207	92.00	2.289	4	0.683
80/20 point system is used for transactions between R30 000 – R50 million	Central/ District/ Regional/Specialised/ Tertiary	207	85.43	5.419	4	0.247
90/10 point system is used for transactions above R50 million	Central/ District/ Regional/Specialised/ Tertiary	207	88.85	2.111	4	0.715
Sub-contracting is considered a pre-requisite for transactions above R30 million	Central/ District/ Regional/Specialised/ Tertiary	207	98.13	4.592	4	0.332

- Null hypothesis: There is no significant difference between the categories of the hospitals in GDoH regarding compliance of demand management practices with SCM policies.
- Alternative hypothesis: There is a significant difference between the categories of the hospitals in GDoH regarding compliance of demand management practices with SCM policies.

5 CONCLUSIONS AND RECOMMENDATIONS

- The study analyzed the compliance of demand management practices to three pieces of legislation, namely, the Constitution of the Republic of South Africa, 1996 (Act 108 of 1996), the Public Finance Management Act, 1999 (Act 29 of 1999), and the Preferential Procurement Policy Framework Act, 2000 (Act 5 of 2000).
- The results reveal that majority of respondents indicated that their demand management practices comply with supply chain policies and regulations.
- However, there are challenges with the implementation, **aligning demand plans to strategic objectives as well as compiling specifications according to the SMART principles.** While the respondents indicated that they comply with supply chain policies and regulations, they also indicated that they experience challenges of compliance in terms of implementation of the policy. This is especially true, about the Auditor General's Report
- About the differences in the application of demand management, there were no major differences between hospitals in GDoH regarding demand management practices. **Therefore, the various hospitals have similar demand management challenges.**
- We recommend that as follows:
 - Professionalization of supply chain management: standards, ethics, license to practice.
 - Demand management and SCM capacity building and development.
 - Increase spending on supply chain research and development.
 - Implement e-procurement systems and use of open data is essential.
 - Open contracting principles: disclosure, transparency and open data.
- Limitations exist in policy and guideline-based research, and researchers must acknowledge and include these limitations to provide actionable insights into public health system administration.
- There is need for improvement in how **rules and standards are enforced and monitored.** The influence of **political and economic factors** may also diminish the effectiveness and applicability of policies and recommendations.

5 CONCLUSIONS AND RECOMMENDATIONS

Gauteng Department of Health

“The department procured a system to expand the radiology solution and address network connectivity issues at health facilities in the province. Full implementation was planned for April 2023. However, implementation had not yet started by March 2023 although the department had already spent R26,29 million. The department had to rely on an information technology service provider to define and implement project management processes. We identified various project governance weaknesses, mainly due to a lack of human resources and poor project management” (Auditor General, 2022-2023)



THANK YOU

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