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## AN EVALUATION OF SELECTED SUPPLY CHAIN MANAGEMENT ELEMENTS IN DEPARTMENT OF COMMUNITY SAFETY AND TRANSPORT MANAGEMENT IN MAHIKENG

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### Abstract

*The study aimed to determine the shortcomings and identify factors that can improve the effective implementation of demand management and supply chain performance management in the department of community safety and transport management. The study, followed positivism paradigm in which quantitative research method was used to collect and analyse data. A survey questionnaire was used to collect data from the participants. This questionnaire was paper based and online (Google Forms). The sample was composed of the managers drawn from the department of community safety and transport management. The findings of the study revealed that when implemented effectively, demand management and SCPM will improve the entire SCM system. Also, the study revealed that there are drawbacks to these two. These relates to non-collaborative planning, non-adherence to legislations, misunderstanding of these concepts. The study finally revealed that there are factors that can improve the implementation of demand management and SCPM, which include: the monitoring of suppliers through contract management activities and others.*

*Keywords: demand management, procurement, supply chain management, supply chain, performance management.*

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### 1. Introduction and Background

According to section 217 of the Constitution of South Africa, government institutions should have a structure of procurement that is fair, equitable,

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transparent, competitive, and cost-effective (*Constitution of the Republic of South Africa* 1996). Equally, the Public Finance Management Act (PFMA) stipulates that government institutions' accounting officers are to develop a procurement system that is fair, equitable, transparent, competitive, and cost-effective (*Public Finance Management Act* 1 of 1999). To give effect to the provisions of the constitution and PFMA, the government introduced procurement reforms. The concept of Supply Chain Management (SCM) was adopted in the public sector (Mantzaris, 2017). As a result, SCM in the public sector developed as one of the most interesting issues among South African citizens (Mhelembe & Mafini 2019).

It is crucial, then, for public sector institutions in South Africa to continually search for techniques for improving their relevant supply chains' performance to guarantee that their contributions to the countrywide economy are sustained. Besides, SCM in the government spheres in South Africa is regarded as a critical indicator of audit outcomes (National Treasury, 2015). Hamid and Ibrahim (2015) allude that Supply Chain integration in the public sector is essential for the sustainability of service delivery to the communities in any government institution. There are five critical components of SCM, which are demand, acquisition, asset and disposal, logistics, and supply chain performance (National Treasury, 2015). Demand management and supply chain performance form part of key supply chain management elements in the public administration (Bizana, Naude, & Ambe, 2015). Public administration SCM is a crucial tool in financial resources to public entities (Hamid & Ibrahim, 2015).

Demand management within SCM in public administration is an essential part of the progression of cross-functional activities that add to accomplishing strategic and operational obligations (National Treasury, 2017). It is used in government institutions to efficiently and effectively arrange for delivering goods or services (Deasy et al., 2014). It is considered the first step towards fulfilling the strategic planning process (Masete & Mafini, 2018). Bizana et al. (2015) argue that as a core activity of supply chain management, if demand management is not carried out accurately at an early phase, it will have undesirable ripple consequences that will ruin the results. It performs a strategic role in the government's capacity to deliver on its service provision commitments (Mantzaris, 2017).

Supply Chain Performance, on the other hand, monitors the progress undertaken in a reviewing analysis to establish whether the procedures have been followed and if the anticipated goals were accomplished (Ambe & Maleka, 2016). Performance needs to be monitored as it impacts on the "relationship management frameworks, future budgets, and the risk management plan"

(Bizana et al., 2015: 673). Once the contractor has completed the project, rendered a service or delivered a product, there has to be an evaluation, and all unresolved matters should be settled (Aimable et al., 2019). Supply Chain performance effectiveness helps provide various direct and indirect benefits to organizations (National Treasury, 2017). For this purpose, supply chain performance management is crucial to guarantee ongoing enhancement in supply chain management (Bizana et al., 2015).

The public sector habitually undervalues the importance of supplier performance management, and there is a narrow understanding of how public sector resolutions and arrangements affect the general corporate environment (National Treasury, 2015). Public entities have an obligation to choose the most suitable SCM framework to ensure compliance with Supply Chain policies and procedures (Masete & Mafini, 2018). Equally, public entities must choose a framework that can efficiently utilize limited organizational resources for enhanced service delivery (Aimable et al., 2019). On the other hand, suppliers frequently exploit the existing weak public sector Supply Chain Management setup (National Treasury, 2017). Public Sector SCM tends to function at low levels of efficiency and capability. With assigned little organizational status, it is habitually not perceived as a value driver (National Treasury, 2015).

Government institutions are frequently not gathering adequate information about the products or services to be procured in order to analyze the market and past procurement trends of a particular institution (National Treasury, 2015). In assent, Dzuke and Naude (2015) highlight that this makes service delivery suffer because institutions treat procurement as incidental. This ultimately makes service delivery suffer as it results in the provision of goods and services of inferior quality on government projects (Bizana et al., 2015). Demand planning, procurement planning, items and specification management, and supplier management are critical phases in the tendering stage (National Treasury, 2017). As alluded by Dzuke and Naude (2015), South African public sector stakeholders, therefore, face the challenge of developing and applying solutions that will challenge the status quo and ensure that SCM contributes productively to the realization of the government's socio-economic development requirements (Masete & Mafini, 2018). Procurement decisions are not made correctly in public procurement. This results in mediocrity and late service delivery to the public (Ambe & Maleka, 2016). The alignment between demand management, procurement planning, and supply chains' performance is critical because it ensures that goods and services are delivered efficiently (Aimable et al., 2019).

## **2. Literature review**

SCM in the public sector plays a crucial role in terms of the whole organisation's performance. As indicated above SCM in public administration incorporates five essential elements (National Treasury, 2015). Concerning the DCSTM, SCM is structured according to the treasury guide. However, there seem to be deficiencies in the implementing demand management and SCPM. According to the North West Provincial Treasury blueprint (2019), demand management should encompass planning and linkages, strategic planning, operational planning, and needs analysis. Furthermore, the blueprint guides the department to establish SCM performance management, which entails risk management and internal control.

According to the AGSA, the department is lacking when it comes to the implementation of these two elements (AGSA, 2015; AGSA, 2017). The DCSTM has repeatedly contravened legislation governing SCM in the public sector (AGSA, 2015; AGSA 2016; AGSA, 2017). According to the National Treasury (2015), supply chains need to be appropriately managed through the correct model and activities that will guarantee higher supply chain performance to accomplish a competitive edge.

### **2.2. The Impact of Demand Management and SCPM on SCM System**

According to Bolton (2016), the main reason for indecisiveness on the part of supply chains that have been found with unnecessary levels of inventory is the deficiency of demand management. Demand management necessitates the integration and communication between the concerned parties (Bondarev, 2012). The demand manager must develop contingency plans to deal with supply chain interruptions that may arise (Bizana et al., 2015). Demand management is a collaborative process that determines how much needs to be procured (the demand) at each phase of the supply chain (National Treasury, 2015). It is used to stimulate the supply of the organisations' goods and services to lessen the total cost for an institution and its supply chains. According to the annual report for the financial year 2017/18 of the department, there are still discrepancies in the implementation of demand management. This is impacting negatively on the entire value chain of the department.

The public financial management act (PFMA) emphasizes the need to ensure that performance measures and key performance indicators are developed as integral parts of the planning process and that these systems and methods can provide relevant information that will enable institutions to determine if they are achieving objectives identified in their strategic plans (National Treasury, 2015).

Performance management stimulates the dialogue between the teams by rationalizing instead of emotionalizing strategic choices backing the acceptance of the set objectives, the predisposition of leaders to coordinate the teams in the quest of goals attainment, and the teams for their execution (Ossovski, 2016). Therefore, performance measurement is crucial for a bench-marking supply chain with market standards.

### **2.3. Limitations to effective demand management implementation**

The limitations include the total cost of ownership (TCO) which denotes a technique and attitude that looks beyond the procurement price but also purchase-related costs (Deloitte, 2017). Although the price is and will always be a significant factor in the supplier decision process, it does not evaluate the hidden costs associated with it. The major unknown cost elements related to essential purchases can be identified by TCO (Rantanen, 2019). Further, proper market research will be help to implement demand management more effectively (National Treasury, 2017). The objective of conducting market analysis is to develop sound procurement strategies for necessary procurements (Ambe & Maleka, 2016).

To a large degree, the realization of the procurement processes is dependent on the quality of detailed knowledge of the supply markets' features and a companies' position within them (Lobermeyer & Kotzab, 2010). Therefore, if the market is not adequately researched, the demand management process becomes ineffective. Further, the AGSA (2019) claims that effective and appropriate steps are not taken to prevent irregular expenditure in the department. It is required by section 38(1) (c) (ii) of the PFMA and Treasury regulation 9.1.1 to prevent irregular expenditure. The majority of irregular expenditures in the department are caused by non-compliance with treasury regulations.

### **2.4. Impediments to effective demand management and SCPM**

The concepts of demand management and SCPM originate from the value chain, and it suggests a different standpoint to look at the chains (Deshmukh & Mohan, 2016). They constitute and complete a value chain along with SCM (Mantzaris, 2017). Demand management and SCPM are significant in finding ways to reduce demand variability, improve performance and operational flexibility (Sehgal, 2017). According to Munzhedzi (2016), the commendable strategy framework introduced is habitually completely weakened by occurrences of Lack of accountability, Political intrusion, Selection of inexperienced and unqualified staff and suppliers, Lack of technical expertise in respective bid committees, Lack

of understanding of the appropriate regulatory framework, and Non-compliance with the policy framework.

### **2.5. Factors that improve the implementation of demand management**

Procurement in the government sphere functions in an atmosphere of progressively intense scrutiny driven by technology, reviews in programmes, and public and political anticipations for service delivery (Mantzaris, 2017). It is thus critical at this phase to understand the procurement needs for a particular organisation. Thus, demand management can be improved by Supplier management (Deasy et al., 2014), procurement planning (National Treasury, 2015). According to Gordan (2016), procurement planning's fundamental importance is that it would allow departments to leverage on their procurement spending by attracting substantiate discounts.

### **2.6. Factors that improve the implementation of SCPM**

Alignment between performance and importance of procurement function in an organ of state is defined as the degree of leveling between the seven trusts dimensions as determined buyers and suppliers (Manyathi, 2014). Performance management effectively links supply chain partners to achieve breakthrough performance in satisfying end-customer needs and provide feedback regarding customer's needs and supply chain capabilities (Ambe 2014). In crafting a performance measurement system based on the process, the crucial step that must be done is to define the central procedures in the supply chain, describe the core procedures into smaller portions, and calculate the resources involved in each of these procedure elements (Putri, Huda & Sinulingga 2019). According to Ossovski (2016), the effects of strategic analysis aligned to the performance measurement system guide managers to focus on the future, encourage a more accurate communication flow, and optimize the coordination process as a whole. Furthermore, Ambe (2014) argues that supply chain performance measurement has an essential role in setting objectives, evaluating performance, and determining future action courses. Any evaluation of the degree of success achieved in providing social and economic deliverables is dependent on effective monitoring (National School of Government, 2017).

### **2.7. Challenges to the implementation of demand management**

A study conducted by Motuba highlights that many government organisations are still faced with the problem of appropriate preparation and linking demand to budget (Motuba, 2017). Furthermore, from the related monetary point of view, resource planning and forecasting are vital and valuable business devices (Bizana et al., 2015). Budget linking has been a problem in the department for

some years. National Treasury (2015) highlights that item and specification management is crucial to the process of procurement as it provides the specifics of the goods, services, or construction works to be procured. Ngoben (2016) argues that inadequate demand and procurement planning will result in meagre development of specifications, a wrong decision regarding the items to be purchased, and ultimately impractical estimations concerning costs. Increasing demand management and procurement planning errors prompt decreasing information quality and cause inconsistencies between institutions' demand forecast and real demand at each phase of SCM processes (Hamid & Ibrahim, 2015).

Strategic sourcing is also crucial for companies to remain competitive and manage their supplier base by identifying and selecting suppliers for long-term partnerships and developing effectively the already established buyer-supplier relationships (Rantanen, 2019). Strategic sourcing plays a significant role in service delivery in public service as it contributes value to the planning of procurement of goods and services. By adopting a strategic sourcing model, strategic categories of commodities can be well managed by a specialized SCM team that would strive to establish key collaborative and strategic relationships with suppliers (Ibrahim and Hamid, 2015).

## **2.8. Challenges to the implementation of performance management**

### **2.8.1. Internal Control deficiencies**

Internal control refers to the utilization of policies, procedures, practices, and organisational structures implemented to provide reasonable assurance that an organisation's objectives will be achieved and undesired risk events will be prevented or detected and corrected, based on either compliance or management initiated concerns (Boakye, 2016). According to Babalola (2020), internal control is a process for assuring that objectives are effectively and efficiently achieved, financial reporting is reliable, and there is compliance with the law, regulations, and policies. In concurrence, Safina and Harisova (2018) state that the implementation of internal control and audit in organisations of the public sector is intended to increase modern public administration efficiency.

In the case of the department of CSTM, internal control is part of the broader function of managing expenditure on and payments for goods and services that are involved in delivering services to communities. According to NWP (2019) SCM, the internal control framework must provide for the entire virtuous cycle of SCM, risk identification, preventative, and corrective control activities.

### **2.8.2. Lack of contract management**

Contract management is the process that enables organisations to a contract to meet their commitments to deliver the goals required from the contract. It also encompasses working relationships between customer and provider. Throughout the contract, it includes proactive management to anticipate future needs and react to situations that may arise. Contract management aims to achieve the goods and services as decided in the contract and achieve value for money.

The management of DCSTM has already accepted the weakness identified in respect of contract management according to the audit report of Provincial Internal Audit (PIA) for 2019/20. The department has no contract management in place. The intervention strategy to source officials from various units to perform contract management functions does not suffice due to the shortfall of staff.

### **2.8.3. Non-Compliance with legislation**

Various legislative frameworks govern supply chain management in the public sector and demand management and supply chain performance management. In the case of DCSTM relating to the above legislation, there is a continuous non-compliance, according to AGSA's reports. According to the 2015/16 annual report, there was no evidence that all the awarded contracts were in accordance with legislative requirements.

## **3. Problem statement and research motivation**

The research problem of this study emanates from the findings by previous researchers (Abd Razak et al., 2016; Ambe & Badenhorst-Weiss, 2012; Ambe & Maleka, 2016; Badenhorst-Weiss et al., 2013; Bizana et al., 2015; Masete & Mafini 2018; Mantzaris, 2017; Naidoo, 2015; Ngobeni, 2016) about the discrepancies in supply chain practices and the abuse thereof. Demand management in the public sector involves procurement planning, budget linking, market/industry analysis, and strategic sourcing (National Treasury, 2015) within the supply chain performance circle. Supply chain performance entails monitoring processes and performing a retroactive analysis to establish whether the intended results were achieved (Ambe & Maleka, 2016).

This study focuses on these two elements of the public sector SCM system (demand and supply chain performance management). A rationale behind selecting these elements was motivated by the discrepancies identified by previous researches as highlighted above. Bizana et al. (2015) accentuate that institutions are obliged to plan appropriately and budget for their needs and market and commodity evaluation. Dlamini and Ambe (2013) argue that there is

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an inefficiency to this effect, which leads to the misuse of funds in the public sector institutions. In agreement, Ambe and Badenhorst-Weiss (2012) affirm that SCM's main challenges come from insufficient planning and linking demand to the budget.

Despite the endeavors to empower practitioners with relevant skills and understanding (Bolton, 2016), the Public Service Commission (cited by Ambe & Badenhorst-Weiss 2012) reveals that SCM's execution and control remain a significant limitation. Mantzaris (2017) argues that challenges in the public sector SCM are aggravated by, among other things, demand management (planning, proper cost estimation, and budgeting balancing) and performance management (contract management, monitoring, and evaluation of performance). Masete and Mafini (2018) highlight that lack of performance management is a weak link in the SCM system and not only strengthens lack of control but also simplifies non-compliance and deviations from rules and regulations. The public sector SCM is under immense pressure from internal and external sources to exhibit performance improvements (Mwilu, 2013). Mantzaris (2017) highlights that lack of planning, estimation of cost, budget balancing, control of bids, and monitoring has contributed to poor performance within the supply chain management. While supply chain performance effectiveness helps provide benefits for suppliers and companies (Hamid & Ibrahim, 2014), it is a great concern that the public sector's performances inadequate (Ambe & Maleka, 2016). SCM's demand management element is very critical because it involves controlling, coordinating, and balancing the supply and demand of an institution to decrease total cost for a firm and its supply chains (Bizana et al., 2015). Performance management includes contract management, which is a key component that impacts service delivery (Bizana et al., 2015).

According to Ambe and Badenhorst-Weiss (2012), numerous things stand in the way of an efficient and economical public sector SCM system. Munenzhi (2015) highlights that fraud and corruption occur mostly throughout poor procurement management and control within the supply chain. The literature highlights the importance of demand management and performance management in executing SCM in public and private. Still, there is limited or no known empirical research on the impact on the North West Department of Community Safety and Transport Management SCM process. During the regular audit of the North West Department of Community Safety and Transport Management (DCSTM) by Auditor-General South Africa (AGSA), it was found that there is a repetitive contravention of the Acts, Treasury Regulations, and Supply Chain Management Practice Notes (AGSA, 2019).

The instances of non-compliance and deviations necessitated the investigation of the effectiveness and impact of demand management and supply chain performance management. Therefore, this study seeks to evaluate the impact of demand management and Supply Chain Performance Management in the Department of Community Safety and Transport Management in Mahikeng. As alluded to by Masete and Mafini (2018), different hindrances impair the effective implementation of SCM practices in public institutions. Some of these barriers include poor demand management and underestimating how important supplier management (National Treasury, 2015).

The National Treasury (2015) posits that inadequate performance management results in suppliers charging high prices for inferior quality goods and services, which ultimately gives way for corruption and waste (National Treasury 2017). This study mainly focuses on demand management and supply chain performance management in the DCSTM in Mahikeng. Despite the importance of demand management and supply chain performance management in the public sector SCM, there have been inadequate studies that focus on the demand and supply chain performance management as public sector SCM elements (Bolton, 2016; Hamid & Ibrahim, 2016). This study seeks to fill that gap and contribute to society and research scientific community knowledge. The study seek to achieve this by exploring and interrogating the key concepts of the topics under study. This study may help the government departments in South Africa (SA) to improve their demand management and supply chain performance management, subsequently, the effective SCM, which will enhance service delivery. The recommendations of the study seek to address the shortcomings identified by the study

#### **4. Research objectives and questions**

Research objectives are usually brief statements that define what the study will achieve (Gaus, 2017). In general, research objectives pronounce what we assume to accomplish by a project. Research objectives are typically articulated in lay terms and are directed as much to a reader as to the investigator (Antwi & Hamza, 2015).

The objectives of this study are:

- To determine the impact of demand and performance management on the SCM system in the North West Department of Community Safety and Transport Management

- To determine the limitations affecting the effective implementation of demand and performance management on the SCM system in the North West Department of Community Safety and Transport Management
- To understand the impediments to effective demand and supply chain performance management in the North West Department of Community Safety and Transport Management
- To determine factors that can improve the implementation of demand and performance management on SCM in the North West Department of Community Safety and Transport Management
- To determine the challenges in the implementation of demand and supply chain performance management in the North West Department of Community Safety and Transport Management

The following are the research questions of the study:

- What is the impact of demand and supply chain performance management on the SCM system in the North West Department of Community Safety and Transport Management?
- What are the limitations affecting the effective implementation of demand and supply chain performance management in the North West Department of Community Safety and Transport Management?
- What are the impediments to effective demand and supply chain performance management on the SCM system in the public sector in the North West Department of Community Safety and Transport Management?
- What factors improve the implementation of demand and supply chain performance management in the North West Department of Community Safety and Transport Management?
- What are the challenges to implementing demand and supply chain performance management in the North West Department of Community Safety and Transport Management?

## **5. Research methodology**

The investigation submitted to the positivist paradigm since it was envisioned to test several *a priori* hypotheses to determine connections between the variables (Taylor & Milton, 2013). This study followed a deductive orientation as it was testing a hypothesis in a specific context (Zefeiti & Mohamad, 2015). A deductive approach was chosen for the reason that a researcher was, in the end, be able to derive finding from the collected data to reject or confirm the hypothesis (Antwi & Hamza, 2015). The sample was composed of the managers drawn from the

department of community safety and transport management. The management was deemed appropriate because they are in a position to be knowledgeable about the processes of SCM, subsequently demand management and SCPM.

Quantitative research needs vigilant experimental design and the capability for anybody to replicate both the test and the results (Antwi & Hamza, 2015). For this study, it made data gathering more reliable and less open to argument. The population of the study is the Department of Community Safety and Transport Management. The population for this study is defined as all senior and middle management staff of the department. To select the sampling elements from the target population, this study used the non-probability sampling approach using the convenience sampling technique. As a result, interpretation of data and presentation of the findings is straightforward and less exposed to error and subjectivity (Igwenagu, 2016). A cross-sectional study with a self-administered questionnaire was conducted to answer the research questions and test the hypotheses. A Likert scale was used since it reaches the higher edge of the scale reliability (Allen & Seaman, 2007). Given the current situation caused by COVID-19, and restrictions on physical contact, the questionnaire was developed into an online survey questionnaire (Google Forms) and distributed to the participants. The paper-based questionnaire was dropped off at the respective offices of the respondents and collected at a later stage, whereas the link for Google Forms was sent through emails obtain from the GroupWise database. An online survey followed the same characteristics as the paper version of the survey. This study considered the target respondents having managerial skills and presumably knowledge of the concepts under study.

Collected data was computed on Statistical Package for Social Sciences (SPSS). The number of rows was matched to the number of respondents surveyed to ensure data completeness. For example, this survey involved 140 participants, the first step was to ensure that the number of rows in the data set equals 140. This is a good first check. However, it did not discount instances of simultaneous exclusion and duplication of a certain number of participants. Thus, data duplicates were taken out through Microsoft excel using the remove duplicates function on excel.

## **6. Data analysis and discussion of the findings**

### **6.1. Data reliability test**

The Cronbach's Alpha test results in table 1 show that for all the constructs, any alpha at 0.6 or more indicates that the items in each of the constructs are reliable (Taherdoost, 2016). A test is seen as being reliable when it can be used

by a number of different researchers under stable conditions, with consistent results and the results not varying (Bryman, 2012). Reliability reflects consistency and replicability over time. Furthermore, reliability is seen as the degree to which a test is free from measurement errors since the more measurement errors occur the less reliable the test.

Table 1: Reliability test

	Reliability Statistics	
	Cronbach's Alpha	N of Items
A1.1	.754	6
A1.2	.845	6
B2.1	.768	5
B2.2	.862	3
C3.1	.633	9
C3.2	.600	7
D4.1	.761	5
D4.2	.635	2
E5.1	.611	4
E5.2	.601	8

Source: Authors' results, 2021.

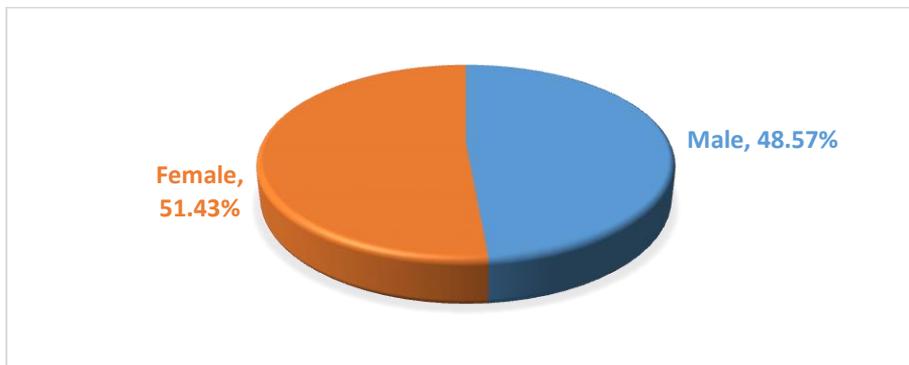
Some items needed to be removed to improve the reliability of E5.1 where "Benchmarking best practices lead to improved implementation of demand management" was excluded, D4.2 where "Non-adherence to legislative framework is a challenge to the implementation of supply chain performance management" and "Lack of feedback from end-users on goods and service provided results in poor execution of supply chain performance management" were excluded, E5.2 where "Recommendation of improvements needed to enhance efficiency across supply chains" was excluded. These items were excluded because they had negative item-total correlations which imply that they were not consistent with the other items in the construct.

## 6.2. Demographic statistics

This question aimed to determine the age categories of the respondents. The age demographics show that there 2(1.4%) respondents of each age group who are 29, 40, 47, 48, 49, 53, and 58 years old, there is 1 (0.7%) who are 30, 31, 32, and 56 respectively, there are 6 (4.3%) who are 33, 39, and 52 years of age, there are 7 (5%) who are 34, 43, 45 years, there are 3 (2.1%) who are 35, 44, 54 and 55, there are 8 (5.7%) who are 36, and 46 respectively, there are 18 (12.9%) who are 37 years old, there are 11 (7.9%) who are 38 years old, there are 13 (9.3%) who are 41 years old, there are 5 (3.6%) who are 42 years and finally there are 4 (2.9%) who are 51 and 57 years respectively. The findings indicate that most of the respondents are 37 years old (18 – 12.9%) followed by those who are 41 at (13 – 9.3%). The least respondents per age are 30, 31, 32, and 56 with only 1 of these age categories responding.

### Gender

Figure 1: Gender



Source: Authors' results representation, 2021.

Figure 1 above aimed to understand the gender of the respondents. The gender demographics indicate that there are 72 (51.43%) and 68 (48.57%) of the respondent. The female respondents are more represented in this study than males.

The years of service of the respondents was asked. The finding shows that 8 (5.7%) of the respondents have 6 years of service at the department of community safety and transport management, 2 (1.4%) have 7 years, 12 (8.6%) have 8 years, 6 (4.3%) have 9 years, 26 (18.6%) have 11 years, 15 (10.7%) have 12 years, 7 (5%) have 13 years, 26 (18.6%) have 14 years. 6 (4.3%) have 15 years, 10 (7.1%) have 16 years, 1 (0.7%) has 17 years, 1 (0.7%) has 18 years, 7 (5%) have 20 years, 1 (0.7%) has 21 years, 6 (4.3%) has 23 years, 1 (0.7%) has 25 years, 1

(0.7%) has 25 years, and 4 (2.9%) has 31 years. The findings indicate that there are more respondents who have 11 (18.6%) and 14 (18.6%) years of experience.

Table 2: Unit of employment

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid CFO	2	1.4	1.4	1.4
Civilian Secretariat for Police	3	2.1	2.1	3.6
Communication	4	2.9	2.9	6.4
Corporate Services	4	2.9	2.9	9.3
Crime Prevention	10	7.1	7.1	16.4
Finance	10	7.1	7.1	23.6
HOD Support	4	2.9	2.9	26.4
HRM	18	12.9	12.9	39.3
Legal Service	5	3.6	3.6	42.9
MEC Support	4	2.9	2.9	45.7
Monitoring and Oversight	8	5.7	5.7	51.4
Operator Licenses and Permits	1	.7	.7	52.1
Policy and Research	2	1.4	1.4	53.6
Public Transport Services	6	4.3	4.3	57.9
Risk Management	3	2.1	2.1	60.0
Road Safety	3	2.1	2.1	62.1
Road Traffic	3	2.1	2.1	64.3
SCM	16	11.4	11.4	75.7
Security Services	3	2.1	2.1	77.9
Strategic Planning	6	4.3	4.3	82.1

Strategic Support Services	5	3.6	3.6	85.7
Transport Admin and Licensing	5	3.6	3.6	89.3
Transport Operations	4	2.9	2.9	92.1
Transport Planning	2	1.4	1.4	93.6
Transport Terminals	9	6.4	6.4	100.0
Total	140	100.0	100.0	

Source: Authors’ results representation, 2021.

Table 2 above presented the unit of employment of the respondents. The findings indicates that there are 2 (14%) respondents from office of Chief Financial Officer (CFO), 3 (3%) from civilian secretariat for police (CSP), 4 (2.9%) from communication, 4 (2.9%) from Corporate Services, 10 (7.1%) from Crime Prevention, 10 (7.1%) from Finance, 4 (2.9%) from HOD support, 18 (12.9%) from Human resource Management (HRM), 5 (3.6%) from Legal Services, 4 (2.9%) from MEC support, 8 (5.7%) from monitoring and oversight, 1 (0.7%) from Operator Licenses and Permits (OLP), 2 (1.4%) from Policy and Research (PR), 6 (4.3%) from Public Transport Services (PTS), 3 (2.1%) from Risk Management and Internal Control, 3 (2.1%) from Road Safety Management (RSM), 3 (2.1%) from Road Traffic Management (RTM), 16 (11.4%) from Supply Chain Management (SCM), 3 (2.1%) from Security Services, 6 (4.3) from Strategic Planning, 5 (3.6%) from Strategic Support Service (SSS), 5 (3.6%) from Transport Admin and Licensing, 4 (2.9%) from Transport Operations, 2 (1.4%) from Transport Planning and Policy Development (TPPD), 9 (6.4%) from Transport Terminals. The findings indicate that there are more respondents from HRM with 18 followed by 16 from SCM, the least was from OLP with only 1 respondent.

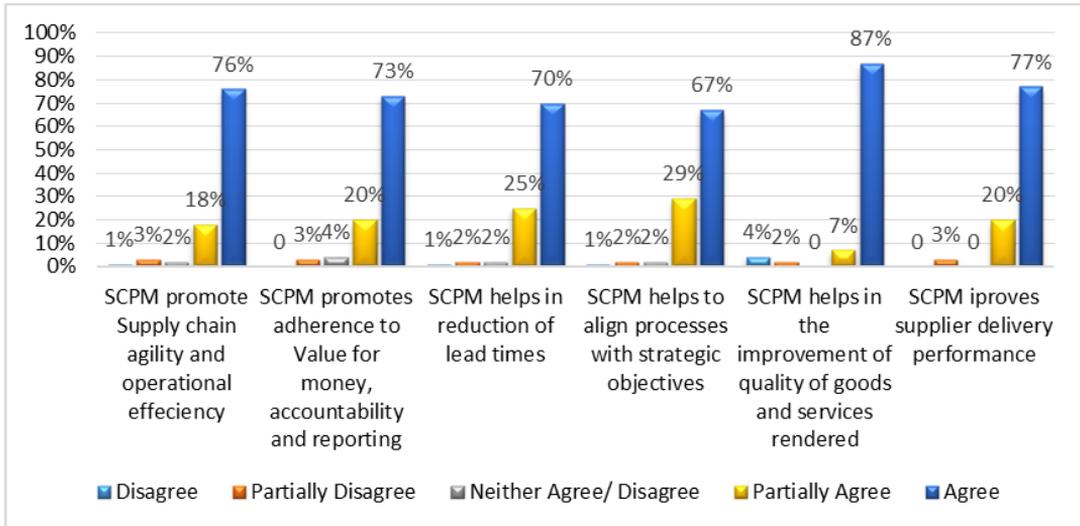
The general aim of this study was to evaluate demand management and SCPM in he department of community safety and transport management.

### 6.3. The impact of demand management and SCPM on SCM system

The results presented in Figure 2 above shows that demand management and SCPM has a significant impact on SCM. The study revealed that when implemented effectively demand management will improve procurement planning and provide clarity on bid specifications and Terms of Reference (TOR) as the majority of the respondents in the population of the study agree. This is in consistence with the notion raised by Bolton (2016), that proper demand management will eliminate indecisiveness and unnecessary inventory levels. Further, NWP (2019) supports this by highlighting that clear specification and TOR helps organisation to choose optimum method of procurement to

satisfy the need. The majority of the population concur that demand management aligns with strategic planning of the department with greater percentage in agreement.

Figure 2: The impact of demand management and SCPM on SCM System.



Source: Authors' representation, 2021.

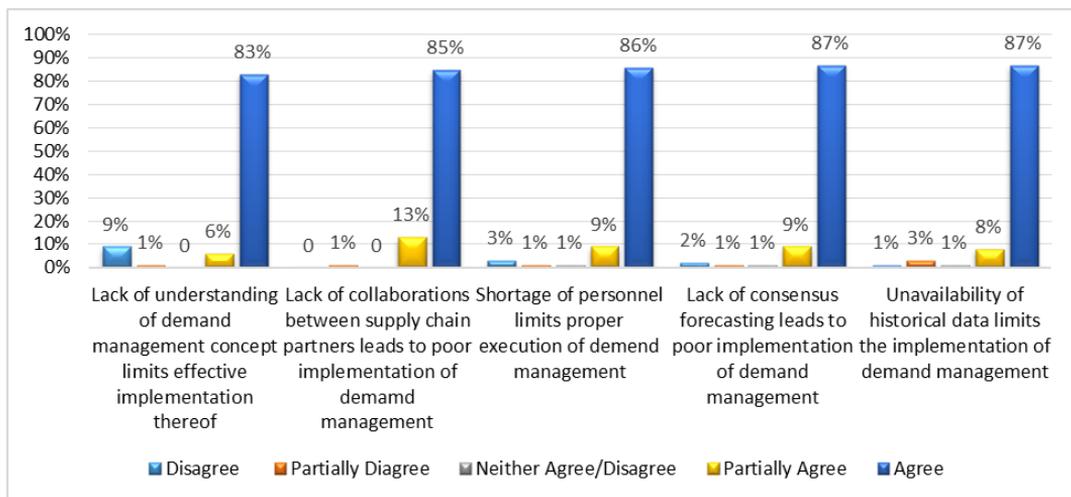
The study revealed that demand management provides a clear understanding of the future needs of the department, what commodities should be purchase, from which setup of the market and what are the trends in the industry. Lastly, regarding demand management it was revealed that it helps manager to identify critical delivery dates in the SCM process and links people and strategic processes to the ultimate improvement of supply chain operations. On contrary, Bizana et al. (2015) believes that it is the responsibility of the demand manager to come up with strategies that will mitigate interruptions on supply chains. In agreement NWP (2019) highlights that this can be achieved by surveying the market, and identifying effective method of procurement.

The study further revealed that SCPM promotes supply chain agility and operational efficiency, as well as adherence to the pillars of SCM. This is supported by section 216 of the constitution of South Africa, which states that National Treasury should introduce uniform standards within government to ensure best practices related to SCM. This sentiment is also shared by National Treasury (2015) with the notion that SCPM should be measure through pillars of SCM. It was also revealed that SCPM helps the department in reducing lead times while aligning the SCM processes with strategic objectives. Finally, in relation to SCPM the study revealed that it can improve quality of goods and services rendered to ultimate improvement of service delivery.

### 6.4. Limitations affecting an effective implementation of demand management and SCPM

The study revealed that there are limitation to effective demand management and SCPM. This is confirmed by the results of the study in with majority of the respondents agree that lack of collaboration between supply chain partners is a limitation in implementation of demand and SCPM. However, Ellram (n.d.) in chapter two noted that what will help institution to arrive at the best purchasing decision is the calculation of TCO. In agreement, Rantanen (2019) highlights that TCO helps in identifying unknown cost related to critical procurement.

Figure 3: Limitations affecting and effective implementation of demand management and SCPM



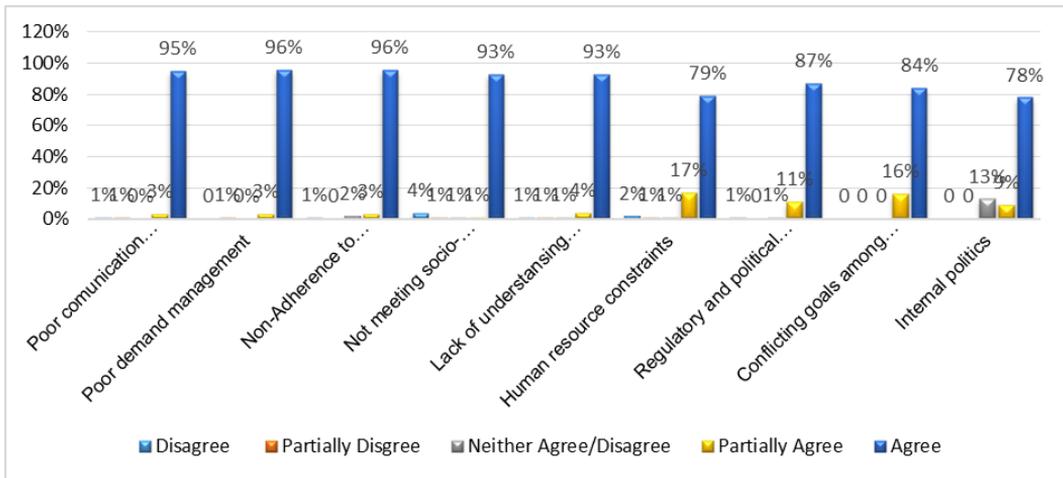
Source: Authors’ representation, 2021.

The results of the study also revealed that the limitation that affect effective implementation of demand management are lack of understanding of the concept of demand management, lack of collaboration between supply chain partners, shortage of personnel, and unavailability of historical data. On contrary, Badenhorst – Weiss et al. (2013) argues that financial figures do not provide any help because they are historic and do not have impact on the future. However, National Treasury (2017) highlights that analyzing spending patterns will help institutions to make projections and ultimately informed decision. The study also revealed limitations to effective implementation of SCPM to be lack of understanding the concept of SCPM, this is confirmed by Gargea (2012) who insinuate that the knowledge of supplier market, and technologies are critical to organisational support. Inadequate staff to execute the function and the unavailability of performance measurement tools.

**6.5. The impediments to effective demand management and SCPM**

As highlighted by Deshmukh & Mohan (2016) literature review, the concept of demand management and SCPM originated from value chain and it suggests looking at SCM from a different perspective. The results of the study according to figure 4 above revealed the impediments to effective demand management and SCPM. The study revealed the impediments related to effective demand management are mainly poor communication channels between SCM staff and end-users, Non-adherence to prescribed legislations, human resource constraints, regulatory and political considerations, conflicting goals among supply chain members, and internal politics.

Figure 4: Impediments to effective demand management



Source: Authors’ results representation, 2021.

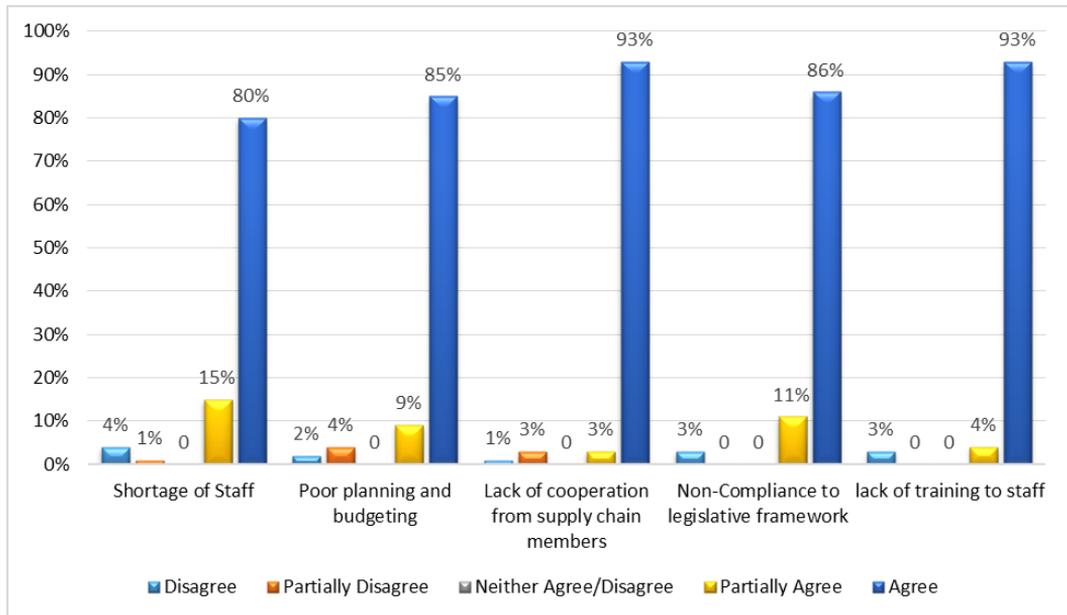
Additional to that Munzhedzi (2016), reveals that the impediments also include: lack of accountability, political intrusion, inexperienced and unqualified staff, lack of technical expertise, lack of understanding of legislative framework, and non-adherence to policy framework. The study further revealed that impediments to SCPM to be insufficient monitoring, poor contract management, poor supplier management, lack of performance measurement tools, reluctance to share or use relevant information, incompatible corporate cultures and poor working relationships. This is a direct conflict to the assertion made by National School of Government (2017) in chapter one that, SCPM should include appropriate contract management and performance measurement tools to address the shortfalls in achieving organisational objectives (Bizana et al., 2015).

**6.6. Challenges to demand management and SCPM**

The study revealed the challenges to demand management in department are shortage of staff, poor planning and budgeting, lack of cooperation from supply chain members, non-compliance to legislative framework and lack of training to

staff. The results of the study are in consistence with the notion by National Treasury (2015) which indicated that inappropriate planning and budgeting result in poor performance of SCM. This was also highlighted by Motuba (2017), who agreed that organisations are still faced with demands that are not linked to the budget.

Figure 1: Challenges to demand management



Source: Authors’ results representation, 2021.

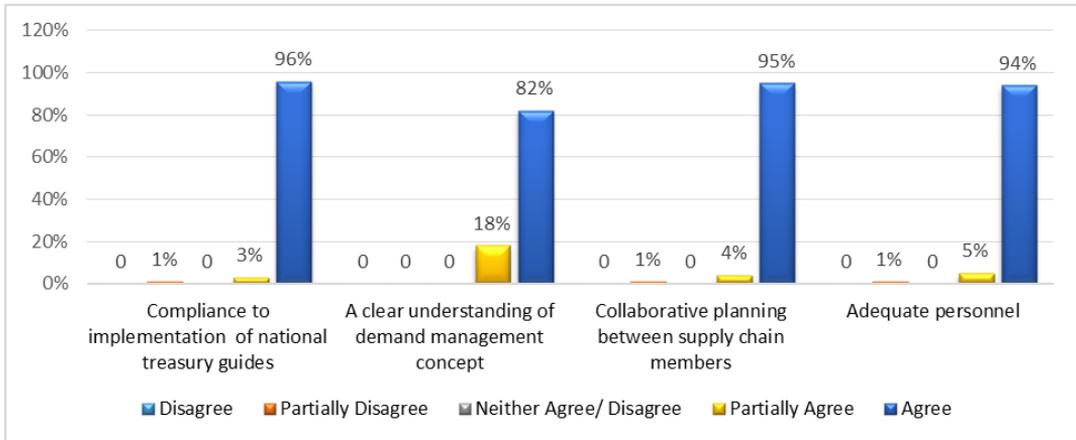
Furthermore, the challenges to SCPM were revealed to be lack of performance measurement tools and training to staff. The literature review however, notes that challenges in SCPM are internal control deficiencies, lack of contract management and contravention of legislations. As revealed in chapter two the management of the department conceded to the finding from PIA that there is no contract management in the department.

### 6.7. Factors that can improve the implementation of demand management and SCPM

Against the backdrop of limitations, impediments, and challenges to demand management and SCPM. In chapter two, literature review Mantzaris (2019) argues that procurement in government spheres function in an atmosphere of progressively intense scrutiny which is driven by technology reviews in public and political setup. The results of the study as presented in figure 4 above also revealed the factors that can improve the effective implementation of demand management and SCPM. In relation to the improvement of the implementation

of demand management, the factors are compliance to implementation of National Treasury guides, a clear understanding of demand management concept, and collaborative planning between supply chain members as well as adequate personnel.

Figure 6: Factors that can improve the implementation of demand management



Source: Authors’ results representation, 2021.

Mholi (2016) agrees that there must be a harmonious procurement planning in the organisations. This will help to achieve cost effective gains, and improve quality of goods and service offered. Regarding the improvement of SCPM, the study revealed that the monitoring of supplier should form the basis for contract management activities, these contract management activities’ reporting elements should include a database of Service Level Agreements (SLA) concluded, and the reporting elements of contract management should also include monitoring of suppliers according to stipulated SLA, documentation of any deviation or non-performance from suppliers, an assessment of supplier or service providers after completion of every projects, monitoring of SCM cycle to enhance adherence to prescribed legislation, and risk management plan.

**7. Recommendation and future study**

The study highlighted that the previous research work gave more attention to the entire SCM system in public sector. It is therefore suggested that future studies should concentrate more on individual elements of SCM, and their role towards SCM agility. Furthermore, the corporate world is transitioning towards technology based operations. The future studies should explore the SCM in industry 4.0 revolution and identify improvement opportunities for the South African public sector. The researchers recommends the following implementation strategies to address the findings of the study in relation to

demand management and SCPM at the department of community safety and transport management: There should be a demand analysis whereby a consumer-product/service segmentation is mapped, Strive for a collaborative demand planning implementation process beyond the organisation's limitations, Align supply and demand management to fit departmental supply chain puzzle together, Reduce variability and increase flexibility to help organisation to respond accordingly, Measure performance and invest in training the role players.

## **8. Implication of the study**

According to Naidoo (2015) and (Ngobeni, 2016), South Africa experiences an increase in the number of knowledgeable citizens, and consequently, the government faces demands for accountability and provision of good quality service. One of the main areas highlighted as having the potential to bring efficiencies in public administration is demand management and performance management within the public sector SCM (Masete & Mafini, 2018). Although SCM has become increasingly significant, according to Boston (2017), there appears to be inadequate research on supply chain practices. In agreement, Hamid and Ibrahim (2014) submit that studies on the link between supply chain management and supply chain practices are still lacking. Researchers (Abd Razak et al., 2016; Ambe & Badenhorst-Weiss, 2012; Ambe & Maleka, 2016; Badenhorst-Weiss et al., 2013; Bizana et al., 2015; Masete & Mafini 2018; Mantzaris, 2017; Naidoo, 2015; Ngobeni, 2016) have been concentrating instead on the entire SCM system thus not doing much justice to individual elements.

The two SCM elements were explicitly chosen to be the subject of the study because they are very much critical to the performance of the entire SCM system. Abd Razak et al. (2016) allude that there is a significant relationship between supply chains' performance and consumer satisfaction, and demand management is considered to be of great importance (Munenzhi, 2015) in SCM. However, Dzuke and Naude (2015) posit that the lack of understanding of these two elements delays delivering essential services in the public sector.

This study mainly focuses on demand management and supply chain performance management in the DCSTM in Mahikeng. Despite the importance of demand management and supply chain performance management in the public sector SCM, there have been inadequate studies that focus on the demand and supply chain performance management as public sector SCM elements (Bolton, 2016; Hamid & Ibrahim, 2016). This study seeks to fill that gap and contribute to society and research scientific community knowledge. The study seek to achieve this by exploring and interrogating the key concepts of the topics under study.

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This study may help the government departments in South Africa (SA) to improve their demand management and supply chain performance management, subsequently, the effective SCM, which will enhance service delivery. The recommendations of the study seek to address the shortcomings identified by the study.

## 9. Conclusions

This study aimed to evaluate the two elements of supply chain management in department of community safety and transport management, namely demand management and supply chain performance management. Even though supply chain management in the public sector is not limited to only two elements, the research deemed it necessary to study these two based on the critical roles they play toward the whole supply chain management.

In the public sector, SCM is a critical function promoting service delivery through the timeous acquisition of goods and services (Singh & Singh, 2019). According to the National Treasury (2015), supply chains need to be managed through the correct model and activities to guarantee higher supply chain performance to accomplish a competitive edge. SCM's primary concern in the public sector is to add value at each stage of the procurement process in the chain (Ambe & Maleka, 2016).

Ambe and Badenhorst-Weiss (2012) describe demand management as the first procedure of the SCM system that includes planning and overseeing resources, setting up objectives and targets, for example, addressing the need assessment of the end-users. While, SCPM indicates the extended supply chain's activities in meeting end-customer requirements, including product accessibility, on-time supply, and all the required inventory and capacity in the supply chain to distribute that performance responsively (Kluwer, 2014).

The study followed a quantitative research approach whereby data was collected through Google Forms and paper-based questionnaires. The study drew its sample from the senior and middle manager of the department of community safety and transport management in Mafikeng with N=140. The data collected was presented through Microsoft Excel and SPSS. The finding of the study confirmed the predetermined hypotheses presented in chapter one of the study. The findings of the study revealed that demand management and SCPM have a positive impact of the performance of the supply chain. Demand management as the first element of SCM improves planning for procurement by providing a clear understanding of what needs to be procured to fulfil organizational objectives and goals. The findings further revealed that SCPM leads to agile supply chain by

reducing turnaround times in SCM operations. While there positive impact of demand management and SCPM the findings also reveal that there are limitations to the effect of these two elements. The findings reveal that if there is no integration between the partners in the supply chain ultimately the demand management and performance of supply chain will be limited.

The findings also highlight the impediments to effective demand management and SCPM, which are generally associated with desertion of prescribed legislation. This impediment is also revealed to be a challenge by the findings of the study. The findings of the study conclude with the factors that can improve the implementation of demand management and SCPM. Generally these challenges are the counter strategies to the limitation, impediments, and challenges to demand management and SCPM. They include devotion to the legislation, working together, and cooperation between the supply chain members. Finally, the study presented recommendations to address these findings.

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