

**AN ANALYSIS OF IMPACT OF PERFORMANCE MEASUREMENT ON SUPPLY CHAIN MANAGEMENT**POOJA DIXIT<sup>1</sup>, TARUN KUMAR YADAV<sup>2</sup><sup>1,2</sup>Department of Mechanical Engineering, Babulal Tarabai Institute of Research and Technology Sagar  
dixit.pooja961@gmail.com, tarunyadav07@gmail.com**ABSTRACT**

Over the last two decades, there has been a great deal of discussion and investigation on the best ways to quantify supply chain performance. Academics, consultants, practitioners, and business managers have all recently paid a great deal of attention to Supply Chain Management (SCM) as a successful management philosophy that may aid businesses in enduring ongoing challenges and reaching the shared aim of increased customer satisfaction.

Numerous studies on SCPM have been published over the last decade as SCM has developed. When used properly, performance assessment may be an invaluable management tool and the means by which supply chain goals can be achieved.

Facilitates performance enhancement measures essential to achieving supply chain excellence. Within the scope of this thesis, a questionnaire-based survey was used to investigate the effect of performance measurement on supply chain management. It was discovered that performance indicators had a major effect on supply chain administration.

**Keywords-** Performance Measurement System, Supply Chain, Service quality, Productivity.

**I. INTRODUCTION**

Management of the supply chain is a technique used by businesses to make sure their supply chain runs smoothly and cheaply. A company's supply chain consists of all the processes involved in turning raw materials into a finished product.[1]

The goal of supply chain management is to minimise overall system costs while trying to satisfy service level requirements by integrating suppliers, manufacturers, warehouses, and retail outlets in such a way that goods are produced and

distributed in the right quantities, to the right locations, and at the right time.[4]

**II. OBJECTIVE**

Following are the objectives of the present study:

- To study performance measurement and supply chain managements
- To evaluate the impact of performance measure on efficiency of on supply chain management
- To suggest methods to improve the performance measures for supply chain management

**A. Hypothesis of the study**

- H0: There is no significant impact of performance measure on efficiency of supply chain management
- Ha: There is a significant impact of performance measure on efficiency of supply chain management

**III. METHODOLOGY**

The methods used in this investigation are laid out in full in this section. In order to achieve the goals of this study, a research plan was developed.

- A. Research design
- B. Data collection
- C. Primary source data
- D. Questionnaire design
- E. Sample designing

**IV. DATA ANALYSIS AND INTERPRETATION**

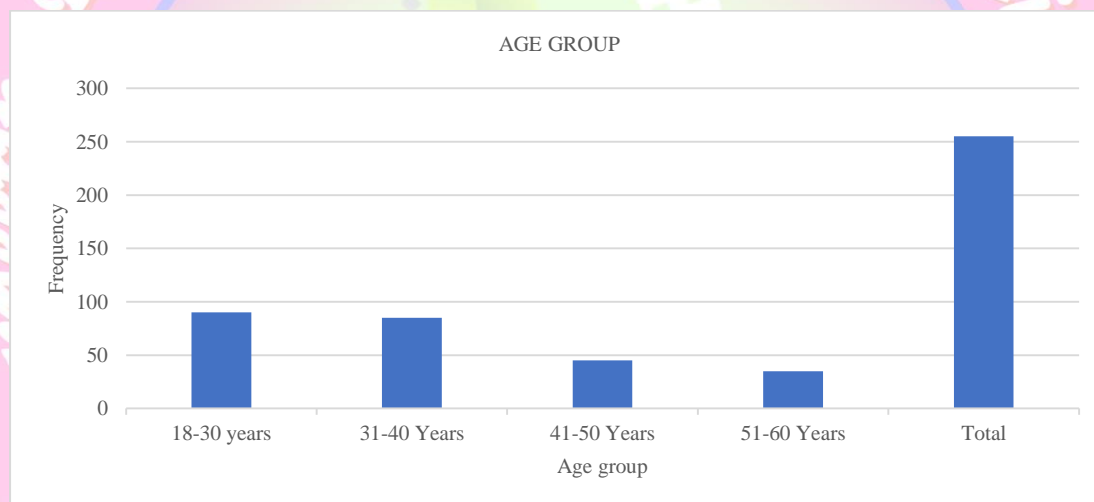
In this section, we'll examine the responses we got from the survey. Tabular and graphical representations of the responses are provided.

**A. Demographic information**

Table 1 Age Group Information

Age group		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-30 years	90	35.3	35.3	35.3
	31-40 Years	85	33.3	33.3	68.6
	41-50 Years	45	17.6	17.6	86.3
	51-60 Years	35	13.7	13.7	100.0
	Total	255	100.0	100.0	

The age group of respondents are mentioned in the above table. It can be inferred that 90 respondents are within the age group of 18-30 years, 85 respondents are within the age group of 31-40 years, 45 respondents are within the age group of 41-50 years and 35 respondents are within the age group of 51-60 years.

Figure 1 Information about age group  
Table 2 Gender Information

Gender		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	90	35.3	35.3	35.3
	Female	165	64.7	64.7	100.0
	Total	255	100	100	

It can be inferred from the table exhibited above that there are 90 male respondents in the study along with 165 female respondents.

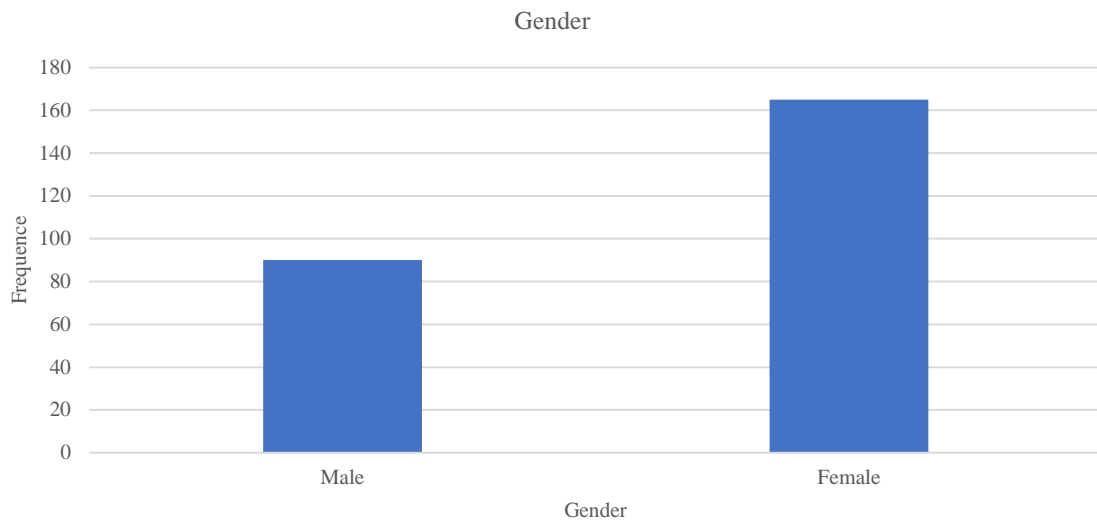


Figure 2 Information about the Gender

Table 3 Experience Information

Experience		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-3 years	60	23.5	23.5	23.5
	3-5 years	55	21.6	21.6	45.1
	5-7 years	60	23.5	23.5	68.6
	Above 7 years	80	31.4	31.4	100.0
	Total	255	100	100	

It is inferred from the above-mentioned table that 60 respondents had an experience of 1-3 years, 55 respondents had an experience of 3-5 years, 60 respondents had an experience of 5-7 years, and 80 respondents had an experience of above 7 years.

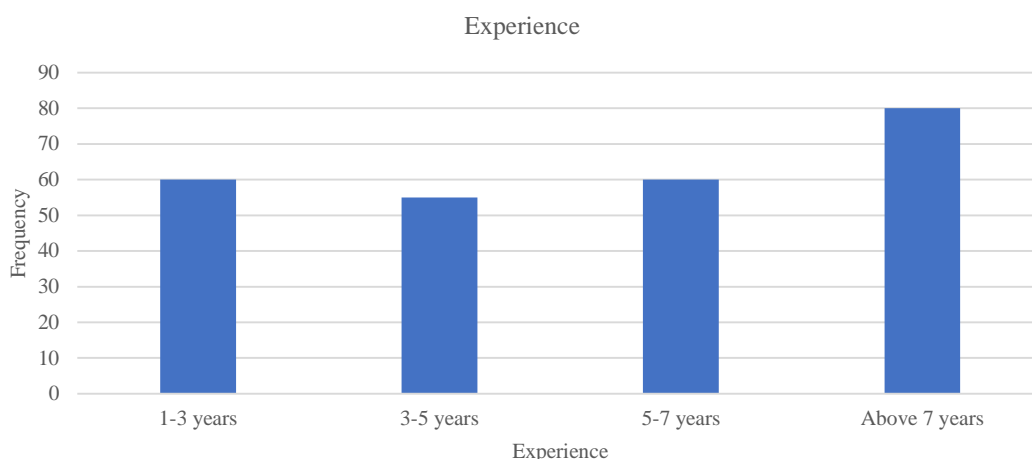


Figure 3 Information about experience

**B. Responses of the respondents**

Table 4 Responses of the respondents

Designing an efficient framework will improve the performance of the SCM					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	175	68.6	68.6	68.6
	Agree	30	11.8	11.8	80.4
	Neutral	30	11.8	11.8	92.2
	Disagree	5	2.0	2.0	94.1
	Strongly Disagree	15	5.9	5.9	100.0
Total		255	100	100	

As mentioned in the above-mentioned table, 175 respondents strongly agreed that designing an efficient framework will improve the performance of the SCM, 30 agreed over it, 30 were neutral, 5 disagreed and 15 strongly disagreed.

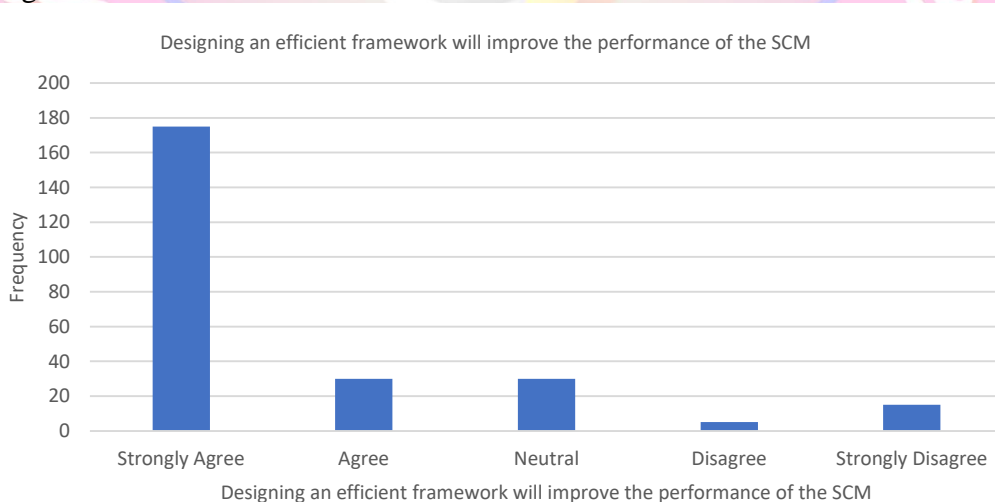


Figure 4 Designing an efficient framework will improve the performance of the SCM

Table 5 Effectiveness of the team in purchasing the resources

Performance measurement will show the effectiveness of the team in purchasing the resources		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	140	54.9	54.9	54.9
	Agree	45	17.6	17.6	72.5
	Neutral	20	7.8	7.8	80.4
	Disagree	15	5.9	5.9	86.3
	Strongly Disagree	35	13.7	13.7	100.0
	Total	255	100	100	

As mentioned in the above-mentioned table, 140 respondents strongly agreed that performance measurement will show the effectiveness of the team in purchasing the resources, 45 agreed over it, 20 were neutral, 15 disagreed and 35 strongly disagreed.

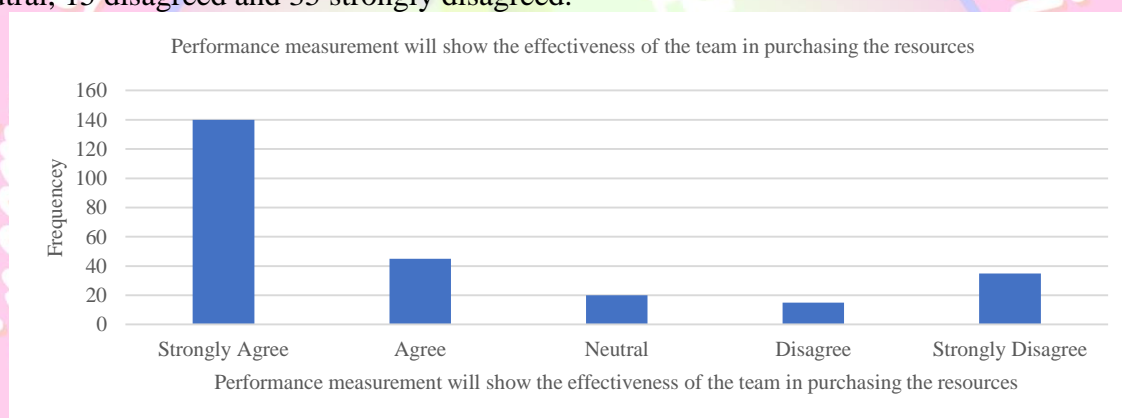


Figure 5 Performance measurement will show the effectiveness of the team in purchasing the resources

Table 6 Evaluating and Finding the issues in operations of the organization

Performance measurement will help in evaluating and finding the issues in operations of the organization		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	125	49.0	49.0	49.0
	Agree	45	17.6	17.6	66.7
	Neutral	5	2.0	2.0	68.6
	Disagree	25	9.8	9.8	78.4
	Strongly Disagree	55	21.6	21.6	100.0
	Total	255	100	100	

As mentioned in the above-mentioned table, 125 respondents strongly agreed that performance measurement will help in evaluating and finding the issues in operations of the organization, 45 agreed over it, 5 were neutral, 25 disagreed and 55 strongly disagreed.



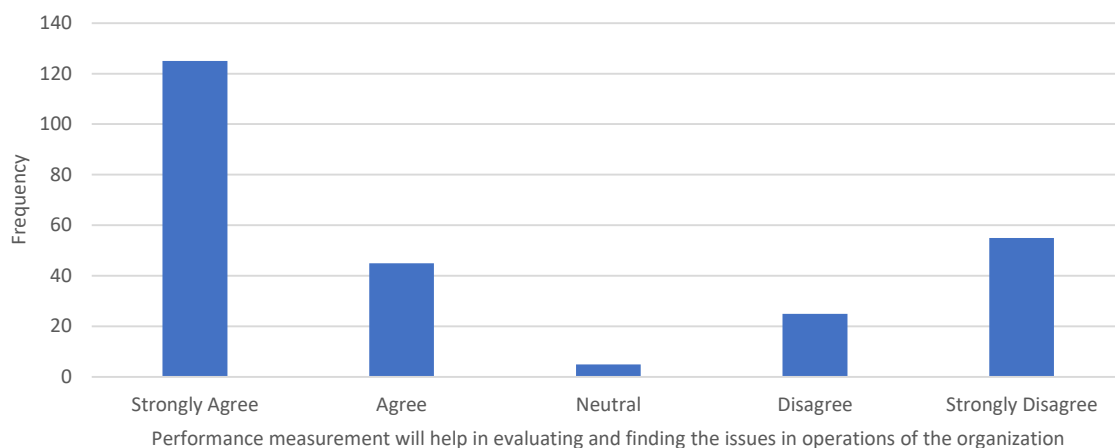


Figure 6 Performance measurement will help in evaluating and finding the issues in operations of the organization

Table 7 One of the important functions of resource management

Performance management is one of the important functions of resource management					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	105	41.2	41.2	41.2
	Agree	55	21.6	21.6	62.7
	Neutral	30	11.8	11.8	74.5
	Disagree	5	2.0	2.0	76.5
	Strongly Disagree	60	23.5	23.5	100.0
	Total	255	100	100	

As mentioned in the above-mentioned table, 105 respondents strongly agreed that performance management is one of the important functions of resource management, 55 agreed over it, 30 were neutral, 5 disagreed and 60 strongly disagreed.

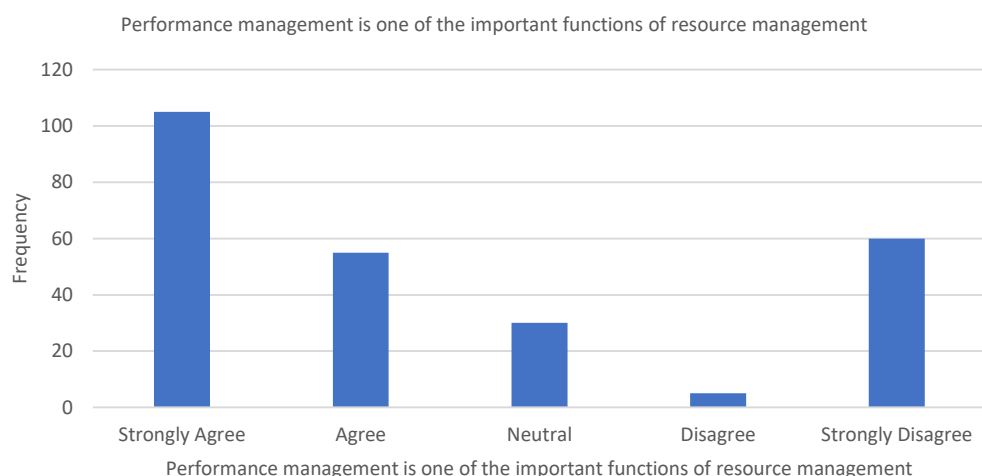


Figure 7 Performance management is one of the important functions of resource management

Table 8 The information flow can be assessed and improved

With the help of performance management, the information flow can be assessed and improved		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	110	43.1	43.1	43.1
	Agree	15	5.9	5.9	49.0
	Neutral	85	33.3	33.3	82.4
	Disagree	20	7.8	7.8	90.2
	Strongly Disagree	25	9.8	9.8	100.0
	Total	255	100	100	

As mentioned in the above-mentioned table, 110 respondents strongly agreed that with the help of performance management, the information flow can be assessed and improved, 15 agreed over it, 85 were neutral, 20 disagreed and 25 strongly disagreed.

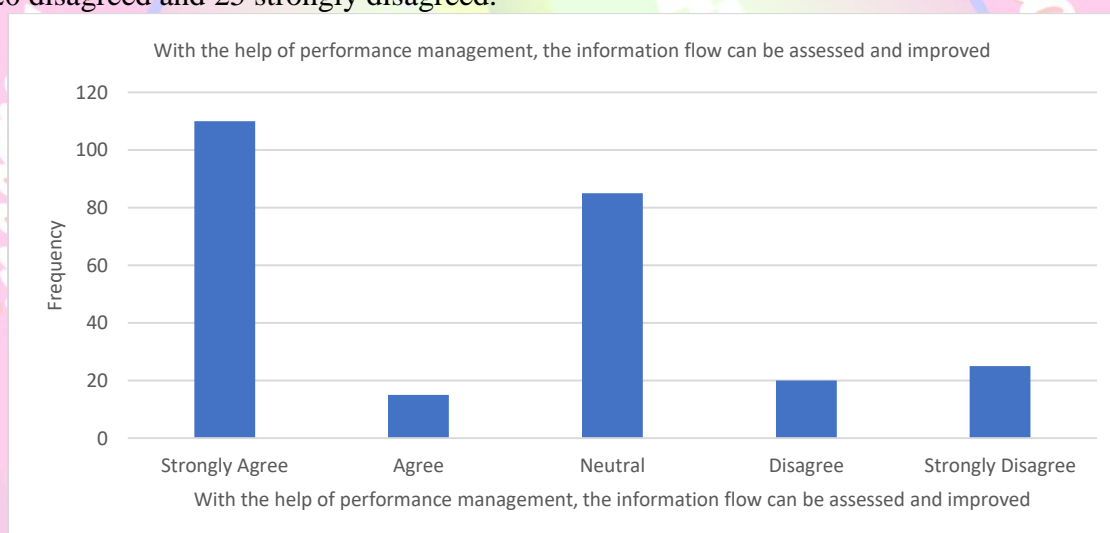


Figure 8 With the help of performance management, the information flow can be assessed and improved

Table 9 Improve the customer satisfaction rate

An effective performance measurement system will improve the customer satisfaction rate		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	110	43.1	43.1	43.1
	Agree	65	25.5	25.5	68.6
	Neutral	60	23.5	23.5	92.2
	Strongly Disagree	20	7.8	7.8	100.0
	Total	255	100	100	

As mentioned in the above-mentioned table, 110 respondents strongly agreed that an effective performance measurement system will improve the customer satisfaction rate, 65 agreed over it, 60 were neutral, and 20 strongly disagreed.

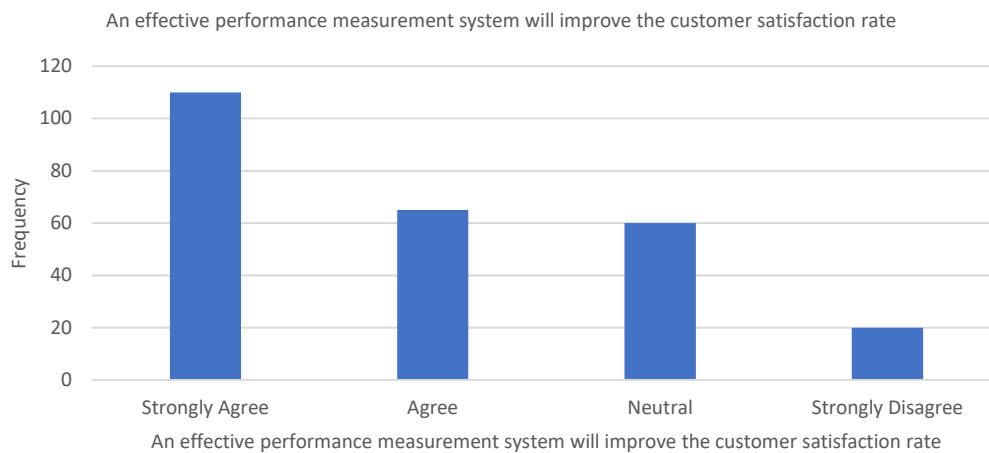


Figure 9 An effective performance measurement system will improve the customer satisfaction rate  
Table 10 Customer to staff ratio

Customer to staff ratio can be easily and effectively be managed with the help of performance measurement					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	145	56.9	56.9	56.9
	Agree	75	29.4	29.4	86.3
	Neutral	10	3.9	3.9	90.2
	Disagree	10	3.9	3.9	94.1
	Strongly Disagree	15	5.9	5.9	100.0
	Total	255	100	100	

As mentioned in the above-mentioned table, 145 respondents strongly agreed that customer to staff ratio can be easily and effectively be managed with the help of performance measurement, 75 agreed over it, 10 were neutral, 10 disagreed and 15 strongly disagreed.



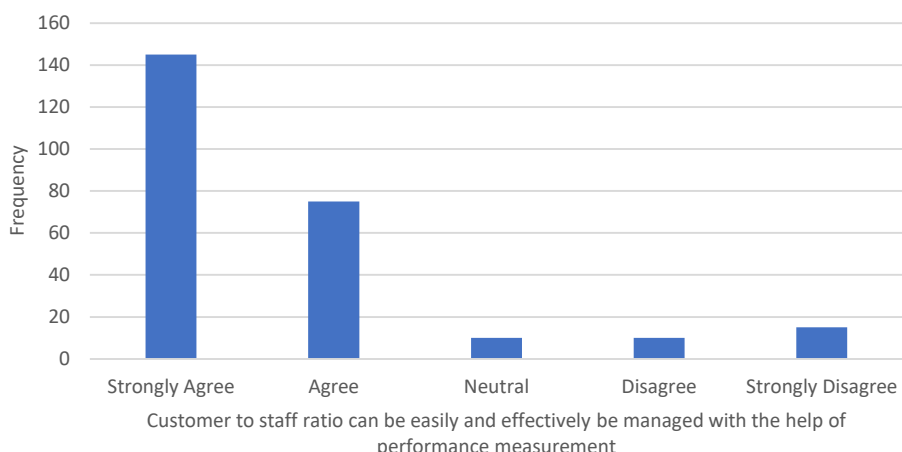


Figure 10 Customer to staff ratio can be easily and effectively be managed with the help of performance measurement

Table 11 Employee turnover rate

Employee turnover rate is highly dependent on performance measurement and management					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	130	51.0	51.0	51.0
	Agree	45	17.6	17.6	68.6
	Neutral	35	13.7	13.7	82.4
	Disagree	35	13.7	13.7	96.1
	Strongly Disagree	10	3.9	3.9	100.0
	Total	255	100	100	

As mentioned in the above-mentioned table, 130 respondents strongly agreed that employee turnover rate is highly dependent on performance measurement and management, 45 agreed over it, 35 were neutral, 35 disagreed and 10 strongly disagreed.

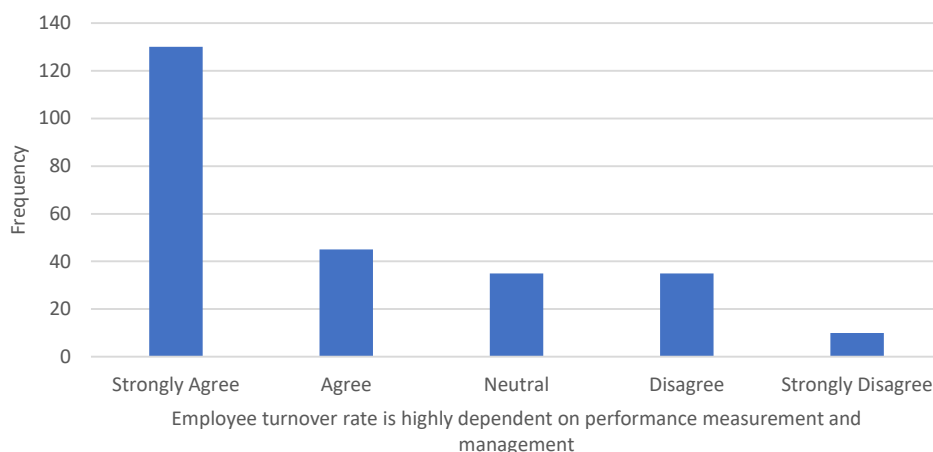


Figure 11 Employee turnover rate is highly dependent on performance measurement and management

Table 12 Employee engagement can be improved

With the help of effective performance measures, employee engagement can be improved					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	135	52.9	52.9	52.9
	Agree	50	19.6	19.6	72.5
	Neutral	20	7.8	7.8	80.4
	Disagree	25	9.8	9.8	90.2
	Strongly Disagree	25	9.8	9.8	100.0
	Total	255	100	100	

As mentioned in the above-mentioned table, 135 respondents strongly agreed that with the help of effective performance measures, employee engagement can be improved, 50 agreed over it, 20 were neutral, 25 disagreed and 25 strongly disagreed.

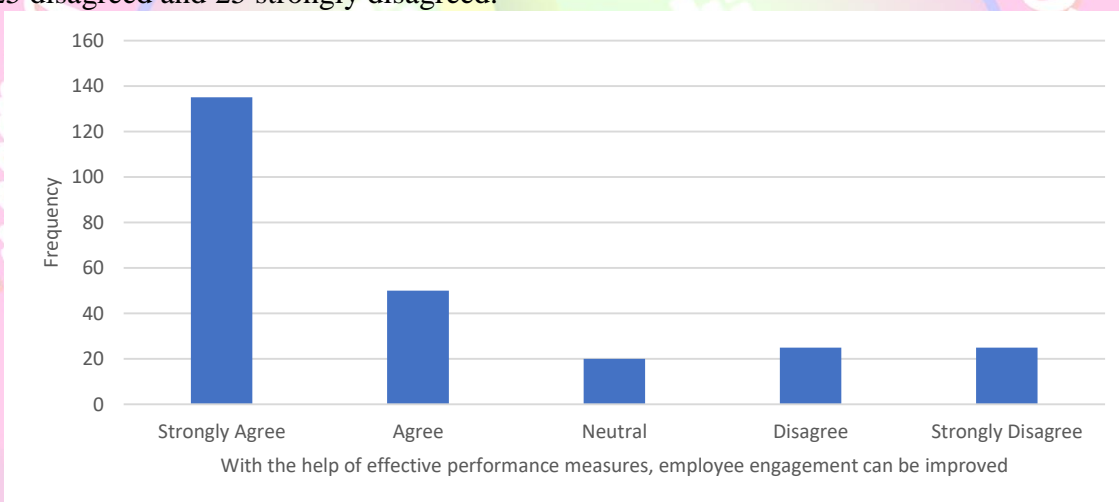


Figure 12 With the help of effective performance measures, employee engagement can be improved

Table 13 Evaluating future possibilities for return on investment

Performance measurement will help on evaluating future possibilities for return on investment					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	120	47.1	47.1	47.1
	Agree	20	7.8	7.8	54.9
	Neutral	90	35.3	35.3	90.2
	Disagree	5	2.0	2.0	92.2
	Strongly Disagree	20	7.8	7.8	100.0
	Total	255	100	100	

As mentioned in the above-mentioned table, 120 respondents strongly agreed that performance measurement will help on evaluating future possibilities for return on investment, 20 agreed over it, 90 were neutral, 5 disagreed and 20 strongly disagreed.

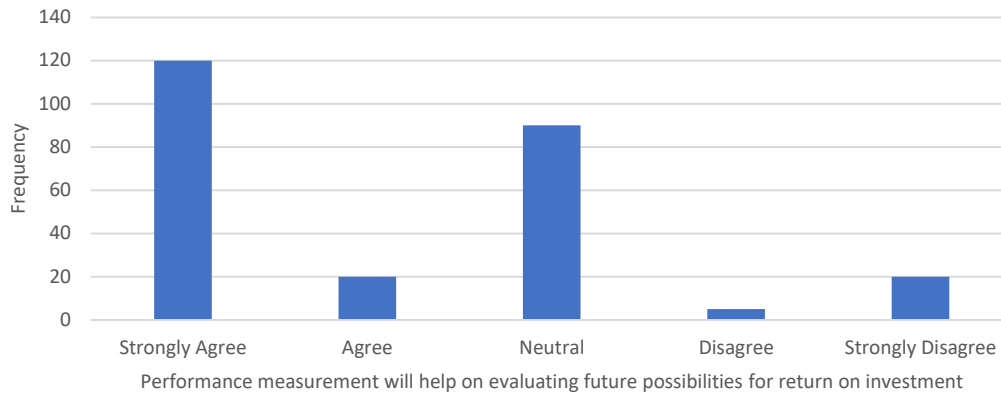


Figure 13 Performance measurement will help on evaluating future possibilities for return on investment

Table 14 Effectively design aligned with the organizational objectives

Performance measurement strategies can be effectively design aligned with the organizational objectives		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	95	37.3	37.3	37.3
	Agree	85	33.3	33.3	70.6
	Neutral	10	3.9	3.9	74.5
	Disagree	5	2.0	2.0	76.5
	Strongly Disagree	60	23.5	23.5	100.0
	Total	255	100	100	

As mentioned in the above-mentioned table, 95 respondents strongly agreed that performance measurement strategies can be effectively design aligned with the organizational objectives, 85 agreed over it, 10 were neutral, 5 disagreed and 60 strongly disagreed.

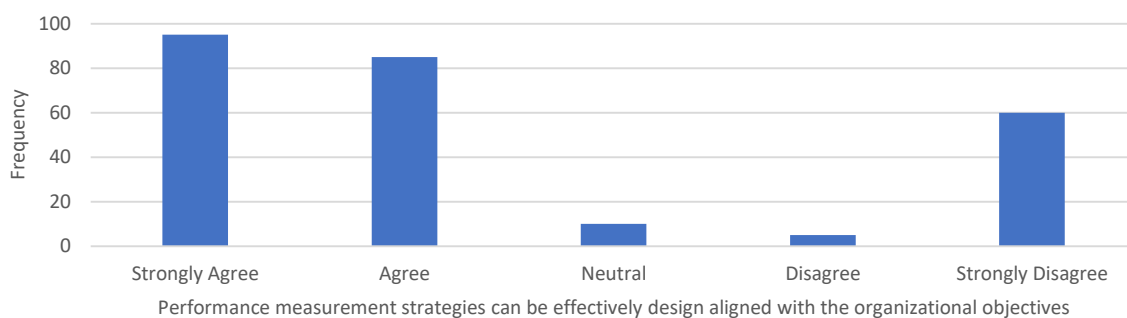


Figure 14 Performance measurement strategies can be effectively design aligned with the organizational objectives

### C. Hypotheses testing

$H_0$ : There is no significant impact of performance measure on efficiency of supply chain management

H<sub>a</sub>: There is a significant impact of performance measure on efficiency of supply chain management

Table 15 Impact of performance measure on efficiency of supply chain management

ANOVA					
Impact of performance measure on efficiency of supply chain management					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	58.12745	1	58.12745	4.346137	0.039
Within Groups	1337.451	100	13.37451		
Total	1395.578	101			

As inferred from the above-mentioned table, there is a significant impact of performance measure on efficiency of supply chain management, since sig.<0.05

## V. CONCLUSION

If a firm is serious about achieving its aims and objectives, it must recognise the value and significance of performance management inside the workplace. Managers with a firm grasp of performance management and the means to properly apply it have a distinct edge over their peers. This is because successful performance management aids companies in optimising the utilisation of their assets, including personnel, equipment, and processes.

A similar definition applies to performance management in the context of supply chain operations. Its aim is to help companies attain their objectives and goals by ensuring that they are making the most of their supply chains. Effective supply chain management methods, indicators, metrics, and technology are determined via supply chain performance analysis. It is essential to have the right performance management system in place for supply chain management to assist achieve corporate goals and objectives including increased profit and better information flow.

Enhancements in supply chain performance and more nuanced supply chain performance metrics are made possible by the widespread availability of the internet. It promotes coordinated, real-time data exchange in a "hands-off" operational mode, which will soon become a game-changer for supply chain efficiency. However, it also helps in

the creation of supply chain-wide performance metrics like the inventory-service trade-off curve. Technology is also needed, but the final result will be a more comprehensive collection of supply chain metrics that can be used as reliable gauges of supply chain performance.

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