



RETAILERS PREFERENCE TOWARDS VARIOUS DIESEL ENGINE TESTING MACHINE IN INDIA

Dr.S.Tephillah Vasantham¹ Dr. J.Praveen Paul²

Mr.C.Raymond Jesudurai³

¹Assistant Professor, Mepco School of Management Studies, Mepco Schlenk Engineering College, Sivakasi, Tamil Nadu, India

²Professor, Mepco School of Management Studies, Mepco Schlenk Engineering College, Sivakasi, Tamil Nadu, India

³II MBA Student, Mepco School of Management Studies, Mepco Schlenk Engineering College, Sivakasi, Tamil Nadu, India

ABSTRACT

A fuel injector is the use of an injector to introduce fuel into an internal combustion engine, which is the most used automotive engine. This article focuses on fuel injection in reciprocating and Wankel rotary engines. The fuel injector is one of the important parts in the engine. If any fuel injector is damaged, it could be checked by using diesel engine testing machine. Diesel engine testing machine helps to identify the exact problem in the fuel injector. This study is to find out the preference of Diesel Engine Testing Machine in India. There are several testing machines used by the workshop owner. The range of the testing machine used by the workshop owners. In this study we analysed whether the workshop owners can own a testing machine or not. The survey was collected from 26 workshops using a Structured Questionnaire. The data collected is analysed using statistical tools such as percentage analysis, frequencies and weighted average.

KEY WORDS: Testing machine, fuel injector, retailers

INTRODUCTION

The automotive industry is interesting to study in nature: it's huge, competitive, and it's only a few years older than a century. Significant changes are expected in recent years due to the impact of globalization, tightening regulations due to environmental issues, and rising fossil fuel prices due to lower oil reserves. The development of the automobile industry has been influenced by various fuel innovations. Changes in vehicle components, social infrastructure, manufacturing processes, and markets, suppliers, and business structures. The last decade has been a turbulent era for car and light car manufacturers. Industry sales growth is much smaller than previous soaring fuel prices, and with growing environmental concerns, consumers prefer smaller, more fuel-efficient trucks from fuel-intensive pickup trucks. The global economic crisis that began in 2007 caused financial problems for many of the world's largest automakers and spread to other countries around the world, leading to higher unemployment and lower prosperity. Demand for automobiles has declined due to lower disposable income and growing pessimism about the future.

REVIEW OF LITERATURE

Rajnish Tiwari and Cornelius Herstatt (2012) has conducted the study to find India's potential as a major market for India. Low-cost frugal engineering. This is especially interesting as lead markets traditionally do this. In India, there will be a trend reversal for some time. This paper aims to identify factors that influence India's new role as a source of the world economy. This survey influences the decision of where to set up a global company. Useful for Innovation and R & D activities.

Earl D. Honeycutt Jr, Theresa B. Flaherty and Ken Benassi (2016) has conducted a study on market potential of electronic media such as worldwide web play. It plays an increasingly important role in the world trade of industrial enterprises. This article examines the experience of three industrial companies that have adopted web strategies and provides lessons learned from the process. Based on these experiences, managers



receive guidelines on how to successfully implement the Internet in their day-to-day operations. **Francis E. Hummel** has explained the purpose of this article is to get people to think about marketing research. By explaining the approach used by Bryant in the machine tool industry chucking Grinder Company in Springfield, Vermont establishes market. The potential of that machine tool line.

Gerhard Stumpp and Mario Ricco (1996) has conducted a study on DI Diesel Engines for Passenger Cars Need Flexible Fuel injection system. Bosch is developing a common rail system for this purpose. In addition to changing the amount of fuel you can freely choose the start of injection and injection pressure and fuel injection in the range of 150 to 1400 bar. These new funds further improvement of DI engine from the viewpoint of noise, exhaust gas and engine torque. With the introduction of direct-injection diesel engines for passenger cars in 1988, the demand for such flexible fuel injection systems has increased. **Gianmarco I.P. Ottaviano and Dino Pinelli (2006)** were conducted a study on New Economic Geography (NEG) emphasizes the role of different types of linkage as a force of agglomeration. We demonstrate that a typical NEG model can be used to design an empirical methodology for assessing the existence of links. Totally relevant, and if so, whether it is more important to businesses and workers in terms of productivity and convenience. Applying each of the proposed methodologies to the NUTS 4 region of Finland from 1977 to 2002.

Erdener Kaynak and James A. Macaulay (1984) has conducted a market potential how to plan sightseeing in Nova Scotia to collect information, opinion on branch for details, more details than before finished. Here the Delphi method comes in handy and collect data for tourism research. Future impact of tourism and strengthening of regional databases, all of these should work effective policy tool for managing and solving planning problems sightseeing and hospitality. The impact of new technologies and training are obtained. **Barry L. Bayus (1987)** has estimated the marketability of new products. Before the actual launch, it's a big issue for marketing and new product managers. Some modeling attempts for both new long-lived one's product and consumer goods. However, the sale of new conditional products will be processed explicitly. The special case of such products is the close relationship between the software. Examples of this relationship include videocassettes, recorders and videocassettes, microcomputers, floppy disk, camera, photos movie. In this article, describes a practical way to estimate hardware and software sales for such products. Behaviour of various market segments, impact of pricing, awareness and purchase intent are built into the model.

OBJECTIVES

- To identify the Retailers preference of the Diesel engine testing machine.
- To identify the needs of customer prospects.
- To examine the measure that could be taken to satisfy their needs regarding the testing machines.

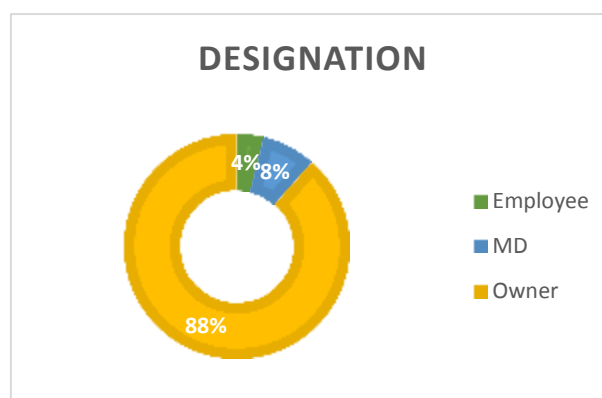
RESEARCH METHODOLOGY

The data collected for this research is purely based on primary sources and secondary sources. The primary data required for this research is collected from the workshop through questionnaires. The questionnaire contains various demographic factors, multiple choice questions, five-point scale questions and general questions. Secondary data for this research is obtained from the company's website and other websites. The sample size of the study is 26. The sampling method used is convenience sampling. Tools used for analysis is percentage analysis and weighted average.

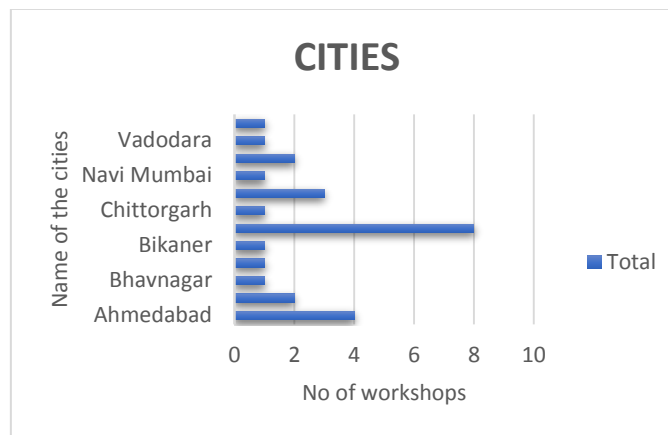
Item	Frequency	Frequency	%
Gender	Male	26	(100%)
	Female	0	(0)
Designation	Owner	23	(88%)
	MD	2	(8%)
	Employee	1	(4%)
State	Maharashtra	10	(38%)
	Tamil Nadu	8	(31%)
	Gujarat	6	(23%)
	Rajasthan	2	(8%)



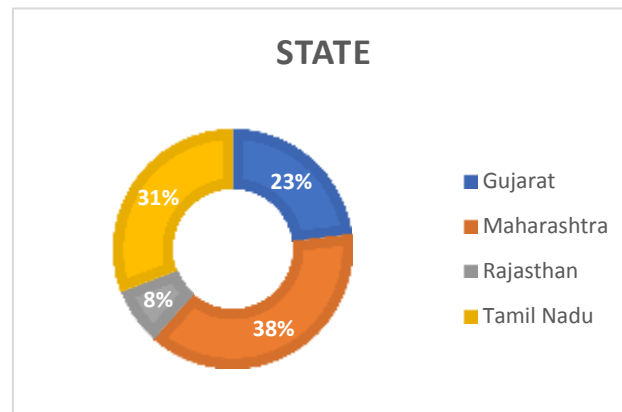
Annual turnover in workshop	Below 20 lakhs	13	(50%)
	20 – 50 lakhs	12	(46%)
	More than 50 lakhs	1	(4%)
Work Experience in this field	Less than 2 years	0	(0)
	2 – 5 years	0	(0)
	More than 5 years	26	(100%)
Usage of Testing machines in their workshop	Yes	26	(100%)
	No	0	(0)
Testing machine used in their workshop	Bosch testing machine	14	(54%)
	Not interested to share		
	Elbe testing machine	4	(15%)
	Universal testing machine		
	One solution machine	2	(7%)
	Genco testing machine	1	(4%)
	Hartridge testing machine		
	Maharaja testing machine	1	(4%)
Stordex testing machine			
		1	(4%)
		1	(4%)
		1	(4%)
		1	(4%)
Range of the testing machine used	1 lakh to 50 lakhs	19	(73%)
	Not interested to share	4	(15%)
	Below 1 lakh		(8%)
	More than 1 lakh	2	(4%)
		1	
No of year machine used	More than 5 years	22	(85%)
	2 – 5 years	4	(15%)
	Below 2 years	0	(0)

**Inference**

It is inferred from the above chart that (88%) of the respondents are owners, followed by (8%) are MD and only (4%) are employees.

**Inference**

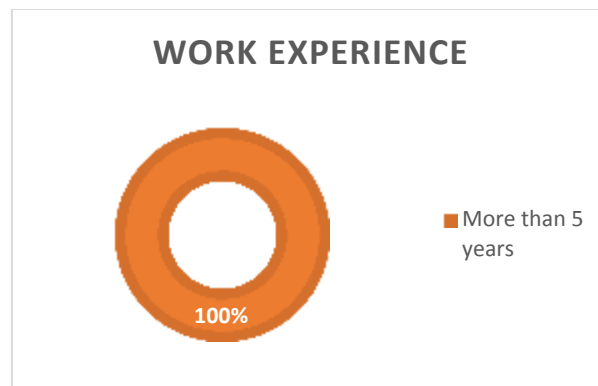
It is inferred from the above chart that the respondents are mostly from the Chennai city (8), followed by the Ahmedabad (4), followed by the Mumbai (3) and remaining cities like Wahal, Vadodara, Chittorgarh, Bikaner, Bhiwandi, Bhavnagar with (1) respondent.

**Inference**

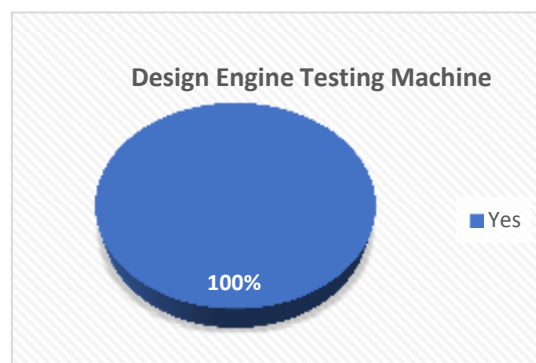
It is inferred from the above chart that the respondents are mostly from the Maharashtra (38%), followed by Tamil Nadu (31%), followed by Gujarat (23%) and least respondents from the state Rajasthan (8%).

**Inference**

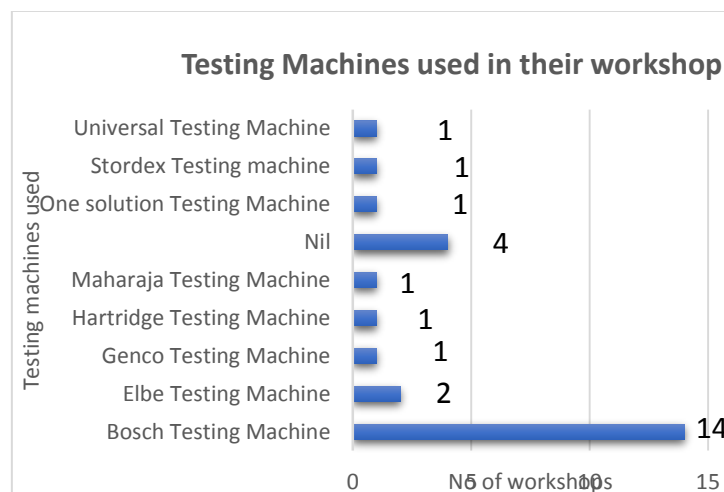
It is inferred from the above chart that the annual turnover of the respondents are below 20 lakhs (50%), followed by more than 50 lakhs (46%) and remaining 20- 50 lakhs (4%).

**Inference**

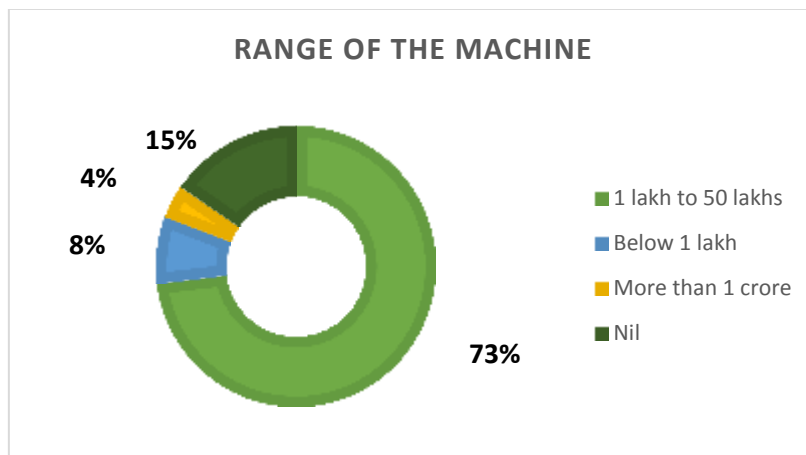
It is inferred from the above chart that all respondents of the workshop owners are having work experience of more than 5 years.

**Inference**

It is inferred from the above chart that all respondents are having the diesel engine testing machines in their workshop.

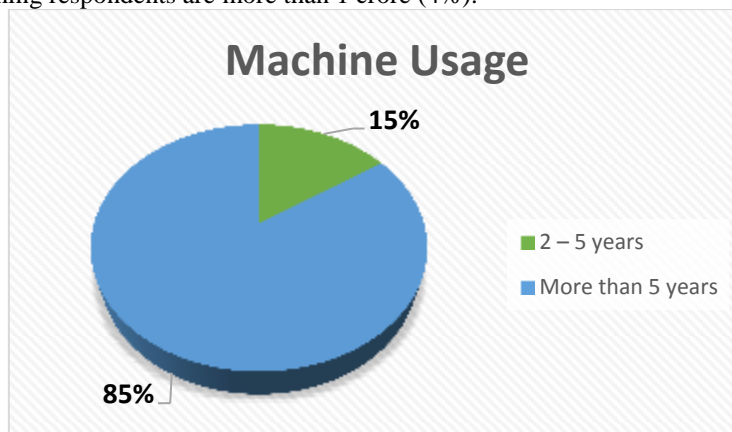
**Inference**

It is inferred from the above table that the diesel engine testing machines used by the 14 workshops are Bosch Testing Machine, 4 workshops are not interesting to tell about their testing machine, followed by 2 workshops are using Elbe Testing Machine and Universal Testing Machine, Stordex Testing Machine, One solution Testing Machine, Maharaja Testing Machine, Hartridge Testing Machine, Genco Testing Machine are few testing machines in their workshops.



Inference

It is inferred from above chart that the range of the testing machines used by the respondents are above 1 lakh to 50 lakhs (73%), followed by many respondents refused to say their machines, followed by below 1 lakh (8%) and remaining respondents are more than 1 crore (4%).



Inference

It is inferred from the above chart that the machine used by the workshop respondents are more than 5 years (85%) and remaining respondents used the testing machine for 2 – 5 years (15%).

Average for factor while purchasing diesel engine testing machine

S.NO	FACTOR	AVERAGE	RANK
1	Technology used	2	1
2	Quality	2.04	2
3	Price	2.92	3
4	Brand name	4.04	4
5	Discounts	4.12	5

Average for factor while purchasing diesel engine testing machine

Inference

From the table it is inferred that the respondents give more importance to the technology used and followed by quality of the machine, price, brand name and quality.

**Average for customer need regarding**

S.NO	CUSTOMER NEEDS	AVERAGE	RANK
1	Timely replacement of spares during your service	3.92	1
2	Free service while purchasing testing machines	3.81	2
3	Discounts while purchasing testing machines	3.77	3
4	Timely service while purchasing testing machines	3.77	4

Average for customer need regarding testing machine

Inference

From the above table it is inferred that the customer needs are timely replacements of spare parts, followed by the free service while the discounts during purchasing and timely service comes next.

FINDINGS**Need for Customers prospects**

- Majority of the respondents are owners of the workshop.
- Majority of the respondents run their workshop more than 5 years.
- Every respondent has their own diesel engine testing machine in their workshop.
- Bosch Testing Machine has been used by majority of the respondents.
- The range of the testing machine used by majority of the respondents is 1 lakh to 50 lakhs.
- Majority of the respondents use their testing machine more than 5 years.

Measures taken to satisfy the customer needs

- Every respondent gives importance to the timely replacement of spare parts in the testing machine.
- Respondents expects free service while purchasing the testing machine.

CONCLUSION

In an engine, fuel injector is one of the important parts for the vehicles. The damage of fuel injector costs is high, so there are many testing machines used. Many of the workshop owners are not interested to buy the machine because of its cost. Workshop owners expects machine low cost. Some of the workshop owners say that they usually customize their machine. Pandemic situation is also one of the reasons for the workshop owners not to prefer this machine. Due to increase in petrol price, all are moving towards e – engines so currently it won't fetch profit for the workshop owners.

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