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A Study on the Analytics Tool Used in Decision Making at Small and Medium Enterprise

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Abstract

The article focuses on the study of prevailing decision making styles of Small Scale Industrial (SSI) Units. It presents data collected from 200 SSI units from Bhavnagar – a coastal city of Gujarat, India. The objective of writing the article is to depict heuristic decision patterns of small and medium enterprises, and the rare use of analytical or statistical business intelligence tools in decision making processes. It would be interesting to study the design of decision taken on routine basis in small units, poorly equipped with technology and technical know-how. The paper is descriptive in terms, and lays a lucid picture of present decision making processes.

Keywords: Decision Making, Smallscale Units, Analytical Tools, Statistical Tools, Business Intelligence

Introduction

In a very simple and primary endeavour to study decision making process adopted by small business units in Bhavnagar town in South Gujarat, India, data were collected for basic business decision areas, use of software or analytical tools was done for these decisions, and the efficiency of decisions was considered.

According to the Ministry of Micro, Small and Medium Enterprises, recent ceilings on investment for enterprises to be classified as micro, small and medium enterprises are as shown in Table 1.

For manufacturing units, investment limit is for plant and machinery, and for service unit it is for equipment.

The data for the research are collected from 200 different small and medium scale entrepreneurs or decision makers. It was proposed to be a convenient sample of the entrepreneurs, but in the due course of data collection process, it was realised that to collect data from a large mass of busy entrepreneurs, who are not using computers to a noticeable extent, and who are especially not looking up to any customized computerised solution, is a challenging task.

Table 1 : SME Definition

Scale	*Manufacturing*	*Service*
Micro	Rs. 25 Lakh	Rs. 10 Lakh
Small	Rs. 5 Crore	Rs. 2 Crore
Medium	Rs. 10 Crore	Rs. 5 Crore

Literature Review

In a study (Paul Foyce, 2003), it is emphasised strategic decisions, keeping in pace with rapid changes and growth of the unit in mind structure decision processes are high in demand. Speed of change and demand of competency enhancement areso resilient that formalised decision making seems indispensable which further induces the need for software applications of business intelligence systems. Since globalisation and liberalisation in India, requirement for formalised decision models and decision making systems has surfaced.

In another study (Simon Mosey, 2002), the focus was on growth and innovation. Decision for growth includes innovation in product design. For the decisions about innovation in any aspect, enterprise requires market and competitor analysis in strategic planning.

In an article by Hedgebeth (2007), describes origin of business intelligence (BI), BI applications, and BI value in

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decision making. It clearly concludes informed decisions greatly depend upon accuracy of BI applications. Efficiency of decisions leads to minimising cost, market forecast and analysis, which further is an outcome of proper implementation and use of BI applications and analytical methods.

One more study (Martin Aruldoss, 2014), which is more comprehensive in nature, discusses composition and development of BI applications, and points out the fact that most of the researches about BI tools talks, in majority, about development of BI applications, than about the usage of these applications in real business decision-making processes.

Methodology

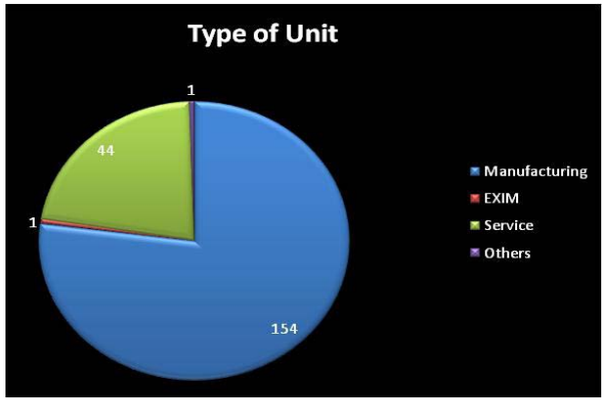
As mentioned above, the study is more descriptive in nature, with a view to display a picture of present decision making pattern of small enterprises. Since the objective was to collect data about some basic decision areas and their impact in a small business, study proceeded with data collected from 200 entrepreneurs.

In the method adopted to collect data and to regularise it, a questionnaire was designed, but the details were collected through informal talks, indirect approach,online form filling. However, a structured format of personal interview was not followed. The details collected were arranged in the strict format of questionnaire.

Data Collection and Analysis

The classification of the details collected is as follows.

Figure 1: Type of Unit



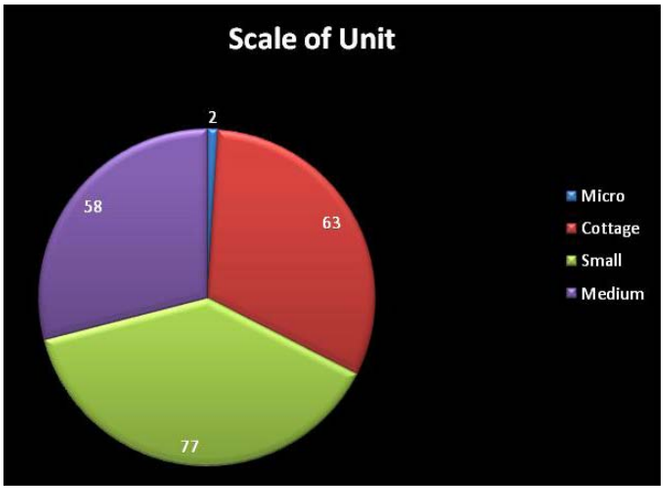
Types of Units

The first criterion selected is the type of unit, since decision pattern changes a lot with the change of type. As displayed in Figure 1, out of 200 units 44 units were manufacturing, 155 units were service providing, 1 unit is EXIM unit.

Scale of Units

The second criterion is the scale of units, because financial and technical feasibility largely depend upon the scale and financial capacity of the unit. As it can be seen in Figure 2, out of 200 units interacted with, 38% are small and 29% units are medium scale units.

Figure 2: Scale of Unit



Market Share

Past decisions can be assessed with different parameters, one of which is market share. For 200 units contacted, the scenario about market share is displayed in Figure 3. 61% units claim to hold 20% to 40% market share in their respective area.

Utilisation of Established Capacity

The best decisions majorly lead to optimum allocation of resources, and eventually to maximum utilisation of established capacity of a firm. As seen in Figure 4, 160 units (80% units) utilise50% to 70% established capacity

of their firm, which is a signal of poor resource allocation and so of weak decision making.

Figure 3: Market Share

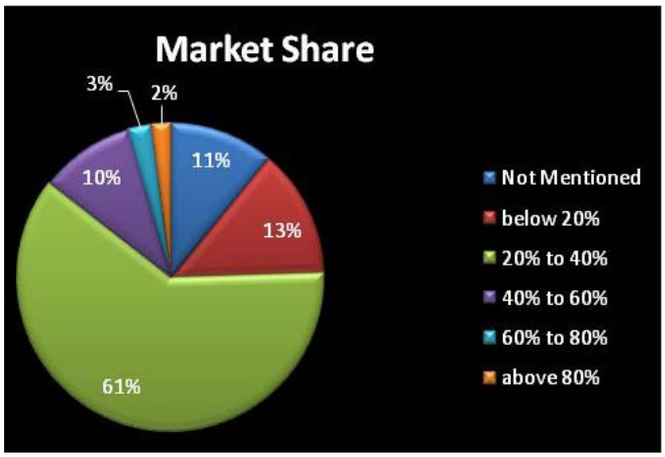
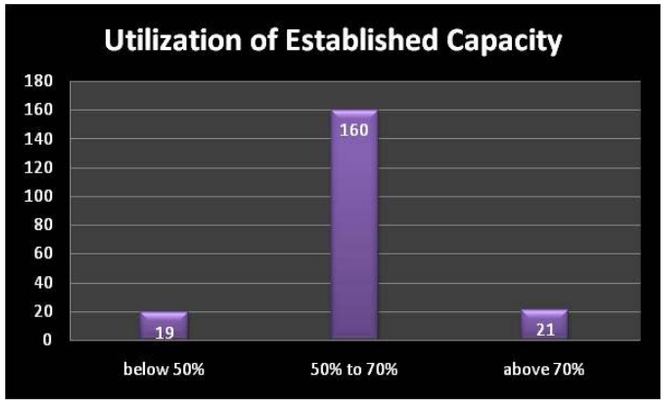


Figure 4: Utilisation of Established Capacity



Failure of Production Schedule

Production scheduling is a routine decision. Such decisions are normally taken by gross experience. This results in failure of production schedule in 10% to 30% cases, for 133 units (66.5% units). More shocking figure is that of 7 units having failure rate from 30% to 50%. Although the number is not too big in a sample of 200 units, it might count remarkable in the complete assessment if conducted.

Demand Forecasting Method Adopted

Planning and scheduling greatly depends on demand forecasting efficiency. Demand forecasting can be done with different methods. We have collected data, and found the units using methods like agency services, intuition/ experience, statistical methods, software or other methods. It is noticeable here that 168 units (84% units) forecast demand only using Intuition / Experience, which is quite disappointing.

Figure 5: Failure of Production Schedule

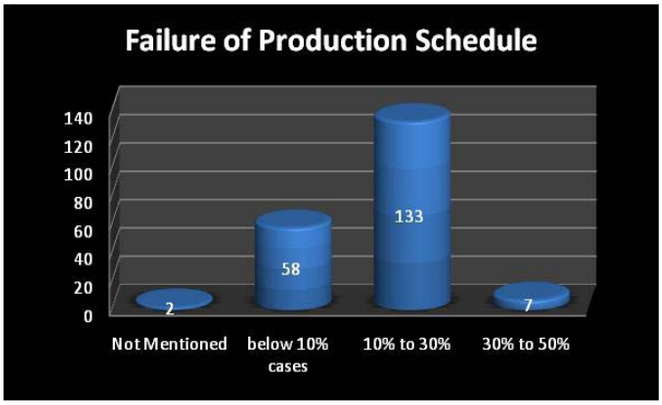
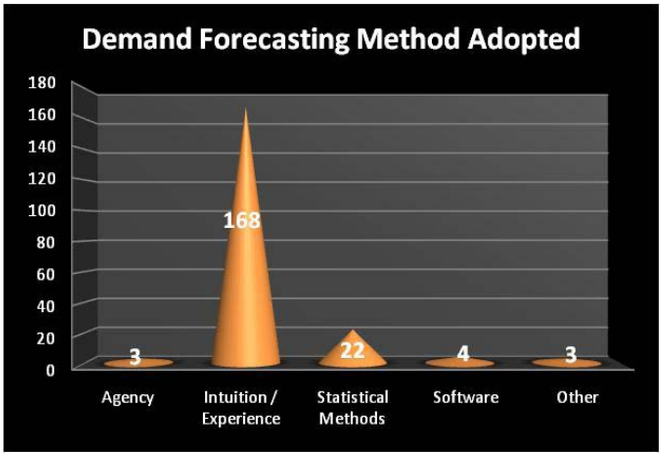


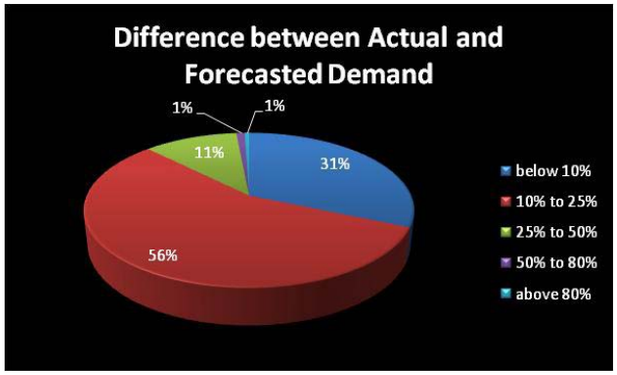
Figure 6: Demand Forecasting Method Adopted



Difference between Actual and Forecasted Demand

Efficiency of the method employed for demand forecasting is assessed with the help of deviation observed of actual demand from estimated/ forecasted demand. Apparently, there are 56% units (112 units) having deviation rate of 10% to 25%.

Figure 7: Difference between Actual and Forecasted Demand



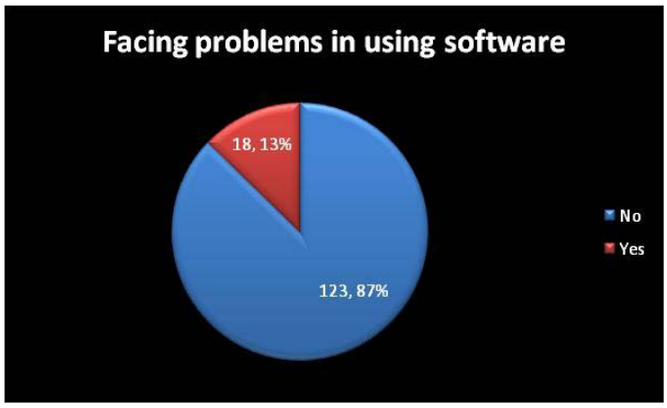
Software/ Application Used

Around 29.5% units (59 units) do not use any software. Units using computer software comprise of the units using Microsoft Word (62 units), Microsoft Excel (39 units), Microsoft Access (2 units), Tally Accounting software (15 units), Word and Excel (12 units), customised software (3 units – these units also have got the applications designed mainly for inventory and accounting), and Lotus (8 units). Now this discomforting number of 59 units explains the whole case. When in a sample of 200 units 59 units are not using any software, for the whole population this number may elevate to a greater extent.

Facing Problems in using Software

Out of 141 units using some software for their routine activities, detail storage or analysis, 123 are happy with the basic applications they use, 18 decision-makers face problems with the applications they utilise.

Figure 9: If Facing Problem in using Software



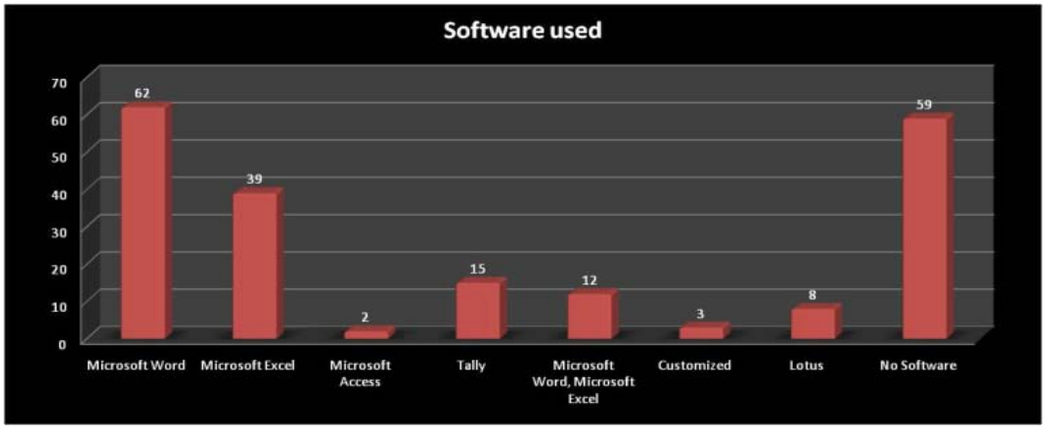
Problems in using Software

Looking into this point, it amazes us with a fact that, majority of problems comes as technical infeasibility to use a computerised tool rather than financial infeasibility or non-affordability. Although, here software application in question are very primary applications like Word, Excel, Access and Tally and one or two customised applications, it does not lose significance that prime concern is technical comfort over financial one.

Do You Opt for Customised Software?

This is a question which leads to the future scope for Business Intelligence tools to play role in decision

Figure 8: Software Used



making of small businesses, the way they contribute in large business processes. At juncture too subdued outcome is 144 units are quite indifferent towards the need of a customised application and so for the need of computerisation in the day-to-day business process for decision making. We can consider lack of skilled employees or the technical infeasibility in the root of this pessimistic retort. Here it exhibits a clear vacuum in the area of Business Intelligence tool/ application designed principally for SMEs.

Figure 10: Problems in using Software

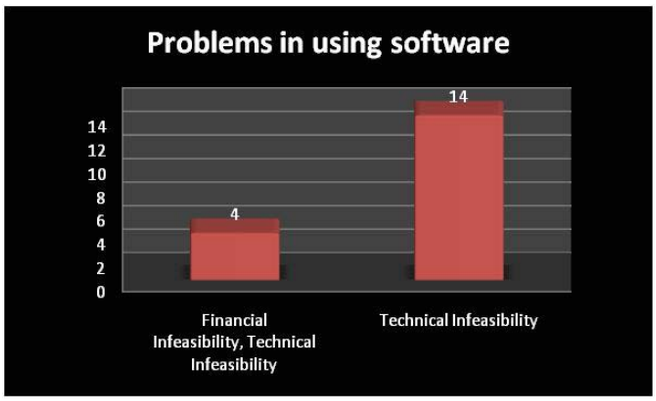
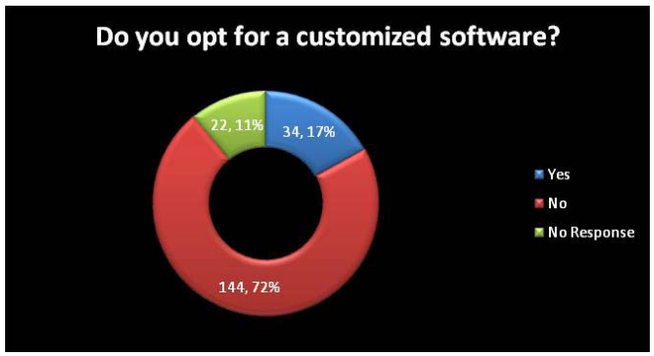


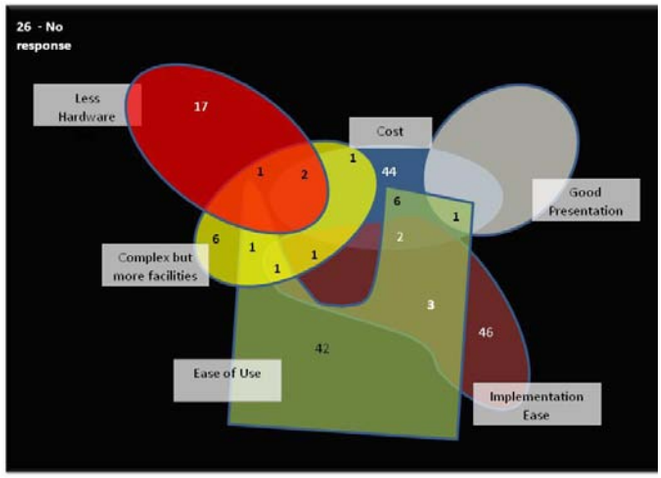
Figure 11: Do You Opt for Customised Software?



Features Expected in Customised Solution

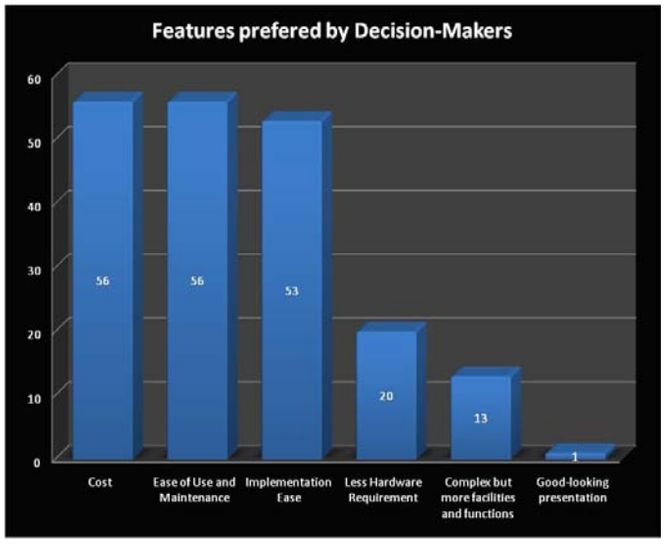
When asked about the features decision-makers seek in customised software solution, their responses were woven around six main factors i.e. Cost, Good Presentation, Less Hardware Requirement, Complex but more facilities and functions, Ease of use and maintenance, and Implementation Ease. The combinations they suggested are displayed in Figure 12.

Figure 12: Features Expected in Customised Solution



Independently treating the features, we have the preferences as shown in Figure 13.

Figure 13: Features Preferred



Conclusion

Preliminary qualitative analysis was preferred. The study leads to two major ideas; first there is a need for systematic data storage, analysis and use in decision making – looking, mainly, at low capacity utilisation and noticeable failure rate of demand estimates; and second, (29% of the units do not use any tool or software application) as low as three units out of 200,i.e.one and a half percent of the total 200 units studied, understand

the need of a customised software and use for decision making. It could be,therefore, concluded that cost and ease of use and maintenance are the characteristics most preferred in a customised software solution. Means financial and technical plus technological feasibility is the main concern for the entrepreneurs. Eventually it narrows down to the path leading to a tailor-made software solution which satisfies the primary requirements and helps an individual to arrive at a decision following an easy alternative selection process.

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