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Strategic resource management model and data envelopment analysis for benchmarking of Indian retailers

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Abstract

Purpose – The purpose of this paper is to use strategic resource management (SRM) model and data envelopment analysis (DEA) for benchmarking Indian retailers. The study ascertains, how a retailer can benchmark its performance at company level, global level, store level and finally at merchandise category level using diverse strategies for inventory, space and people.

Design/methodology/approach – The paper aims to use SRM model, for evaluating and comparing the performance of two generalized retailers Shoppers Stop and Trent. These two generalized retailers are benchmarked with another best-in-class retailer, Wal-Mart using the SRM model. The benchmarking exercise brings out improvement directions for the Indian retailers. In the next part of the study, economic efficiencies of 11 generalized retailers are ascertained using DEA model. Finally, a study is conducted to understand, how SRM model can be used as a planning tool for deciding alternative inventory, space and people strategies at store level as well as at merchandise category level.

Findings – Based on the data for the year 2011-2012, Trent's performance is comparatively better than Shoppers Stop. The paper offers suggestion to improve its performance. Next, it was found that the performance of Wal-Mart is superior to the two Indian retailers. The study offers direction to the two retailers to devise appropriate strategies to improve their performance. The study further ascertains the relative efficiencies of 11 generalized retailers in the country. Finally, an illustration of how a retailer can use the SRM model as a tool for planning alternative strategy for inventory, space and people in a particular merchandise category is offered using data from a retail firm. The study has used "Jeans" and "Toys" as two categories to demonstrate this concept.

Practical implications – The examples considered in this paper can be used by practicing retailers to plan and benchmark their performance.

Originality/value – The study proposes a method, by which retailers can examine ways to plan and improve their operations and profitability by using the SRM and DEA model. The study is therefore relevant to practicing retailers as well as academicians.

Keywords Benchmarking, Data envelopment analysis, Retail, Shoppers Stop Limited, Strategic resource management model, Trent Limited

Paper type Research paper

Introduction

Organized retail has played a major role in driving the economy of developed nations and provides a lot of growth opportunities to developing nations. The Indian organized retail industry started picking up in the year 2005-2006 as a result of increasing disposable incomes, favorable demographics, changing lifestyles, growth of the middle

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class segment and a high potential for penetration in the urban and rural areas. There is a growing acceptance of modern formats in the country. Many global players have entered the market and some of the retailers have seen success. But overall the retail sector has not been able to perform extremely well, with very few players making decent profits. The reasons for a sluggish growth for most of the players is that, the property rentals are very high and therefore the retailers are unable to break even fast. There is lack of positive regulatory environment. Some of the retailers have expanded with great speed by opening many stores, which led to operational and supply chain inefficiencies as well as high debt. Generalized retailers like Subhiksha, had to close down and many others had to shut down some of their stores, which were not profitable.

Given the industry's changing landscape and emerging challenges, the focus of the industry players too is changing; with a strong focus on profitability growth and improvement in operational and supply chain arenas. Retailers are therefore concentrating on strengthening existing operations and assessing options for growth through consolidation, while continuing to innovate. In such a scenario, there is a need for a measurement yardstick, which can direct the organization toward profitability and better performance. The strategic resource management (SRM) model provides such a framework, which connects three interlinked strategies; people, space and inventory, which are the three vital inputs to the retail industry, in such a way, that it can work as a planning tool for strategic decisions making.

To demonstrate how we can use SRM model for driving planning and decision making, we selected two generalized retailers, i.e. Shoppers Stop and Trent, who have retailing experience for more than a decade and are performing quite well as compared to the other retailers in the country. We also wanted to use global benchmarking and efficiency measurement tools and therefore used data envelopment analysis (DEA) for comparing the economic efficiency of generalized retailers in the country. The motivation for the present research therefore stems from the following issues. First, the Indian retailers Shoppers Stop and Trent's efficiency in using labor, inventory and square foot area are ascertained. A study of the performance of these two Indian retailers would be of great interest and would provide an outlook to understand, whether they will be able to survive in the coming days. Second, the performance of these two Indian retailers is benchmarked with the best-in-class retailer, Wal-Mart. This benchmarking exercise will throw light in terms of how the Indian retailers can improve their performance without diluting the service quality. The exercise will aid the inefficient firms to move toward efficiency by making the required changes in space, people and investment in inventory using the framework of SRM model. Third, economic efficiency of 11 generalized retailers including Shoppers Stop and Trent is evaluated using DEA. This analysis will provide the outlook in terms of how Shoppers Stop is performing as compared to Trent and also while comparing with the other similar firms in the industry. Finally, the SRM model can help to plan the operations of a retailer at company level, store level as well as merchandise category level. As a sample, the paper uses the SRM model to evaluate the performance of two merchandise categories, i.e. "Jeans" and "Toys" and suggests ways to improve its performance. The store is compared to a similar store in a similar locality named as comparative store. It is also compared with the grid average, which is the average of similar stores in similar localities and company average, which is the average of all the stores of the company put together. The model provides pragmatic solutions, which implies that the store managers can use this model to make operational decisions to improve the store performance.

Background

The research paper conducts a benchmarking exercise and therefore looks at various methods and models, which enable retailers to compare their performance with similar firms in the country, globally as well as comparing one store of the same retailer with another. Davidson *et al.* (1984) used Strategic Profit Model to evaluate the performance of retail firms. The model is the result of research formularization of DuPont model. It calculates the return on net worth, which is dependent on financial leverage, net profit margin and asset turnover. Thus, the return on net worth depicts how effectively a firm is using shareholders investments. Selvarasu *et al.* (2009) used Strategic Profit Model to measure the performance of three Indian retail companies, i.e., Shoppers Stop Ltd, Pantaloon Retail Ltd and Provogue India Ltd. The study suggests suitable strategies to maximize the performance in the future years. Cronin (1985) conducted a study for 35 grocery companies over a period of nine years to ascertain the impact of sales growth, market share, average inventory per store, relative promotional effort and capital-to-labor ratios on profit performance using multiple regression analysis. Thurik and Kooiman (1986) suggested a model to investigate the impact of environmental factors on floor space productivity of individual retail stores. Pal and Byrom (2003) proposed a method by which managers can examine ways of improving their operations by the use of a modified cause-effect technique taking systems, standards, stock, space and staff as the parameters. There are various other methods for evaluating the performance of the retailers in terms of the value created by the firm for their shareholders like customer satisfaction and customer value added, economic value added, profitability analysis, total cost analysis, market value added and balanced scorecard.

SRM model is another performance measurement tool that can be used to measure the performance of a retailer, compare the performance through a benchmarking exercise as well as provide concrete direction in terms of how a retailer can improve its profitability and operations. The first authors who brought this model in the marketing literature are Laush and Serpkenci (1983). They have described this tool, which helps in ascertaining the performance of a retailer on three major inputs to any retailing business – inventory, space and people. This model has proven to be a very useful tool for measuring performance as compared to the traditional models mentioned above, as it can be applied at different level of aggregation – from corporate to market, to store, to department, to category, to class and to the SKU level (Ring *et al.*, 2002). This enables the company to formulate clear cut strategy right up to the SKU level, in terms of altering the mix of space, inventory and labor for higher growth of the retailer. The retailer is able to make operational decisions like, how much space, labor and inventory to allocate to a SKU to maximize growth for the firm. The model calculates the Gross Margin Return on Inventory (GMROI), Gross Margin Return per Selling feet (GMROF) and Gross Margin Return per Full Time Equivalent Labor (GMROL).

Sweeney (1973) argues that by taking GMROI as the primary criteria for planning and controlling merchandising, corporate profitability of retail firms can be improved. Ring *et al.* (2002) revisited the SRM model and offered certain modifications to the model. They focussed on GMROF and Net Margin Dollar per Selling Feet as the key metrics. They content that the new focus gives the SRM framework a firmer grounding conceptually as the retailer is motivated to stack products with higher visibility, which offers higher margins per floor space. Tigert *et al.* (1998) used SRM model to analyze the performance of Wal-Mart by extending the model to net margin. The focus of the paper is on Profit Wedge, which is a measure of the productivity and performance of space.

The paper further benchmarks Wal-Mart with Sears, The Home depot, Nordstrom and Gap by comparing the gross margin return on selling feet, operating expense per selling feet and net margin return on selling feet. Thurik and Koerts (1984) conducted a study, where they investigated the relation between total available floor space, which was partitioned between selling area and remaining area and the value of total annual sales for small retail establishments.

DEA is another benchmarking tool, which has been used in this study. It has been suggested by Charnes *et al.* (1978), which was built on the idea of Farrell (1957). DEA is non parametric technique based on linear programming for measuring the relative performance of organizational units, where the presence of multiple inputs and outputs makes comparisons otherwise difficult. DEA identifies sources and amounts of inefficiency in each input and each output for each Decision Making Unit (DMU). It also identifies the most efficient set of DMUs and the inefficient ones. The inefficient DMUs can get a direction in terms of how, they can alter their inputs or outputs or both, so that they can move toward the efficiency frontier. Many authors have used DEA to ascertain the economic efficiency of retail firms. Barros and Alves (2003) conducted a DEA study with 47 Portuguese retailers, Sellers-Rubio and Mas-Ruiz (2006) conducted a study with 100 Spanish retailers and Moreno (2008) conducted a similar study with 234 Spanish retailers. DEA is a well established methodology and has been used by many authors in various industries to ascertain the relative efficiency of firms.

Research objective and methodology

A retailer, who wishes to benchmark its performance, can incorporate various approaches to evaluate and plan the future course of action for strategic decision making. The retail chain can be benchmarked against itself over time. The key here is steady improvement in all the performance ratios. The disadvantage of this method is that the benchmarking does not necessarily promote best practices, as the retailer may be inefficient and little improvement from the last year does not take the retailer at a higher pedestrian. The retailer can benchmark against other chains in the retail sector, over time. DEA and Malmquist Productivity Index (MPI) are some of the techniques, which enable a retailer to benchmark their performance within the industry for a period of time. The methodology offers insights, which can help the retailer to relook into its operations and get some clues for future improvement. Finally, the retailer can benchmark itself with the best-in-class retailer in a similar sector on a global basis.

In the study a benchmarking exercise has been conducted, where the two generalized retailers Shoppers Stop and Trent are compared using the SRM model for the year 2011-2012. Further these two retailers are benchmarked with the best-in-class retailer, i.e., "Wal-Mart." This study will offer better insights, in terms of areas of improvement and would provide concrete proposals to the two Indian retailers. To further validate the findings of the SRM model, global benchmarking technique DEA is used to ascertain the efficiency of 11 generalized retailers in the country. The data includes Shoppers Stop and Trent. Similar input parameters are selected so that the results of SRM model can be compared to the results arrived at, with the DEA model. Number of employees, square foot area and inventory are used as input parameters in both the SRM model as well as DEA model.

The SRM model can also be used as a planning tool for making inventory, space and people-related decisions. The model is prescriptive in nature and therefore, it can suggest alternative mix of inventory, space and people, so as to enhance the GMROF of the store. The paper describes, how a store level-analysis and comparison can help a

retailer make strategic decisions, in terms of whether to continue a store, to pump up further money in a store, change the mix of inventory, space and people to enhance profitability. From store level, the analysis can be further drilled down to merchandise category level. A sample study of two merchandise categories, namely jeans and toys are mentioned in this paper. Through this practical exercise, insights of how the SRM model can be used to analyze the performance of the store, in comparison to a similar store in a similar geographical location as well as in comparison to the grid average, which is the average performance of all the stores in a similar geographical location and company average, which is the average performance of all the stores put together. The conceptual framework of the research is given in Figure 1.

SRM model

The SRM model was developed at the University of Oklahoma in 1980s. The tool was developed to access the performance of a retailer, in terms of how it uses its three major inputs, i.e., inventory, space and people. This tool is a useful tool for benchmarking, as it aids the retailer in making many informed decisions like, for a multi-store retailer, which store is doing the best on each of the three parameters, namely inventory, space and people. The less efficient stores can then be benchmarked with the efficient ones to improve their performance. The model facilitates answering questions like, how much space should be allocated to each merchandize category to maximize profit? How many people should be allocated to a category to maximize sale and service? How much inventory should be maintained to provide enough variety to the customer, which ultimately enhances sales? The framework also supports a multi-firm comparison where one can study, how different firms are managing their

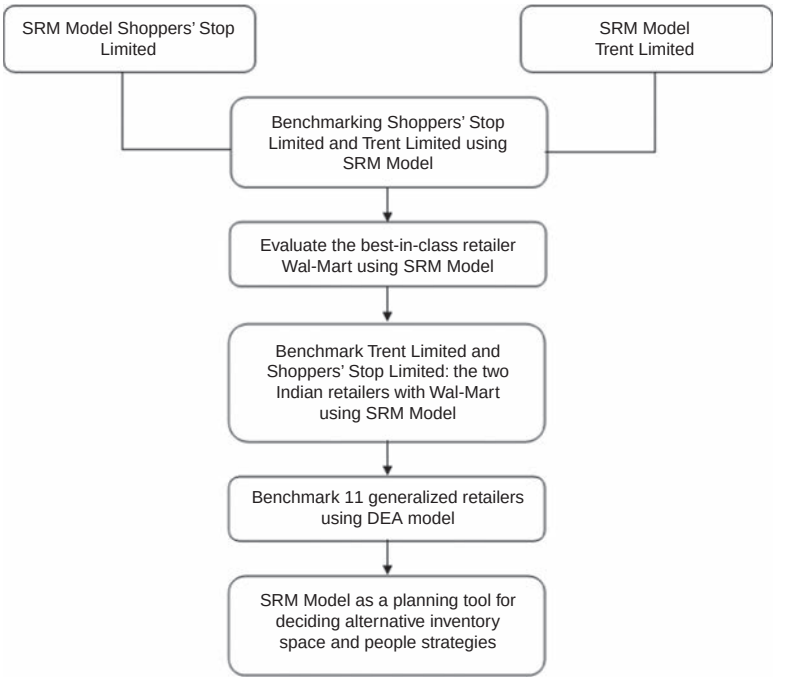

Figure 1.
Conceptual framework of research

merchandise, space and people. This benchmarking exercise helps in focussing the company's strategy, toward better utilization of its input resources.

Retailers who have stores at prime locations in metro cities have to pay very high rentals and therefore it becomes very important that they utilize the available space in such a way, as to maximize per selling feet margin, which is called as (GMROF), i.e., GMROF. Retailers also aim to generate substantial sales per employee and therefore the model provides a framework to capture (GMROL), i.e., GMROL. The higher, the sales per employee, it would be a favorable situation for the retailer. Retailers also would aim to achieve a high (GMROI), i.e., GMROI, which measures the ability of the retailer to hit a target margin and a target sales turnover number. Figure 2 summarizes the calculations of the SRM model. The model is efficient as it aids in ascertaining the performance at company level, store level, department level, category level and finally SKU level. Thus, the model is a flexible tool, which can facilitate in planning and controlling in an organization.

SRM model interpretation

The SRM model in Figure 2 starts with Box 1 (gross margin/net sales) on the left side. The gross margin percentage reflects the gross margin that the retailer earns as a percentage of sales. The gross margin percentage reflects the decision of the retailer in terms of the pricing of the goods and services offered. Based on the desired margin, the prices are set. The gross margin percentage is multiplied by the quantity in Box 2 (net sales/inventory) to give an output which is tabulated in Box 3 (gross margin/inventory). The ratio in Box 2 gives the inventory turnover ratio of the firm. Inventory turnover ratio measures the velocity of conversion of stock into sales. Usually a high inventory turnover/stock velocity (generally greater than 4), indicates efficient management of inventory because more frequently the stocks are sold; the lesser amount of money is required to finance the inventory. A low inventory turnover ratio

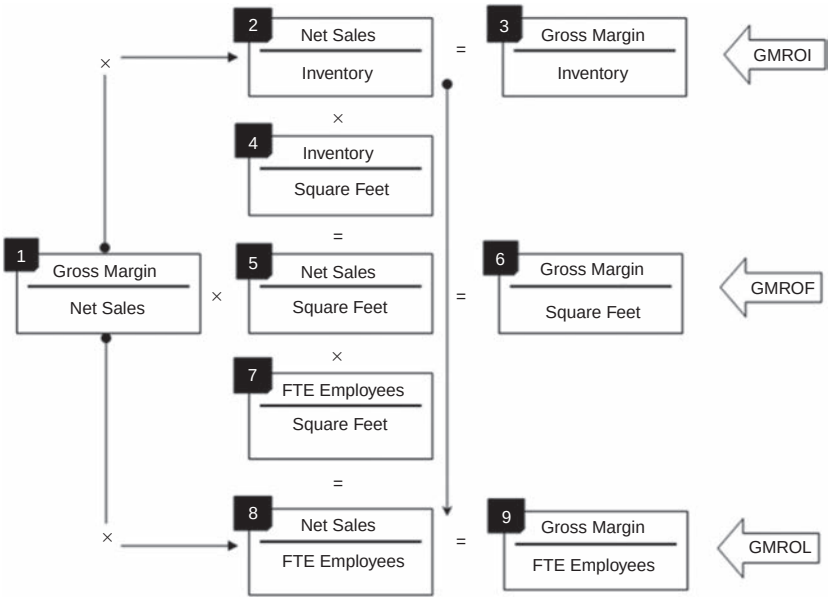

Figure 2.
Strategic resource management (SRM) model

(generally less than 4) indicates an inefficient management of inventory. A low inventory turnover implies over-investment in inventories, dull business, poor quality of goods, stock accumulation, accumulation of obsolete and slow moving goods and low profits as compared to total investment. The inventory turnover ratio is also an index of profitability, where a high ratio signifies more profit; a low ratio signifies low profit.

The ratio in Box 3 gives the GMROI, which is the GMROIs, which measures the ability of the retailer to hit a target margin and a target turnover number. A good GMROI figure is advisable. There are two ways to improve the GMROI, either increase the gross margin on sales (Box 1) or increase the inventory turnover (Box 2). To get more clarity, we can see through real life examples, that firms, which have very good margins normally have a low turnover ratio and firms with very high turnover do not enjoy a good margin. Therefore varying retail businesses end up having similar GMROI results.

After the GMROI, the SRM model proceeds toward the GMROF. The analysis starts with multiplying the inventory turnover (Box 2) with the (inventory/selling feet) in Box 4 to give an output, which is tabulated in Box 5 (net sales/selling feet). Sales per selling feet measure the merchandise intensity and are an important measure to ascertain space productivity. There are two ways to improve sales per selling feet. Increase the inventory turnover (Box 2) or increase the inventory per selling feet (Box 4). The next is GMROF, which is one of the most important ratios to judge and compare retail firms. The GMROF figure is arrived by multiplying the gross margin per sales ratio (Box 1) to the net sales per selling feet (Box 5) to give an output, which is tabulated in Box 6 as (gross margin/selling feet). To achieve a high GMROF, increase the Inventory turnover (Box 2), increase the inventory per selling feet (Box 4) or increase the gross margin ratio (Box 1).

The last resource in the SRM model is the labor and its productivity. The SRM model proceeds by multiplying the Box 5 (net sales/selling feet) with Box 7 (number of full time employees/selling feet) to give an output, which is tabulated in Box 8 (net sales/number of full time employees). There are two ways to increase the sales per employee. Increase the net sales per selling feet or alter the service intensity as per the requirement of the business model. One has to be very careful, while reducing the service level because if this parameter is altered without due thought and the customer expectations are not met, then the sales of the company may get adversely affected. The desired service level is what matches the customer expectation and also produces the right sales per employee. The final calculation is the GMROL calculation in Box 9 arrived by multiplying the gross margin percentage (Box 1) with net sales/number of full time employee (Box 8) to give an output which is tabulated in Box 9 (gross margin/number of full time employee). There are three ways the GMROL can be improved. Increase the gross margin percentage (Box 1), increase the sales per selling feet (Box 5) and bring the desired service level (Box 7). The overall GMROL figure should be optimized and not maximized. If you try to maximize you may reduce the service levels, which would affect the sales and margins of the company.

The most important row in the SRM model is the middle one, i.e., GMROF. The cost of space for a retailer is very high and is escalating day by day across the globe. This cost includes the rent, depreciation, maintenance, security, interest on mortgage, etc. This cost normally would exceed the cost of inventory and labor for most of the retailers. In case of retailers who are able to turn their inventory faster than they have to pay for it, inventory holding costs, in fact can be negative. As far as the labor costs are concerned, the salary and wages paid to the employees of the retailer are

far less as compared to the cost of property rentals. Another important reason to focus on GMROF, is that, retail space is the result of relatively fixed investment decisions that are quite difficult to reverse in the short to medium term. Retail space is the most valuable asset for the retailer and therefore the retailer should make all efforts to maximize the productivity of these scare resources. When we express margins and expenses as a percentage of sales, to margins and expenses per selling feet of space, we bring more seriousness to the space productivity and thereby our strategy, targets and efforts all move in that direction (Ring *et al.*, 2002).

Benchmarking Shoppers Stop and Trent using SRM model (data 2011-2012)

The model in this paper uses data from the published annual reports of these companies. The data for the selling feet area has been taken from CRISIL database. A summary of the key financial parameters of the model have been illustrated in Table I. Trent (56.70 percent) has a high gross margin percentage as compared to Shoppers Stop (38.27 percent). Shoppers Stop sales are 2.3 times sales of Trent, but the gross margins of Shoppers Stop are just 1.59 times higher than Trent. After speaking to the company executives, it was ascertained, that the reason for such a high gross margin for Trent, is that, its departmental store "Westside" sells major portion of its apparels through private label, which ensures a very high margin as compared to Shoppers Stop, which has relatively lower private labels (around 17 percent, source: CRISIL Database). Trent's "Westside" chain of stores is ranked to be in the top quartile in terms of contribution of private label merchandize to overall revenues. Higher private label content facilitates not only realization of better margins but also affords other benefits like control over the merchandize design and quality, which allows for a better competitive position over the short to medium term. The retailer is able to make the offering complete and collectively more attractive.

From gross margin percentage, we move to GMROI and we get to analyze that Shoppers Stop GMROI is 4.07, which is higher than Trent, which has 3.00. A higher GMROI is advisable. There are two components to the GMROI; gross margin percentage and inventory turnover ratio. The gross margin percentage of Trent is higher than that of Shoppers Stop but the inventory turnover of Trent (5.30) is lower than Shoppers Stop (10.62). Usually a high inventory turnover/stock velocity indicate efficient management of inventory because more frequently the stocks are sold; the lesser amount of money is required to finance the inventory. A low inventory turnover ratio indicates an inefficient management of inventory. One of the methods to attract

Retailer	Gross margin/ sales (%)	Net sales/ inventory	Gross margin/ inventory GMROI	Inventory/ selling feet	Net sales/ selling feet	Gross margin/ selling feet GMROF	FTE/ selling feet	Net sales/ FTE	Gross margin/ FTE GMROL
Shoppers Stop	38.27	10.62	4.07	609.84	6,478.8	2,479.71	0.0018	3,591,847.7	1,374,753.3
Trent	56.70	5.31	3.01	1,027.53	5,451.34	3,091.01	0.002	2,772,570.85	1,572,098.52
Wal-Mart (US$)	25.43	12.14	3.09	35.04	425.35	108.19	0.0022	190,432.73	48,437.27
Wal-Mart (INR)	25.43	12.14	3.09	2,079.27	25,240.27	6,419.99	0.0022	11,300,278.19	2,874,267.60

Note: 1 US$ is equal to 63.72 INR (date: February 1, 2014)

Table I. SRM model for Shoppers Stop Limited, Trent Limited and Wal-Mart

customer is to offer a wider range. Trent's lower inventory turnover ratio could also indicate that, Trent is offering a wider range to lure the customer.

One of the most important parameters to judge the retail productivity is the GMROF. The GMROF for Trent is INR 3,091 per selling feet as compared to Shoppers Stop, which has INR 2,480 per selling feet. Shoppers Stop has a higher inventory turnover ratio (10.62) as compared to Trent (5.30) but a lower Inventory per selling feet (609.84) as compared to Trent which has (1,027.52). This depicts that Trent offers more choices to the customer and has a wider range. The net sale per selling feet of Trent is lower (5,451.34) as compared to Shoppers Stop (6,478.80). The gross margin of Trent is higher as compared to Shoppers Stop and therefore the net result is that the GMROF of Trent is higher than that of Shoppers Stop. Further analysis depicts, that Trent has higher private label and therefore the company is able to earn more margins on the sale made. It is also able to use its floor space in a better way as compared to Shoppers Stop, which is depicted through high GMROF.

The last parameter of the SRM model is GMROL. The GMROL of Shoppers Stop (INR 1,374,753 per full time equivalent employee) is lower as compared to Trent (INR 1,572,098 per full time equivalent employee). The GMROL figure is arrived by multiplying the gross margin percentage by the net sales per employee. The net sales per employee of Shoppers Stop (INR 3,591,848) is higher than Trent (INR 2,772,571). But the GMROL is lower of Shoppers Stop as compared to Trent, as Shoppers Stop gross margin percentage is lower.

The results depicts that the performance of Trent is better as compared to Shoppers Stop. Out of the important four parameters of performance, Trent scores better on 3. It has a higher gross margin percentage, GMROF and GMROL. Shoppers Stop is marginally higher on GMROI and Inventory turnover. As both the retailers operate with similar product mix, the study depicts that Shoppers Stop has immense scope for improvement. It should target to improve its GMROF, GMROL and gross margin percentage. The various suggestions could be as follows:

- Shoppers Stop should enhance the percentage of private labels out of the total sales, so that, it is able to increase its gross margin. This will also enable the company to increase the variety and therefore the consumers will get attracted to the store.
- Shoppers Stop should focus on bringing new fashion garments every month to attract the old customers for repeat sales. They can benchmark themselves in the arena of fashion apparel with "Zara," who has successfully increased retail footfall by bringing the same customers to the store again and again by changing the complete apparel inventory by bringing new varieties every 15 days. The customer is lured to come to the store frequently to check new designs.

Benchmarking the performance of Shoppers Stop and Trent with the best-in-class retailer Wal-Mart

Figures 3-5 provide the comparative analysis of Shoppers Stop, Trent and Wal-Mart using the SRM model. The gross margin percentage of Wal-Mart is quite low as compared to Shoppers Stop and Trent. Though the gross margin percentage is low for Wal-Mart, its turnover is high and therefore it is able to play a volume game instead of a margin game. Wal-Mart's strategy is to constantly lower the cost of life's necessities to the ultimate customer. Therefore Wal-Mart is forcing gross margins down on a

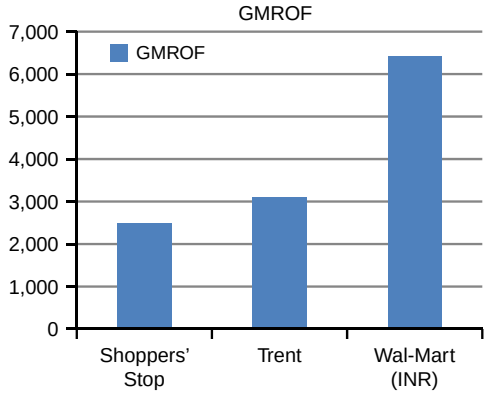

Figure 3.
GMROF

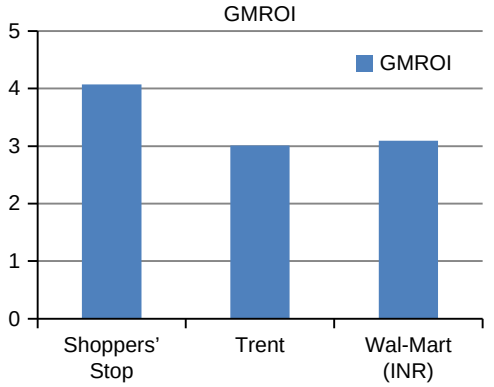

Figure 4.
GMROI

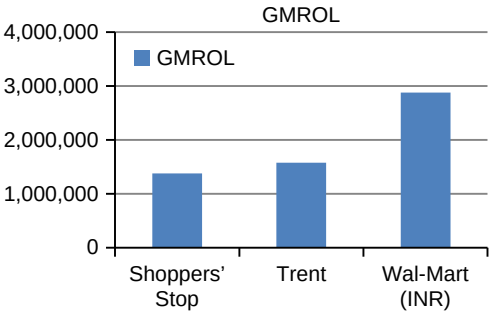

Figure 5.
GMROL

constant basis and working with suppliers to reduce the cost of goods purchased from them. This should ideally increase the gross margins of the company. But this is not happening as Wal-Mart is passing the major benefit to the customer by offering everyday low prices, which cannot be matched by any competitor (Tigert *et al.*, 1998).

The GMROI of Trent is similar to Wal-Mart but Shoppers Stop has a higher GMROI. It is advisable to have a higher GMROI. Both the Indian retailers have

similar or higher GMROI. The GMROF of Wal-Mart is 6,419.99 in rupees converted from dollars. This figure is high as compared to Indian retailers; Shoppers Stop (2,479.71) and Trent (3,091.01). There is a lot of scope for the Indian retailers to improve their gross margin return on selling feet. The GMROL of Wal-Mart is INR 2,874,267.60 which is way higher than the Indian counterparts that is INR 1,374,753 for Shoppers Stop and INR 1,572,098 for Trent. This depicts that there is a lot of scope for the Indian retailers to improve on this parameter as well. The Indian retailers would need to work on multiple fronts. There is a need for the Indian retailers to use advanced and efficient retailing technologies to their advantage. Today new technologies have become drivers of business growth and it has become imperative for organizations to embrace technologies. Customers are looking for a wireless, seamless, cashless and most economical alternative. To stay ahead in the global retail race, the use of modern technologies has become imperative. Retailers that effectively utilize the technologies available to them will grow sales, increase margins and improve profitability. The effective use of technology comes down to getting the right product, to the right store, at the right time, so that, the customer buys the product and is satisfied in doing so. Retailers need to improve their logistics, supply chain and forecasting accuracy. The space allocation to the different merchandise should be done based on the GMROF per merchandise; higher the GMROF, higher the space allocated. Finally the Indian retailers have to ascertain their own individual strategy, to entice customers either through customer loyalty programs, selling goods at competitive prices, to sell new designs/varieties based on the current fashion or any other method which helps in bringing more and more customers to the retail outlets and thereby enhancing the money spent per customer.

Benchmarking Shoppers Stop and Trent using DEA (2011-2012)

DEA. DEA measures the relative performance of organizational units taking into consideration multiple inputs and multiple outputs. The model helps in identifying sources and amounts of inefficiency in each input and each output for each Decision Making Unit (DMU). It identifies a "frontier," on which the relative performance of all the DMUs in the sample can be compared. It benchmarks DMUs against the best producers. It assumes that if a particular DMU can produce a certain level of output utilizing a certain level of inputs than another firm of equal scale should be capable of doing the same. The most efficient producer can form a group of producers, allowing the computation of an efficient solution for every level of input and output. There are different models of DEA which are used by researchers. For this study, two models CCR and BCC have been used. The CCR model was initially proposed by Charnes, Cooper and Rhodes and therefore the abbreviation CCR (Charnes *et al.*, 1978, 1979). Later Banker *et al.* (1984) suggested a model for distinguishing between technical efficiency and scale efficiency (SE) in DEA. The BCC model was proposed by Banker, Charnes and Cooper and therefore the abbreviation BCC. The BCC model relaxed the constant returns to scale (CRS) assumption of the CCR model and made it possible to evaluate the performance of DMU's using variable returns to scale in multiple outputs and multiple inputs situation.

The DEA methodology measures the efficiency of each DMU as the ratio of weighted outputs to the weighted inputs. The weights are derived from the data and therefore the DEA model tries to maximize the efficiency of each DMU and calculates

the efficiency that assigns the most favorable weights to each unit (Charnes *et al.*, 1978). Mathematically, this can be written as:

$$\text{Efficiency ratio} = \frac{\text{weighted sum of output}}{\text{weighted sum of inputs}} \quad (1)$$

For the CCR model with CRS and input minimization orientation, the following linear programming is solved to ascertain whether kth DMU is DEA efficient:

$$\underset{\theta k, \lambda_k}{\text{Minimise}} = \theta_k \quad (2)$$

$$\text{Subject to: } X\lambda_k \geqslant \theta_k X_k$$

$$Y\lambda_k \geqslant y_k$$

$$\lambda_k \geqslant 0$$

where θ_k is the input-oriented technical efficiency measurement for firm k; X is the $I \times K$ matrix of observed input quantities; Y is the $J \times K$ matrix of observed output quantities; Vector x_k is the observed input quantities of firm k; and Vector y_k is the observed output quantities of firm k.

The CCR DEA model measures the technical efficiency of each firm in the sample such that, it seeks to find the factor θ_k, by which the kth firm can reduce its input vector. For example, a technical efficiency score of 0.80 would indicate that the firm could reduce input levels by 20 percent and still produce the same level of output. Similarly a variable returns to scale DEA model is obtained by inserting an additional constraint in CCR Model that restricts the elements of the λ_{kt} vector to sum to one. The research paper assumes that the reader has some basic understanding of the technique and the technique itself is well established and therefore the paper does not provide a detailed review of the same.

Inputs and outputs. The data for the model has been taken from CMIE database and by gathering data by calling up the corporate office of the retail firm for information related to the number of employees and square foot area of retail space that the retailer has. To be included in the data set used in this study, we selected all generalized retailers so that comparison would be more meaningful. Table II reports descriptive statistics of the variables used in the study.

Variables	Minimum	Maximum	Mean	SD
Outputs				
Sales (INR)	2,140,000	67,717,800,000	10,272,627,545	20,460,571,790
Inputs				
Number of employees (No.)	900	3,000,000	281,820	901,610
Square foot area (Sq. ft.)	25,000	15,780,000	3,521,744	5,267,604
Inventories (INR)	550,000	44,692,100,000	4,455,240,000	13,362,604,872

Note: Values in INR (1 USD ≅ 63.72 INR as on February 1, 2014)

Table II. Descriptive statistics of the variables used in the study based on CMIE database

DEA model requires the identification of inputs and outputs. Based on literature survey and availability of published data, the input and the output variables have been selected. The authors wanted to extend the SRM model and compare the results with the DEA model and therefore the three inputs used in the SRM model, i.e., number of employees, square foot area and inventories are used as input parameters for the DEA model. The output was measured in terms of sales. DEA model will enable to ascertain, how efficiently space, people and inventory – the three relevant inputs to the retail sector, were used to generate higher sales. The total numbers of input and output variables are kept to a minimum as per the DEA convention. The general rule of thumb is that the minimum number of DMU's should be greater than three times the number of inputs plus outputs. To ensure that the performance benchmarking is conducted with similar firms, we selected all the generalized retailers in the country, whose data were available, which lead to 11 firms in total. This rule has been closely adhered to in this paper. Since number of inputs plus outputs is four in our model, it's three times value is 12. The study has used 11 DMU's, which is close to the rule of thumb. The input and output parameters selected for the purpose of study are mentioned in Table III along with the supporting literature.

DEA results. The DEA results have been calculated by using the software "DEA-Solver" by Cooper *et al.* (2007). The DEA results can be calculated in several ways. In order to solve the CCR and BCC, DEA problem, three characteristics have to be specified: input-output orientation, returns to scale and weights to be assigned to the inputs and outputs. First, if the model is input oriented, it means that the inputs are in the control of the DMU and therefore the inefficient firms are suggested to reduce their inputs for the given outputs to become more efficient and in the case of output-oriented models, the inefficient firms are suggested to increase their outputs for the given set of inputs to become more efficient. Our research has used input-oriented models as we believe that in today's competitive markets, outputs may not be in the direct control of

Table III.
Input and output parameters with supporting literature

Input output parameters	Literature
Output parameters	
Sales	Yu and Ramanathan (2008), Perrigot and Barros (2008, 2006), Barros and Alves (2003), Moreno and Sanz-Triguero (2011), Sellers-Rubio and Mas-Ruiz (2006, 2007, 2009), Joo *et al.* (2009, 2011), Banker *et al.* (2009), Moreno (2006, 2008, 2010), Mostafa (2009, 2010), Mateo *et al.* (2006), Vaz *et al.* (2010), Barth (2007), Donthu and Yoo (1998), Thomas *et al.* (1998), Keh and Chu (2003), Anthanassopoulos (1995), Dasgupta *et al.* (1999)
Input parameters	
Number of employees	Yu and Ramanathan (2008), Perrigot and Barros (2008), Barros and Alves (2003), Sellers-Rubio and Mas-Ruiz (2006), Moreno (2008), Barros (2006, 2007), Mostafa (2009, 2010), Mateo *et al.* (2006), Moreno (2006, 2010), Thomas *et al.* (1998), Keh and Chu (2003)
Square foot area	Barros and Alves (2003), Sellers-Rubio and Mas-Ruiz (2006), Banker *et al.* (2009), Moreno (2008), Mateo *et al.* (2006), Vaz *et al.* (2010), Donthu and Yoo (1998)
Inventories	Barros and Alves (2003), Moreno and Sanz-Triguero (2011), Banker *et al.* (2009), Vaz *et al.* (2010), Moreno (2010), Thomas *et al.* (1998)

the retailer, though will aim to maximize the outputs, but may be able to influence the inputs to a larger extent. Second, returns to scale can be CRS (CCR model) and variable returns to scale (BCC Model). The paper has used both the models. BCC models employ the variable returns to scale or VRS and can assess pure technical efficiency (PTE). CCR models use CRS and measure technical efficiency, which is the product of PTE and SE. Accordingly, TE (by a CCR model) = PTE (by a BCC model) × SE. Lastly, as far as the weights are concerned, they are endogenously defined by the algorithm for CCR and BCC model and measure the distance between the DMU and the frontier. The relative efficiency scores of 11 Indian generalized retailers in the year 2011-2012 are presented in Table IV.

It is observed that under the CCR model, the most efficient Indian retail firms, which are on the efficient frontier, are Shoppers Stop (1.00); Trent Ltd (1.00) and Future value retail (1.00). The average efficiency score under CCR is 66 percent with a standard deviation of 31, which implies that on an average the Indian retail firms could use 34 percent less inputs to produce the same level of output. With regard to BCC model, the most efficient Indian retail firms, which are on the efficient frontier are Future retail Ltd (1.00); Shoppers Stop Ltd (1.00); Trent Ltd (1.00); Globus Stores Pvt Ltd (1.00); Future value retail (1.00); Trent Hypermarket (1.00) and Infinity Retail Ltd (1.00). The average efficiency score under BCC is 86 percent with a standard deviation of 29. Retail firms like Future retail Ltd, Globus Stores Pvt Ltd, Trent Hypermarket and Infinity Retail Ltd are showing less than 100 percent efficiency on CCR as compared to 100 percent efficiency on BCC. This implies that these firms do not operate at their most productive scale of operations. SE is the ratio of CCR and BCC efficiency. Indian retail firms, which have SE close to 1.00 are Shopper Stop Ltd (1.00); Trent Ltd (1.00) and Future value retail (1.00) These firms operate at their most productive scale of operations.

The study reveals that Shoppers Stop and Trent both are efficient as compared to the other generalized retailers in the country from the sample selected. The DEA model is therefore not able to provide direction in terms of how these two retailers can improve their performance. How they can plan their space, people or inventory strategies to maximize profitability. The authors therefore extend the SRM model and further research to ascertain, how SRM model can be used as a planning and decision making tool to plan alternative strategies at store and merchandise category level.

Name of retail company	CCR	BCC	Scale efficiency	RTS
Future Retail Ltd	0.44	1.00	0.44	−1
Shoppers Stop Ltd	1.00	1.00	1.00	0
Trent Ltd	1.00	1.00	1.00	0
Bharti Retail Ltd	0.53	0.66	0.80	1
Globus Stores Pvt Ltd	0.32	1.00	0.32	1
Future value Retail	1.00	1.00	1.00	0
Reliance Retail Ltd	0.04	0.06	0.67	1
Aditya Birla Retail Ltd	0.64	0.86	0.74	1
Trent Hypermarket	0.67	1.00	0.67	1
Infinity Retail Ltd	0.86	1.00	0.86	1
Hypercity retail (India) Ltd	0.76	0.85	0.89	1

Notes: RTS, returns to scale; 0 = constant RTS; −1 = decreasing RTS; 1 = increasing RTS

Table IV. The efficiency scores of the Indian generalized retailers for the year 2011-2012

Using SRM as a planning and decision making tool

Store level-analysis. The SRM Model can be used as a planning tool to set alternative targets for GMROF, GMROL and GMROI for a particular store. Based on the set target, the stores actual performance can be evaluated. Such a process enables a store manager to move in the direction of better productivity and profitability. Apart from setting individual targets, the SRM model can be used as a benchmarking tool to evaluate the performance of a particular store with reference to the average of all stores of the company, as well as the grid average, which is the average of all similar stores in terms of the demographic and geographical location characteristics. This activity helps in ascertaining the stores, which are the best performing stores, as compared to the least performing stores. The analysis provides deep insights in terms of how a particular store can alter its inventory, space and labor to achieve high gross margin per selling feet. It can also ascertain the best stores and the not so best stores. The best stores can become the benchmark stores, which will become examples to replicate in the not so good stores. Such an analysis clarifies that the problem with a not so good store is a local problem and can be resolved at the level of the store. In case the not so good stores are still not able to improve their performance, then the retailer can take strategic decision in terms of, whether to continue with such a store or shut it down.

These strategic decisions would need to consider not only the parameters of the SRM model, but apart from them, reasons which could be marketing or tactical based. For example, a retailer may like to continue with a store in an airport, though the revenues are not significant, as the retailer is able to put up a huge hoarding in front of the store. The visibility of the hoarding and the clients it attracts, justifies the cost of maintaining the retail outlet. Another example is of a store in an up-market area, where the rentals are high and therefore the store is not able to perform very well. You would still like to maintain the retail store as symbolically, it is important for you to have your presence in such an area. SRM model can provide a yardstick to understand, how your stores are performing and therefore act as a tool for planning the future of the store. Ultimately, the decision to continue, discontinue, alter the mix of inventory, space or labor is based on not just the SRM model parameters, but also strategic outlook, which may justify the presence of an outlet.

The SRM model does not stop at ascertaining problem areas in terms of, which store is comparatively performing badly as compared to the other stores, but also provides prescriptive insights, which can help improve the performance of the store. Some of these insights are mentioned as follows:

- Target a higher gross margin for the badly performing store. This can be achieved either by reducing the cost of goods sold, or increasing the prices or changing the merchandise mix by having higher products with higher margins or adding private label products, which have higher margin as compared to branded products.
- Changing the space requirement of the merchandise mix by allocating more space to merchandise categories, which earn higher gross margin per selling feet. Also display high GMROF merchandise categories immediately as soon as the customer enters the store, as the customer may pick up products, which have high visibility in spite of the fact that customer had not planned for such purchases initially.

- Targeting a merchandise intensity level based on the customer requirement. For example, if many clients come and pick up products under a particular merchandise category, then the store manager can increase the stock intensity of that particular merchandise, which will in turn enhance the sales of the store.
- Altering the level of customer service can enhance the profitability of the store. Merchandise categories where detailed product information and advice has to be rendered, a higher number of employees will enhance sales, whereas merchandise categories, where customers makes his own decision and does not require expert advice or help, the customer service level can be reduced or kept to a bare minimum.

Merchandise category level-analysis. The analysis can further move on to ascertain the performance of each merchandise category, like kids section, ladies section, sports-wear, toys, etc. Such an analysis will provide deep insights, which can enable a store manager plan and understand, whether the firm has made sufficiently sound decisions with reference to inventory, space and labor. Again, the merchandise category performance is compared with a similar store in the neighborhood; group of similar stores in terms of geographic and demographic characteristics, i.e., the grid average and finally the overall company average. The analysis provides a window to the store manager to decide whether his merchandise category is performing well as compared to the company average as well as grid average. If the analysis depicts deficiency in some merchandise category across all the stores, it is an indication that the problem is not a local problem and a strategic decision needs to be taken to deal with such a problem. The implications of such decisions will affect the way retailer does business and therefore act as an aid in planning stores future course of action. Sometimes, a merchandise category may not be doing too well, yet cannot be completely removed due to the fact that, it is possible that customers have the expectation that everything can be bought from a single store. In such a situation, if a particular merchandise category is removed completely, then the customer may have to switch to a competitor, leading to a reduction in the footfall and consequently, sales.

Tables V and VI provide an illustration of how this process works. The data that populates these figures are from a departmental store chain in India, with 55 stores.

Category: jeans. Tables V provides the data and analysis for the jeans merchandise category at the Bandra store located in the west of Mumbai, the financial capital of India. The jeans section at the Bandra store is compared with the jeans section at a similar up-market store, i.e., Andheri store, which is located in the north of Mumbai, with the grid average, which gives the average of similar stores in similar demographic and geographical characteristics and with the overall company average. This type of analysis helps in benchmarking and would provide prescriptive action plan, which would help the store to better its own performance. Therefore this kind of analysis is not a postmortem analysis but provides highly directional and pragmatic action plan, which can aid a store manager to improve its performance.

The Bandra store is a better performer store with a GMROF of INR 928,000 per square meter compared to Andheri store at only INR 830,000 per square meter. But it is a bad performer store as compared to the grid average of INR 1,252,000 per square meter and company average of INR 1,136,000 per square meter. The action plan for the Bandra store is as follows:

- Bandra stores gross profit margin is higher than the comparative store, grid average and company average.

Table V.
How to use SRM as a planning tool: merchandise category analysis of "Jeans" section

Store: Bandra

Category: Jeans

Comp Store: Andheri

Sales to Stock Ratio			
Comp	Net Sales Rs 000's	936	5.54
	Avg Stock @ Cost	169	
Store	Net Sales Rs 000's	796	5.44
	Avg Stock @ Cost	146	
Grid Avg	Net Sales Rs 000's	15,656	5.74
	Avg Stock @ Cost	2,723	
Comp Avg	Net Sales Rs 000's	61,511	5.76
	Avg Stock @ Cost	10,671	

GMROI: Gross Margin Return on Inventory		
2.1	353	Gross Profit Rs 000's
	169	Avg Stock @ Cost
2.2	325	Gross Profit Rs 000's
	146	Avg Stock @ Cost
2.3	6,217	Gross Profit Rs 000's
	2,723	Avg Stock @ Cost
2.3	24,265	Gross Profit Rs 000's
	10,671	Avg Stock @ Cost

Merchandise Intensity			
Comp	Avg Stock @ Cost	169	398
	Sqr Meters	425	
Store	Avg Stock @ Cost	146	418
	Sqr Meters	350	
Grid Avg	Avg Stock @ Cost	2,723	548
	Sqr Meters	4,966	
Comp Avg	Avg Stock @ Cost	10,671	500
	Sqr Meters	21,359	

Gross Profit Margin %			
Comp	Gross Profit Rs 000's	353	37.70%
	Net Sales Rs 000's	936	
Store	Gross Profit Rs 000's	325	40.80%
	Net Sales Rs 000's	796	
Grid Avg	Gross Profit Rs 000's	6,217	39.70%
	Net Sales Rs 000's	15,656	
Comp Avg	Gross Profit Rs 000's	24,265	39.40%
	Net Sales Rs 000's	61,511	

Sales Per Selling M2			
Comp	Net Sales Rs 000's	936	2,202
	Sqr Meters	425	
Store	Net Sales Rs 000's	796	2,274
	Sqr Meters	350	
Grid Avg	Net Sales Rs 000's	15,656	3,153
	Sqr Meters	4,966	
Comp Avg	Net Sales Rs 000's	61,511	2,880
	Sqr Meters	21,359	

GMROF: Gross Margin Return on Floor Space		
830	353	Gross Profit Rs 000's
	425	Sqr Meters
928	325	Gross Profit Rs 000's
	350	Sqr Meters
1,252	6,217	Gross Profit Rs 000's
	4,966	Sqr Meters
1,136	24,265	Gross Profit Rs 000's
	21,359	Sqr Meters

Service Intensity			
Comp	Sqr Meters	425	140.8
	FT Employees	3.02	
Store	Sqr Meters	350	132.7
	FT Employees	2.64	
Grid Avg	Sqr Meters	4,966	95.2
	FT Employees	52.14	
Comp Avg	Sqr Meters	21,359	112.1
	FT Employees	190.6	

Sales Per Team Member (FTE)			
Comp	Net Sales Rs 000's	936	310,040
	FT Employees	3.02	
Store	Net Sales Rs 000's	796	301,675
	FT Employees	2.64	
Grid Avg	Net Sales Rs 000's	15,656	300,254
	FT Employees	52.14	
Comp Avg	Net Sales Rs 000's	61,511	322,728
	FT Employees	190.6	

GMROL: Gross Margin Return on Labour		
116,820	353	Gross Profit Rs 000's
	3.02	FT Employees
123,142	325	Gross Profit Rs 000's
	2.64	FT Employees
119,225	6,217	Gross Profit Rs 000's
	52.14	FT Employees
127,309	24,265	Gross Profit Rs 000's
	190.6	FT Employees

Table VI.
How to use SRM as a planning tool: merchandise category analysis of "Toys" section

- Bandra store should increase the merchandise intensity further from INR 418 per square meter to Rs 500 per square meter, which is the company average or further increase it to INR 548 per square meter, which is the grid average. High merchandise intensity will offer more choices to the customer and therefore would lure the customer to buy.
- Bandra store should increase the stock turns from the current level of 5.44 to the company average of 5.76. This can be done by removing the old stocks by markdown and pumping up fresh stock, which will attract the customer and increase the sale.
- Jeans is a very specialized selling. A customer will not buy, until he is satisfied with the fit of the outfit. The salesperson, who assists in selecting a particular jeans, should have good product knowledge and should be able to judge by looking at the customer, which jeans would best suit the liking of the customer. Therefore, it is essential to have high service intensity. The average service intensity of the grid is 95.2 square meters per employee and 112.1 square meters per employee for the company. If Bandra store hires one more additional employee, the service intensity will go up to 96.15 square meters per employee, which is close to the grid average and not very far from the company average.
- With the additional manpower, the jeans section of the Bandra store should be able to increase the sales per FTE and consequently the GMROL.
- The employees should be sufficiently motivated and if required move some good performing employees from other stores to Bandra store. This will ensure that the other employees get trained and are motivated to perform at a level far above the current level.

Category: toys. Table VI provides the data and analysis for the toys category at the Bandra Store. The Toy section at the Bandra store is compared with the toys section at Andheri store, with the grid average and with the overall company average.

The Bandra store is a bad performer store with a GMROF of INR 1,022,000 per square meter compared to Andheri store at INR 1,048,000 per square meter. But the Bandra store is a better performer store with a GMROF better as compared to the company average of INR 1,004,000 per square meter and a bad performer as compared with the grid average of INR 1,150,000 per square meter. The action plan for the Bandra store is as follows:

- Bandra stores gross profit margin is lower than the comparative store, grid average and company average. The comparative stores gross profit margin is higher than the Bandra store, grid average and company average. Therefore, the Bandra store should benchmark its performance to the Andheri store and drive relevant inferences and action points.
- Bandra store should increase the stock turns from the current level of 4.68 to the company average of 4.91.
- Bandra store has higher merchandise intensity as compared to the comparative store Andheri and company average. Therefore, the store is offering a lot of choices. The quality of stock should be checked. If Bandra store is carrying a lot of old stock, than it should mark down the old stock so that fresh new stock can be enhanced, which in turn improves the chances of higher sales as customers are

offered the latest trend toys, which would be picked up faster. Kids are very brand focussed and are always at the look-out for the latest toys and games available in the market. There is a lot of peer pressure among kids and therefore as soon as one friend picks up a toy, all the other kids are in a hurry to purchase the same offering.

- Let us assume that the Bandra store has new stock but still the sales are not commensurate to the merchandise intensity, then the store should increase the marketing efforts required to sell the toys. The alternatives could be to have a very seasoned and experienced sales manager managing this particular merchandise category. Sales promotion could be another alternative to lure the kids and their parents. The Bandra store can tie up with schools in the nearby vicinity and thereby set up stalls during school open days, functions and festivals. This would promote the name of the store as well as generate sales, as kids will force the parents to take a round at the stall and may end up buying.
- It is essential to have high service intensity in the toy section as the salesman can push sales by showing all the variety and informing the customer about the various features of the various toys. The service intensity of the store is 96.9 square meters. The average service intensity of the grid is 88 square meters per employee and 99.7 square meters per employee for the company. If Bandra store hire an additional 0.2 employee, the service intensity will go up to 89.81 square meters per employee, which is close to the grid average.
- With the additional manpower, the toy section of the Bandra store should be able to increase the sales per FTE and consequently the GMROL. The current sales per employee of the Bandra store is INR 464,043 per employee, which is lower than the Andheri store, grid average and company average.
- The employees should be sufficiently motivated. The efficiency and performance of the store manager should be checked to ensure that the leadership is encouraging the employees to perform to the best of their abilities or is pushing the employees toward non-performance. The pay of the employee can be shifted from a fixed salary to a performance linked salary so as to motivate employees for better performance.

Discussion and managerial implications

SRM model is an important tool for benchmarking and planning of retail stores. The SRM model can be adopted as a framework, which can be used by retailers for their weekly, fortnightly, monthly, quarterly and yearly planning and reporting. The reporting can be done at company level, department level, merchandise category level and finally SKU level. As discussed in this paper, the most important parameter of performance in the SRM model is the GMROF and therefore, specific targets can be allocated at company level, store level and departmental-level. Based on the set target, appropriate levels of GMROI and GMROL can be set, which would enhance the profitability and GMROF in the long run. New technologies like RFID, wireless technologies, mobile technologies, retail ERP, etc., have brought in enhanced visibility of inventory. Retailers are able to know on a dynamic basis, the quantity of stock available, stocks to be ordered, outdated or unsold stock and stocks in pipeline. This, to a great extent, has reduced the amount of redundant inventory that retailers are carrying these days. Retailers need to decide the appropriate level of inventory that

they need to carry, which enhances the variety and choice available to the customer but at the same time does not stock up too much inventory. Therefore, it is possible to earn a higher GMROI without sacrificing the merchandise intensity. Similarly, appropriate level of GMROL, need to be set, to provide desired service level to the customer. Higher service level will enhance the chances of enhanced sales especially in the merchandise categories, where customers seek detailed product information. Thus, if everyone in the organization works toward enhancing the parameters of the SRM model, i.e., enhance GMROF and manage appropriate level of GMROI and GMROL, profitability will definitely begin to improve.

The SRM model not only acts as a diagnostic tool to understand the current level of performance but also aids in the process of planning the future course of action for the company, store, merchandise category or SKUs. The retailer can plan alternative people, space and inventory strategies to enhance the GMROF and profitability of the company. The SRM model can be used to plan the layout and space allocated to each merchandise category. The model aids in answering pertinent questions like, which merchandise category should be displayed as soon as the customer enters the shop. The merchandise category, which has the highest GMROF is the one, which should be selected. The model also answers questions like, which merchandise category should be allocated more space, is there a need to change the stock intensity: enhanced or decreased, should more people be allocated to a particular merchandise category.

The study evaluates the performance of two well performing generalized Indian retailers; Shoppers Stop and Trent, to ascertain their performance and then compare it with each other, followed by benchmarking with the best-in-class retailer Wal-Mart. The study proceeds with benchmarking these two retailers with other generalized retailers in the country using DEA model. The study also provides a framework to plan and evaluate the performance of a store and merchandise categories; "Jeans" and "Toys." Benchmarking efficiency is a good way managers can compare their performance with the best in the industry and the globe at large and accordingly making the required changes. Instead of just setting performance targets based on historic data, global efficiency techniques used in this paper can help the retailers judge their retail store performance. Managers may analyze their organizational practices with their peer organizations and accordingly try to monitor the future efficiencies on a regular basis.

Contributions, limitations and conclusions

The SRM model is in existence since more than three decades, but its application by Indian retailers is quite scanty. Only one generalized retailer, i.e. Shoppers Stop has started reporting the GMROF, GMROI and GMROL figures in the annual report and has also implemented the model for day to day monitoring and decision making. The remaining retailers have to go a long way in embracing the model and transforming the organization to a data driven organization. The success of the implementation of a robust model like SRM is possible only when the top management commitment for the initiative is in place. Right from procurement manager, to supply chain manager, to operations head and to store manager, all the key personnel have to be evaluated on the basis of, how they have performed on the planned parameters of the SRM model. People in the organization have to be trained so that they understand the model well and are aware, how they can impact the bottom line by channelizing their actions in the direction of achieving a higher GMROF. Over a period of two to three years retailers can inculcate the culture, where all levels of data starting

from company, to store, to department, to merchandise category, to SKU is collected, analyzed and appropriate actions is taken in accordance to the SRM model. With such a focus, retailer will eventually have the right amount of inventory, the right merchandise and assortment, the best utilization of the retail space and the right amount of labor to man the store; which eventually would positively affect the bottom line. The authors have also used DEA model to evaluate the efficiency level of 11 generalized retailers in the country, which includes Shoppers Stop and Trent. Both the retailers are efficient as per the CCR and BBC model, which means compared to the other generalized retailers in the country, they are relatively using the appropriate levels of inputs to produce the outputs. Productivity tools like DEA help in understanding how a particular firm has performed as compared to other similar firms in the industry. It can provide direction to the inefficient firms in terms of reducing its inputs or enhancing outputs for improving efficiency. Once a firm is able to understand whether it is efficient as compared to its competitors, it can use the SRM model, to arrive at specific deliverables, which can help the firm to become more efficient and profitable by planning appropriate levels of space, people and inventory strategies using the SRM model.

SRM model can provide direction to managers to manage the operations of the firm in an efficient way, but cannot help in bringing new business. It can at best help in retaining the existing customers by ensuring the right mix of merchandise manned by the retailer, ensure there are sufficient people to man a particular department and the store space is used in the most optimum way by ensuring merchandise, which sell more are allocated sufficient space and visibility as compared to merchandise, which do not. Therefore, it is essential that along with a strong data driven and SRM model driven organization, firms would need a strong sales focus, which will ensure that existing customers lifetime value enhances and new customers get attracted to the store. The paper has been able to clearly demonstrate how a retailer can benchmark its performance at global level, company level, store level, department level, merchandise category level and SKU level. The benchmarking can be conducted within the company, as well as with competitors in the country and abroad to get a global perspective in terms of how the best practices of the globally successful players can be incorporated in your own company. As long as retailers keep benchmarking themselves with the best players in the world, they will never get overconfident about their own performance and would try to keep updating and enhancing the current level of performance. Such organizations will be able to face economic downturns and global slowdowns in a much better way as compared to organizations, which remain in their own shell satisfied with the current level of performance.

The paper has conducted a detailed benchmarking exercise for two of the best generalized retailers in the country in terms of financial performance. Future studies should look at the performance of some of the not so good performing retailers and benchmark their performance with the best performers. The study has taken into consideration only generalized retailers and therefore future studies should incorporate other retailers too. Future studies can also use methodologies like multiple regression models and structural equation modeling to arrive at meaningful insights on the constructs, which impact efficiency of a firm. While using DEA models, researchers can incorporate MPI to ascertain the pattern of efficiency change over a period of time. They can also use Tobit regression models to ascertain drivers of efficiency of retail firms.

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Appendix

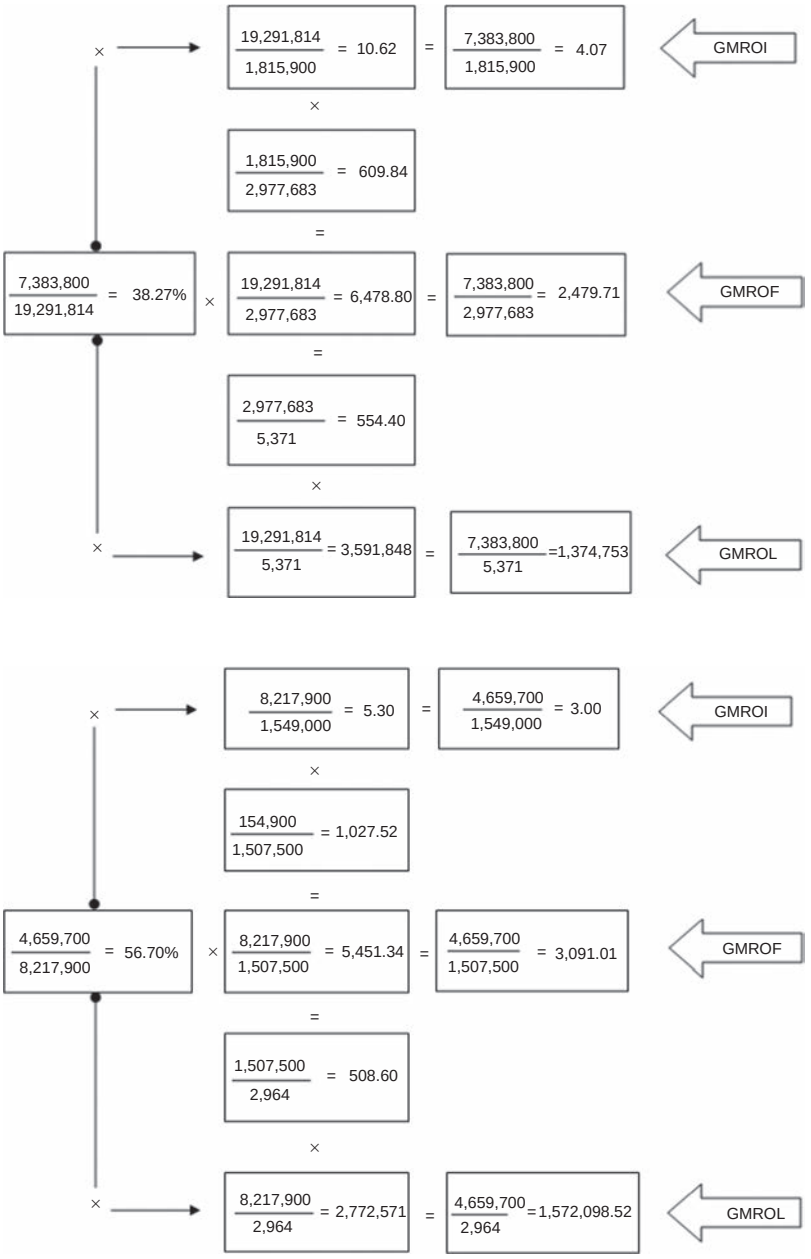

Figure A1.
SRM model for Shoppers Stop Limited (2011-2012)

Figure A2.
SRM model for Trent Limited (2011-2012)

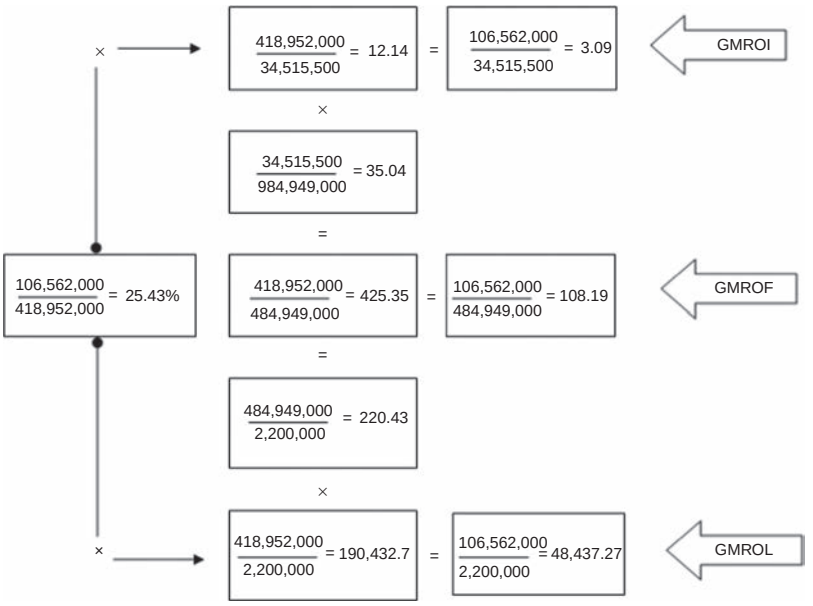

Figure A3.
SRM model for Wal-Mart (2011)

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