Impact of Store Size Reduction on Overall Store Performance – Insights from an Experiment

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ABSTRACT

Majority of brick-and-mortar retailers in India assume that (a) existing store size is ideal to their retailing format, (b) inventory display density per square foot is optimal, (c) larger the store size higher the consumer walk-ins, (d) more premium the store location more premium the perceived retail store brand positioning in consumers mind, (e) larger the store size higher the store revenue and most importantly, (f) store revenue reduces in proportion to reduction in store size. Such assumptions and widely followed practice have resulted in increasing pressure on store operating costs for many years. Brick-and-mortar retailers need to understand the importance of store rent and its implications on the overall store profitability to achieve a sustainable store level profit and to achieve this they need to rationalize stores size on consistent basis. In this research, we have analysed the existing store size across locations of a select retailer in relation to overall store profitability, selected few loss making stores; especially the ones which are delivering losses owing to higher rent and larger store size, reduced these stores size without compromising the consumer experience aspect, evaluated the overall store performance over a period of eleven months to understand the changes in (a) consumer walk-ins, (b) store revenue, and (c) overall store profitability.

Keywords: Brick-and-mortar store; Offline store; Physical store; Store Image; Store Size; Store Rent; Store Operating Costs.

1. INTRODUCTION :

Store size determines most of the store operating costs, be it fixed or variable in nature viz., rent, electricity charges, inventory holding, number of sales personnel, house-keeping charges, maintenance costs, security related costs, fixtures etc. Rental component of this cost structure contributes to the largest part of fixed cost structure of a store and the same varies in proportion to store size and location along with steadily increasing year-on-year on pre-agreed terms. One could argue that a brick-and-mortar retailer must open stores in locations which are available at lesser rent per square foot, but unfortunately it is not that simple, it is truly complex in nature. Every retailer needs to have their store presence in different location to have strategic advantage as far as retailer brand image in consumers mind is concerned and hence it is inevitable for retailers to open few stores in premium locations. Rent is one of the most important costs in retailing which holds significant share of overall retailing cost structure and most importantly due to its fixed cost nature store rent becomes even more important aspect of retailing which has direct impact on overall store revenue and retailing profitability. Many researchers have pointed out that the store size is very important to determine the store layout,

atmosphere and number of facilities which can be provided as part of overall store experience. The consumer angle to store size is the one which puts many brick-and-mortar retailers in dilemma while considering the optimal store size for their specific retailing formats. The store size becomes even more important for retailers offering multi-category and multi-branded offering in their stores and catering to multiple life-stage needs of a consumer. These stores comprise of many products/categories which are designed to serve specific needs of consumers. Most of the retailers, classify these products into different sections either based on consumer needs (demand side) or product's behaviour (supply side) or visual appeal (communication side) or consumer life-stage (solution side) and this classification is known as categories. Each of these categories include multiple sub-categories and each sub-category is comprised of multiple brands, models, colours and SKUs. Every product/category/brand in the entire store's product offering plays an important role with respect to consumer and retailer. It is imperative to note that, the understanding of the role played by a particular product/category/brand might not be same among consumers, retailers and sales personnel. What is really important and of significant essence is that, every retailer needs to understand the optimal level of inventory to be displayed in a store which is enough to create positive perceptions about the store layout and variety of stock available for them to choose from. Once a retailer is able to arrive at optimal level of inventory to be displayed it is easy for them to work on the display fixtures, display methods and store layouts to be adopted for maximum utilization of minimum store space and continually strive for rationalizing the store sizes which could possibly enable brick-and-mortar retailer to overcome increasing rental and decreasing store profit.

2. LITERATURE REVIEW :

Lindquist (1974) [1], was the first to list the key components of store image construct. Based on past studies Lindquist listed eight component of store image construct viz., (i) merchandise, (ii) clientele, (iii) physical facilities, (iv) convenience, (v) promotion, (vi) store atmosphere, (vii) institutional factors and (viii) post-transactional satisfaction. Hirschman et al. (1978) [2] have later confirmed that the basic attributes of store image construct as listed by Lindquist in 1974 remain unchanged. Ghosh (1994) [3], through his studies was able add few more attributes to store image construct such as (ix) customer service, (x) personal selling and (xi) sales incentive programs. Omar (1999) [4], argues that these factors together influence the overall store image in consumers mind only when the consumers have experienced these factors through actual shopping. There have been many studies confirming positive correlation between store layout and consumer loyalty (Mazursky and Jacoby (1986) [5], Osman (1993) [6] and Lassk (2000) [7]. As per Newman and Cullen (2002) [8], consumers perception of store image varies with store layout. Consumers shopping at different store formats having different store layouts create their own perception of store image in their mind. Newman (2003) [9], extends this study and recommends bricks-and-mortar retailers to align their store layout design keeping their target consumers in mind rather adopting standard layout designs. Lilien et al. (1995) [10], argues that retailers need to consider various location specific factors while planning for expansion such as (a) attractiveness of the market, (b) number of stores to be opened per market, (c) store locations, and (d) ideal store size for each of these stores. In this study they clearly indicate that, every store needs to have size optimal for the location and market it is present rather a standard size being adopted across all the stores of a particular retailing format.

Store size and location are most important components of retailing as far as enhancing consumer experience is concerned. Few reputed retail brands like Zara have increased their store sizes exponentially along with changing the type of locations in the past, few retail brands such as Debenhams and Mother Care have downsized their existing store sizes to incorporate improved operating efficiencies, few retail brands such as Tesco entered city centre locations with smaller sized stores, few continually kept rationalizing their store sizes and few still believe that larger the store size higher the consumer walk-ins (Reynolds J. et al. (2007)) [11].

One of the biggest challenges faced by brick-and-mortar retailers is the higher cost involved in expanding store sizes even though it helps them in enhancing overall consumer shopping experience. Retailers are finding it extremely difficult to find relevant spaces in right locations owing to higher rentals and lesser spaces available in key retail locations (Levy M. and Weitz A. B, (2007)) [12].

Krishen S. A. et al. (2010) [13], proposes retailers to consider mall kiosks as one possible retailing format which can be cost effective as far as expensive rentals are concerned.

Researchers in that past have considered store layout/atmosphere as one of the components of store image construct and notably all these researchers were interested in knowing the relationship between store image construct as a whole and consumer behaviour. Nowhere these studies were trying to connect the cost of building and managing the store image with overall store profitability. Despite empirical, theoretical and descriptive literature available on overall store image construct, we were not able to find in-depth literature specifically focussed on store size which we would apply and evaluate if the methodology is able to answer our key research questions in the Indian context. But we could not find a model/framework with which we can answer our research questions such as (a) can we believe that the existing store size across various locations and type of cities is appropriate and optimal?, (b) can we believe that the existing store size is delivering optimal store revenue and profit?, (c) is there any scope to increase the store size?, (d) should we reduce the size to reduce the store operating costs and finally,(e) can we possibly create a standard methodology to derive an ideal store size for specific location?. Thus, we decided to understand the existing methodology being used to derive the store size, modify the existing methodology, experiment and evaluate the results.

3. OBJECTIVES :

Key objectives of this research were to;

(a) understand the change in (a) consumer walk-ins, (b) overall store revenue and (c) profitability by reducing the store size across;
   i. control group
   ii. experimental group
   iii. pre-test period
   iv. post-test period

(b) draw insights from the experimentation.

4. METHODOLOGY:

Stage I: One of the organized brick-and-mortar retailers in India was selected who is having stores all over India across (a) mall stores, (b) high-street stores, (c) neighbourhood stores, (d) tier 1, 2 and 3 cities, (e) offering multiple-categories and multiple-brands serving different consumer life-stage needs at mid to high price positioning catering to pregnant women, new moms, babies, infants and kids up to 8 years. 40 percent of stores were selected to undergo experimentation wherein, these stores were reduced in size to the extent of matching the average store size across other stores which were treated as control group stores.

Stage II: Quantitative data for all the stores were collected prior to experimentations (pre-test). An open-ended personal interview was conducted for randomly selected (convenience sampling) sales personnel across experimental and control group stores along with central teams managing category, retail planning, supply chain, finance, store maintenance, project and strategy to understand their understanding and attitude towards existing store sizes.

Stage III: Continuous training was conducted to all the store management team of experimental group including store managers, area sales managers, territory managers, regional managers and the national sales head along with central retail planning and project team over a period of 30 days prior to experimentation on various techniques to available to enhance the stock density without compromising the overall store ambiance and about the key goals of this experimentation. Post-training store size was reduced on an average by 35 percent in all the stores selected for experimentation and operated with new store size over a period of eleven months (experimental phase).

Stage IV: Results obtained during the experimentation stage (post-test) analysed using appropriate statistical methods and compared with the pre-test periods.

Stage V: The findings from this experimentation were compared with pre-test across experimental and control groups.

Stage VI: In this stage, insights and inferences from the research findings were used to propose way forward for brick-and-mortar retailers to enable them to decide on the optimal store size required to enhance their overall store profitability.

5. KEY FINDINGS AND INSIGHTS:

Using pre-test post-test real treatment effect formula, we have found that the real treatment effect has shown a48.49 percent improvement in the overall store profitability of experimental group over their pre-test period. Real treatment effect for every key factor is also shown in table 1. Comparative results as shown in table 2, 3, 4, 5, and 6 when compared with different phases indicate that in the experimental group of stores reduction in the overall store size by 36.93 percent has shown 93.44 percent improvement in overall store profitability without any significant reduction in the store revenue.

Table 1: Pre-test post-test real treatment effect across key factor in experimental group as percentage change over pre-test period.

Factors	Post-Test Experimental Group
Average MRP	-3%
Average Selling Price	-5%
Average Transaction Value	-6%
Average Basket Size	-1%
Discount per cent	16%
Average Area per store	-37%
Bills per store per month	-1%
Quantity per store per month	-3%
Revenue per store per month	-7%
Earnings per store per month	-7%
Profit per store per month	48%

Table 2: Share of store count by store size group pre and post-test.

Store Size	Experimental Group	
	Pre-Test	Post-Test
Extra-Small	4%	4%
Small	4%	7%
Medium	4%	25%
Extra-Medium	14%	29%
Large	32%	21%
Extra-Large	18%	4%
Larger	11%	4%
Largest	14%	7%

Statistical analysis indicate that, in experimental group of stores the correlation between store size and overall store revenue is significantly positive at 0.416 with an adjusted R square value of 0.157, correlation between store size and overall store profit is significantly negative at -0.349 with an adjusted R square value of 0.105 and a t-test 2-tailed sig. value of 0.000, whereas, in the control group of stores the correlation between store size and overall store revenue is significantly positive at 0.770 with an adjusted R square value of 0.587, correlation between store size and overall store profit is insignificantly positive at 0.123 with an adjusted R square value of 0.001 and a t-test 2-tailed sig. value of 0.000. In the experimental group of stores the correlation between store size and the number of bills/invoices made by the store has been insignificant at 0.233 with an adjusted R square value of 0.036 and a t-test 2-tailed sig. value of 0.000 whereas in the control group of stores the correlation between store size and number of invoices/bills being generated by the store was significantly positive at 0.611 with an adjusted R square value of 0.364 and a t-test 2-tailed sig. value of 0.000. Interestingly,

as the store size increases the positive correlation between store size and store revenue keeps reducing and reaches to insignificant levels.

Table 3: Post-test percentage change over pre-test across key factor in control and experimental group.

Factors	Post-Test Control Group	Post-Test Experimental Group
Average MRP	-1%	-4%
Average Selling Price	2%	-3%
Average Transaction Value	1%	-5%
Average Basket Size	-1%	-2%
Discount per cent	-26%	-9%
Average Area per store	0%	-37%
Bills per store per month	12%	10%
Quantity per store per month	10%	5%
Revenue per store per month	11%	2%
Earnings per store per month	23%	12%
Profit per store per month	94%	93%

Table 4: Post-test percentage change over pre-test across key factor in experimental group by type of store locations.

Factors	Post-Test Experimental Group High-Street Stores	Post-Test Experimental Group Mall Stores	Post-Test Experimental Group Institutional Stores
Average MRP	-4%	-4%	1%
Average Selling Price	-2%	-4%	2%
Average Transaction Value	-4%	-6%	-5%
Average Basket Size	-1%	-3%	-7%
Discount per cent	-15%	-1%	0%
Average Area per store	-33%	-44%	-33%
Bills per store per month	14%	0%	9%
Quantity per store per month	11%	-5%	1%
Revenue per store per month	7%	-8%	3%
Earnings per store per month	16%	4%	10%
Profit per store per month	98%	86%	98%

As far as qualitative findings are concerned an open-ended interview was conducted with all the sales personnel of the stores under experimental group post-test and unanimously, they have all said, (a) overall store overhead costs have reduced drastically along with rent, (b) they could not witness any reduction in number of consumer walk-ins, (c) space utilization was optimal, (d) were able to manage with less number of sales personnel and most importantly, (e) the store revenue did not decrease in proportion to decrease in store size. Another key insight from these direct interviews was that, the results of this experiment were clearly visible to them as they were able to witness increase in overall store profitability.

Table 5: Post-test percentage change over pre-test across key factor in control and experimental group.

Factors	Post-Test Experimental Group
Average MRP	4%
Average Selling Price	1%
Average Transaction Value	1%
Average Basket Size	1%
Discount per cent	25%
Average Area per store	-6%
Bills per store per month	20%
Quantity per store per month	17%
Revenue per store per month	13%
Earnings per store per month	12%
Profit per store per month	131%

Table 6: Post-test percentage change over pre-test across key factor by store size slab.

Store Size	Experimental Group				
	Post-Test Store Count	Post-Test Mean Area	Post-Test Mean Bills	Post-Test Mean Revenue	Post-Test Mean Profit
Extra-Small	0%	-33%	8%	3%	98%
Small	100%	-10%	-24%	-2%	61%
Medium	500%	3%	37%	68%	136%
Extra-Medium	100%	-9%	38%	27%	84%
Large	-33%	-22%	18%	21%	92%
Extra-Large	-80%	-27%	-31%	-36%	35%
Larger	-67%	-23%	42%	19%	43%
Largest	-50%	-45%	7%	4%	129%
Chain Level	**-4%**	**-37%**	**10%**	**2%**	**93%**

6. CONCLUSION :

In most of the cases, bigger the store size higher the rent, overheads, maintenance, sales personnel and all of these together contribute to the majority of retailing fixed cost. Except rent most of these cost factors usually vary in proportion to the store size across all locations within a country, whereas rent is not, which varies according to location type such as mall, high-street, institutional, etc. The experiment of attempting to reduce the store size shows that, it is possible to improve overall store profitability without any negative impact on the store revenue which is one of the biggest concerns for brick-and-mortar retailers whenever they discuss the topic on store size reduction. Results clearly show that there isn't any significant correlation between store size and number of invoices/bills being generated by a store, which in turn proves the fact that, bigger the store does not guarantee higher consumer walk-ins and conversions thereby yielding higher revenue and profit. We do not have any standard formula to arrive at an ideal store size for every location. Retailers need to continually experiment different store sizes across different type of locations and derive an optimal store size for each location type. Any opportunity which prompt retailer to reduce the store size must be used for such experimentations and the learnings to be applied on the new stores which are in the expansion plan along with trying to apply the learnings on the existing stores. It is not just about reducing the store size and expect reduced costs, what is very important is that how does one ensure the display standards, store layout and overall store

ambiance is being maintained even after store size reduction, else this could lead to other consumer perception, retailer/brand image and store image related issues which bear long-term negative impact.

7. SUGGESTIONS TO BRICK-AND-MORTAR RETAILERS :

Based on this research outcome, we would like to suggest Brick-and-mortar retailers not to decide on the store size assuming that the store size has direct correlation with number of consumer walk-ins and store revenue. They need to clearly understand the role of every store/location in relation to target consumers, catchment and merchandise assortment in the offering. Brick-and-mortar retailers need to clearly understand every other retailer's key business objectives behind having larger sized stores and stores at specific locations which are more expensive to operate compared to other stores/location in their retail chain. Few may be trying to create perception in consumers mind over their brand image, few may be treating such stores as experiential, anchor or destination stores, few may be opening such stores to market their retail brand to attract investors, franchisees or licensees and few online retailers may be trying to show their presence in the offline space. What is very important is, how many of such stores a retailer can afford to operate in the long-term and what is the magnitude of qualitative benefits delivered from such stores to the retailer strategically.

8. LIMITATIONS OF RESEARCH :

The main limitation of this research work is the coverage of various stakeholders viz., consumers and retailers in experimenting this new framework. This might limit the generalizability of the research findings to other set of retailers and consumers. The second limitation would be the empirical validation is restricted to one retail format i.e., multi brand and multi category baby care store in India and hence the generalizability of the findings and suggestions to other retail formats. The third limitation would be our ability to carry out true experimental design, at best we were able to carry out a pre-test post-test control group experimental design. However, it provides significant input regarding the ways to utilise these findings as all the findings have been derived from an experiment spread over eleven months.

9. SCOPE FOR FURTHER RESEARCH :

It is recommended that the experimentation to be applied by researchers and finetune the framework if required for different retailing formats and verticals. Based on the key business objectives for a specific period and specific context, brick-and-mortar retailers can try reducing their store sizes at their select stores and finetune the same based on real-time findings which can then be implemented across the entire chain of their stores.

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