# Decentralized Discounting Framework: Insights from an Experiment

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**ABSTRACT**

Ever since the online retailing format has emerged in India, consumers now have wider options available for them to buy a product at a discounted price and notably, as online stores in India are following the product discounting as one of the key drivers for consumer acquisition, consumers' perspective towards discount at brick-and-mortar store has changed. This change in consumers' perspective has put the majority of brick-and-mortar retailers in India into a quandary and they are losing out their market share slowly to online retailers. In this research which is based on recommendations of empirical research previously carried out on the impact of changes in retailer and consumer perspective towards discount post emergence of online stores in India, we have carried out an experiment using decentralized discounting framework to investigate and recommend brick-and-mortar retailers on ideal decentralized discounting strategies to enable brick-and-mortar retailers to design appropriate sales promotions to gain a competitive advantage over online retailing on a discount component.

**Keywords:** Discount, End-of-season sale, Brick-and-mortar store, Offline store, Physical store, Consumer perspective, Online store, Sales promotion, Discount Framework, Long-Term Discounts, Salespeople, Salesperson, Sales personnel.

## 1. INTRODUCTION :

The e-commerce retailing format undoubtedly making a paradigm shift in the way retailing is done in India. This new retailing format, e-commerce is projected to grow to 62.3 billion US$ by the year 2023 which is at 32.34 billion US$ in the year 2019. Such a significant increase in the market share is attributed mostly to the rapidly increasing penetration of smartphones and internet users. This ongoing change in penetration is projected to increase the total internet user base to 657.8 million by year 2023 which is at 553.7 million as of the year 2019 in India. Share of buyers using e-commerce retailing format in India is expected to increase to 50.03 percent by the year 2020 which is at 23.55 percent as of the year 2016 (Statista) [1]. The overall market size of the Indian Retail industry which was at 950 billion US$ in the year 2018 might cross 1.1 trillion US$ by the year 2020 (IBEF) [2].

E-commerce has been able to expand its market consistently in India. Owing to this new retailing format consumers now have the widest product assortment offered to them at discounted prices. E-commerce retailing format has probably crossed a key milestone in revolutionizing the Indian retail market, and this trend is expected to continue for many more years. As per one IBEF's December 2019 [2] report on Indian retailing, it is noted that the union government of India is also working on various ways to boost consumption in the rural market of India and e-commerce would play an important role in achieving this. The forecast also indicates that e-commerce retailing will be able to capture 7 percent of the overall Indian retail market by 2021.

In such a short period e-commerce retailing format in India reached to around 3 percent of the overall Indian retail market. Growth rate is more than double as compared to the brick-and-mortar stores. Available literature indicates to key reasons for this as being capable of building the trust of the consumers in online stores, they have successfully established their brands in the minds of the online shoppers through their 365 days discounts, deals, and low-price strategies. Even though it is very hard to build a sustainable business model using strategies mainly based on price wars, it is inevitable that the brick-and-mortar stores in India will have to ascertain specific strategies head-on to deal with this increasing loss of market share to online stores. Up till the emergence of online stores in India, brick-and-mortar retailers were following a season and occasion driven sale promotions prominently known as end-of-season sale and festive sale which accounted for close to 40 percent of their annual revenue. But, post the emergence of online stores in India, the majority of brick-and-mortar retailers in India are bewildered with continuous discounts, deals, sale promotion events, coupons being offered by the online stores throughout the year and they are not able to design appropriate sales promotion programmes.

## 2. LITERATURE REVIEW :

We have noted that for many the choice of store format was and is one of the important research subjects among many researchers beginning from the 70's of the 20th century. The authors of many of earlier studies - among others: Monroe & Guiltinan (1975) [3], Arnold, Oum & Tigert (1983) [4], Mason, Durand & Taylor (1983) [5], Keng & Ehrenberg (1984) [6], Louviere & Gaeth (1987) [7], Spiggle & Sewall (1987) [8], Dawson, Bloch & Ridgway (1990)[9], Burke et al (1992)[10], have studied to rationalize store choice using different approaches, models and frameworks with respect to internal and external factors to the consumer such as (a) store attributes (b) situational factors, (c) consumers' households, (d) consumers' demographics, (e) consumers' shopping patterns, (f) consumers' attitudes toward stores, (g) implied importance and (h) weightage of price levels. It is also noted that most of the above said studies were carried on same store formats (supermarkets and discount stores).

Weitz (1979) [11], believes that the way in which sales personnel interact with consumers needs to be customized to each consumer and this could possibly be able to determine their success. Saxe and Weitz (1982) [12], were the first to define sales personnel's consumer orientation. This customer orientation is said to happen when the sales personnel and consumer together practice marketing concept. They have clearly stated that just the interaction between sales personnel and consumer does not yield to this orientation, it needs to encompass most of the marketing concepts driven centrally by the company. Later, Brown et al. (2002) [13] narrowed down this definition and came up with two key constructs, first one being sales personnel's tendency to ensure consumer needs are met and the second one being the level of sales personnel's enjoyment in doing so. Vandewalle et al. (1999) [14], what can lead to sales personnel enjoy the process of interaction with consumers and ultimately selling a product is their strong orientation to learning.

Gupta and Cooper (1992) [15], have demonstrated that brand reputation plays an important role in creating consumer perceptions over discounting announcements. Hence discount level alone will not be able to determine the changes in consumers intent to buy more. There also exist some studies examining the influence of retail pricing formats on shopping behaviour (Bell, Ho & Tang, 1998) [16], often if one store format has in general higher prices than the other one. Chandon et al (2000) [17], suggested that the discount types and levels need to be relevant to the products/category to enhance consumer preference to buy more.

Shim et. al (2000) [18], using consumer's shopping behavioural intentions, established the size of three market segments (primarily Internet shopper, product-situation specific cross-shopper and primarily store-oriented shopper markets) for both the cognitive and sensory experiential product categories. One of the key recommendations from the researchers was that the retailers and mall developers should understand the greater importance of social influence on online shoppers and cross-shoppers, as compared to traditional store shoppers. Perhaps a competitive strategy could be utilized whereby promotions portray aspirational and/or peer members of Internet consumers describing their positive experiences as mall patrons.

Peter and Olson (2002) [19], preferences for retail channel and format choice within a particular channel depend on factors external to the consumer and internal ones. Those preferences are subject to change when important factors as changes in the economy (like economic slowdown, fall in consumers income)

and retail industry (development of new sales channels and/or formats) become visible for consumers. External factors among others include perceived price level, physical effort to buy, amount of time needed to fulfil shopping tasks – most of the external factors are creating the perceived total cost of buying for the consumer. Among internal factors, there are i.e.: consumer demographics and consumer personality manifesting in decision-making styles and perceived level of cognitive and emotional effort connected with shopping.

Bhatnagar, & Ratchford (2004) [20] represent an interesting approach but limited to non-durable goods. Exploring fixed and variable costs of shopping, including assumption about consumers preferring to shop at a minimum total cost, and different price levels between formats, they found conditions in which the store format choice would be optimal. Hardesty and Suter (2005) [21], post online retailing format emergence, consumers' expectations on lower priced products has increased.

As per Diwakar Gupta et al (2006) [22] the problem of setting prices for clearing retail inventories of fashion goods is a difficult task that is further exacerbated by the fact that markdowns enacted near the end of the selling season have a smaller impact on demand. In the research, they have presented discrete-time models for setting clearance prices in such an environment. When demand is deterministic, researchers compute optimal prices and show that decreasing reservation prices lead to declining optimal prices. When demand is stochastic and arbitrarily correlated across planning periods, researchers obtain bounds on the optimal expected revenue and on optimal prices. Researchers have also developed a heuristic procedure for finding near-optimal prices and test its accuracy through numerical experiments. These experiments revealed new insights for practitioners. Mokhtarian and Tang (2009, 2011) [23], perceived channel characteristics are influencing the choice of channel for both phases of consumer decision making: information search and buying.

Sales promotion techniques are instruments that seek to increase sales of products and brands, usually in a short time (Wierenga & Soethoudt, 2010) [24], because they act in the consumer's mind as a benefit to him, creating thus consumer behaviour (Yusuf, 2010) [25]. The effectiveness and the importance of sales promotion in the market can be viewed when presenting the segment numbers. According to Teunter (2002) [26], over 20% of sales of products of some food branches occur through sales promotion activities. In a report quoted by Wierenga and Soethoudt (2010) [24], over 75% of spending on communication in nondurable consumer goods segment between 1997 and 2004 in the United States was driven by sales promotion activities, while 25% were applied in other communication activities.

As stressed by some authors (D'Austous & Landreville, 2003 [27]; Haans & Gijsbrechts, 2011[28]) there are still academic and managerial deficiencies on the deeper knowledge of the relationship of sales promotion with consumer behaviour and their effectiveness for the companies.

Dhruv et al (2017) [29]. One of the key components of their organizing framework for 'future of retailing' identified by them was 'visual display and merchandise offer decisions' along with other four components (1) technology and tools to facilitate decision making, (2) consumption and engagement, (3) big data collection and usage and (4) analytics and probability.

Ganesha, H.R. et al (2020) [30], concluded that it is practically impossible to change consumers perspective towards a discount in favour of brick-and-mortar store as the same is widely influenced by a paradigm shift in the evolution of various modern retailing formats available now to consumers to buy required products. It was evident from their empirical research that brick-and-mortar retailer will no more be able to convert walk-ins into bills unless the discount is one of the key components of their selling proposition, but possibly retailer can analyse their sales data on a consistent basis to determine ideal levels of discount which can probably gain a competitive edge over online stores on the discount component and arrest such huge degrowth in their store profitability.

Ganesha, H.R. et al (2020) [31], conducted eight short-term discounting experiments and compared the findings with past ten years empirical data and concluded that; 'all levels of discounts and types of discounts could possible attract consumers to purchase more and in turn enhance overall store's revenue, but what is very important is the retailer's understanding of existing consumer base, their purchase history, their purchase behaviour, their response to different types and levels of discounts previously offered. Discounts if offered to select consumers on select product/category for a shorter period of time could possibly (a) attract only relevant consumers who were planning to purchase these products, (b) distract consumers for whom the product/category on discount offer is either irrelevant or already being bought, (c) create a perception in consumers mind about discount levels available at their brick-and-

mortar store higher than that of an online store on a consistent basis, (d) negate the loss or reduced gross earnings in the discounted product/category through regular sales from non-discounted products/categories. And thereby (a) positively impacting the overall store level profits and (b) creating a sustainable competitive edge with online stores over the discount component'.

Ganesha, H.R. et. al (2020) [32], conducted seven long-term discounting experiments and compared the findings with past ten years empirical data and concluded that; 'brick-and-mortar retailers need to include discount as one of the key components of selling/engagement proposition post the online stores emergence in India to create a competitive edge over online retailing format. All levels and types of discounts could possibly attract more consumers to the store and even increase their intent to purchase more and in turn, enhance overall store's revenue, but what is very important is the retailer's understanding of existing consumer base, their purchase history, their purchase behaviour, their response to different types, their life-stage needs, product/category usage frequencies and levels of discounts previously offered. Discounts if offered to select consumers on select product/category for a longer period of time which allows consumers to create favourable perceptions towards the store could possibly (a) attract only relevant consumers who were planning to purchase these products, (b) distract consumers for whom the product/category on discount offer is either irrelevant or already being bought, (c) create a perception in consumers mind about discount levels available at their brick-and-mortar store being usually higher than that of an online store on a consistent basis, (d) negate the loss or reduced gross earnings in the discounted product/category through regular sales from non-discounted products/categories. And thereby (a) positively impacting the overall store level profits and (b) creating a sustainable competitive edge with online stores over the discount component. It is recommended that the long-term discounting frameworks need to be framed keeping both internal and external factors in mind. Internal factors being (a) existing consumer base, (b) existing product and brand assortment (c) store personnel's ability to communicate such long-term discount offers and external factors being (a) various retailing formats/stores available for consumers to purchase similar products/brand, (b) selling proposition of similar products/brands at other retailing formats/stores and most importantly (c) retailer's control over such products/brands'.

Past research carried out in the developed countries where the brick-and-mortar retailers have already gone through a phase of online store formats being made available to consumers and have provided many guidelines to brick-and-mortar retailers on various discounting and pricing frameworks for them to create promotional strategies to withstand discount strategies of online stores.

We could not find answers for (A) can we implement the recommendations of various researches carried out in developed countries in the Indian context? (B)is there an ideal (a) framework, (b) duration, (c) type, (d) timing and e) advertising technique for long-term discounting strategies to enable brick-and-mortar retailers to design appropriate sales promotions to gain a competitive advantage over online retailing on the discount component. To find answers to these questions we decided to carry out a long-term experiment using a decentralized discounting framework to find answers to our key research questions.

## 3. OBJECTIVES :

Key objectives of this research were to;

(a) understand the change in overall store profitability through an experiment implementing a decentralized discounting framework across;
   i. control group
   ii. experimental group
   iii. pre-test period
   iv. post-test period
   v. pre-online stores emergence period
   vi. post-online stores emergence period

(b) draw insights from the experimentation

## 4. METHODOLOGY :

**Stage I:** One organized brick-and-mortar retailer 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 at mid to high price positioning catering to pregnant women, new

moms, babies, infants and kids up to 8 years.15 percent of these stores were exposed to decentralized discounting experimentation (experimental group) and discounting was controlled centrally in other stores (control group).

**Stage II:** Data for all the stores was collected prior to experimentations (pre-test).

**Stage III:** Multiple discounting frameworks were experimented across all the stores 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 period.

**Stage V:** The findings from this experimentation were compared with the results of empirical research previously carried out on the impact of changes in retailer and consumer perspective towards discount post emergence of online stores in India.

**Stage VI:** In this stage, insights and inferences from the research findings were used to propose a way forward for brick-and-mortar retailers to enable them to design appropriate discounting frameworks.

## 5. KEY FINDINGS AND INSIGHTS :

**Pre-online** stores emergence;

- majority of discounting during end-of-season sale
- spread over 30 to 45 days
- key objective was to liquidate aged inventory
- discount based on the age of the inventory, older the stock higher the discount level,
- exclusive sales preview of first 2 to 3 days for existing loyalty club members
- in-store offer signages
- communication of offer to existing consumer base through SMS on a weekly basis
- communication of offer to all potential consumers through above the line (ATL) channels
- benchmark for consumers used to be discount levels available at other brick-and-mortar retail stores
- discount component was not the key component of the selling proposition

**Post-online** stores emergence;

- discounting throughout the year
- key objective was to reduce shifting of consumers to online stores
- discounts are not based on age of the inventory
- in-store offer signages
- communication of offer to existing consumer base through SMS on a weekly basis
- communication of offer to all potential consumers through above the line (ATL) channels
- benchmark for consumers is the discounts availability at online stores
- discount component is the key component of the selling proposition

**Experimental group;**

- a store gift voucher (SGV) was issued to sales personnel for a period on eleven months, which need to be entered in the billing details whenever they use this gift voucher
- SGV did not carry any fixed value of the discount, but the sales personnel were not allowed to give discount using this SGV which exceeds 10 percent of total bill value
- SGV was applicable on all products and categories
- SGV redemption is immediate
- SGV was neither communicated using in-store signages nor through using any digital medias to consumers
- silent offer known only to sales personnel
- even though the SGV was given to sales personnel to help them enhance the cross-category selling and up-selling, the key objective of the SGV was to empower the sales personnel to offer customized discounts based on real-time consumer expectations, competition knowledge and sales personnel's understanding of the consumer needs unknown to consumers
- no approvals from the central office were required to apply SGV on any bills/transactions
- store team was allowed to either accept or reject discount offers designed by the central team

- discount component was the key to assure consumers that the store team is cognizant of the fact that discounts are available at online stores throughout the year and the sales personnel will try his/her best to match the deal

**Control group;**

- all the discount offers were framed by the central office and these stores were required to follow them
- both short-term and long-term discounting were executed during the experimentation period
- key objective was to have a competitive edge over online stores on the discount component of similar products offered on discounts at online stores
- in-store offer signages
- communication of offer to existing consumers chosen based on the discounting framework was sent through SMS
- no use of above the line (ATL) channels for advertising of the discount offer
- benchmark for consumers is available as the same product is offered on discount at online stores
- discount component is the key component of consumer engagement/selling proposition

Using pre-test post-test control group formula, we have found that the real treatment effect has shown a 3.541 times improvement in the overall store profitability of the experimental group over their pre-test period which is significant. Comparative results as shown in table 1, 2, 3, 4 and 5 when compared with different periods indicate that the discount levels and the way in which the discount is offered impact consumer attraction and overall store profitability levels. In the experimental group post-test, we have found a significant positive correlation (0.886 at 0.01 level 2-tailed with t-test Sig. value of 0.000) between discount and consumer attraction and a significant positive correlation between discounts and overall store profitability (0.774 at 0.01 level 2-tailed with a t-test Sig. value of 0.145) whereas in the control group we have found a positive correlation (0.446 at 0.01 level 2-tailed with a t-test Sig. value of 0.000) between discount and consumer attraction and a positive correlation between discounts and overall store profitability (0.205 at 0.01 level 2-tailed with t-test Sig. value of 0.049) which is not statistically significant.

**Table 1:** Percentage change over 'post-online' stores emergence across each key factor for control and experimental groups post-test.

| Factors | Post-Test Control Group *(Centralized Offers)* | Post-Test Experiment Group *(Decentralized Offers)* |
|---|---|---|
| Average MRP | ↑ 27% | ↓ 17% |
| Average selling price | ↑ 3% | ↓ -5% |
| Average transaction value | ↑ 5% | ↓ -15% |
| Average basket size | ↑ 1% | ↓ -11% |
| Discount per cent | ↓ -28% | ↑ -24% |
| Bills per day per square foot | ↓ 40% | ↑ 94% |
| Consumers per day per square foot | ↓ 40% | ↑ 94% |
| Sale quantity per day per square foot | ↓ 40% | ↑ 71% |
| Discount value per day per square foot | ↓ -13% | ↑ 3% |
| Revenue per day per square foot | ↓ 47% | ↑ 65% |
| Earning per day per square foot | ↓ -4% | ↑ 7% |
| Profit per day per square foot | ↓ 58% | ↑ 199% |

**Table 2:** Percentage change over pre-test period across each key factor for control and experimental groups post-test.

| Factors | Post-Test Control Group (Centralized Offers) | Post-Test Experiment Group (Decentralized Offers) |
|---|---|---|
| Average MRP | -3% | -10% |
| Average selling price | 0% | -8% |
| Average transaction value | -2% | -21% |
| Average basket size | -2% | -14% |
| Discount per cent | -10% | -6% |
| Bills per day per square foot | 55% | 115% |
| Consumers per day per square foot | 55% | 115% |
| Sale quantity per day per square foot | 51% | 84% |
| Discount value per day per square foot | 31% | 56% |
| Revenue per day per square foot | 51% | 69% |
| Earning per day per square foot | 59% | 78% |
| Profit per day per square foot | 84% | 139% |

**Table 3:** Percentage change across each key factor between experimental group and control group pre-test phase.

| Factors | Pre-Test Experiment Group (Decentralized Offers) |
|---|---|
| Average MRP | -5% |
| Average selling price | -3% |
| Average transaction value | -17% |
| Average basket size | -14% |
| Discount per cent | -12% |
| Bills per day per square foot | 15% |
| Consumers per day per square foot | 15% |
| Sale quantity per day per square foot | 0% |
| Discount value per day per square foot | -16% |
| Revenue per day per square foot | -4% |
| Earning per day per square foot | -1% |
| Profit per day per square foot | -52% |

**Table 4:** Percentage change across each key factor between experimental group and control group post-test.

| Factors | Post-Test Experiment Group (Decentralized Offers) |
|---|---|
| Average MRP | -8% |
| Average selling price | -8% |
| Average transaction value | -24% |
| Average basket size | -14% |
| Discount per cent | 5% |
| Bills per day per square foot | 28% |
| Consumers per day per square foot | 28% |
| Sale quantity per day per square foot | 18% |
| Discount value per day per square foot | 16% |
| Revenue per day per square foot | 11% |
| Earning per day per square foot | 10% |
| Profit per day per square foot | 142% |

**Table 5:** Percentage change over last ten years means across each key factors and phases.

| Factors | Pre-Online *(Centralized Offer)* | Post-Online *(Centralized Offers)* | Pre-Test Control Group *(Centralized Offers)* | Pre-Test Experimental Group *(Centralized Offers)* | Post-Test Control Group *(Centralized Offers)* | Post-Test Experiment Group *(Decentralized Offers)* |
|---|---|---|---|---|---|---|
| Average MRP | -3% | 2% | 33% | 26% | 29% | 20% |
| Average selling price | -3% | 2% | 5% | 1% | 5% | -3% |
| Average transaction value | -10% | 10% | 18% | -2% | 15% | -7% |
| Average basket size | -7% | 8% | 12% | -4% | 10% | -4% |
| Discount per cent | -41% | 60% | 29% | 13% | 15% | 21% |
| Bills per day per square foot | -2% | 0% | -10% | 4% | 39% | 93% |
| Consumers per day per square foot | -2% | 0% | -10% | 4% | 39% | 93% |
| Sale quantity per day per square foot | -10% | 8% | 0% | 0% | 51% | 84% |
| Discount value per day per square foot | -53% | 74% | 15% | -4% | 50% | 79% |
| Revenue per day per square foot | -12% | 9% | 6% | 2% | 60% | 79% |
| Earning per day per square foot | 4% | 3% | -38% | -38% | -1% | 11% |
| Profit per day per square foot | 487% | -380% | -1122% | -490% | -99% | 576% |

It is evident from the paired sample t-test that, the discount is an important factor in attracting consumers across the experimental group, control group, pre-test period and post-test period. But as far as overall store profitability is concerned, the t-test indicates that even though the levels of discounts were almost similar between control and experimental groups during the experimentation phase, the improvement in overall store profitability of the experimental group was significantly higher than that of the control group. This, in turn, indicates that the methodology used in offering a discount which was the key manipulation in the experimental group has a major role to play with respect to overall store profitability.

## 6. CONCLUSION :

The experiment of decentralizing the discount offers along with empowering the sales personnel who are the closest link between the retailer/brand and the consumers have clearly shown significant improvement in overall store profitability. This, in turn, suppress the fact that it is not just the discount level, type, duration, coverage and advertising discount offer which is important to attract more consumers and increase their intent to purchase more, what is also very important is (a) how does the sales personnel who is dealing with the consumer directly and has real-time insights about consumer's intent, needs and attitude towards a particular purchase activity communicate available discount offers to consumers with confidence, (b) does he/she believes in a particular discount offer and (c) can he/she convince the consumer about the benefits of discount offers which are not real-time. Various research findings in the past have concluded that brick-and-mortar retailers need to include discounts as one of the key components of selling/engagement proposition post the online stores emergence in India to create a competitive edge over online retailing format. All levels and types of discounts could possibly attract more consumers to the store and even increase their intent to purchase more and in turn, enhance overall store's revenue, but what is very important is the retailer's understanding of existing consumer base, their purchase history, their purchase behaviour, their response to different types, their life-stage needs, product/category usage frequencies and levels of discounts previously offered and most of this information and the decision to offer a relevant discount to the consumer in real-time is easier when the sales personnel is empowered to do so.

Discounts if offered to select consumers on select product/category for a longer period of time which allows consumers to create favourable perceptions towards the store could possibly (a) attract only relevant consumers who were planning to purchase these products, (b) distract consumers for whom the product/category on discount offer is either irrelevant or already being bought, (c) create a perception in consumers mind about discount levels available at their brick-and-mortar store being usually higher than that of an online store on a consistent basis, (d) negate the loss or reduced gross earnings in the discounted product/category through regular sales from non-discounted products/categories. And thereby (a) positively impacting the overall store level profits and (b) creating a sustainable competitive edge with

online stores over the discount component.

## 7. SUGGESTIONS TO BRICK-AND-MORTAR RETAILERS :

Based on this research outcome, we would like to suggest brick-and-mortar retailers that they need to clearly understand every other retail format's key business goal behind offering discounts to consumers. Few may be trying to capture the bigger market share, few may be trying to show exponential growth in the top line to attract more investors, few may be trying to wrap up their business and few may be hoping that all these consumers acquired based on discount as one of their key components of selling proposition are going to be loyal to their store. What is very important is the key business goal of your retailing format and business. It is recommended to empower your sales personnel who come to direct contact with the consumers in the stores to customize real-time discount offers to consumers, of course with clear guidelines and limitations of making such decisions without them to wait for approvals of authorities at the regional or central office.

## 8. LIMITATIONS OF RESEARCH :

The main limitation of this research work is the coverage of the various stakeholders viz., consumers and retailers in experimenting with this decentralized discounting 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 stores in India and hence the generalizability of the findings and suggestions to other retail formats. However, it provides significant input regarding the ways to utilise these findings as all the findings have been derived from a pre-test post-test control group experiment spread over eleven months and validated with actual empirical transactional data across different periods over a period of ten years.

## 9. SCOPE FOR FURTHER RESEARCH :

It is recommended that this research can further be extended to derive an ideal discounting framework/model for brick-and-mortar retailers to enable them to design appropriate sales promotional programmes to effectively deal with the change in consumer's perspective towards the discount.

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## Appendices

### Findings

**Correlations**

| Phase | Group | | | Discount per cent | Customers per day per square foot |
|---|---|---|---|---|---|
| Pre-Test | Experimental | Discount per cent | Pearson Correlation | 1 | .405 |
| | | | Sig. (2-tailed) | | .216 |
| | | | N | 11 | 11 |
| | | Customers per day per square foot | Pearson Correlation | .405 | 1 |
| | | | Sig. (2-tailed) | .216 | |
| | | | N | 11 | 11 |
| | Control | Discount per cent | Pearson Correlation | 1 | .317 |
| | | | Sig. (2-tailed) | | .342 |
| | | | N | 11 | 11 |
| | | Customers per day per square foot | Pearson Correlation | .317 | 1 |
| | | | Sig. (2-tailed) | .342 | |
| | | | N | 11 | 11 |
| Post-Test | Experimental | Discount per cent | Pearson Correlation | 1 | .886** |
| | | | Sig. (2-tailed) | | .000 |
| | | | N | 11 | 11 |
| | | Customers per day per square foot | Pearson Correlation | .886** | 1 |
| | | | Sig. (2-tailed) | .000 | |
| | | | N | 11 | 11 |
| | Control | Discount per cent | Pearson Correlation | 1 | .446 |
| | | | Sig. (2-tailed) | | .169 |
| | | | N | 11 | 11 |
| | | Customers per day per square foot | Pearson Correlation | .446 | 1 |
| | | | Sig. (2-tailed) | .169 | |
| | | | N | 11 | 11 |

**. Correlation is significant at the 0.01 level (2-tailed).

**Correlations**

| Phase | Group | | | Discount per cent | Profit per day per square foot |
|---|---|---|---|---|---|
| Pre-Test | Experimental | Discount per cent | Pearson Correlation | 1 | .046 |
| | | | Sig. (2-tailed) | | .892 |
| | | | N | 11 | 11 |
| | | Profit per day per square foot | Pearson Correlation | .046 | 1 |
| | | | Sig. (2-tailed) | .892 | |
| | | | N | 11 | 11 |
| | Control | Discount per cent | Pearson Correlation | 1 | -.039 |
| | | | Sig. (2-tailed) | | .909 |
| | | | N | 11 | 11 |
| | | Profit per day per square foot | Pearson Correlation | -.039 | 1 |
| | | | Sig. (2-tailed) | .909 | |
| | | | N | 11 | 11 |
| Post-Test | Experimental | Discount per cent | Pearson Correlation | 1 | .774** |
| | | | Sig. (2-tailed) | | .005 |
| | | | N | 11 | 11 |
| | | Profit per day per square foot | Pearson Correlation | .774** | 1 |
| | | | Sig. (2-tailed) | .005 | |
| | | | N | 11 | 11 |
| | Control | Discount per cent | Pearson Correlation | 1 | .205 |
| | | | Sig. (2-tailed) | | .545 |
| | | | N | 11 | 11 |
| | | Profit per day per square foot | Pearson Correlation | .205 | 1 |
| | | | Sig. (2-tailed) | .545 | |
| | | | N | 11 | 11 |

**. Correlation is significant at the 0.01 level (2-tailed).

## T-Test

**Paired Samples Correlations**

| Phase | Group | | | N | Correlation | Sig. |
|---|---|---|---|---|---|---|
| Pre-Test | Experimental | Pair 1 | Discount per cent & Customers per day per square foot | 11 | .405 | .216 |
| | Control | Pair 1 | Discount per cent & Customers per day per square foot | 11 | .317 | .342 |
| Post-Test | Experimental | Pair 1 | Discount per cent & Customers per day per square foot | 11 | .886 | .000 |
| | Control | Pair 1 | Discount per cent & Customers per day per square foot | 11 | .446 | .169 |

**Paired Samples Test**

| Phase | Group | | | Paired Differences: Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference: Lower | Upper | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Pre-Test | Experimental | Pair 1 | Discount per cent - Customers per day per square foot | .135273 | .044998 | .013567 | .105043 | .165503 | 9.970 | 10 | .000 |
| | Control | Pair 1 | Discount per cent - Customers per day per square foot | .155727 | .043982 | .013261 | .126180 | .185275 | 11.743 | 10 | .000 |
| Post-Test | Experimental | Pair 1 | Discount per cent - Customers per day per square foot | .139273 | .014520 | .004378 | .129518 | .149027 | 31.813 | 10 | .000 |
| | Control | Pair 1 | Discount per cent - Customers per day per square foot | .135636 | .011263 | .003396 | .128070 | .143203 | 39.941 | 10 | .000 |

**Paired Samples Correlations**

| Phase | Group | | | N | Correlation | Sig. |
|---|---|---|---|---|---|---|
| Pre-Test | Experimental | Pair 1 | Discount per cent & Profit per day per square foot | 11 | .046 | .892 |
| | Control | Pair 1 | Discount per cent & Profit per day per square foot | 11 | -.039 | .909 |
| Post-Test | Experimental | Pair 1 | Discount per cent & Profit per day per square foot | 11 | .774 | .005 |
| | Control | Pair 1 | Discount per cent & Profit per day per square foot | 11 | .205 | .545 |

**Paired Samples Test**

| Phase | Group | | | Paired Differences: Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference: Lower | Upper | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Pre-Test | Experimental | Pair 1 | Discount per cent - Profit per day per square foot | .97582 | .59123 | .17826 | .57862 | 1.37301 | 5.474 | 10 | .000 |
| | Control | Pair 1 | Discount per cent - Profit per day per square foot | 1.88818 | .59806 | .18032 | 1.48640 | 2.28997 | 10.471 | 10 | .000 |
| Post-Test | Experimental | Pair 1 | Discount per cent - Profit per day per square foot | -.52073 | 1.09340 | .32967 | -1.25529 | .21383 | -1.580 | 10 | .145 |
| | Control | Pair 1 | Discount per cent - Profit per day per square foot | .42591 | .62972 | .18987 | .00286 | .84896 | 2.243 | 10 | .049 |

# Regression

**Model Summary[b]**

| Phase | Group | Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics: R Square Change | F Change | df1 | df2 | Sig. F Change |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Pre-Test | Experimental | 1 | .046[a] | .002 | -.109 | .62293 | .002 | .019 | 1 | 9 | .892 |
| | Control | 1 | .039[a] | .002 | -.109 | .62640 | .002 | .014 | 1 | 9 | .909 |
| Post-Test | Experimental | 1 | .774[a] | .600 | .555 | .73761 | .600 | 13.485 | 1 | 9 | .005 |
| | Control | 1 | .205[a] | .042 | -.064 | .65204 | .042 | .395 | 1 | 9 | .545 |

a. Predictors: (Constant), Discount per cent

b. Dependent Variable: Profit per day per square foot

**ANOVA[a]**

| Phase | Group | Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|---|---|
| Pre-Test | Experimental | 1 | Regression | .008 | 1 | .008 | .019 | .892[b] |
| | | | Residual | 3.492 | 9 | .388 | | |
| | | | Total | 3.500 | 10 | | | |
| | Control | 1 | Regression | .005 | 1 | .005 | .014 | .909[b] |
| | | | Residual | 3.531 | 9 | .392 | | |
| | | | Total | 3.537 | 10 | | | |
| Post-Test | Experimental | 1 | Regression | 7.337 | 1 | 7.337 | 13.485 | .005[b] |
| | | | Residual | 4.897 | 9 | .544 | | |
| | | | Total | 12.233 | 10 | | | |
| | Control | 1 | Regression | .168 | 1 | .168 | .395 | .545[b] |
| | | | Residual | 3.826 | 9 | .425 | | |
| | | | Total | 3.994 | 10 | | | |

a. Dependent Variable: Profit per day per square foot

b. Predictors: (Constant), Discount per cent

**Coefficients[a]**

| Phase | Group | Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|---|---|
| Pre-Test | Experimental | 1 | (Constant) | -.920 | .645 | | -1.426 | .188 |
| | | | Discount per cent | .604 | 4.338 | .046 | .139 | .892 |
| | Control | 1 | (Constant) | -1.641 | .751 | | -2.184 | .057 |
| | | | Discount per cent | -.528 | 4.494 | -.039 | -.118 | .909 |
| Post-Test | Experimental | 1 | (Constant) | -7.271 | 2.175 | | -3.344 | .009 |
| | | | Discount per cent | 52.264 | 14.232 | .774 | 3.672 | .005 |
| | Control | 1 | (Constant) | -1.895 | 2.575 | | -.736 | .481 |
| | | | Discount per cent | 11.128 | 17.707 | .205 | .628 | .545 |

a. Dependent Variable: Profit per day per square foot

**Residuals Statistics[a]**

| Phase | Group | | Minimum | Maximum | Mean | Std. Deviation | N |
|---|---|---|---|---|---|---|---|
| Pre-Test | Experimental | Predicted Value | -.8754 | -.7903 | -.8336 | .02743 | 11 |
| | | Residual | -1.12813 | .89985 | .00000 | .59096 | 11 |
| | | Std. Predicted Value | -1.523 | 1.582 | .000 | 1.000 | 11 |
| | | Std. Residual | -1.811 | 1.445 | .000 | .949 | 11 |
| | Control | Predicted Value | -1.7661 | -1.6979 | -1.7264 | .02328 | 11 |
| | | Residual | -.88573 | .68748 | .00000 | .59426 | 11 |
| | | Std. Predicted Value | -1.706 | 1.221 | .000 | 1.000 | 11 |
| | | Std. Residual | -1.414 | 1.098 | .000 | .949 | 11 |
| Post-Test | Experimental | Predicted Value | -.4771 | 1.9271 | .6727 | .85655 | 11 |
| | | Residual | -.95783 | 1.39332 | .00000 | .69976 | 11 |
| | | Std. Predicted Value | -1.342 | 1.464 | .000 | 1.000 | 11 |
| | | Std. Residual | -1.299 | 1.889 | .000 | .949 | 11 |
| | Control | Predicted Value | -.4590 | -.0583 | -.2809 | .12959 | 11 |
| | | Residual | -.94104 | 1.12542 | .00000 | .61858 | 11 |
| | | Std. Predicted Value | -1.374 | 1.718 | .000 | 1.000 | 11 |
| | | Std. Residual | -1.443 | 1.726 | .000 | .949 | 11 |

a. Dependent Variable: Profit per day per square foot

## Factor Analysis

**Communalities[a]**

| | Raw | | Rescaled | |
|---|---|---|---|---|
| | Initial | Extraction | Initial | Extraction |
| Discount per cent | .002 | 1.132E-5 | 1.000 | .005 |
| Bills per day per square foot | 2.218E-6 | 1.985E-6 | 1.000 | .895 |
| Customers per day per square foot | 1.091E-6 | 8.520E-7 | 1.000 | .781 |
| Sale quantity per day per square foot | 2.622E-5 | 2.369E-5 | 1.000 | .904 |
| Revenue per day per square foot | 8.974 | 8.969 | 1.000 | .999 |
| Earning per day per square foot | .237 | .162 | 1.000 | .685 |
| Profit per day per square foot | .350 | .197 | 1.000 | .562 |

Extraction Method: Principal Component Analysis.

a. Phase = Pre-Test, Group = Experimental

**Total Variance Explained[a]**

| | | Initial Eigenvalues[b] | | | Extraction Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|---|
| | Component | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| Raw | 1 | 9.328 | 97.542 | 97.542 | 9.328 | 97.542 | 97.542 |
| | 2 | .159 | 1.668 | 99.210 | | | |
| | 3 | .075 | .782 | 99.992 | | | |
| | 4 | .001 | .008 | 100.000 | | | |
| | 5 | 7.357E-7 | 7.694E-6 | 100.000 | | | |
| | 6 | 1.212E-7 | 1.268E-6 | 100.000 | | | |
| | 7 | 1.648E-8 | 1.723E-7 | 100.000 | | | |
| Rescaled | 1 | 9.328 | 97.542 | 97.542 | 4.832 | 69.025 | 69.025 |
| | 2 | .159 | 1.668 | 99.210 | | | |
| | 3 | .075 | .782 | 99.992 | | | |
| | 4 | .001 | .008 | 100.000 | | | |
| | 5 | 7.357E-7 | 7.694E-6 | 100.000 | | | |
| | 6 | 1.212E-7 | 1.268E-6 | 100.000 | | | |
| | 7 | 1.648E-8 | 1.723E-7 | 100.000 | | | |

Extraction Method: Principal Component Analysis.

a. Phase = Pre-Test, Group = Experimental

b. When analyzing a covariance matrix, the initial eigenvalues are the same across the raw and rescaled solution.

**Component Matrix[a,b]**

| | Raw Component 1 | Rescaled Component 1 |
|---|---|---|
| Discount per cent | .003 | .074 |
| Bills per day per square foot | .001 | .946 |
| Customers per day per square foot | .001 | .884 |
| Sale quantity per day per square foot | .005 | .951 |
| Revenue per day per square foot | 2.995 | 1.000 |
| Earning per day per square foot | .403 | .827 |
| Profit per day per square foot | .444 | .750 |

Extraction Method: Principal Component Analysis.

a. Phase = Pre-Test, Group = Experimental

b. 1 components extracted.

**Descriptive Statistics[a]**

| | Mean | Std. Deviation | Analysis N |
|---|---|---|---|
| Discount per cent | .1618 | .04408 | 11 |
| Bills per day per square foot | .00927 | .000467 | 11 |
| Customers per day per square foot | .00609 | .000302 | 11 |
| Sale quantity per day per square foot | .02936 | .002248 | 11 |
| Revenue per day per square foot | 16.5018 | 1.18801 | 11 |
| Earning per day per square foot | 3.8182 | .60489 | 11 |
| Profit per day per square foot | -1.7264 | .59471 | 11 |

a. Phase = Pre-Test, Group = Control

**Communalities[a]**

| | Raw | | Rescaled | |
|---|---|---|---|---|
| | Initial | Extraction | Initial | Extraction |
| Discount per cent | .002 | .001 | 1.000 | .385 |
| Bills per day per square foot | 2.182E-7 | 3.024E-8 | 1.000 | .139 |
| Customers per day per square foot | 9.091E-8 | 1.444E-8 | 1.000 | .159 |
| Sale quantity per day per square foot | 5.055E-6 | 2.050E-6 | 1.000 | .406 |
| Revenue per day per square foot | 1.411 | 1.397 | 1.000 | .990 |
| Earning per day per square foot | .366 | .327 | 1.000 | .895 |
| Profit per day per square foot | .354 | .222 | 1.000 | .628 |

Extraction Method: Principal Component Analysis.

a. Phase = Pre-Test, Group = Control

**Total Variance Explained**[a]

| | | Initial Eigenvalues[b] | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Component | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| Raw | 1 | 1.532 | 71.839 | 71.839 | 1.532 | 71.839 | 71.839 | 1.515 | 71.023 | 71.023 |
| | 2 | .415 | 19.463 | 91.302 | .415 | 19.463 | 91.302 | .433 | 20.279 | 91.302 |
| | 3 | .185 | 8.663 | 99.965 | | | | | | |
| | 4 | .001 | .035 | 100.000 | | | | | | |
| | 5 | 7.359E-7 | 3.450E-5 | 100.000 | | | | | | |
| | 6 | 6.083E-8 | 2.852E-6 | 100.000 | | | | | | |
| | 7 | 3.088E-8 | 1.448E-6 | 100.000 | | | | | | |
| Rescaled | 1 | 1.532 | 71.839 | 71.839 | 2.057 | 29.380 | 29.380 | 2.112 | 30.168 | 30.168 |
| | 2 | .415 | 19.463 | 91.302 | 1.544 | 22.059 | 51.439 | 1.489 | 21.271 | 51.439 |
| | 3 | .185 | 8.663 | 99.965 | | | | | | |
| | 4 | .001 | .035 | 100.000 | | | | | | |
| | 5 | 7.359E-7 | 3.450E-5 | 100.000 | | | | | | |
| | 6 | 6.083E-8 | 2.852E-6 | 100.000 | | | | | | |
| | 7 | 3.088E-8 | 1.448E-6 | 100.000 | | | | | | |

Extraction Method: Principal Component Analysis.

a. Phase = Pre-Test, Group = Control

b. When analyzing a covariance matrix, the initial eigenvalues are the same across the raw and rescaled solution.

**Component Matrix**[a,b]

| | Raw Component | | Rescaled Component | |
|---|---|---|---|---|
| | 1 | 2 | 1 | 2 |
| Discount per cent | -.003 | .027 | -.068 | .617 |
| Bills per day per square foot | .000 | .000 | .355 | .113 |
| Customers per day per square foot | .000 | .000 | .368 | .153 |
| Sale quantity per day per square foot | .001 | .000 | .637 | -.002 |
| Revenue per day per square foot | 1.179 | -.080 | .993 | -.068 |
| Earning per day per square foot | .021 | -.572 | .035 | -.945 |
| Profit per day per square foot | .376 | .285 | .631 | .479 |

Extraction Method: Principal Component Analysis.

a. Phase = Pre-Test, Group = Control

b. 2 components extracted.

**Rotated Component Matrix[a,b]**

| | Raw Component | | Rescaled Component | |
|---|---|---|---|---|
| | 1 | 2 | 1 | 2 |
| Discount per cent | .000 | -.027 | .009 | -.621 |
| Bills per day per square foot | .000 | .000 | .366 | -.068 |
| Customers per day per square foot | .000 | .000 | .384 | -.106 |
| Sale quantity per day per square foot | .001 | .000 | .632 | .082 |
| Revenue per day per square foot | 1.160 | .227 | .976 | .191 |
| Earning per day per square foot | -.050 | .570 | -.083 | .942 |
| Profit per day per square foot | .408 | -.236 | .686 | -.396 |

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Phase = Pre-Test, Group = Control

b. Rotation converged in 3 iterations.

**Component Transformation Matrix[a]**

| Component | 1 | 2 |
|---|---|---|
| 1 | .992 | .125 |
| 2 | .125 | -.992 |

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Phase = Pre-Test, Group = Control

**Communalities[a]**

| | Raw | | Rescaled | |
|---|---|---|---|---|
| | Initial | Extraction | Initial | Extraction |
| Discount per cent | .000 | .000 | 1.000 | .712 |
| Bills per day per square foot | 1.122E-5 | 1.103E-5 | 1.000 | .983 |
| Customers per day per square foot | 4.618E-6 | 4.290E-6 | 1.000 | .929 |
| Sale quantity per day per square foot | 8.109E-5 | 8.024E-5 | 1.000 | .990 |
| Revenue per day per square foot | 20.253 | 20.246 | 1.000 | 1.000 |
| Earning per day per square foot | 1.212 | 1.191 | 1.000 | .982 |
| Profit per day per square foot | 1.223 | 1.083 | 1.000 | .885 |

Extraction Method: Principal Component Analysis.

a. Phase = Post-Test, Group = Experimental

**Total Variance Explained[a]**

| | | Initial Eigenvalues[b] | | | Extraction Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|---|
| | Component | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| Raw | 1 | 22.521 | 99.255 | 99.255 | 22.521 | 99.255 | 99.255 |
| | 2 | .148 | .651 | 99.906 | | | |
| | 3 | .021 | .094 | 100.000 | | | |
| | 4 | 5.164E-5 | .000 | 100.000 | | | |
| | 5 | 7.314E-7 | 3.224E-6 | 100.000 | | | |
| | 6 | 1.093E-7 | 4.817E-7 | 100.000 | | | |
| | 7 | 5.868E-8 | 2.586E-7 | 100.000 | | | |
| Rescaled | 1 | 22.521 | 99.255 | 99.255 | 6.481 | 92.582 | 92.582 |
| | 2 | .148 | .651 | 99.906 | | | |
| | 3 | .021 | .094 | 100.000 | | | |
| | 4 | 5.164E-5 | .000 | 100.000 | | | |
| | 5 | 7.314E-7 | 3.224E-6 | 100.000 | | | |
| | 6 | 1.093E-7 | 4.817E-7 | 100.000 | | | |
| | 7 | 5.868E-8 | 2.586E-7 | 100.000 | | | |

Extraction Method: Principal Component Analysis.

a. Phase = Post-Test, Group = Experimental

b. When analyzing a covariance matrix, the initial eigenvalues are the same across the raw and rescaled solution.

**Component Matrix[a,b]**

| | Raw Component 1 | Rescaled Component 1 |
|---|---|---|
| Discount per cent | .014 | .844 |
| Bills per day per square foot | .003 | .991 |
| Customers per day per square foot | .002 | .964 |
| Sale quantity per day per square foot | .009 | .995 |
| Revenue per day per square foot | 4.500 | 1.000 |
| Earning per day per square foot | 1.091 | .991 |
| Profit per day per square foot | 1.041 | .941 |

Extraction Method: Principal Component Analysis.

a. Phase = Post-Test, Group = Experimental

b. 1 components extracted.

**Communalities[a]**

| | Raw | | Rescaled | |
|---|---|---|---|---|
| | Initial | Extraction | Initial | Extraction |
| Discount per cent | .000 | 1.767E-5 | 1.000 | .130 |
| Bills per day per square foot | 1.818E-6 | 1.778E-6 | 1.000 | .978 |
| Customers per day per square foot | 8.545E-7 | 7.491E-7 | 1.000 | .877 |
| Sale quantity per day per square foot | 1.607E-5 | 1.491E-5 | 1.000 | .928 |
| Revenue per day per square foot | 5.924 | 5.915 | 1.000 | .999 |
| Earning per day per square foot | .275 | .255 | 1.000 | .926 |
| Profit per day per square foot | .399 | .297 | 1.000 | .745 |

Extraction Method: Principal Component Analysis.

a. Phase = Post-Test, Group = Control

**Total Variance Explained[a]**

| | | Initial Eigenvalues[b] | | | Extraction Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|---|
| | Component | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| Raw | 1 | 6.467 | 98.012 | 98.012 | 6.467 | 98.012 | 98.012 |
| | 2 | .120 | 1.815 | 99.827 | | | |
| | 3 | .011 | .171 | 99.998 | | | |
| | 4 | .000 | .002 | 100.000 | | | |
| | 5 | 1.012E-6 | 1.534E-5 | 100.000 | | | |
| | 6 | 5.888E-8 | 8.923E-7 | 100.000 | | | |
| | 7 | 7.596E-9 | 1.151E-7 | 100.000 | | | |
| Rescaled | 1 | 6.467 | 98.012 | 98.012 | 5.582 | 79.743 | 79.743 |
| | 2 | .120 | 1.815 | 99.827 | | | |
| | 3 | .011 | .171 | 99.998 | | | |
| | 4 | .000 | .002 | 100.000 | | | |
| | 5 | 1.012E-6 | 1.534E-5 | 100.000 | | | |
| | 6 | 5.888E-8 | 8.923E-7 | 100.000 | | | |
| | 7 | 7.596E-9 | 1.151E-7 | 100.000 | | | |

Extraction Method: Principal Component Analysis.

a. Phase = Post-Test, Group = Control

b. When analyzing a covariance matrix, the initial eigenvalues are the same across the raw and rescaled solution.

**Component Matrix[a,b]**

| | Raw Component 1 | Rescaled Component 1 |
|---|---|---|
| Discount per cent | .004 | .361 |
| Bills per day per square foot | .001 | .989 |
| Customers per day per square foot | .001 | .936 |
| Sale quantity per day per square foot | .004 | .963 |
| Revenue per day per square foot | 2.432 | .999 |
| Earning per day per square foot | .505 | .962 |
| Profit per day per square foot | .545 | .863 |

Extraction Method: Principal Component Analysis.

a. Phase = Post-Test, Group = Control

b. 1 components extracted.