Short-Term Discounting Frameworks: Insights from Multiple Experiments

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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 multiple experiments on multiple short-term discounting frameworks to investigate and recommend brick-and-mortar retailers on ideal (a) frameworks, (b) duration, (c) types, (d) assortment coverage, and (e) advertising techniques for short-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.

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

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 2023which is at32.34 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 2023which 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 2020which is at23.55 percent as of the year2016 (Statista)[1]. The overall market size of 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 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

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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 overall Indian retail market. The 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. LITERATUREREVIEW :

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).

Gupta and Cooper (1992)[11], 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)[12], often ifone store format has in general higher prices than the other one. Chandon et al (2000) [13], 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)[14], 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)[15],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 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.

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Bhatnagar, & Ratchford (2004)[16]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 the 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) [17], post online retailing format emergence, consumers' expectations on lower priced products has increased.

Diwakar Gupta et al. (2006)[18].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. Whendem and 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. For example, the penalty for choosing clearance price once and keeping it unchanged for the remainder of the selling season is found to be small when either the mean reservation prices do not change appreciably over time or when they drop sharply after the first period. Mokhtarian and Tang (2009, 2011)[19], 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)[20], because they act in the consumer's mind as a benefit to him, creating thus consumer behaviour (Yusuf, 2010) [21]. The effectiveness and the importance of sales promotion in the market can be viewed when presenting the segment numbers. According to Teunter (2002)[22], over 20%of sales of products of some food branches occur through sales promotion activities. In a report quoted by Wierenga and Soethoudt (2010)[20], over 75% of spending on communication in nondurable consumer goods segment between 1997 and 2004in 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[23]; Haans & Gijsbrechts, 2011[24]) 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) [25]. 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)[26], 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 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 discount component and arrest such huge degrowth in their store profitability.

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 short-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 multiple experiments across various types of short-term discounting frameworks to find answers to our key research questions.

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3. OBJECTIVES:

Key objectives of this research were to:
  (a) understand the changein conversion of walk-ins to bills, store profitability across;
      i. discount types
      ii. discount applicability types
      iii. duration of discounting
      iv. pre-online stores emergence period
      v. post-online stores emergence period
  (b) Draw insights from multiple experimentations

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. All the stores were exposed to multiple experimentations.
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 six 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 these multiple experimentations 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 away 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 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 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 selling proposition

Experiment 1:
  • all products in the store are eligible for discount offer
  • discount offer valid for only eight days

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- key objective was to have a competitive edge over online stores on discount component of the selling proposition
- discounts are not based on age of the inventory
- in-store offer signages
- communication of offer to existing consumer base (entire) through SMS on daily basis
- no use of above the line (ATL) channels for advertising of the discount offer
- benchmark for consumers is not available as the offer is customized
- discount component is the key component of consumer engagement/selling proposition

Experiment 2, 3, 4, 5 and 6:
- all products in the store are eligible for the discount offer but limited to a specific category
- discount offer valid for only three days
- key objective was to have a competitive edge over online stores on discount component of the selling proposition
- discounts are not based on the age of the inventory
- in-store offer signages
- communication of offers to select (selected based on their purchase history) on existing consumer base through SMS on a daily basis
- no use of above the line (ATL) channels for advertising of the discount offer
- benchmark for consumers is not available as the offer is customized
- discount component is the key component of consumer engagement/selling proposition

Experiment 8 and 9:
- all products in the store are eligible for discount offer
- discount offer valid for only one day
- key objective was to have a competitive edge over online stores on the discount component of the selling proposition
- discounts are not based on the age of the inventory
- in-store offer signages
- communication of offer to an existing consumer base (entire) through SMS
- no use of above the line (ATL) channels for advertising of the discount offer
- benchmark for consumers is not available as the offer is customized
- discount component is the key component of consumer engagement/selling proposition

Table 1: Percentage change over 'post-online' stores emergence across each key factor, types, levels, and duration of discounting frameworks experimented.

Factors	Post-Test (Offer on All Stocks at Bill Level - 8 Days)		Post-Test (Offer on All Stocks at Bill Level - 1 Day)		Post-Test (Offer on All Stocks, but Limited to a Category at a time - 3 Days)	
Average selling price	⬆	29%	⬂	11%	⬇	6%
Average transaction value	⬆	47%	⬂	23%	⬇	9%
Average basket size	⬆	12%	⬈	10%	⬇	2%
Discount per cent	⬇	-90%	⬆	-9%	➡	-44%
Consumers per day per square foot	⬂	20%	⬇	12%	⬆	48%
Sale quantity per day per square foot	➡	34%	⬇	22%	⬆	50%
Discount value per day per square foot	⬆	23%	➡	2%	⬇	-25%
Revenue per day per square foot	⬆	77%	⬇	39%	➡	61%
Earning per day per square foot	⬇	-29%	⬇	-28%	⬆	12%
Profit per day per square foot	⬇	-326%	⬇	-319%	⬆	56%

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Results of all the nine short-term discounting experiments as shown in table 1, 2, 3 and 4 when compared with different periods indicate that the discount levels, discount types, discount duration, and discount coverage impact consumer attraction and overall store profitability levels. Some have a positive impact and some negative. It is important to note that, ten years of empirical data and these nine experimentations though indicate a significant positive correlation (0.269 at 0.01 level 2-tailed with Sig. value of 0.000) between discount and consumer attraction it also shows that the overall store profitability is significantly correlated negatively with discounts (-0.665 at 0.01 level 2-tailed with Sig. value of 0.505).

Table 2: Percentage change over 'no discount' period across each key factor, types, levels and duration of discounting frameworks experimented.

Factors	Post-Test (Offer on All Stocks at Bill Level - 8 Days)	Post-Test (Offer on All Stocks at Bill Level - 1 Day)	Post-Test (Offer on All Stocks, but Limited to a Category at a time - 3 Days)
Average selling price	⬆ 21%	⬂ 4%	⬇ -1%
Average transaction value	⬆ 35%	⬂ 13%	⬇ 1%
Average basket size	⬆ 12%	⬀ 9%	⬇ 1%
Discount per cent	⬇ -80%	⬆ 95%	➡ 19%
Consumers per day per square foot	⬂ 0%	⬇ -7%	⬆ 24%
Sale quantity per day per square foot	➡ 23%	⬇ 12%	⬆ 37%
Discount value per day per square foot	⬆ 143%	➡ 100%	⬇ 47%
Revenue per day per square foot	⬆ 36%	⬇ 7%	➡ 24%
Earning per day per square foot	⬇ -23%	⬇ -23%	⬆ 21%
Profit per day per square foot	⬇ -1093%	⬇ -1062%	⬆ 587%

Table 3: Percentage change across each key factor, types of customized discounting frameworks over un-customized discounting frameworks.

Factors	Post-Test (Offer on All Stocks, but Limited to a Category at a time - 3 Days)
Average selling price	-18%
Average transaction value	-26%
Average basket size	-10%
Discount per cent	487%
Consumers per day per square foot	24%
Sale quantity per day per square foot	11%
Discount value per day per square foot	-39%
Revenue per day per square foot	-9%
Earning per day per square foot	57%
Profit per day per square foot	169%

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Table 4: Percentage change over last ten years means across each key factor, types, levels and duration of discounting frameworks.

Factors	Pre-Online (Offer on Old Stocks at SKU Level)	Post-Online (Offer on All Stocks at SKU Level)	Pre-Test (No Offer)	Post-Test (Offer on All Stocks at Bill Level - 8 Days)	Post-Test (Offer on All Stocks at Bill Level - 1 Day)	Post-Test (Offer on All Stocks, but Limited to a Category at a time - 3 Days)
Average selling price	-4%	1%	8%	31%	12%	7%
Average transaction value	-11%	8%	17%	58%	32%	17%
Average basket size	-8%	7%	8%	21%	18%	9%
Discount per cent	-39%	65%	-23%	-84%	50%	-8%
Consumers per day per square foot	-5%	-3%	16%	16%	8%	44%
Sale quantity per day per square foot	-13%	4%	13%	40%	27%	56%
Discount value per day per square foot	-53%	73%	-12%	112%	75%	29%
Revenue per day per square foot	-16%	3%	34%	83%	43%	67%
Earning per day per square foot	1%	1%	-7%	-28%	-28%	13%
Profit per day per square foot	1380%	-1933%	-517%	-4238%	-4108%	2764%

6. CONCLUSION :

With reference to data shown in table 1, 2, 3 and 4 and the statistical tests across correlations, hypothesis tests, regression, and factor analysis, it is imperative to include discount as one of the key components of selling proposition post the online stores emergence in India for brick-and-mortar retailers to create a competitive edge over online stores. All levels of discounts and types of discounts could possibly 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.

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, clearly understand your consumers and their needs using both qualitative and quantitative methodologies and make strategies to create your own discounting framework/model to gain a competitive edge over any retailing formats on the discount component.

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 multiple short-term discounting frameworks. 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

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findings have been derived from multiple experiments and validated with actual empirical transactional data across different periods.

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

Correlations

		Discount per cent	Consumers per day per square foot
Discount per cent	Pearson Correlation	1	.269**
	Sig. (2-tailed)		.003
	N	117	117
Consumers per day per square foot	Pearson Correlation	.269**	1
	Sig. (2-tailed)	.003	
	N	117	117

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

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Correlations

		Discount per cent	Profit per day per square foot
Discount per cent	Pearson Correlation	1	-.665**
	Sig. (2-tailed)		.000
	N	117	117
Profit per day per square foot	Pearson Correlation	-.665**	1
	Sig. (2-tailed)	.000	
	N	117	117

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

T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Discount per cent	.12199	117	.098106	.009070
	Consumers per day per square foot	.01047	117	.002168	.000200
Pair 2	Discount per cent	.12199	117	.098106	.009070
	Profit per day per square foot	.0369	117	1.30795	.12092

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Discount per cent & Consumers per day per square foot	117	.269	.003
Pair 2	Discount per cent & Profit per day per square foot	117	-.665	.000

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Discount per cent - Consumers per day per square foot	.111521	.097544	.009018	.093660	.129383	12.367	116	.000
Pair 2	Discount per cent - Profit per day per square foot	.085068	1.375148	.127132	-.166733	.336870	.669	116	.505

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Regression

Variables Entered/Removed[a]

Offer Type	Model	Variables Entered	Variables Removed	Method
Only on Old Stocks, SKU Level Discount	1	Discount per cent[b]	.	Enter
All Stocks, SKU Level Discounts	1	Discount per cent[b]	.	Enter
All Stocks, Bill Level Discounts	1	Discount per cent[b]	.	Enter
All Stocks but Limited to Specific Category	1	Discount per cent[b]	.	Enter

a. Dependent Variable: Profit per day per square foot

b. All requested variables entered.

Model Summary[b]

Offer Type	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Only on Old Stocks, SKU Level Discount	1	.326[a]	.106	.091	.74559
All Stocks, SKU Level Discounts	1	.754[a]	.569	.557	1.10762
All Stocks, Bill Level Discounts	1	.458[a]	.210	.078	.80327
All Stocks but Limited to Specific Category	1	.186[a]	.035	-.086	.71218

a. Predictors: (Constant), Discount per cent

b. Dependent Variable: Profit per day per square foot

ANOVA[a]

Offer Type	Model		Sum of Squares	df	Mean Square	F	Sig.
Only on Old Stocks, SKU Level Discount	1	Regression	3.835	1	3.835	6.898	.011[b]
		Residual	32.242	58	.556		
		Total	36.077	59			
All Stocks, SKU Level Discounts	1	Regression	59.820	1	59.820	48.761	.000[b]
		Residual	45.392	37	1.227		
		Total	105.213	38			
All Stocks, Bill Level Discounts	1	Regression	1.026	1	1.026	1.591	.254[b]
		Residual	3.871	6	.645		
		Total	4.898	7			
All Stocks but Limited to Specific Category	1	Regression	.146	1	.146	.287	.606[b]
		Residual	4.058	8	.507		
		Total	4.203	9			

a. Dependent Variable: Profit per day per square foot

b. Predictors: (Constant), Discount per cent

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Coefficients[a]

Offer Type	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
Only on Old Stocks, SKU Level Discount	1	(Constant)	.816	.141		5.807	.000
		Discount per cent	-3.609	1.374	-.326	-2.626	.011
All Stocks, SKU Level Discounts	1	(Constant)	1.777	.394		4.513	.000
		Discount per cent	-12.233	1.752	-.754	-6.983	.000
All Stocks, Bill Level Discounts	1	(Constant)	-.337	.620		-.544	.606
		Discount per cent	-5.867	4.652	-.458	-1.261	.254
All Stocks but Limited to Specific Category	1	(Constant)	.979	.710		1.379	.205
		Discount per cent	-3.514	6.556	-.186	-.536	.606

a. Dependent Variable: Profit per day per square foot

Residuals Statistics[a]

Offer Type		Minimum	Maximum	Mean	Std. Deviation	N
Only on Old Stocks, SKU Level Discount	Predicted Value	-.1909	.7981	.5472	.25494	60
	Residual	-1.68554	1.57031	.00000	.73924	60
	Std. Predicted Value	-2.895	.984	.000	1.000	60
	Std. Residual	-2.261	2.106	.000	.991	60
All Stocks, SKU Level Discounts	Predicted Value	-3.2137	.9701	-.6779	1.25468	39
	Residual	-3.49696	2.41559	.00000	1.09295	39
	Std. Predicted Value	-2.021	1.314	.000	1.000	39
	Std. Residual	-3.157	2.181	.000	.987	39
All Stocks, Bill Level Discounts	Predicted Value	-1.4867	-.4482	-1.0312	.38290	8
	Residual	-1.08177	1.00091	.00000	.74368	8
	Std. Predicted Value	-1.189	1.523	.000	1.000	8
	Std. Residual	-1.347	1.246	.000	.926	8
All Stocks but Limited to Specific Category	Predicted Value	.3745	.7224	.6180	.12726	10
	Residual	-.78886	1.09331	.00000	.67145	10
	Std. Predicted Value	-1.914	.820	.000	1.000	10
	Std. Residual	-1.108	1.535	.000	.943	10

a. Dependent Variable: Profit per day per square foot

Factor Analysis

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
Discount per cent	.12199	.098106	117
Consumers per day per square foot	.01047	.002168	117
Sale quantity per day per square foot	.03042	.007831	117
Discount value per day per square foot	2.9923	3.04270	117

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Correlation Matrix[a]

		Discount per cent	Consumers per day per square foot	Sale quantity per day per square foot	Discount value per day per square foot
Correlation	Discount per cent	1.000	.269	.514	.930
	Consumers per day per square foot	.269	1.000	.890	.420
	Sale quantity per day per square foot	.514	.890	1.000	.674
	Discount value per day per square foot	.930	.420	.674	1.000
Sig. (1-tailed)	Discount per cent		.002	.000	.000
	Consumers per day per square foot	.002		.000	.000
	Sale quantity per day per square foot	.000	.000		.000
	Discount value per day per square foot	.000	.000	.000	

a. Determinant = .009

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.572
Bartlett's Test of Sphericity	Approx. Chi-Square	535.839
	df	6
	Sig.	.000

Communalities

	Initial	Extraction
Discount per cent	1.000	.973
Consumers per day per square foot	1.000	.972
Sale quantity per day per square foot	1.000	.964
Discount value per day per square foot	1.000	.974

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.865	71.621	71.621	2.865	71.621	71.621	1.996	49.894	49.894
2	1.017	25.436	97.057	1.017	25.436	97.057	1.887	47.164	97.057
3	.078	1.950	99.007						
4	.040	.993	100.000						

Extraction Method: Principal Component Analysis.

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Component Matrix[a]

	Component 1	Component 2
Discount per cent	.810	-.563
Consumers per day per square foot	.754	.635
Sale quantity per day per square foot	.909	.371
Discount value per day per square foot	.902	-.399

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Rotated Component Matrix[a]

	Component 1	Component 2
Discount per cent	.975	.146
Consumers per day per square foot	.113	.979
Sale quantity per day per square foot	.407	.894
Discount value per day per square foot	.931	.328

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

a. Rotation converged in 3 iterations.

Component Transformation Matrix

Component	1	2
1	.728	.686
2	-.686	.728

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