

COMPARATIVE ANALYSIS BETWEEN URBAN KITCHEN MARKET AND SUPER-SHOPS - FOCUS ON PROPER RETURN ON INVESTMENT (ROI) IN SENSE OF SPATIAL UTILIZATION IN THE CONTEXT OF DHAKA, BANGLADESH

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Abstract

Kitchen market that means traditional retail market has always been an integral component of everyday lifestyle for the people of Dhaka city, Bangladesh. Its importance is profusely intensified in urban areas. In topmost cases, the supplies of these markets are not manufactured in the urban areas. So the kitchen market performs as a connecting platform of several functions. In a broader sense, it remains directly connected to the overall annual economic growth of a nation. Through ages, the necessity of the kitchen market is perpetual whereas its envelope characteristics i.e. shape, size, pattern, spatial organization is changing. Experiencing several metamorphic phases, presently it is config.d in the form of super-shops. Along with the present trend of modern lifestyle, the number of super-shops is on the rise. At present the urban population is densifying. Simultaneously the number of super-shops is swallowing to meet the demand. But land is a precious limited resource in any urban area. Now the question arises whether the portion of land or space used by a community for super-shops functions or kitchen markets is meeting the proper return on investment (ROI). We need to know that which financial category of population is served by the existing traditional kitchen markets and the super-shops. The main objective of the research aims at finding out the spatial utilization of a traditional kitchen market and modern super-shops. Furthermore a comparative overview between these two would be presented. The end result of this research may lead us to know whether which one between these two types gives the more ROI and may prevail in the future. A quantitative research method of data analysis is used for the research.

Keywords: Kitchen-Market, Super-Shop, retail market, Spatial Utilization, Return on Investment (ROI).

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Introduction

Dhaka is the capital city of Bangladesh. It lies along the east bank of the river *BURIGANGA* in the heart of Bengal Delta. Dhaka being the capital city and the largest city of Bangladesh has been considered as a center point of Trade and Commerce. It is known from the history that traders and businessmen used to come to Dhaka by river way to trade varieties of products from all over the south East Asia. So the urbanization process of the city started from the bank of *Buriganga* River. Retail market business has passed a long way to come to its present form. Kitchen market (which is locally known as '*KACHABAZAR*') is one of the biggest sector in field of food retail markets. With the growth of the Dhaka city and its population, it has accommodated thousands of Kitchen markets in each and every areas or ghettos with several adoptable forms. The recent addition to this process is the concept of Super shop or Supermarkets. Since the very first super shop started at Dhaka at 2001, the number of super shops is on an exponential increase. This emerging new concept of retail market and its growth give us a new window to think over. Now at 2017 local kitchen market and super shops are running side by side. Almost all the areas of Dhaka have at least one kitchen market and one super shop. Many prefer super shops to kitchen market and vice-versa. This paper focuses on the comparison between these two retail market styles particularly on the return on investment (ROI) issues in spatial utilization perspective. As the land value of the Dhaka city has been also increasing. Over the past decades land value has been increase to four-leaf. Moreover growth of super shops has been considered as an indicator to the economic growth of the city as more and more urban people are adopting this new form of markets. So it has become an arising question to find out the comparison of these two forms of retail market – kitchen market and super shop. So a ROI analysis ascertaining stock keeping unit, selling quantity and revenue per square feet of space may help to understand the shift.

Objective

Objective of the research are –

1. To find out a comparison between Urban Kitchen market and Super shop fragmenting in different parameters.
2. To find the sale per square feet value i.e. how much a square feet of space give return on investment for both the kitchen market and super shop
3. Analysis of all these values to find out the mode of paradigm shift in case of retail market in the context of a developing urban city like Dhaka.

Aim

Aim of the research is to find out a comparison between Urban Kitchen market and Super shop particularly focusing on the return on investment (ROI) in terms of spatial utilization perspective.

Method

Quantitative method has been followed here. Direct firsthand information was collected from the super shops and kitchen markets. Analysis has been done by using Microsoft Excel. Theoretical knowledge was collected from books, articles, conference papers, journal papers, newspapers and reports.

Literature Review

Chronological evolution of Markets in respect to the History of Dhaka

Dhaka, the capital city of Bangladesh, has a rich history of long four hundred years to be established from town to a megacity. Evolution of kitchen market is as old as the city. The city expanded from south to north due to significant development of trade and commerce. Wholesale and retail market has always been one of the main trading businesses of Dhaka. In the pre-Mughal era, Dhaka being lying between Buriganga and Dholaikhal, was a small Hindu trading Center (Ahsan, 1991). Many areas of Old-Dhaka are named after bazars and are still standing as an evidence of the glorious past. For example Lakshmi Bazaar, Bangla Bazaar, Shankari Bazaar, Tanti Bazar etc. along with a few localities of craftsman and businessman such as Patua-toli, Kumar-toli etc. (Dani, 1956). In the later part of the 15th century, under the twelve Bhuiyans, the growth of the MunawarKhans Bazaar near the Nawabpur Road suggests that there was an extension of commercial activity into this area (Ahsan, 1991). At that time Dhaka had irregular narrow streets and linear development of bazars like many other south-Asian cities. Infact each locality was developed with a bazar at center. Thus Dhaka was once called "Bahanno Bazar TipannoGoli"(Fifty two markets & Fifty three lane).

During the Mughal period (1608-1764) the administrative system got more organized and it helps the local farmers to bring their crops to town for sell. With the fall of the Mughal Empire in 1707, Dhaka experienced a sixty-year period of disorder, unrest and political instability with no such significant development in retail market sector. Under British colonization (1857-1947) Dhaka went through a major transformation and this transformed medieval Dhaka into a modern city (Ahmed, 1986). And traditional retail market was not an exception. With the development of railroads and newly built grid pattern road layout, the communication became even easier and faster. So farmers and traders from remote areas were started to come to Dhaka to support the increasing needs of daily necessities and foods as population was increasing.

Dhaka's area increased from 6 sq. miles in 1947 to 25 sq. miles in 1962. (Hossain, 2014). Thus, rapid expansion of the city began in 1947 with the increase of population (Haq, 1990). And as such the retail markets development got new window to flourish. Bangladesh got independence at 1971 and after that the city of Dhaka changes drastically and rapidly. For the past 46 years Dhaka has fully transformed. Rapid economic growth and population explosion go on side by side. Traditional retail markets grew in number at an exponential rate to meet up the need of constantly increasing population. At 2001 the retail grocery market saw a totally new track of grocery business with the establishment of first super store at Dhanmondi area. Within a few years the super store concept got popularity among the upper and upper middle class citizens of Dhaka. If development goes like this, that time is not very far for 'Hypermarket' concept to become familiarized popular at Dhaka.

Urban Kitchen Market

Urban kitchen market refers to traditional retail market where groceries and house hold needs are gathered and sold to the customers. According to Farlex Financial Dictionary, Retail market is the market for the sale of goods or services to consumers rather than producers or intermediaries. In the kitchen market this sale of goods include but not limited to perishable/nonperishable food items, groceries, household needs and other daily necessities which are sold to the users commonly known as customer. As kitchen related products are profoundly found in these retail markets, these markets are commonly called as 'Kitchen Market' and these are often termed 'Urban kitchen market' at cities of Bangladesh. In local language it is called '*KACHA BAZAR*' which means 'market with raw products'. Generally these kitchen markets are like semi-open shaded space where vendors come with their products in order to selling to the customers. Vendors buy these products from wholesale markets and then sell at retail markets. Some sections are automatically created in these types of markets like-vegetables, fruits, fish, chicken, beef, spices, groceries, cereals etc. These markets vary in size and locations. Despite some big ones each of these covers a certain catchment area. Sometimes these markets also grow spontaneously in open space, beside roads or footpath, shaded or open to sky. Urban kitchen market is a part and parcel of everyday city life of Dhaka. Whether by paddled rickshaw or by Mercedes, People from all financial classes use to go to kitchen market to meet up their daily needs. Bargain policy is followed here. The role of traditional markets in providing goods needed by consumers is very important (Sandra, 2012)



Fig 1: Kitchen Market, Farmgate&Zigalota Area, Dhaka, Bangladesh
Source : Author

Super Market/Super Shop

A super market refers to a large retail market that sells food and other household goods and that is usually operated on a self-service basis (dictionary.com). Generally this is larger and offers a wider variety of products. Super markets occupy a large amount floor space and generally built in a single floor. Varieties of products are displayed on shelves with aisles. These products include but not limited to fish, meat, fresh produce, dairy baked goods, home essentials etc. Super markets are usually situated near residential areas to be convenient to customers. The basic appeal is the availability of a broad selection of goods under a single roof. (Wikipedia.org). Supermarkets typically are supplied by the distribution centers of their parent companies, usually in the largest city in the area. All products are sold on fixed price policy. For Dhaka super market is not so old concept. The system of super market was introduced at Dhaka by the establishment of first super Store –AGORA at 2001 (bdproducts24.com). After that its popularity started to spread among citizen of Dhaka people especially among upper class and upper middle class. After passing a decade or more it is also gained popularity among middle class families. But it has a long way to go in comparison to kitchen market by number of stores. The other name of super market is Super-shop.



Fig 2: Super Market, Farmgate&Zigalota Area, Dhaka, Bangladesh
Source: Author

Space Crisis and Markets

Dhaka is the center and the focal point of all kinds of civic activities in the context of social, economic, political perspective of Bangladesh. So there always remains an increase in population. According to Bangladesh Bureau of Statistics report 2016, population of the Dhaka city is 18 million and estimated population for 2017 is 19 million (worldpopulationreview.com). The city's population is growing by about 2,200 a day, according to Professor Adnan Morshed, Chairman, Department of architecture, BRAC University (www.thedailystar.net). Limitations of land with population explosion and rapid urbanization process made the land of the city extremely valuable. With rising incomes, this creates a huge demand. Prices are rising in the 590 square kilometers city by an average of 150 percent in 35 years, forcing many to the outskirts. (www.thedailystar.net). There remains an inversely proportional relation between the land per capita and the land price. So the city is in a constant situation of space crisis. This space crisis is eventually working as a factor for the increasing space rent at Dhaka city.

Increased population grows an increased demand of daily food and necessities. To meet up these need and more and more vendors gather in the city with their products ranging from food to daily household necessities. As a result kitchen markets, mini roadside markets, temporary morning markets etc. are mushrooming. There are hundreds of markets under two City Corporations of Dhaka and thousands of local mini kitchen markets; sometimes without proper legal authority. This phenomenon is also a result of rural-urban migration. And from 2001, with the establishment of first super market in the town, a new business venture was introduced in this highly competitive economic sector of the country. Newer and newer super markets are adding to facilitate the urban people. A crowded kitchen market with colorful vegetables, meat and fishes is a very common image of everyday life of Dhaka and price hike at markets has become a periodic headline in the daily newspapers.

This present scenario of the space crisis, high space rent and the densification of kitchen markets and super markets has been arisen the question of spatial utilization of these markets. As land or space is limited with high price and every day the demand for markets are rising; so which markets among the two types are given us the best return in terms of spatial utilization. Taking space rent as a vital factor, here in the paper, return on investment (ROI) of these two types of markets has been calculated against square feet of space.



Fig 3: Super shops and kitchen markets at Dhaka

Source: Author

Return on Investment (ROI)

A performance measure used to evaluate the efficiency of an investment or to compare the efficiency of a number of different investments. ROI measures the amount of return on an investment relative to the investment's cost. To calculate ROI, the benefit (or return) of an investment is divided by the cost of the investment, and the result is expressed as a percentage or a ratio (investopedia.com).

The return on investment formula:

$$\text{Return on Investment (ROI)} = \frac{(\text{Gain from Investment} - \text{Cost of Investment})}{\text{Cost of Investment}}$$

Return on Investment (ROI) is the benefit to an investor resulting from an investment of some resource. A high ROI means the investment's gains compare favorably to its cost. As a performance measure, ROI is used to evaluate the efficiency of an investment or to compare the efficiencies of several different investments (Wikipedia.org).

But as the research focus is on spatial utilization, here area of space used for a single product is considered as investment. And product variety, product selling quantity and value are considered as gain from investment. So Return on investment (ROI) is expressed in SKU per sft, quantity per sft, value per sft etc.

Spatial Utilization

Spatial utilization means the uses of space. How well a space can be utilized is the main concept of spatial utilization. In the research spatial utilization is the key focus. All the variable of kitchen market and super market are measures against per square feet to compare.

Sales per square feet

This is a measurement used to value the space's value for a retail shop.

Sale per square feet is an important element to make decision on rent fees for retail shops. Also this is important for planning inventory purchases. Sale per square feet is broadly used to measure returns on investment (ROI) for both the lessor (landlord) and the lease.

“Sales per square feet are popular sales metric used in the retailing industry. A sale per square feet is simply the average revenue a retail business creates for every square feet of sales space.” (“Sales per square feet”, investopedia.com)

$$\text{Sale per square feet} = \frac{\text{total net sales of particular shop}}{\text{area (in square feet) of selling space}}$$

Sales per square feet is used by businessanalysts alike to measure the efficiency of a store's management in creating revenues with the amount of sales space available to them. The higher the sales per square feet, the better job management is doing of marketing and displaying the store's products. As the research focuses on spatial utilization, where the business analysts are concern about the monetary value, the research is more concern about the utilization of space i.e. space used as less as possible to get revenue as much as possible.

Terms used in the paper

Area

By definition area means a part or section within a larger place, the size of a surface, the amount of space within a boundary (Cambridge dictionary.org). In the paper area for displaying and preparation of each product line is considered.

Stock Keeping Unit (SKU)

A stock keeping unit (SKU) is a product and service identification code for a store or product, often portrayed as a machine-readable bar code that helps track the item for inventory (Investopedia.com). In the paper SKU is used to define the variety of product.

Sale Quantity

Sale quantity means unit sale. Unit sales refers to the measure of the total sales that a firm earns in a given reporting period, as expressed on a per-unit of output basis. In the paper, unit sale per month is used. After that unit sale per square feet is calculated.

Sale value

Sale value means the amount of money that something would make if it were to be sold. Total sale value for a product line a month is measured. Then sale value per square feet is calculated.

Methodology

The research study was divided in two major sectors – one, collecting data from first hand sources and second, analyzing data. The study starts with collection of data from first hand source through a direct field survey. As the main objective of the research is to compare between urban kitchen market and super-shop, field survey include two pair of kitchen market and super shop. Each pair comprises of one kitchen market and one super shop from the same area so that some variables may act like constant here – location, catchment area, user group, transport facilities, economic classification.

The survey includes four markets from two areas of the city of Dhaka. First one is Farm gate, this area is one of the most densely populated area of Dhaka city. Majority of the people lived in the area belongs to Middle class and Upper middle class. Besides this area is popular among students and bachelors to live like mess, some informal hostels are also available in the area. Moreover there is one slum area and as the area act like a major transportation hub of the city, a portion of the resident of this area also belongs to lower class. The other area is Zigatola-Dhanmondi- it is one of the planned area of the city. Majority of the resident here belongs to Upper Middle class and Upper class. It was mainly a residential area but now commercialization encroachment can be seen in the major roads of this area. So this two areas, more or less give a variety of customer group.



Fig 4, 5: Super Market, Farmgate Area (1st & 2nd floor) Schematic Layout (Not to Scale)
Source: Author

Kitchen market is so available in Dhaka city. It grows spontaneously here. And also there are allocations for kitchen markets from the Dhaka City corporation authorities. But number of super market is limited in comparison to kitchen market, though increasing rapidly. So choosing the super market first was the best option. One of most popular brand of super-markets was surveyed in both the areas. And the most adjacent kitchen markets to those super-shops were chosen. Collection data from super-shop were easier. We collect monthly data from their record to get a monthly average values. And then crosscheck majority of the data by an extensive field survey. Kitchen market data collections were a lot more difficult as generally kitchen market vendors do not keep record. So data collection was done by extensive field

survey through questionnaire survey and face to face interviews. Crosschecking of data was also done by including direct counting.

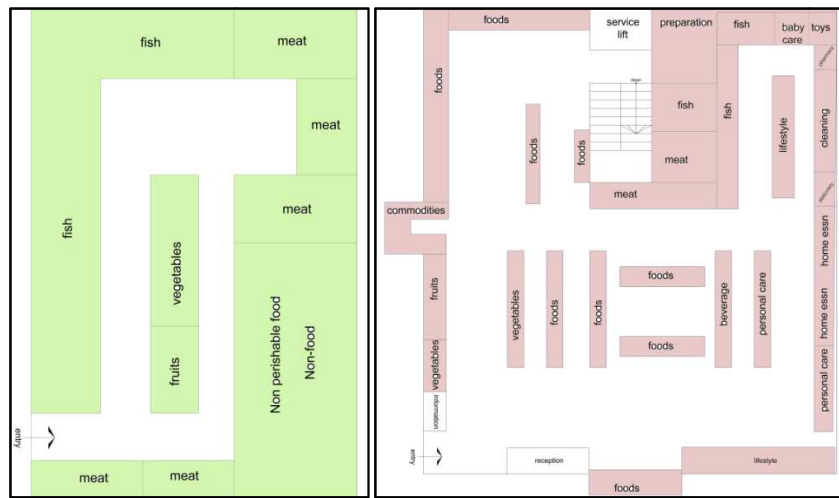


Fig 6, 7: Kitchen Market, Farmgate and Super Market, Zigatola Schematic Layout (Not to Scale)
 Source: Author

All the products found in market can be broadly categorized into three basic sectors – perishable food, nonperishable food, non-food. For our research these three broad categories are divided into sixteen (16) major product lines. These are : fish(all kinds), meat(all kinds), fruits, vegetables, groceries commodities (rice, wheat, pulses, spices, salt etc.) , Groceries Food(all other kinds of dry food items, beverages, cleaning needs, personal care, lifestyle products, health products, Stationaries, home essentials (tissue paper, air freshener etc.), cooking accessories(glass, bowl, plates, frying pan, spoon, utensils etc.), baby care, toys. Four data were collected against each product line – area of display and preparation (except circulation) in square feet, stock Keeping Unit (SKU) or variety, sell quantity and revenue.

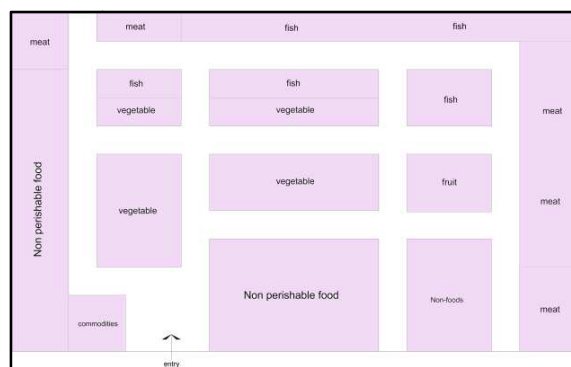


Fig 8: Kitchen Market Zigatola Schematic Layout (Not to Scale)
 Source: Author

Monthly data were collected for all these variables and average monthly data are taken for calculation. Some other basic information like total area, rent, users per month etc. were also taken into account. Though the business policy, process, context and situations are different for kitchen market and super shops; the research is focus only on spatial utilization perspective. So to compare in a common ground values per square feet are the key measure here. SKU per sft, Sell quantity per sft and Revenue per sft are measured.

The second phase includes analysis of these data. An area's Kitchen market information is compared against super shop of that particular area. Comparative analysis is follows detail in the next section.

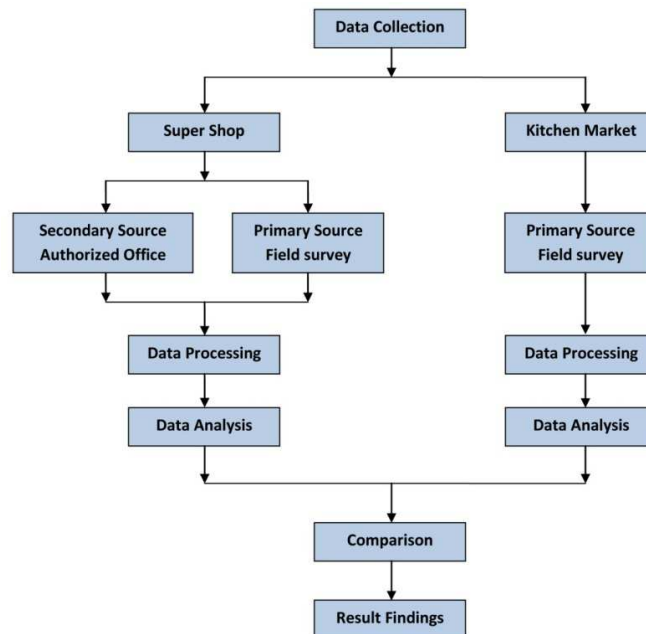


Fig 9: Flow Chart showing the Research Methodology

Technical Analysis Model

Basic Information

The main focus of the technical analysis model is to create a comparison among ROI of 4 different market types. Four market types were selected which remainat the following categories:

Table 1 : Types of Market

Occupancy	Area Name	Super Market	Kitchen Market
Mostly Commercial	Farmgate	Type 1 : Super Market Farmgate	Type 3: Kitchen Market Farmgate
Mostly Residential	Zigatola	Type 2: Super Market Zigatola	Type 4: Kitchen market Zigatola

Then the research focused on the parameters. The whole model for the research was designed based on 3 (three) parameters. These parameters are considered as the guiding factors of the research finding which fluctuate according to the different external and internal forces.

The three parameters are:

Table 2 :Parameters

Parameter	Notation
• SKU (Stock Keeping Unit)	S
• Sell Quantity	Q
• Revenue in Taka	R

One of the important fact of this technical analysis model is that, all these parameters are converted into “per square feet” value. So the comparison become justified that these parameters at different market types are compared at the base of 1 (one) unit area.

Then they are denoted with a bar and become $\bar{S}, \bar{Q}, \bar{R}$. which are respectively: SKU per square feet, Sell quantity per square feet and Revenue in Taka per square feet.

Phases of the technical Analysis Model

1. Each market type was analysed individually. The three parameters are tabulated against each product category under different columns.
2. These tables guide to the values of Average Gain Per sft. \bar{G}
3. A business initiative has different parameters which are altogether responsible to develop the total value of cost. In this research SPACE RENT was considered as the only cost parameter. This is because there search focus is based on the spatial utilization of shop area. Space rent mainly includes the monthly rentals which are decided upon land price and location.
4. So, after analyse it gives the data of Rent cost per sft \bar{C}
5. Then ROI is calculated based on the following formula:

$$\text{Return on Investment (ROI)} = \frac{(\text{Gain from Investment} - \text{Cost of Investment})}{\text{Cost of Investment}}$$

$$\therefore ROI = \frac{\bar{G} - \bar{C}}{\bar{C}}$$

6. Moreover, illustration are done showing a comparison among different market types against the three parameter through bar chart and pie chart

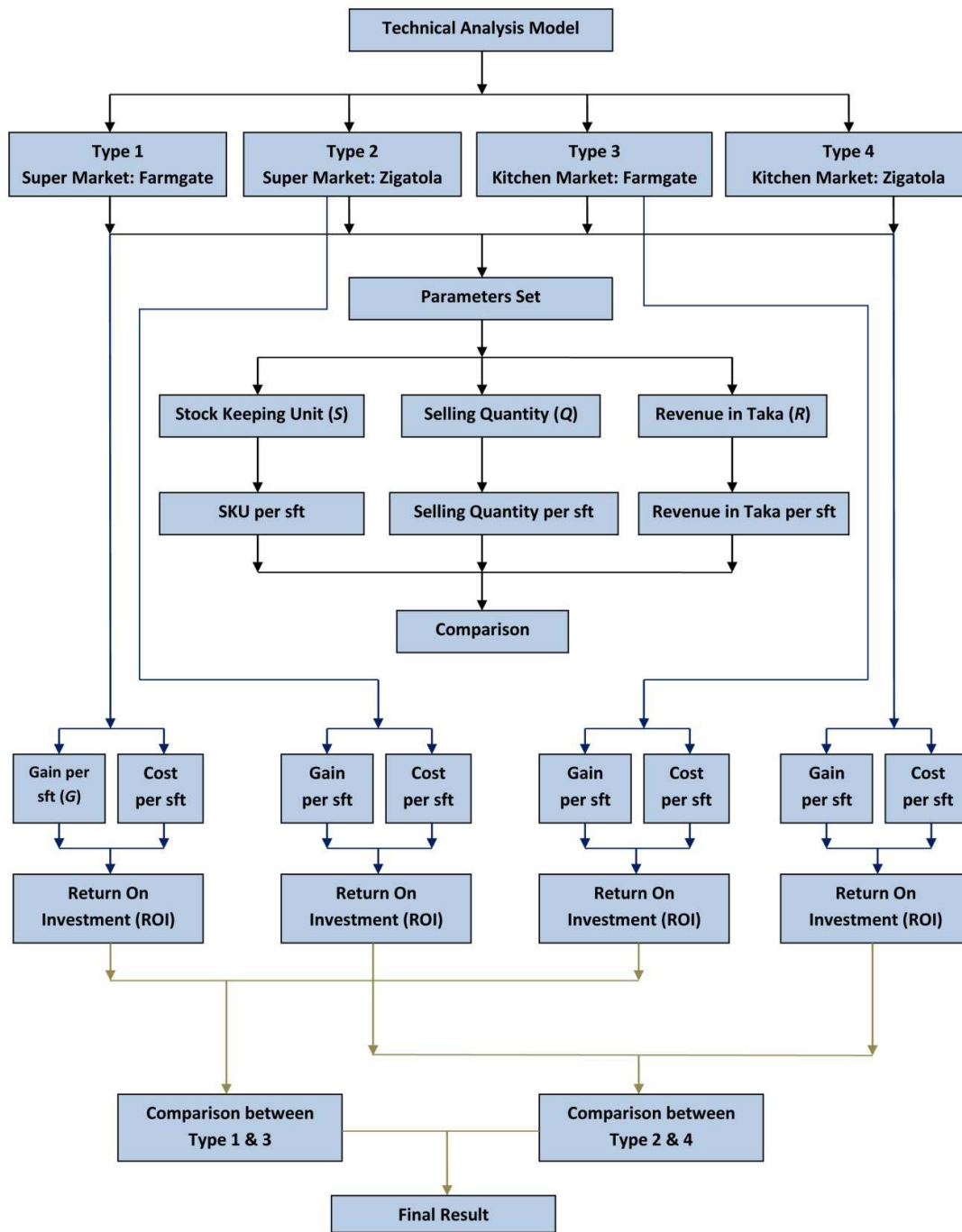


Fig 10: Flow Chart- Technical Analysis Model

Statistical Data Analysis

Data Analysis for Super Shop Farmgate Area

Table 3: Data Analysis for Super Shop Farmgate Area

	<u>category</u>	<u>Net area (sft)</u>	<u>sku</u>	<u>sell quantity</u>	<u>unit</u>	<u>Revenue tk</u>	$\overline{S_{sf}}$	$\overline{Q_{sf}}$	$\overline{R_{sf}}$
	<i>i</i>	N_{a_i}	S_{sf}	Q_{sf}		R_{sf}	$\frac{S_{sf}}{N_{a_i}}$	$\frac{Q_{sf}}{N_{a_i}}$	$\frac{R_{sf}}{N_{a_i}}$
1	fish	192	118	3,791	kg+piece	1,669,000.00	0.61	19.74	8,692.71
2	meat	184	64	14,751	kg	3,360,000.00	0.35	80.17	18,260.87
3	vegetable	112	107	13,643	kg+piece	669,000.00	0.96	121.81	5,973.21
4	fruits	88	123	12,900	kg+piece	1,424,000.00	1.40	146.59	16,181.82
5	grocery-commodities	119	721	26,200	kg	2,588,000.00	6.06	220.17	21,747.90
6	other foods	636	1800	20,212	kg+piece	7,746,000.00	2.83	31.78	12,179.25
7	beverages	30	128	6,900	piece	246,000.00	4.27	230.00	8,200.00
8	cleaning needs	86	144	8,251	piece	562,000.00	1.67	95.94	6,534.88
9	lifestyle products	102	340	2,407	piece	518,000.00	3.33	23.60	5,078.43
10	personal care	88	700	11,288	piece	1,814,000.00	7.95	128.27	20,613.64
11	pharmacy	6	61	486	piece	48,700.00	10.17	81.00	8,116.67
12	stationery	4	74	206	piece	16,900.00	21.14	58.86	4,828.57
13	home essentials	123	2250	5,700	piece	337,000.00	18.29	46.34	2,739.84
14	baby care	18	280	920	piece	219,000.00	15.56	51.11	12,166.67
15	toys	10	136	335	piece	66,000.00	13.47	33.17	6,534.65
	<u>Net Area</u>								
	$\sum_{i=1}^{15} N_{a_i} =$	1,798				$\sum_{i=1}^{15} (R_{sf})_i$			21,283,600.00
	<u>Gross Area</u>	4,494							

	$\sum_{i=1}^{15} Ga_i =$								
	Circulation & admin =	60%							

$$\text{Average Gain per sft} = \overline{G_{sf}} = \frac{\sum_{i=1}^{15} (R_{sf})_i}{\sum_{i=1}^{15} Ga_i} = 4,736.00$$

Data Analysis for Super Shop Zigatola Area

Table 4: Data Analysis for Super Shop Zigatola Area

	<u>category</u>	<u>Net area (sft)</u>	<u>sku</u>	<u>sell quantity</u>	<u>unit</u>	<u>Revenue tk</u>	$\overline{S_{sz}}$	$\overline{Q_{sz}}$	$\overline{R_{sz}}$
	<i>i</i>	<i>Na</i>	<i>S_{sz}</i>	<i>Q_{sz}</i>		<i>R_{sz}</i>	$\frac{S_{sz}}{Na}$	$\frac{Q_{sz}}{Na}$	$\frac{R_{sz}}{Na}$
1	fish	280	156	6,814	kg+piece	3,761,835.00	0.56	24.34	13,435.13
2	meat	225	108	29,294	kg	6,007,367.00	0.48	130.20	26,699.41
3	vegetable	102	124	34,682	kg+piece	1,838,145.00	1.22	340.02	18,021.03
4	fruits	84	138	41,506	kg+piece	4,330,215.00	1.64	494.12	51,550.18
5	grocery-commodities	175	246	44,678	kg	5,973,507.00	1.41	255.30	34,134.33
6	other foods	644	2325	161,929	kg+piece	18,153,306.00	3.61	251.44	28,188.36
7	beverages	63	465	21,900	piece	2,544,796.00	7.38	347.62	40,393.59
8	cleaning needs	71	329	14,861	piece	1,474,791.00	4.63	209.31	20,771.70
9	lifestyle products	118	345	4,278	piece	1,242,614.00	2.92	36.25	10,530.63
10	personal care	88	1304	20,799	piece	4,115,234.00	14.82	236.35	46,764.02
11	pharmacy	18	33	513	piece	74,541.00	1.83	28.50	4,141.17
12	stationery	22	55	658	piece	40,636.00	2.50	29.91	1,847.09

13	home essentials	89	731	21,264	piece	2,926,387.00		8.21	238.92	32,880.75	
14	baby care	44	309	1,620	piece	436,528.00		7.02	36.82	9,921.09	
15	toys	22	410	766	piece	215,124.00		18.64	34.82	9,778.36	
	Net Area $\sum_{i=1}^{15} Na_i =$	2,045				$\sum_{i=1}^{15} (R_{sz})_i$ 53,135,026.00					
	Gross Area $\sum_{i=1}^{15} Ga_i =$	12,066									
	Circulation & admin =	70% in only first floor + backhouse 5261 sft									

$$\text{Average Gain per sft} = \overline{G_{sz}} = \frac{\sum_{i=1}^{15} (R_{sz})_i}{\sum_{i=1}^{15} Ga_i} = 4,403.69$$

Data Analysis for Kitchen Market Farmgate Area

Table 5: Data Analysis for Kitchen Market Farmgate Area

	category	Net area (sft)	sku	sell quantity	unit	Revenue tk		$\overline{S_{kf}}$	$\overline{Q_{kf}}$	$\overline{R_{kf}}$
	<i>i</i>	<i>Na</i>	<i>S_{kf}</i>	<i>Q_{kf}</i>		<i>R_{kf}</i>		$\frac{S_{kf}}{Na}$	$\frac{Q_{kf}}{Na}$	$\frac{R_{kf}}{Na}$
	fish	830	32	2,300	kg+piece	2,152,500.00		0.04	2.77	2,593.37
	meat	462	18	4,260	kg+piece	1,746,600.00		0.04	9.22	3,780.52
	vegetable	158	45	2,375	kg+piece	756,254.00		0.28	15.03	4,786.42
	fruits	168	32	5,570	kg+piece	842,512.00		0.19	33.15	5,014.95
	grocery-commodities	220	142	7,120	kg	1,165,895.00		0.65	32.36	5,299.52
	other foods	308	253	15,690	kg+piece	2,864,785.00		0.82	50.94	9,301.25

beverages	24	17	4,137	piece	252,541.00	0.71	172.38	10,522.54
cleaning needs	40	48	5,182	piece	285,124.00	1.20	129.55	7,128.10
lifestyle products	38	29	1,654	piece	345,892.00	0.76	43.53	9,102.42
personal care	21	47	1,925	piece	312,445.00	2.24	91.67	14,878.33
pharmacy	1	0	0	piece	0.00	0.00	0.00	0.00
stationery	1	0	0	piece	0.00	0.00	0.00	0.00
home essentials	26	41	1,854	piece	246,200.00	1.58	71.31	9,469.23
baby care	23	6	984	piece	165,230.00	0.26	42.78	7,183.91
toys	1	0	0	piece	0.00	0.00	0.00	0.00
Net Area $\sum_{i=1}^{15} Na_i =$	2,321			$\sum_{i=1}^{15} (R_{kf})_i$	11,135,978.00			
Gross Area $\sum_{i=1}^{15} Ga_i =$	3,316							
Circulation & admin=	30%							

$$\text{Average Gain per sft} = \overline{G_{kf}} = \frac{\sum_{i=1}^{15} (R_{kf})_i}{\sum_{i=1}^{15} Ga_i} = 3,358.25$$

Data Analysis for Kitchen Market Zigatola Area

Table 6: Data Analysis for Kitchen Market Zigatola Area

<u>category</u>	<u>Net area (sft)</u>	<u>sku</u>	<u>sell quantity</u>	<u>unit</u>	<u>Revenue tk</u>	$\overline{S_{kz}}$	$\overline{Q_{kz}}$	$\overline{R_{kz}}$
	Na	S_{kz}	Q_{kz}		R_{kz}	$\frac{S_{kz}}{Na}$	$\frac{Q_{kz}}{Na}$	$\frac{R_{kz}}{Na}$
fish	740	30	2,500	kg+piece	2,339,673.00	0.04	3.38	3,161.72
meat	450	16	6,300	kg+piece	2,672,894.00	0.04	14.00	5,939.76
vegetable	1,000	35	3,575	kg+piece	1,072,487.00	0.04	3.58	1,072.49
fruits	75	25	4,567	kg+piece	913,400.00	0.33	60.89	12,178.67
grocery-commodities	550	195	9,540	kg	1,526,400.00	0.35	17.35	2,775.27
other foods	750	322	21,388	kg+piece	3,208,190.00	0.43	28.52	4,277.59
beverages	75	18	5,010	piece	250,562.00	0.24	66.80	3,340.83
cleaning needs	100	50	4,380	piece	350,455.00	0.50	43.80	3,504.55
lifestyle products	140	35	1,856	piece	371,188.00	0.25	13.26	2,651.34
personal care	60	68	2,355	piece	317,925.00	1.13	39.25	5,298.75
pharmacy	1	0	0	piece	0.00	0.00	0.00	0.00
stationery	1	0	0	piece	0.00	0.00	0.00	0.00
home essentials	200	40	1,734	piece	257,300.00	0.20	8.67	1,286.50
baby care	57	10	678	piece	175,543.00	0.18	11.89	3,079.70
toys	0	0	0	piece	0.00	0.00	0.00	0.00
Net Area $\sum_{i=1}^{15} Na_i =$	4,200			$\sum_{i=1}^{15} (R_{kz})_i$	13,456,017.00			

Gross Area									
$\sum_{i=1}^{15} Ga_i =$	6,000								
Circulation & admin =	30%								

$$\text{Average Gain per sft} = \overline{G_{kz}} = \frac{\sum_{i=1}^{15} (R_{kz})_i}{\sum_{i=1}^{15} Ga_i} = 2,242.66$$

Comparison

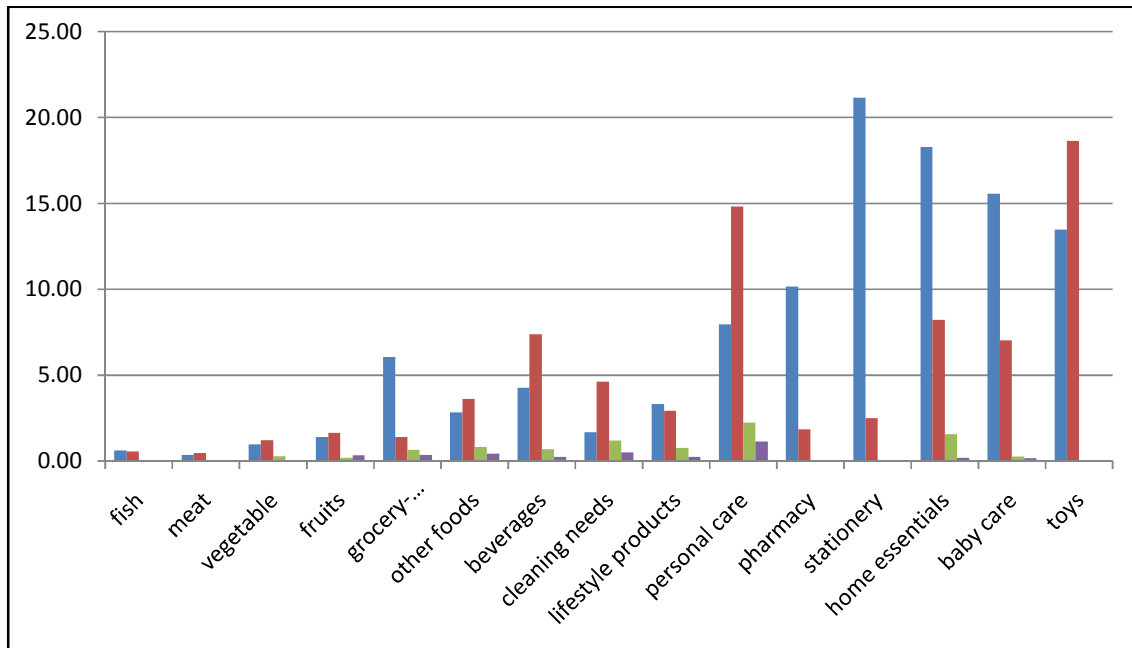


Fig 11: Comparison in terms of SKU per square feet (\overline{S}) against each category.

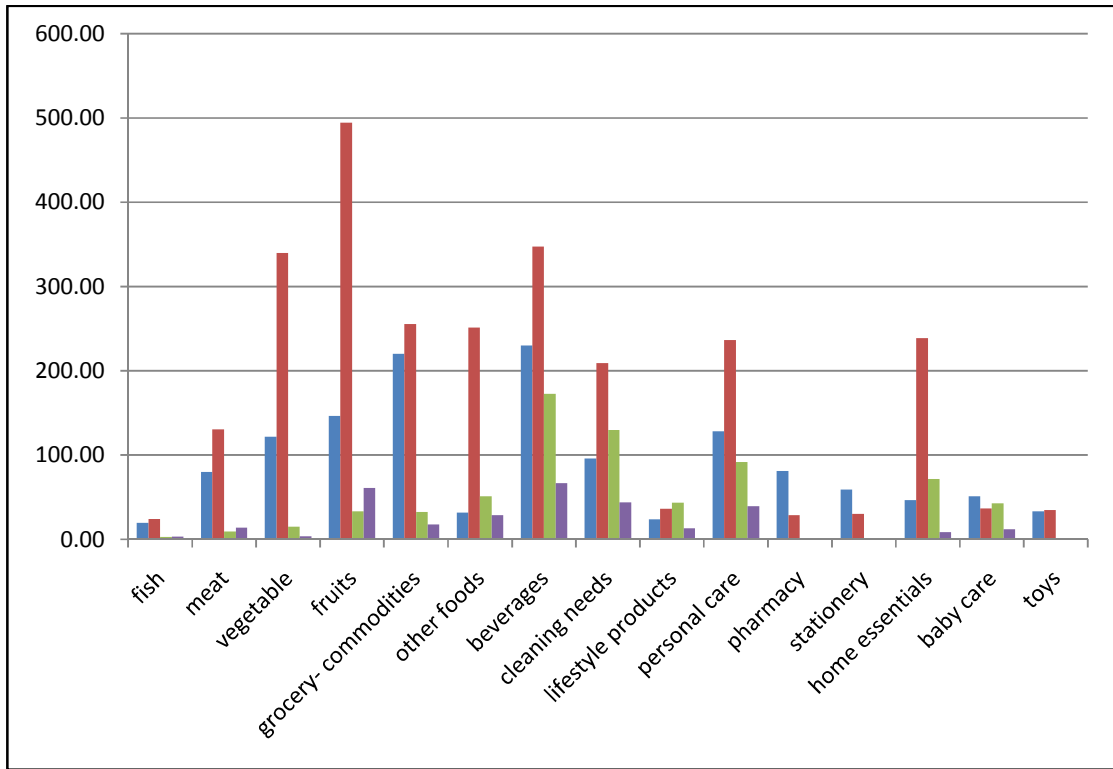


Fig 12: Comparison in terms of Sell Quantity per square feet (\bar{Q}) against each category

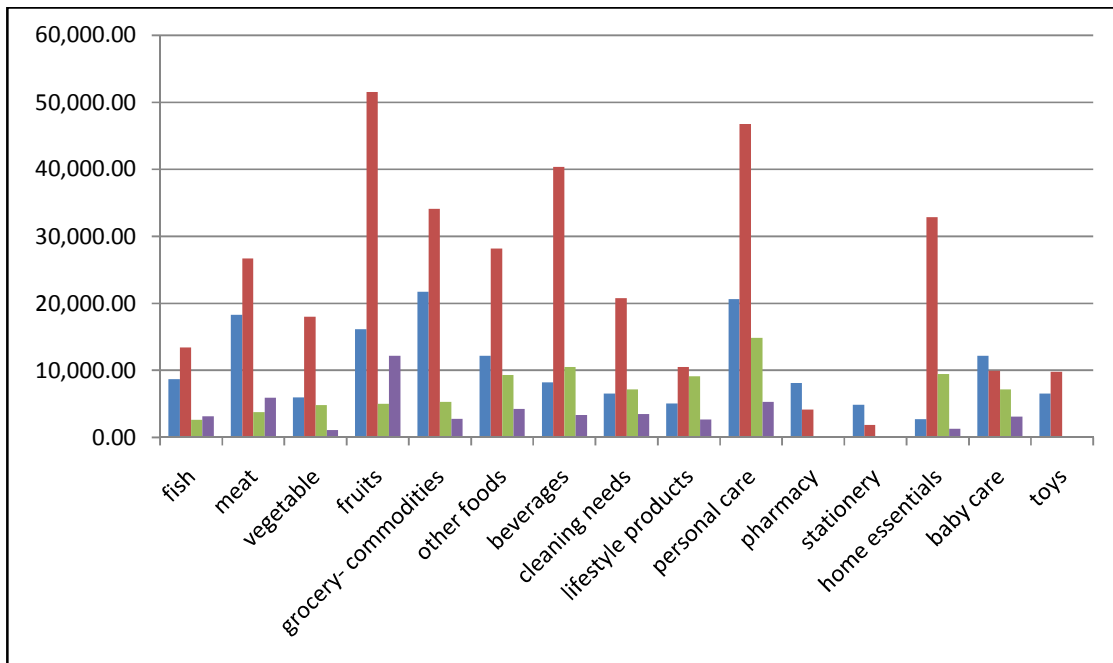


Fig 13: Comparison of Revenue per square feet (\bar{R}) against each category on the basis of different market types.

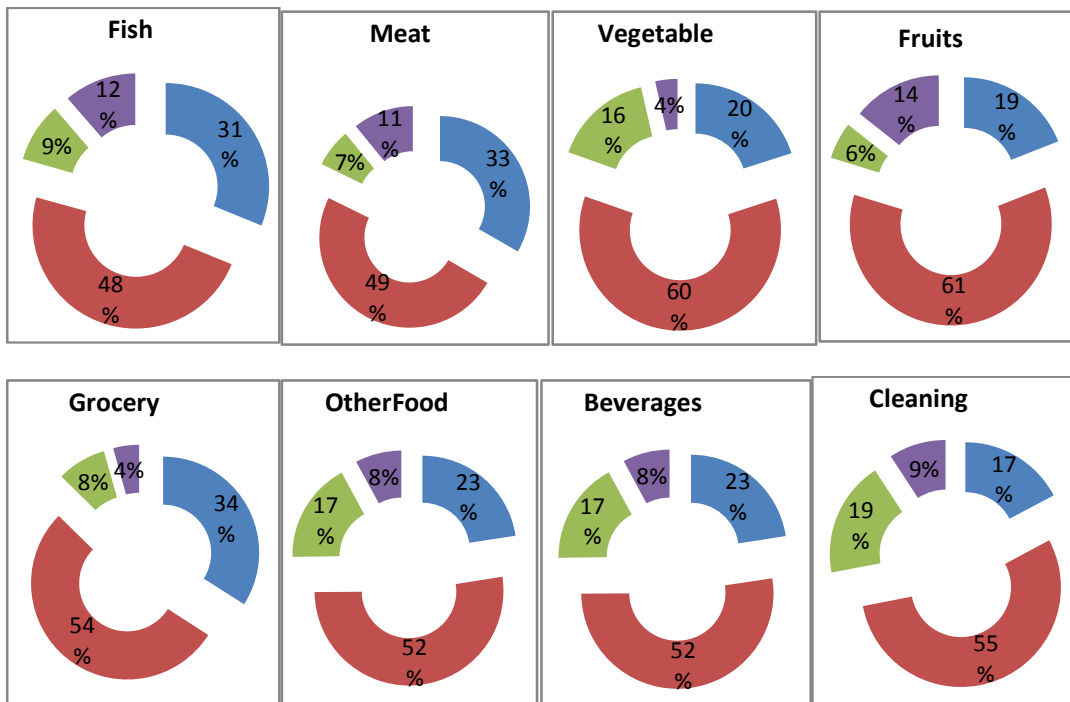


Fig 14(a): Comparison of Revenue per square feet (\overline{R}) against each market type on the basis of different categories. (i=1 to I=8)

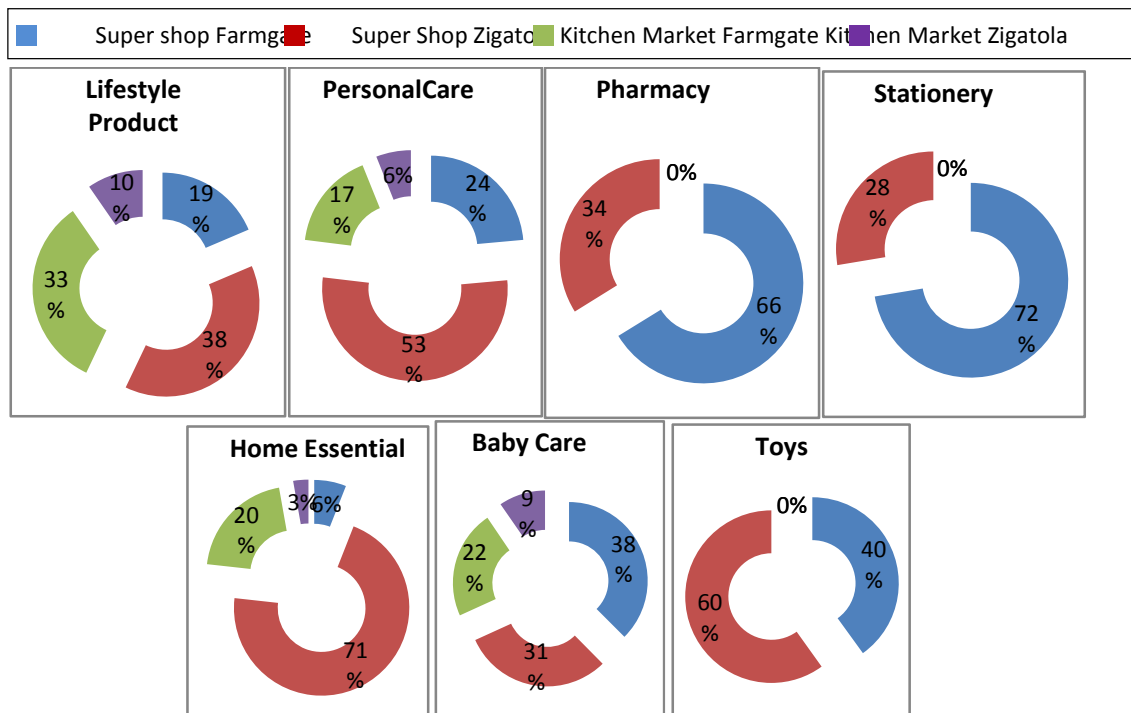


Fig 14(b): Comparison of Revenue per square feet (\overline{R}) against each market type on the basis of different categories. (i=9 to i=15)

Table 7: Analysis of Rent per square feet

ANALYSIS OF RENT PER SFT				
Market Type		Total Gross Area (sft)	Rent Cost	Rent Cost Per Sft
		Ga	C	$\bar{C} = \frac{C}{Ga}$
1	Super Shop Farmgate	4494	694,000	154.43
2	Super Shop Zingatola Shopping floor= 6,805 sft + basement 5,261 sft	12,066	2,725,000.00	225.84
3	Kitchen Market Farmgate	3316	410,000	123.64
4	Kitchen Market Zingatola	6000	1317000	219.50

Table 8: Analysis of Return on Investment

■ Super shop Farmgate
 ■ Super Shop Zingatola
 ■ Kitchen Market Farmgate
 ■ Kitchen Market Zingatola

ANALYSIS OF ROI				
Market Type	Average Revenue Per Sft	Cost per Sft	Gain-Cost	ROI
	\bar{G}	\bar{C}	$\bar{G} - \bar{C}$	$\frac{\bar{G} - \bar{C}}{\bar{C}}$
Super Shop Farmgate	4736	154.43	4581.57	29.66762
Super Shop Zingatola	4403.69	225.84	4177.85	18.49916
Kitchen Market Farmgate	3358.25	123.64	3234.61	26.16152
Kitchen Market Zingatola	2242.66	219.5	2023.16	9.21713

Research Findings

The ultimate research findings are illustrated in this Bar chart.

(i) Comparing between super shop farmgate with kitchen market farmgate. It is noticed that, ROI for super shop is 29.67 and ROI for kitchen market is 26.16. Therefore, supershop in farmgate gives better Return on Investment than the kitchen market.

(ii) Now comparing super shop zigatola with kitchen market zigatola. It is noticed that, ROI for super shop is 18.50 and ROI for kitchen market is 9.22. Therefore, In this case also supershop in zigatola gives better Return on Investment than the kitchen market.

(iii) Now comparing mostly commercial farmgate with mostly residential zigatola area. It is noticed that, the difference between, the two types in farmgate is $(29.67 - 26.16 = 3.51)$. The difference between the two types market in zigatola is $(18.50 - 9.22 = 9.28)$. Difference in zigatola is greater.

It indicates, in terms of ROI, the differences between supershop and kitchen market in commercial areas are smaller than the differences in residential area.

(iv) If we focus on a particular area following analysis can be realized - For a upper-class residential area Zigatola, ROI for super shop is much more than a kitchen market. Most probably, this is the reason behind super shop's number increasing day by day and getting popular among those areas. For an area like Farmgate, the ROI difference between two types is not that much. Here kitchen market grows spontaneously, even vendors' seat to sell beside footpath or roads. Super shop has not got popularity yet. The first super shop was built a year ago. But kitchen market is more in number and popular in terms of acceptability.

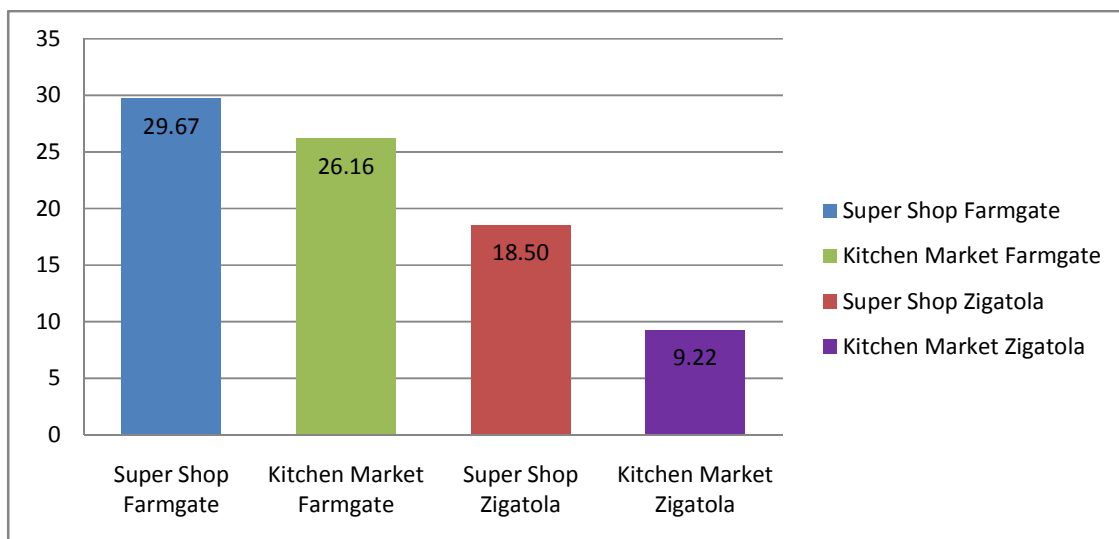


Fig 15: Comparison of ROI (return on investment)

Future Research and Limitations

The limitations of the research are that it analyses four particular markets and three parameters. The research should add more number of super shops, kitchen markets and parameters to get a more accurate comparison. This research has been done on an architectural focus that is on spatial utilization perspective. As a result, this research particularly works with area (square feet). A Volumetric analysis can bring some different dimensions of result. Result may change in a minimum scale according to seasonal change (such as seasonal food selling-mango, winter vegetables, summer and winter foods etc.) and occasional issues (Eid, vacation, strike etc.). Results may also vary area to area as different economic groups lived in different areas.

Researchers should continue to explore the impact of seasonal and economic factors on the structure of the food retail system serving consumer groups. These factors influence revenue and sale quantity, so formulating variables related to selling factors. Consequently, researchers should make these variables an integral part of their research agenda.

Conclusion

In respect to return on investment in a spatial utilization perspective super-shops are more profitable than kitchen market. Spaces are properly utilized in this kind of retail shops. These shops offer us more varieties of product within a limited space with user-friendly environment. And as so these types of retail markets are increasing day by day. But our farmers and local suppliers are still more connected with kitchen market. Majority of the citizens also prefer to buy from kitchen market than super shops as kitchen markets offer products at a cheap rate. There are also provisions for bargaining and people enjoy this freedom. Both the retail types have their own importance and limitations. This research could show the comparison but to predict the future retail types may require some more extensive researches. 'Marketing is a contest for people's attention', said by Seth Godin. May be in a city like Dhaka, super-shops are in a forward position in respect to this marketing contest. But here another saying goes by Seth Godin – "People do not buy goods and services. They buy relations, stories and magic." And surely our traditional kitchen markets have that bonding and relations with customers, stories behind every purchase and it is still in the competition with equal importance because of its economic magic.

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