ISTANBUL BILGI UNIVERSITY

INSTITUTE OF SOCIAL SCIENCES

MARKETING MASTER`S DEGREE PROGRAM

ALLOCATION OF SHELF PLACE WITH USING BIG DATA

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Allocation of Shelf Place with Using Big Data

Büyük veri kullanılarak raf yerinin konumlandırılması

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2) Big data

3) Allocation of Shelf Place

4) Shopping

5) Consumer trends

Dedicated to my dear family

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ABSTRACT

Big data practices and related to allocation of the right shelf place in supermarkets is a new approaches; searching for new ways using big data to sell their products through the various kinds of stores, categories. In order to have successful sales and profit maximization, companies have to focus on the right shelf place allocation, that supermarket chains and suppliers are racing to answer these days. It is believed that there are products relationships on shelf place allocation that may have an influence on consumers on different categories, and these are relational and locational factors. This research was made in order to identify the best shelf place allocations for the supplier to replace product categories that have an effect on increasing sales performance. The results were obtained through on selected period of sales analysis, what are the actual sales in reality and comparing what could be much more if our big data model applies to change shelf place, and all these applications resulted on customer behavior changes very clear is increasing the total number of sales. Although big data helps us to find the right shelf place location for products for categories, also in terms of more profitable products selection for supermarkets brings the advantage of profit maximization when they choose to place.

ÖZET

Bu tezin temel amacı, süpermarketlerdeki büyük veri uygulamalarıyla raf yeri performansının ölçülmesi, doğru lokasyonun büyük dataya bakılarak tespit edilmesi ve diğer şubeler ile karşılaştırılması; yeni metodlarla ürünler, mağazalar, kategoriler ve müşterilerin satın alma süreçlerini büyük dataya bağlı olarak ürün yerleşiminde ulaşılabilecek maksimum verimliliğe çıkartılmasıdır. Başarılı satış süreci ve kar maksimizasyonu elde etmek için süpermarket zincirleri ve tedarikçiler doğru ürünü, doğru raf yerinde, doğru zamanda yerleştirmelidir. Bu tezde, perakende kasalardan gelen ham data, ürün ilişkisinin tüketiciler için farklı kategoriler üzerinde etkisi olduğunu gösteriyor ve bu etkilerin ilişkisel ve konumsal faktörler olduğunu tespit ediyoruz. Bu araştırma, satış performansını arttırmada etkisi olan ürünün yer seçimi, tedarikçi ürün kategorileri için en uygun raf yeri tahsislerini belirlemek amacıyla yapılmıştır. Sonuçlar şu anki satış analiziyle, gerçek satışların ne olduğu üzerinden büyük veri modelimiz kullanılarak raf yerini değiştirmek için maksimum performas gösteren şubelere bakarak uygulandığında, açık ve net satışı arttıran sonuçlar elde edilmiştir. Elbetteki veriler bize ürün için mağazadaki ideal lokasyonu göstersede, supermarketler kar oranına bağlı olarak satış oranı ve kar marjı daha yüksek olan ürünleri rekabet görülen noktalarda kendi istekleri doğrultusunda satışa çıkartmaktadırlar.

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1. INTRODUCTION

This chapter introduces the reader to the study outline and research background, problem, and purpose.

1.1. Research Background

The allocation of for finding the right shelf place to get better performance using with big data is related to the ability to design, analyze and manages big data while the IT (Information Technology) architecture is increasingly strategic for retailers focus on improving their process effectiveness and efficiency. Lots of models show the relationships of finding shelf place allocation effect to unit sales are reviewed in this article.

This study is based on decisions and actions taken for the practice of changing shelf place with using big data for profit maximization. Operational efficiency considering consumer experience and trends retention of shoppers' strategic keys to success focus on demand is important for a more efficient allocation of shelf place, stock management, order management, and overall operations. Since Supermarkets become larger, the relevant data becomes more and more complex.

Current analysis can help to better applications of what motives drive for more profitability per square foot in Supermarkets. For example, it might lead to a decision to stock more Macaroni in the shelf and fewer Nescafe as the Nescafe takes fewer places and turns over in sales less often, but the Supermarkets must analyze if there are enough Nescafe sales to set on sales of the much higher profitability.

Today we can talk about the analysis that the supermarkets must make on daily activities. Supermarkets have adopted normally strategies that resulted in the continuous process of the product offered.

Supermarkets are trying to understand their customers in order to build a long term relationship with them. Although keeping a customer in long term is not that easy and for a long period time requires much more energy and effort, it is almost six times cheaper to retain existing customers than to acquire new customers in today's supermarkets.

Selling on right products on right shelf place depend on stores physical shelf allocations strategy chosen and remodeling stores based on this data increased on sales, but not the number of items these stores handle, and not increases in the number of products offered. Finding right place pressures in competitive environment supermarkets are focusing on daily activities on more solving problems of right shelf place location.

Because it seems clear that different shelf place allocations can affect sales and profits, so that retailers have a focused on shelf place allocation to favor particular products, especially those having high profits. Although shelf place allocation is strategic, knowledge about the effects of shelf place allocation changes on product sales depends on the circumstances and context of using big data.

Supermarkets have made continuously success and fail shelf allocation changes. Those applications have shown very few results that can be generalized. Academic researchers have conducted studies on the effects of shelf place changes on sales, but these studies have also involved small number of experiments and uncertain results. These reported experiments have no impact on supermarket right shelf place allocations.

Most applications involved to understand of right shelf place allocation elasticity of demand. Finding right shelf place elasticity may be Supermarkets have gathered consumer data to loyalty cards that show what shoppers purchase. The data shows purchasing trends, but might be indicative of current demand. Big data

can help for Supermarkets to handle a better understanding of customer demand and consumer buying behaviors and trends.

It can be expected that if a customer is satisfied with Supermarkets, service design like the allocation of the right shelf place or product, then a greater level of customer loyalty can be attained. Customer satisfaction is positively related to customer loyalty and organizational profits. Although loyal customers are those who are typically well satisfied, satisfaction may not universally translate into loyalty.

This paper is an overview for the transition of big data in supermarket business and analytic capabilities architecture model of big databases how can use practices that can meet customer needs in the supermarkets and better customer shopping experience when right shelf place allocation for products chosen. The following figure shows during shopping experience how each transaction recorded on POS (Point of Sale) computer in front of the cashier when cashier scan barcodes of the products.

Figure 1. How each transaction background recorded on POS (Point of Sale) computer in front of the cashier when the cashier scans the products. (columns; Stock code, Quantity, Price, Dates,etc.). In this project by this data accumulation, more than 15 million rows (product sales) are analyzed in a local Supermarket chain, 131 stores in a month, linked to each transaction, linked to each Supplier' products category.

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SIGNATURE-GNDSALES.GDF
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05 110    0                                              0   0
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02 1    KG.MUTF.LEVER.AYC.003  00  3 8  1        039,9          39,9        2,96      0         0      0      0      0
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02 8    KG.MUTF.LEVER.KTC.003  00  3 8  1        09,95          9,95        0,74      0         0      0      0      0
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Stock code   Quantity   Sales Price   Sales

1.2 Research Problem

"A research problem is a statement about an area of concern, a condition to be improved upon, a difficulty to be eliminated, or a troubling question that exists in scholarly literature, in theory, or in practice that point to the need for meaningful understanding and deliberate investigation."

Problem statement shows the basic statements of the behind the problem, explains why the problem is what based on, and defines solution on this statement and follow possible outcomes. It can be formulated with the existence of a problem that involved.

The Research problems are formulated to find Category, Supplier and product performance to find the right allocation of shelf place in supermarket based on to use customers' big data on sales as:

- What is the optimum quantity must sell in each branch if the right shelf place allocation chosen and sales of category on these shelves based on big data?
- What is the optimum quantity must sell in each branch if the right shelf place chosen and selected Supplier' Sales and their competitors based on big data?
- What is the relationship between right shelf place allocation and Product Sales based on big data?

The following table shows an example of X Supplier performances from Table14. in Appendix. The first column represents branch name in each region, Second column shows actual sales on the current period and the Next column is quantity must sell (is modeled and counted by big data).

BRANCH	SALES	QUANTITY MUST BE SELL	DIFFRENCE	SUCCESS LEVEL
CENNET	1992	2354	-362	Fail
CEKMECE	2100	2197	-97	Fail
GUMUSPALA	1611	1716	-105	Fail
SUKRUBEY	1665	1920	-255	Fail
AMBARLI	2353	2300	53	Success
SANAYI MAH.	2842	3232	-390	Fail
SEYRANTEPE	3334	2088	1246	Success

Table 1.1:

Performance

Company Name : X

Date: 01/11/2018-30/11/2018

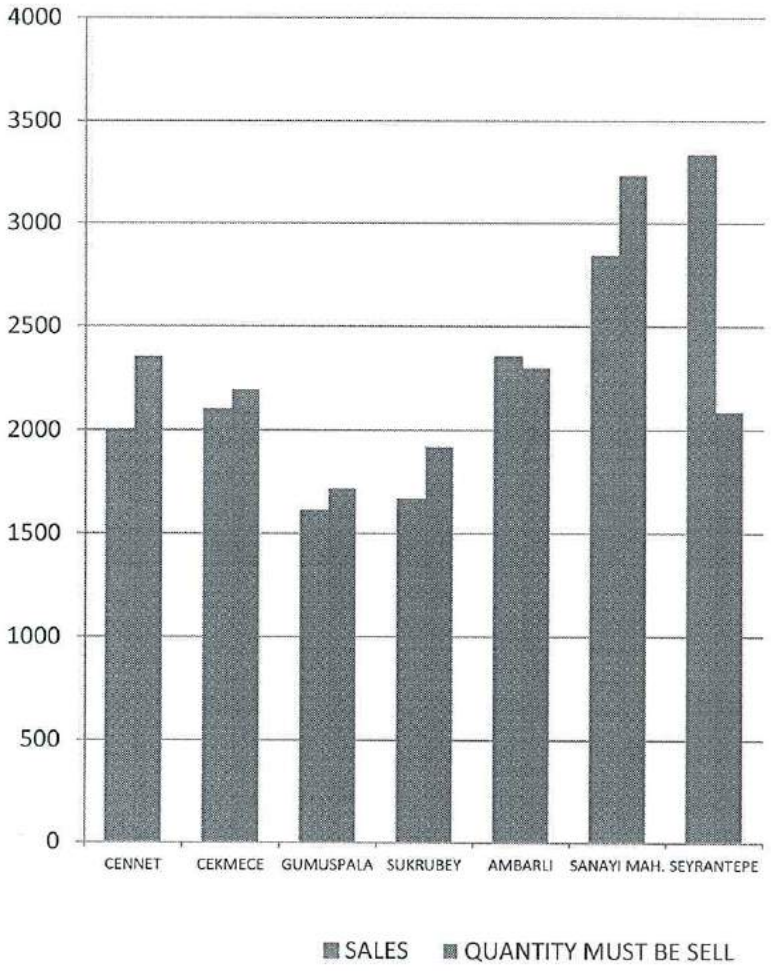


Figure 1: Performans Company Name : X

Date:01/11/2018-30/11/2018

1.3 Research Purpose

Research purpose explains the aim of the study what will be tested and what kind of literature will be used. The research purpose is the process of research formulation systematic.

In this research, factors affecting to find the right shelf place allocation in supermarkets will be examined. Also, this study will also explore the relationship between the right shelf place allocations and based on this selected shelf place effects on sales.

Being in line with the research purpose, questions of

- "What is the best shelf place allocation for Categories?"
- "What is the best shelf place allocation for Suppliers?"
- "What is the best shelf place allocation for Products?"
- "What is the best products shelf place allocation for best Customer shopping experience?"

will be studied with the help of existing marketing literature.

1.4 Study Outline

The study is presented in six chapters (Figure 1.1). Chapter one is the introductory chapter that covers the research background, research problem, research purpose and study outline. Chapter two is a review of relevant literature that includes Big Data and Retailing, Supermarket big data and computer modeling. Chapter three presents the methodology of the study. It is comprised of research design, sample selection, data collection, and Model and related parameters. Chapter four covers the Improving productivity with big data, optimization and data architecture. Chapter five covers big data process, allocation of right shelf place and shelf place efficiency and implications. Finally, Chapter six is the conclusion of the research.

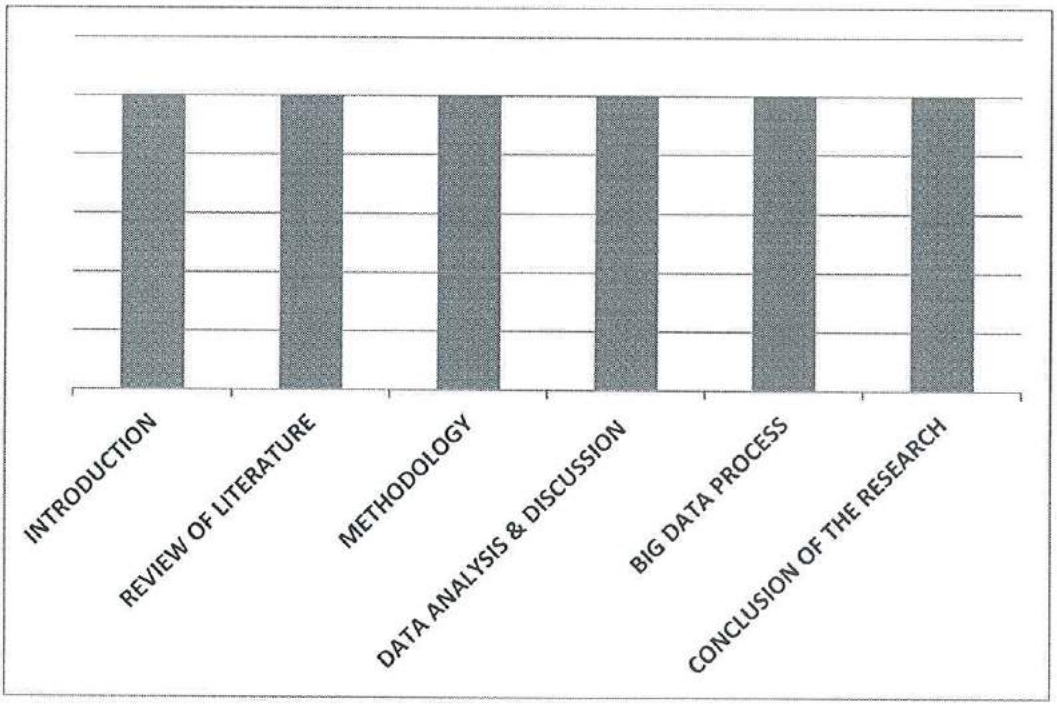


Figure 2. Structure of the thesis.

2. LITERATURE REVIEW

The aim of this section is to literature relevant big data and the retail sector application and implementation background to this research and to provide a theoretical framework. The chapter consists of a review of definitions and some models of big data in retailing and computer modeling using supermarket data. In the following abstract, some literature will be demonstrated in order to add background to the obtained research.

2.1. Big Data in Retailing

After 1960s computers started to use in business actively, data were processed, stored and created to add value to manage more efficient business operation. When the volume of data grew faster and faster, data warehouses obtained more detailed insight. The development of technology and processing data enabled retailers to move with big data to focus size; range and speed for apply standardization store and allocation of shelf in retailing in optimization process.

According to estimates, Walmart collects about 2.5 petabytes (1,000,000 gigabytes) of information per hour for transactions, shopper trends, locations, and devices (McAfee, 2012). Especially for the individual shopper level to allow online and offline retail data to provide a complete trend of shopper buying behavior and to enable the calculation of lifetime value (Gupta, 2006; Venkatesan and Kumar, 2004). IT Analyst company Gartner predicts that the equipment connected to the Internet of things will be 20 billion units on the amount of data generated by these devices (Gartner, 2015). Today, data was thought to exist only in the online retailing industry. An integrated online/offline experiment that provides an exogenous variation that allows causal reasoning about important marketing/retail subjects such as the effectiveness of email, loyalty CRM, advertising, etc. is being performed today (Anderson and Simester, 2003).

Data is not only collected in laboratories from developed monitors, but is also collected by retinal devices inserted in shelves (Lans, Pieters, and Wedel, Chandon, 2008).

Big data is also defined based on criteria's such as volume, variety, velocity. Supermarkets focus on activities mainly assortment of goods, optimize inventory and adding value of operation. Difficulties of shelf management such as out of stock and lack on products on shelf cause to customer dissatisfaction and market share loss. Store layout is challenging processes in retail operations that are expected to help and benefit from big data analysis. Store layout is directly affect customers' purchasing decisions.

Big data helps to possible to plan at designing to locate categories and products shelf place allocation. Big data can also help retailers evaluate sources of sales increase and plan store shelf allocation process more effectively. Store layout is very important in terms of how it can benefit from big data analysis as it has an impact on purchasing decisions. Big data could be future of many industries, to change many aspect of doing business more systematic way especially in supermarkets for optimization of ordering, logistic operation, designing of stores and shelf allocation process. In this project, more than 15 million rows (products sales in a month) are analyzed to find and design best allocation of products in the local Supermarket chain, 131 stores in Turkey, analyzed linked to each transaction, linked to each supplier products of categories.

Marketing focus on customers behaviors and trends rather competitors. The survival of an organization is only possible to adopt these changes. Organizations are now more interested on buying behaviors how customer acts during buying process. Therefore allocation of shelf place plays very active role for decision of consumer during shopping experience. Consumer behavior is not an easy to respond especially it could change very fast. Questions are here why they buy and how they buy? Neil H. Borden highlighted it in an article in 1964. McCarthy categorized them known today as 4Ps of marketing (LING, 2007). The marketing mix model with the concept of later 4P, 5P or 7P with big data can help to take

better decision how to convert this data into language of allocation of shelf place in physical store Product, Place, Price, Promotion, Physical Environment, Process, People in a more optimized way.

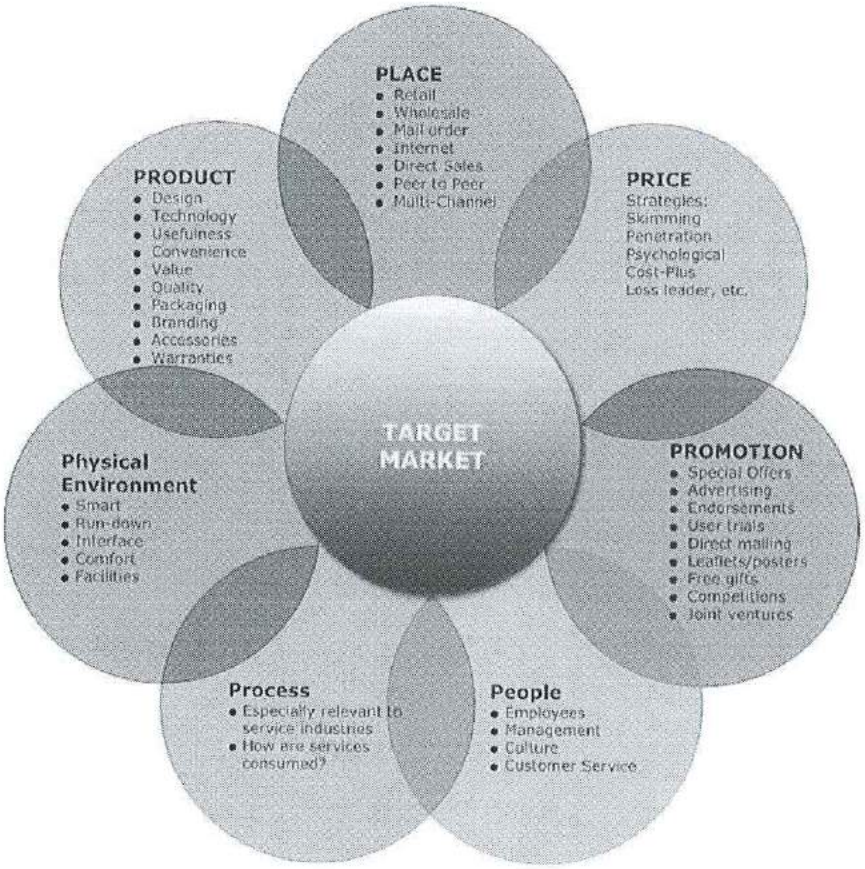


Figure 2. Marketing Mix 7P

2.2. Computer Modeling Using With Supermarket Big Data

This project is based on the construction of a computer model that simulates in detail the operation of one of Turkey local supermarket chain in five different cities, in all stores.

BranchSales

Total Sales

Total Sales
*Store Sales
Percantage

Branch	Sales	Store Sales Percentage In Total Sales	Quantity Must Be sell	Diffrence	SUCCESS LEVEL
CENNET	1992	0,87%	2354	-362	Fail
CEKMECE	2100	0,81%	2197	-97	Fail
GUMUSPALA	1611	0,63%	1716	-105	Fail
SUKRUBEY	1665	0,71%	1920	-255	Fail
AMBARLI	2353	0,85%	2300	53	Success
SANAYI MAH.	2842	1,19%	3232	-390	Fail
SEYRANTEPE	3334	0,77%	2088	1246	Success
BEYLIKDUZU (INNOVIA)	2246	0,86%	2314	-68	Fail
SIRINEVLER	5209	1,41%	3821	1388	Success

Table :2

Company Name :X

Date :01/11/2018-30/11/2018

Total Sales 270576

...

...

... Sales –

... Quantity must be selll

...

Total Sales 270576

This is the part of to explain from the first table in Appendix, the first column represents branch name in each region, the second column shows actual sales on the current period and the next column is quantity must sell. Our model is based on how the system counts Quantity must be sold?

First of all, we analyze about 15.000.000 sales rows what products are sold in all Supermarkets in this period. Secondly, Beverage Suppliers and related categories combined what percentage each store has and finally all products combined based on this to find each product performance. So what are we measuring from this system,

Supplier performance of Categories on based on shelf allocation
Store performance of Categories based on shelf allocation
Product performance of any products based on shelf allocation

In our project, we focused on all beverage products Suppliers and their categories and performances based on big data how could be improved with simple touches.

The goal is to predict customer behavior more accurately. Model details supermarkets are the focus on to encourage shoppers to buy as much as possible and to learn more about how people choose what they buy. You can look up the survey, how shoppers' moves, but this approach is limited unless you build a math-based computer big data model.

To this model strategy generated by a computer program that models the behavior of real shoppers wandering the aisle. Agents tend to be different. Each company's category list has a shopping list that was created with actual store data about the person who actually purchased it. Every supplier has a shopping strategy that depends on how people react to different forces. The operations office adapts to the layout of the supermarket and releases useful data on shopping trends.

Operations expect shoppers with a store layout to find out which is the right place and easy to optimize their shopping. We are designing stores in such a way that shoppers are happy and encouraged to buy more stuff, but by observation, in reality, we aren't capable to measure the trend of consumer buying behavior. Using big data shows us what is the best place any category or any products in store by analyzing 3.5 million sales slips which is about 15.000.000 transactions by comparing each store performance in each category places and also product relationship matrix by using big data shows us in basket analysis there is a highly significant relationship between such as Beverage and Snacks and fruit and vegetables, Nescafe and Nescafe Cup, Sausage and Egg, Diapers and Baby Shampoo and Baby food and so on to find and design best shelf place relational placement. Interesting results of some categories are found because of boundary conditions environmental effects such as Beverages and Snacks were maximum when the stores closer to schools, wet wipes sales was maximum when the stores closer to hospitals and another example Nescafe sales were maximum in the system when we checked these stores why sales are maximum we found that all these stores are closer to the workplaces. So big data helped us to find and analyze environmental effects as well.

3. METHODOLOGY

This section presents the methodology chosen in this study. It consists of research design, data collection and the development of a theoretical framework for analysis.

3.1. Research Design

It would be better to contemplate on the assumptions behind the research tools chosen. Understanding the theoretical framework helps to recognize the techniques needed for a specific research subject. According to Saunders et al., the research design is described as an outline of the systematic and scientific procedures used in a study. They suggested that there are mainly five components of a research design, which are research philosophy, research purpose, research approach, time horizon, and research strategy. Research philosophy can be seen as a belief that shapes the researcher's interpretation of the world. According to Saunders et al., research philosophy can be classified as positivism or phenomenological. A positivism study shows the researcher role based on limited data collection and interpretation and the research findings are observable and quantifiable. According to the principles of positivism, statistical analysis can be done via quantifiable observations. Fellows and Liu advocate that phenomenology defends the scientific study of immediate experiences and focuses on events, occurrences and happenings as one experiences them with a minimum of regard for the external, physical reality. To put it in another way, in phenomenology studies ideas are generated from a rich amount of data by both inductions from the data and human interest. Due to the fact that several structured and reliable models are available for assessing and analyzing service quality, customer satisfaction and customer loyalty positivism philosophy leads the way in this research. Saunders et al. pointed out that the purpose of research can be classified as exploratory/descriptive or explanatory. However, these categories are not mutually 33 exclusives, they are a matter of emphasis. Exploratory research as its

name suggests is research being done for exploring, understanding a new phenomenon. It can be defined as the initial research into a hypothetical or theoretical idea. It usually involves a literature search or focuses on group interviews. According to Saunders et al., descriptive research deals with portraying an accurate profile of persons, events or situations. It usually addresses "what" questions rather than "why/how" questions in order to describe the characteristics of phenomena. Explanatory research aims to establish a relationship between variables via cause and effect analysis.

3.2 Sample Selection and Data Collection Shelf Place Allocation System

Shelf place most often is measured in terms of change shelf place location performance to sales unit effect. Understanding of right place shelf allocation with using big data enables suppliers to improve their brand operation on shelf and product line decisions. It helps enable retailers to develop more profitable place allocations, make better decisions about store size, and develop more effective strategies for allocating shelf place to individual products and categories. Allocation of shelf place and sales relationships, both Suppliers and retailers might utilize big data and apps to adopt merchandising; this could be more practical applying computer technology for defining product category. This article does not just show empirical data about place elasticity rather, it reviews and organizes experimental findings within the context of big data a general model of shelf place location, existing models for shelf place, and explains considerations for the management of shelf places.

Supermarket's data resource; big data is collected from the POS (Electronic Point of Sale) devices when each transaction sales collects data to the back office, each line shows for each sale in the database to the related customer. In this study, we analyzed three parameters to optimize shelf location by space of 131 stores and 3.5 million customer sales basket data per month which is more than 15.000.000

transactions and also beverage sales of all suppliers were chosen to analyze to find the best place for beverage categories.

These four parameters are considered and designed within month time horizon;

1. The total amount of sales quantity for all Stores
2. The total amount of sales quantity Selected Beverage Suppliers
3. The total amount of sales quantity Selected Category
4. The total amount of sales quantity Selected Product

Based on these data sets we achieved the performance of Suppliers, Categories, and Products within the current period with real data sets what sales achieved and modeled what must be optimum sales by comparing and measuring the performance of Supplier' success and fail; for stores, for categories, and for products. So with the System approach we analyze all elements in the System and relationship within elements, also boundary conditions what could be in environmental effects. This new model generated to define success level based on Stores, Suppliers, Categories, and Products using by big data within the current output to find optimization of shelf place allocation in the system.

BRANCH	SALES	QUANTITY MUST BE SELL	DIFFRENCE	SUCCESS LEVEL
IKITELLI	5851	4339	1512	Success
SIRINEVLER	5209	3821	1388	Success
MALTEPE	6401	5045	1356	success
SEYRANTEPE	3334	2088	1246	Success
BAHCESEHIR	3342	2201	1141	Success
ESENYURT PIRI REIS	2313	1344	969	Success
BOMONTI	3023	2143	880	Success
CAKMAK	2062	1254	808	Success
ISPARTAKULE	3490	2711	779	Success
HALKALI	5965	5245	720	Success
BIZIMEVLER 3	939	291	648	Success
KURTKOY ATLANTIS AVM	3437	2808	629	Success
HAL SUBE BANDIRMA	1278	650	628	Success
BEYLIKDUZU(ESENBAHCE)	2271	1752	519	Success
HALKALI 2	3061	2547	514	Success
BIZIMEVLER 2	1989	1496	493	Success
KAVAKLI	1713	1228	485	Success
EYUP	3267	2796	471	Success
ORTAKOY	3409	2964	445	Success
FIKIRTEPE	2230	1788	442	Success
MARMARAEVLERI3	3419	2982	437	Success
HADIMKOY	2417	1987	430	Success
BEYLIKDUZU(MARKACITY)	3360	2944	416	Success
YESILOVA	2645	2231	414	Success
U.CARSI	2080	1668	412	Success
YENIDOGAN	1666	1261	405	Success
K.MPASA	2871	2482	389	Success
SILIVRI KİPTAŞ	1562	1198	364	Success
ORDU	1812	1450	362	Success
BEYLIKDUZU (PRESTIJ)	1712	1356	356	Success

Table 4. Company Name: X, Most successful 30 Stores for x supplier

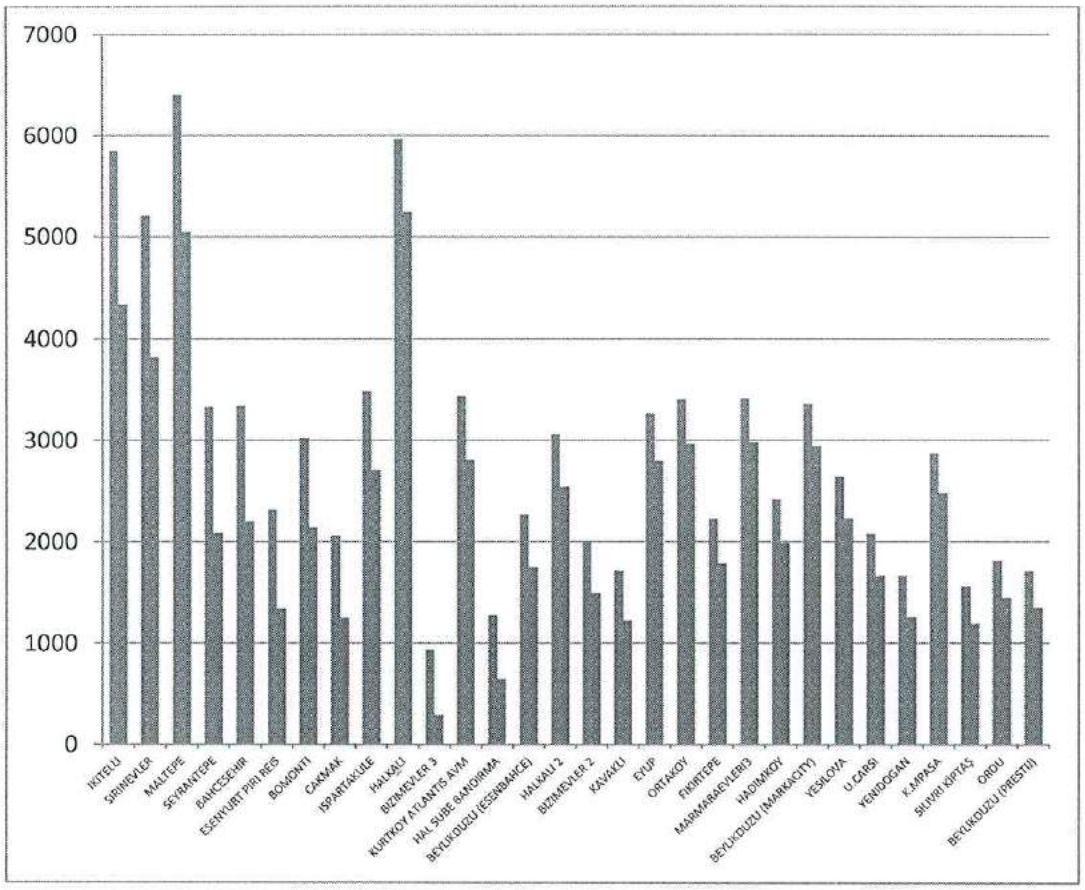


Table 4. Company Name: X, Most successful 30 Stores for x supplier

BRANCH	SALES	QUANTITY MUST BE SELL	DIFFRENCE	SUCCESS LEVEL
SULTANBEYLI MERKEZ	3885	6259	-2374	Fail
ASYAPARK	2458	3634	-1176	Fail
ESENYURT MERKEZ	1249	2327	-1078	Fail
TASDELEN	2689	3765	-1076	Fail
ATAKENT	1939	2594	-655	Fail
KAZIMKARABEKIR	1125	1777	-652	Fail
UMRANIYE METRO	2567	3211	-644	Fail
BASAKSEHIR 5.ETAP	3903	4525	-622	Fail
MURATPASA	1042	1613	-571	Fail
SOGANLIK	2141	2688	-547	Fail
SANTRAL	1427	1973	-546	Fail
CELIKTEPE	1498	2036	-538	Fail
CEKMEKOY (2)	2435	2971	-536	Fail
CAN	1109	1642	-533	Fail
SANCAKTEPE	2636	3166	-530	Fail
BULGURLU	1202	1721	-519	Fail
KAGITHANE	2480	2990	-510	Fail
GOPASA	2375	2844	-469	Fail
S.CESME	726	1183	-457	Fail
HEKIMSUYU	1317	1736	-419	Fail
KURTULUS	1215	1627	-412	Fail
KARACABEY 1	648	1048	-400	Fail
ZUMRUTEVLER NIL	1407	1802	-395	Fail
SANAYI MAH.	2842	3232	-390	Fail
FATIH HALIC CAD.	1022	1408	-386	Fail
KUCUKKOY	1918	2300	-382	Fail
YESILPINAR	1827	2207	-380	Fail
CENNET	1992	2354	-362	Fail
CAMLIKAHVE	1476	1838	-362	Fail
ESENLER	2210	2553	-343	Fail

Table 6

Company Name : X, Most failed 30 Stores for x supplier

Date:01/11/2018-30/11/2018

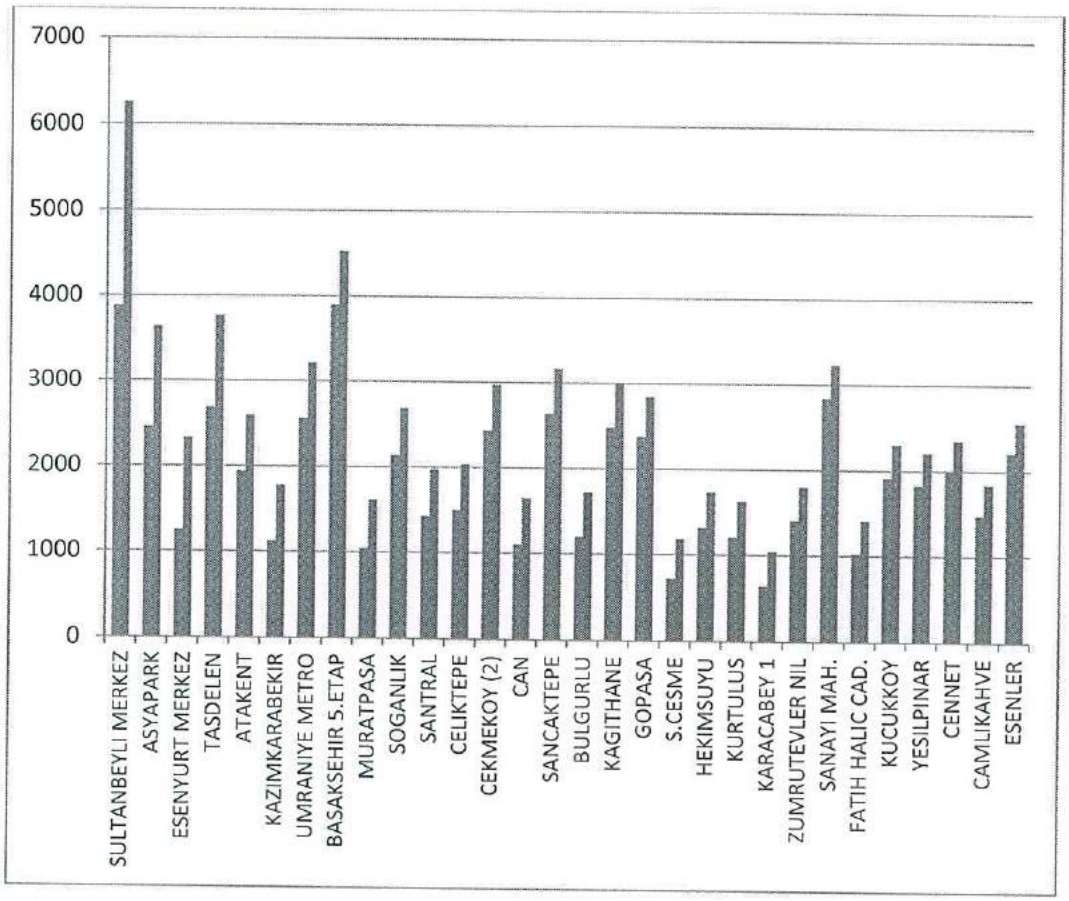


Figure 6 .Most failed 30 Stores for x supplier

BRANCH	SALES	QUANTITY MUST BE SELL	DIFFRENCE	SUCCESS LEVEL
KURTKOY ATLANTIS AVM	2466	1797	669	success
SILIVRI KİPTAŞ	1418	767	651	Success
YESILPINAR	1965	1412	553	Success
ESENYURT PIRI REIS	1384	860	524	success
BESYUZEVLER	1753	1249	504	Success
BESYUZEVLER 2	2031	1537	494	success
ORDU	1416	928	488	Success
TUZLA	1778	1291	487	Success
MARMARAEVLERI3	2387	1908	479	Success
BALIKESIR 1	1514	1091	423	Success
BEYLIKDUZU (KOCTAS AVM)	2397	1988	409	success
KAVAKLI	1170	786	384	success
KARTALTEPE	1019	649	370	success
SEYRANTEPE	1703	1336	367	Success
EYUP ISLAMBEY	1177	812	365	success
HEKIMSUYU	1454	1110	344	success
SEFAKOY SULTAN MURAT	999	656	343	success
CUMHURIYET MAH.	1124	801	323	Success
BIZIMEVLER 3	503	186	317	Success
KUCUKKOY MERKEZ	1761	1453	308	success
CEKMECE	1689	1406	283	Success
YUZUNCUYIL	1186	905	281	Success
K.MPASA	1842	1588	254	Success
TEPEUSTU	1694	1442	252	Success
YESILOVA	1671	1427	244	Success
SEFAKOY	1135	910	225	Success
BEYLIKDUZU (PRESTIJ)	1083	868	215	Success
HAL SUBE BANDIRMA	629	416	213	Success
GONEN	871	665	206	Success
BOMONTI	1568	1371	197	Success

Table 7. Company Name : Y

Date:01/11/2018-30/11/2018 Most successful 30 Stores for Y supplier

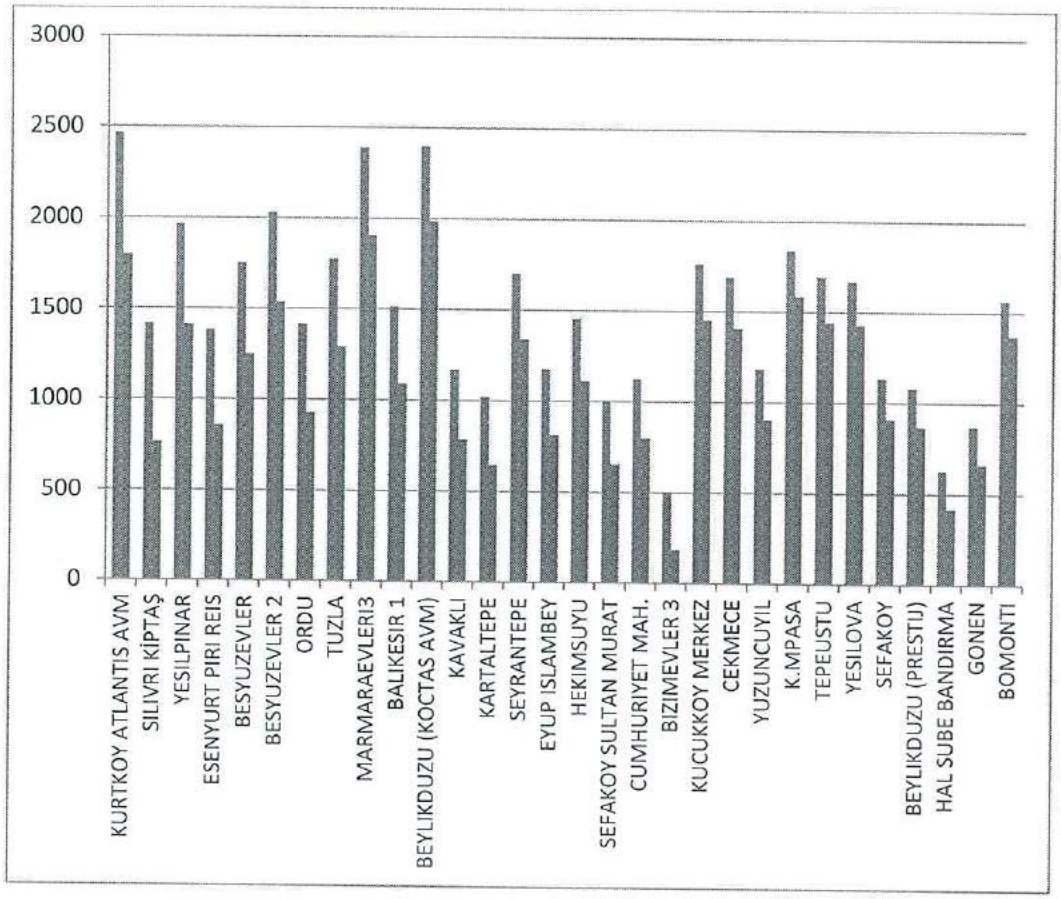


Figure 7. Most successful 30 Stores for Y supplier

BRANCH	SALES	QUANTITY MUST BE SELL	DIFFRENCE	SUCCESS LEVEL
ASYAPARK	1412	2325	-913	Fail
IKITELLI	2040	2776	-736	Fail
KAZIMKARABEKIR	449	1137	-688	Fail
MALTEPE	2563	3228	-665	Fail
CAN	430	1051	-621	Fail
CEKMEKOY (2)	1402	1901	-499	Fail
ISPARTAKULE	1252	1735	-483	Fail
SANCAKTEPE	1547	2025	-478	Fail
ZUMRUTEVLER NIL	749	1153	-404	Fail
UMRANIYE METRO	1651	2054	-403	Fail
UMRANIYE	1062	1450	-388	Fail
ATAKENT	1299	1660	-361	Fail
KAGITHANE	1556	1913	-357	Fail
ATASEHIR ORNEK	1006	1358	-352	Fail
BIGA	815	1147	-332	Fail
SERIFALI	796	1113	-317	Fail
SOGANLIK	1406	1720	-314	Fail
AMBARLI	1170	1472	-302	Fail
YENIKOY	464	739	-275	Fail
ICERENKOY	1216	1489	-273	Fail
ZUMRUTEVLER TU.	756	1028	-272	Fail
BULGURLU	834	1101	-267	Fail
MALTEPE BELEDIYE	764	1023	-259	Fail
FIKIRTEPE	898	1144	-246	Fail
TASDELEN	2175	2409	-234	Fail
MARMARAEVLERI 2.ETAP	709	943	-234	Fail
M.AKIF	1456	1641	-185	Fail
ESENYURT MERKEZ	1308	1489	-181	Fail
PENDIK	808	988	-180	Fail

Table 8. Company Name : Y

Most failed 30 Stores for Y supplier

Date:01/11/2018-30/11/2018

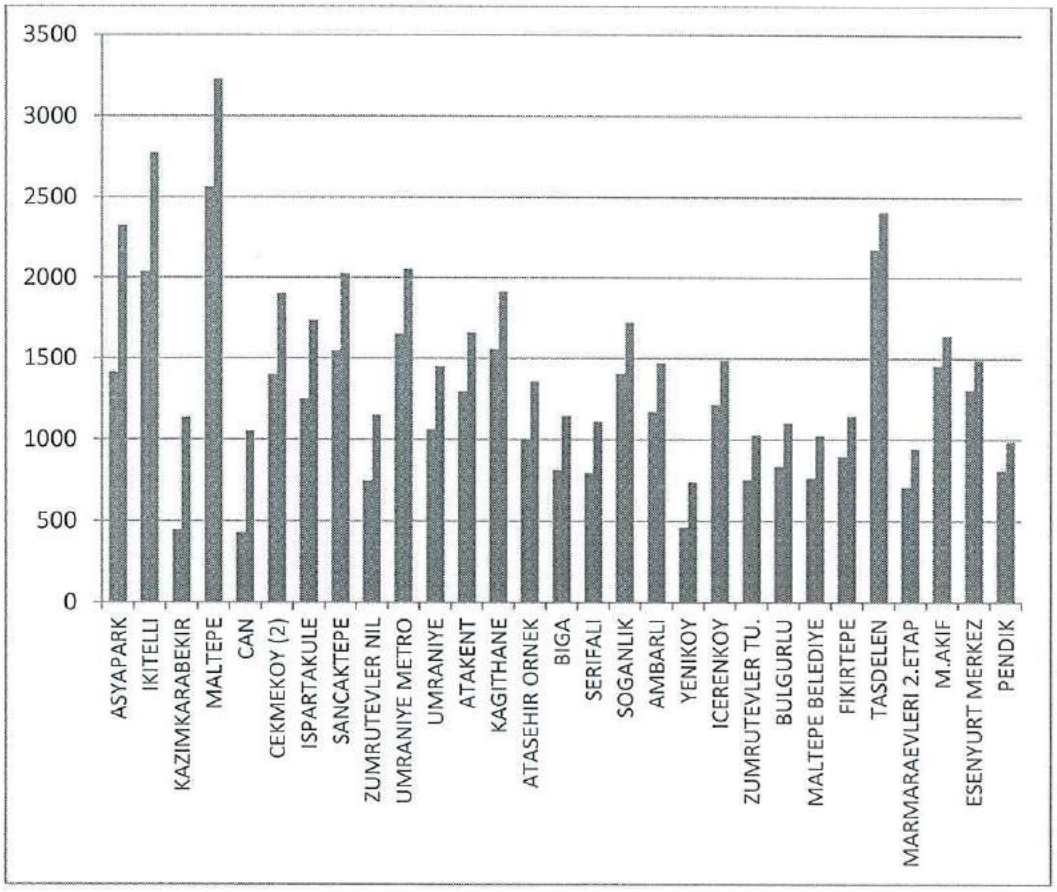


Figure 8. Company Name : Y, Most failed 30

Stores for Y supplier

Date:01/11/2018-30/11/2018

BRANCH	SALES	QUANTITY MUST BE SELL	DIFFRENCE	SUCCESS LEVEL
BANDIRMA MERKEZ	1869	415	1454	Success
HAL SUBE BANDIRMA	766	140	626	Success
ORDU	922	312	610	Success
PASABAYIR 1	724	261	463	Success
HACIYUSUF	685	228	457	Success
BIGA	804	385	419	Success
EYUP	999	601	398	Success
MUSTAFAKEMALPASA	577	211	366	Success
YUZUNCUYIL	650	304	346	Success
SUSURLUK	646	332	314	Success
KARACABEY 1	516	225	291	Success
BALIKESIR 1	654	366	288	Success
GONEN	500	223	277	Success
CAN	628	353	275	Success
ERDEK	488	250	238	Success
BULGURLU	597	370	227	Success
GONEN KULTUR MERKEZI	440	222	218	Success
HADIMKOY	642	427	215	Success
BIGA 2	391	178	213	Success
KAYASEHIR SEYRANSEHIR	741	542	199	Success
ZEYTINBURNU	471	276	195	Success
MARMARAEVLERI3	792	641	151	Success
AHMET YESEVI	468	318	150	Success
SILIVRI KİPTAŞ	395	258	137	Success
KAYASEHIR GIRIS	720	592	128	Success
U.CARSI	476	358	118	Success
SULTANBEYLI MERKEZ	1461	1345	116	Success
ACISU	468	353	115	Success
FATIH	477	375	102	Success
HEKIMSUYU	468	373	95	Success

Table 9. Company Name : Z

Most successful 30 Stores for Z supplier

Date :01/11/2018 – 30/11/2018

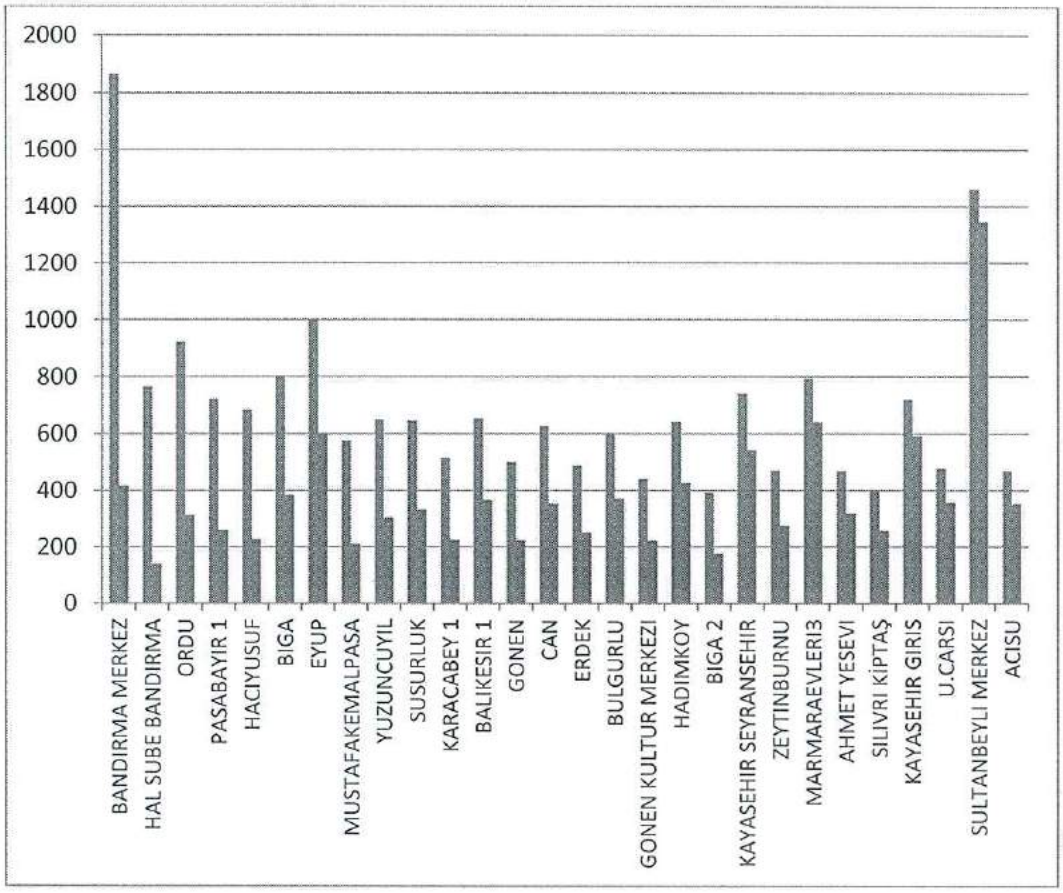


Figure 9. Company Name : Z Most successful 30 Stores for Z supplier

BRANCH	SALES	QUANTITY MUST BE SELL	DIFFRENCE	SUCCESS LEVEL
SANAYI MAH.	334	695	-361	Fail
HALKALI	825	1127	-302	Fail
YAKACIK	179	477	-298	Fail
MECIDIYEKOY	309	606	-297	Fail
BEYLIKDUZU (INNOVIA)	213	497	-284	Fail
TEPEUSTU	211	484	-273	Fail
ISPARTAKULE	315	583	-268	Fail
BEYLIKDUZU (KOCTAS AVM)	400	667	-267	Fail
ESENYURT MERKEZ	250	500	-250	Fail
SIRINEVLER	584	821	-237	Fail
ADNANKAHVECI	163	400	-237	Fail
BEYLIKDUZU (MARKACITY)	400	633	-233	Fail
MALTEPE	874	1084	-210	Fail
RESITPASA 1	315	523	-208	Fail
SANTRAL	221	424	-203	Fail
UMRANIYE METRO	503	690	-187	Fail
SAHINBEY	305	487	-182	Fail
ORTAKOY	455	637	-182	Fail
MARMARAEVLERI 2.ETAP	145	317	-172	Fail
HALKALI DUMANKAYA MIKS	298	468	-170	Fail
IKITELLI	772	932	-160	Fail
SOGANLIK	418	577	-159	Fail
HALKALI 2	389	547	-158	Fail
ZUMRUTEVLER TU.	187	345	-158	Fail
UMRANIYE	337	487	-150	Fail
BAKIRKOY REFERANS	163	303	-140	Fail
KOCASINAN	328	466	-138	Fail
YENIKOY	110	248	-138	Fail
YESILOVA	342	479	-137	Fail
BEYKENT 2	280	417	-137	Fail

Company Name : Z

Table 10. Company Name : Z Most failedl 30 Stores for Z supplier

Date:01/11/2018-30/11/2018

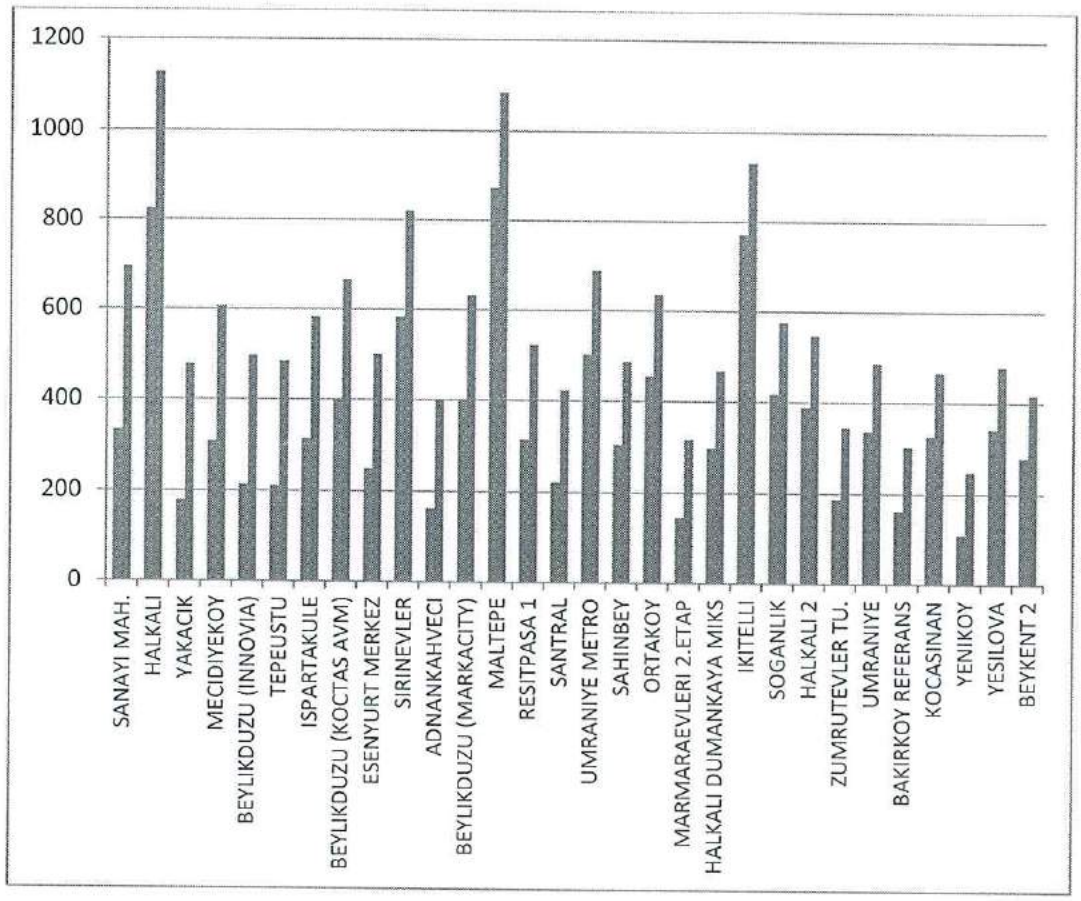


Figure 10. Company Name : Z Most failed 30 Stores for Z supplier

3.3 Beverage Category in Store Analysis

Let's analyze all 3 Beverage Suppliers in İkitelli store

COMPANY:Z

BRANCH	SALES	QUANTITY MUST BE SELL	DIFFRENCE	SUCCESS LEVEL	
IKITELLI	772	932	-160	Fail	21%

COMPANY :X

IKITELLI	5851	4339	1512	Success	

COMPANY: Y

IKITELLI	2040	2776	-736	Fail	36%

Table 11. 3 Suppliers performances in İkitelli store

Analyzing company x in ikitelli store:

BRANCH	SALES	QUANTITY MUST BE SELL	DIFFRENCE	SUCCESS LEVEL
IKITELLI	5851	4339	1512	Success

Success reasons for Company x in ikitelli Store:

- More merchindising area for company X, esspecially closer to fruit and vegetables, usually they use enterance
- Regular merchindising visiting activities from company X
- More stock efficiency in store, company X control stocks regularly
- More merchindising area for company X, closer to snacks
- Customer Relationship Managament (crm) big data, products relationship matrix shows there is a significant relation between beverages and snacks and fruit and vegetables

Analyzing company Y in ikitelli store:

branch	sales	quantity must be sell	diffrence	success level	
ikitelli	2040	2776	-736	fail	36%

Failure reasons for company Y in ikitelli store:

- Less merchindising area for company Y in the store, esspecially they don't have any products closer to fruit and vegetables. They don't use enterance
- No regular merchindising visiting activities from company Y
- Less stock efficiency in store, company Y doesn't control stocks regularly.
- Less merchindising area for company Y, it is not closer to snacks
- Customer relationship managament (crm) big data, products relationship matrix shows there is a significant relation between beverages and snacks and fruit and vegetables

Analyzing company Z in ikitelli store:

branch	sales	quantity must be sell	diffrence	success level	
IKITELLI	772	932	-160	Fail	21%

Failure reasons for Company Z in ikitelli store:

- Less customer loyalty and brand doesn't have good reputation.
- Less merchindising area for company Z in the store, esspecially they don't have any products closer to fruit and vegetables. They don't use enterance.
- No regular merchindising visiting activities from company Z.
- Less stock efficiency in store, company Z doesn't control stocks regularly.
- Less merchindising area for company Z, it is not closer to snacks.
- Customer relationship managament (crm) big data, products relationship matrix shows there is a significant relation between beverages and snacks and fruit and vegetables.

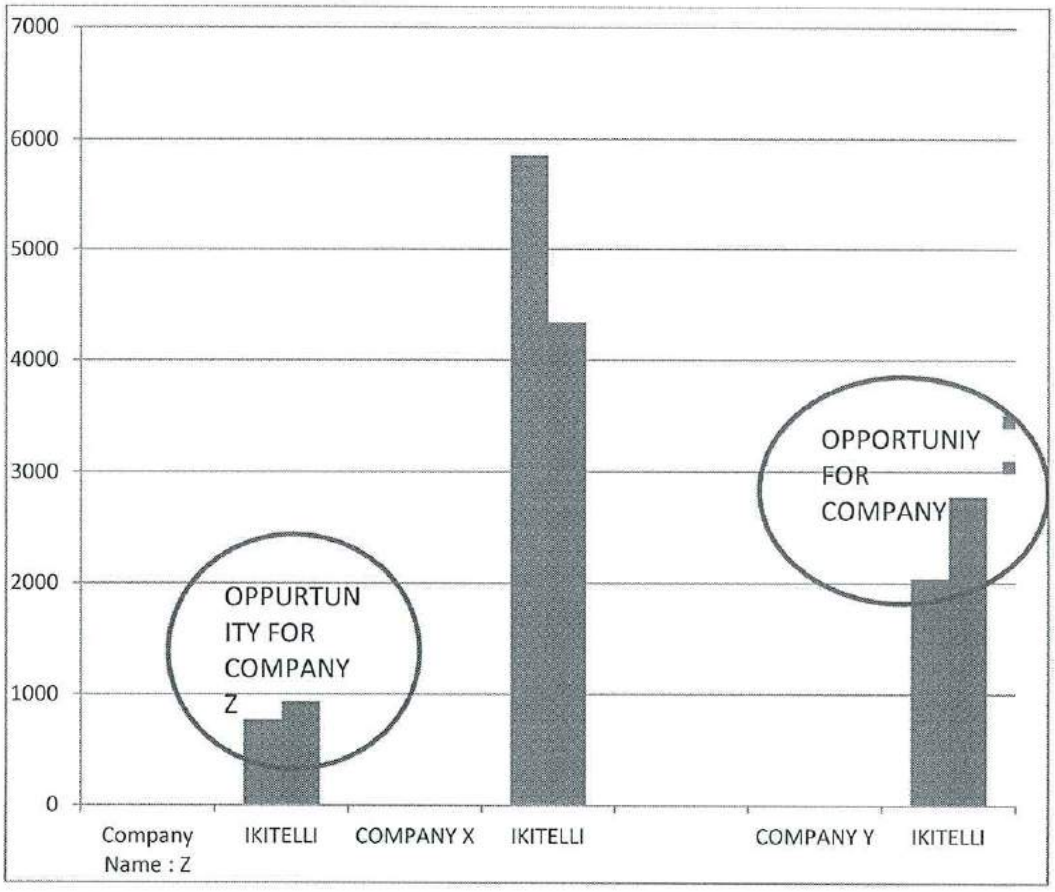


Figure 12 : Three Beverage Suppliers Performance in Ikitelli Store

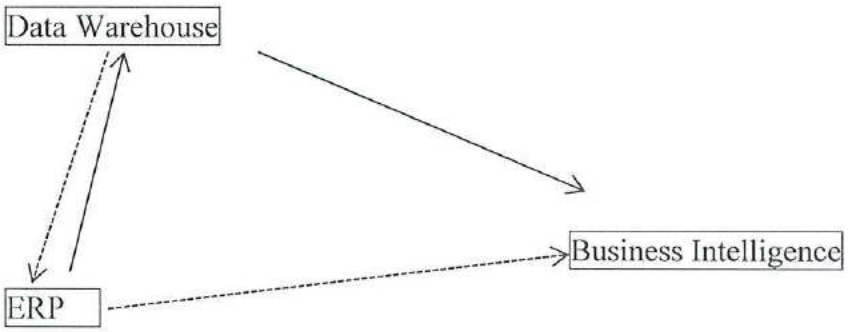
Summary of Analysis Beverage Category in Ikitelli Store,

- ✓ Company X significantly following steps of right shelf place allocation and they are very successful in Ikitelli store. They use enterance as well.
- ✓ Big Data shows us significantly if company Y focus on right shelf place allocation in store, min 36% can increase its sales.
- ✓ Significantly if company Z focus on right shelf place allocation in store, min 21% can increase its sales.

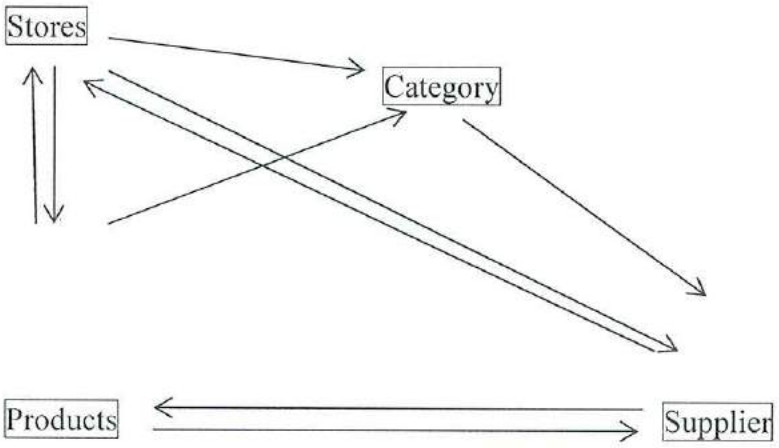
With these results, two companies Y and Z acted based on big data and focus on right shelf allocation process at the end they increased their sales on average more than 25% per month in this store by focusing more on merchandising.

3.4 Model and Parameters

Data Flow



Process



Supermarkets use big databases and business analytic tools to report and analyze shopping behavior and transactions. Using the Big Data Management Systems in 4 basic applications below which will benefit more in these areas;

a) Product relationship matrix and cross-selling to customers

b) To allocate the shelf location correctly and to spend with it

c) Meet customer needs and higher customer shopping experience

d) Optimization with B2B, with a better calculation of demand and customer needs

3.5 Customer Trends and Big Data

Big Data and analytical solutions are built on Supermarket System POS (point of sale), Stock control, automatic ordering, loyalty, and ERP systems and external factors; market share, population; demographic data, etc. provides clearer visibility to customer purchase models with relevant background information. This information supports the customer-oriented movement strategy for daily activities. For example, applying the most appropriate marketing programs to the needs of the customer is possible with the right shelf location design. In fact, Supermarkets can create more effective and more accurate pricing programs and categories and product location accordingly to the customer's needs.

4. IMPROVING PRODUCTIVITY

It is used for demand forecasts and accordingly to take appropriate steps and stock control and to make the distribution balanced, especially the determination of the location of the right shelf place is very effective in presenting the right product in the right place at the right price. This analytics can be used in order to understand trends and anticipate demand.

For example, the consumption of certain products (batteries, preserves, umbrella materials, etc.) is often strongly dependent on weather conditions. The upcoming cold weather forecast can be used in particular to determine the impact on the allocation of supplies and on the distribution of landfills between regions. Understanding these patterns can be used for supermarket planning several weeks in advance along with their impact on customer behavior. So analytics can help retailers better predict demand and improve supply. Accurate demand estimates for perishable products may enable supermarkets to decide to make accurate scheduled deliveries to sell their products, keep their stocks fresh and use the most appropriate shelf space. Better use of big data also enables the supermarkets to implement and develop efficiency programs as well as to maximize their communication with their suppliers. When we checked with big data that we found some stores are failing for the beverage category that is because of less space for refrigerator and less purchasing points for beverages category. When we fix it all related issues about this category on current stores resulted in 15 to 25 % of sales increase.

4.1 Optimization

Many businesses can be developed easier when more and more database is part of the center in information architecture. Information processing operations in supermarkets are often linked to these tasks to produce solutions when identifying Big Data processes:

a) Optimum Profitability: better shelf place allocation and diversified product variety based on the local customer profile. Big Data, local data and other data sources available through transactional data are used to ensure that the right shelf place and products are available at the right time. The retailer monitors the success of the local promotion, wants to estimate the success of such promotions as soon as possible, and adjusts the promotions accordingly when sales do not meet expectations.

b) Optimum Inventory: Accurate demand forecasts that direct the best stock planning, not only by analyzing stocks but also by analyzing which suppliers are best able to respond to changing demands. Reducing stocks and increasing sales is very critical for Supermarkets.

c) Optimum shelf allocation and store design: Allocation of right shelf place is made based on the ability to monitor product placement affecting shelf availability and sales, to monitor sales based on it, to make changes to the location and to see results, Smart labeling, estimating market price and understanding the price of similar products in competitors and sales trends.

d) Optimum IT: The advantage of Supermarkets is that they are very good at evaluating the data; it is the center to transfer data layers and transformation to a platform. The efficient handling and use of all sources depend on the efficient design of IT and it is often difficult to prove its operational efficiency, but sometimes IT organizations are the starting point of their goal when implementing such solutions.

4.2 Data Architecture

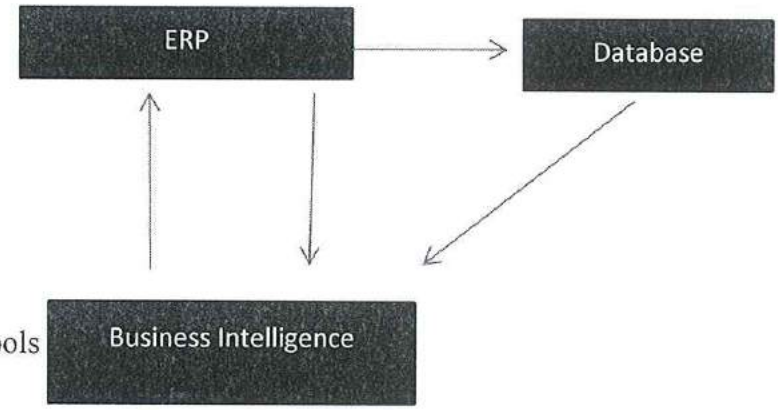
It consists of multi-functional components in the Information Architecture. The data is regularly collected and edited from the POS(Point of Sale) and then evaluated by the business analytics to make more meaningful business decisions.

Various platforms play a strategic role here. Management and decision-making are critical and are always at the highest level in supermarkets.

How we can decide and understand which of these tools to design and should be part of the process to meet the needs of supermarkets? If we create database architecture and monitor the data flow from the input, the process to the output, we can create a logical optimization to support the whole system.

The database and its environment are modeled in Figure 1.

Figure 1:



Many retailers are gathering data from devices such as POS and related products where all of this software is already embedded in a purchased hardware and software solution.

4.3. Big Data Process

One of the most important points to the success of a large project is to align with business needs and objectives and with IT architecture design and deployment plans. Key operating should be active and active at every stage. Methodologies based on phased approaches are almost always the most successful. To get started, we need to understand the current status and gaps, so we can better understand how to build better in the future. We need to change the architecture as the business requirements change. Therefore, a common method for success is to quickly demand success along the way and deploy it in extensive increments to

adjust the plan as needed. A complete Architecture is never built during a short period of time but has been developed with years of elaboration. Supermarkets are at an important time on the date that more data are available than any other time in history, and much more can be collected. Supermarkets will use this data to reveal new and better business processes and productivity and will do so by effectively developing Information Architecture. Some even use advanced footprints and data to launch their own networks, so they compete with data collectors and earn more money from IT investments.

5.RESEARCH FINDINGS

5.1 Allocation of Right Shelf Place

Profitable Supermarkets have shelf place allocation to choose specific products, especially products with a high gross margin, as different shelf location allocations seem quite reasonable because they may affect sales. Although shelf allocation is common, information on the effects of shelf allocation changes on product sales is sectional. Supermarkets made numerous trial-and-error changes but repeated several legitimate experiments. These experiments accumulated little results that could be generalized to product classes. Academic researchers conducted a number of experimental studies on the effects of shelf place, but there is not enough study on how displacement occurs in sales. Additional resources can help supermarkets better understand customer demand, and a better view of customer and customer purchasing models.

Model is defined as the ratio of relative change in unit sales to relative change shelf place in retail. The shelf location is most often measured as a place of exhibition. A more flexible sense of floor flexibility can enable Supermarkets to improve their brand management and product line decisions. This understanding can enable Supermarkets to develop more profitable product diversity policies, make better decisions about store size, and develop more effective strategies to allocate shelf place to individual products and product families. Given the knowledge of shelf location/sales relationships, both manufacturers and Supermarkets can use simulation techniques to test merchandising options, which are currently available in terms of computer technology but not practical in terms of product behavior. This study examines and arranges the experimental findings within the context of a general model of right shelf place elasticity, discusses existing trade models for allocating shelf place, and introduces considerations for the practical management of shelf place. It is evident that the impact of shelf place

on unit sales differs among products; the relationship of product characteristics to response rates is well defined.

5.2 Efficient Shelf Place Practices

Supermarkets will probably benefit from more rigorous trial and error tests of their allocation.

Many Supermarket electronic point-of-sale data capture will make it easier to perform these tests and thus ensure a fast and local response to certain conditions. However, a perfect solution is not possible because the condition of trade is in a steady flow. Even if a dynamic solution is available, actual location allocations cannot be changed in response to each sales nuance. However, there are a number of possible ways to improve: a more systematic use than existing knowledge and a better understanding of the relationship between place/sale allows the improvement of decision criteria. From the two, the old one has a much more practical significance. For example, researchers and practitioners generally agree that logistics matters should be prioritized over merchandising issues. High labor costs refer to each product that a sufficient shelf place must be allocated to minimize stock costs and stock quantities before certain products are preferred by an additional location. Supermarkets consider such logistical considerations, but their work is likely to be lower than possible. In addition, systems may routinely contain restrictions such as service level variables in the inventory, which are difficult to store manually. For example, products with perceived high brand loyalty, typically higher levels of service for products with a high sales-to-sales ratio can be identified. Lower service level targets can be set for products where shoppers can request more by requesting stores. New product proliferation and changing market conditions also point to the need for more frequent goods reset. However, even when adapted to individual stores, the implementation of programmed location allocations cannot be done only by the computer. The allocation of in category positions to specific products still requires significant

marketing discretion. It is essential that the purchase of the impact is spontaneously an in-store decision or if it is part of a pre-planned shopping strategy, the product is exposed if the process is triggered. However, it seems hopeless to speculate on specific ground levels that need to trigger the impulse purchase. The place is very important to position new products in the eyes of the customer with the proximity to well-known products.

Location flexibility determinations are not easily systematic and are likely to remain intuitive. However, profitability determination should be clearly calculated systematically. Supermarkets must proceed to routinely calculate this measurement. Supermarkets at all levels can use the simpler gross profit margin and move rate metrics as an objective criterion rather than continue to use them. In summary, Supermarkets will need to continue to consider subjectively significant factors in their product characteristics. Right shelf place allocation decisions impacts, specially labeled products, and fast moving products should be as much as possible. However, when making these decisions, they must have available big data sets.

6. CONCLUSION

In conclusion, it can be stated that the model had issues with the significance scores and validity, on the other hand the structure of the project with using big data clearly showed us how to increase sales by changing shelf place needs effort and focus on store boundary conditions. We observed several circumstances changing shelf place were included, reliable and useful such as we found store entrance was the best shelf allocation place for beverage category and also closer to fruit and vegetables or Snacks sections from product relationship but since retailers want to increase their profitability they prefer to allocate more profitable products on the entrance and on these places. Later on, we conducted to find the relation between products, categories, customers, and stores allocated shelf place for beverages with other variables. We found out with big data right product allocation place and customer behavior had a positive relationship on increase on sales. Later on, as we continued with and reached data showed how some parts of the model were products relationship and found a new and simplified version of the model that we had started with. It can be said that there are significant relationship between consumer behavior in store, purchasing experience and allocation of the right shelf place. Supermarkets have one of the greatest tools that big data to design inside store generate sales and profit maximization.Especially, Supermarkets and Suppliers must not forget about the importance to find the right shelf place strategically satisfy for more customer so that shopping experience can affect an increase in sales. In order to avoid false shelf allocation places, using big data effectively helps us for customer about the finding better shopping trends. The new model can aid academicians or students to use big data by concerning all parameters such as products, categories, stores and customers in this area to get an insight with mathematical modeling and artificial intelligence.

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8.APPENDIX

Beverage Categories,

Comparison of Companies

131 Stores Shelf Place Performance with Using Big Data

BRANCH	SALES	QUANTITY MUST BE SELL	DIFFRENCE	SUCCESS LEVEL
CENNET	1992	2354	-362	Fail
CEKMECE	2100	2197	-97	Fail
GUMUSPALA	1611	1716	-105	Fail
SUKRUBEY	1665	1920	-255	Fail
AMBARLI	2353	2300	53	Success
SANAYI MAH.	2842	3232	-390	Fail
SEYRANTEPE	3334	2088	1246	Success
BEYLIKDUZU (INNOVIA)	2246	2314	-68	Fail
SIRINEVLER	5209	3821	1388	Success
FATIH	2027	1747	280	Success
ESENLER	2210	2553	-343	Fail
TUZLA	1934	2018	-84	Fail
KOCASINAN	1829	2167	-338	Fail
CUMHURIYET MAH.	1070	1252	-182	Fail
IKITELLI	5851	4339	1512	Success
YESILOVA	2645	2231	414	Success
MECIDIYEKOY	2625	2818	-193	Fail
HAZNEDAR	1616	1569	47	Success
BEYLIKDUZU (MARKACITY)	3360	2944	416	Success
BEYLIKDUZU (PRESTIJ)	1712	1356	356	Success
KUCUKKOY	1918	2300	-382	Fail
TEPEUSTU	2092	2254	-162	Fail
SEFAKOY	1547	1422	125	Success
BEYLIKDUZU (ZIGANA)	2134	1974	160	Success
CAMLIKAHVE	1476	1838	-362	Fail
BAHCESEHIR	3342	2201	1141	Success
HALKALI	5965	5245	720	Success
K.MPASA	2871	2482	389	Success
KAGITHANE	2480	2990	-510	Fail
BESYUZEVLER	1784	1952	-168	Fail
SEYRANTEPE 2	2731	2598	133	Success
ARMUTLU FSM	2546	2592	-46	Fail
GOPASA	2375	2844	-469	Fail

BOMONTI	3023	2143	880	Success
CELIKTEPE	1498	2036	-538	Fail
BASAKSEHIR 5.ETAP	3903	4525	-622	Fail
ISPARTAKULE	3490	2711	779	Success
ESENKENT	2225	2176	49	Success
MUSTAFAKEMALPASA	646	982	-336	Fail
BIGA	1860	1793	67	Success
KARACABEY 1	648	1048	-400	Fail
HACIYUSUF	1383	1063	320	Success
ORDU	1812	1450	362	Success
BANDIRMA MERKEZ	1664	1931	-267	Fail
GONEN	793	1040	-247	Fail
PASABAYIR 1	1276	1215	61	Success
ERDEK	863	1165	-302	Fail
BALIKESIR 1	2033	1705	328	Success
CAN	1109	1642	-533	Fail
HAL SUBE BANDIRMA	1278	650	628	Success
RESITPASA 1	2468	2436	32	Success
RESITPASA 2	2138	2095	43	Success
M.AKIF	2339	2566	-227	Fail
AVCILAR (HAVUZ)	1178	1372	-194	Fail
BIZIMEVLER 2	1989	1496	493	success
YESILPINAR	1827	2207	-380	Fail
EYUP	3267	2796	471	success
BEYKENT	1887	1540	347	success
UMRANIYE	2111	2266	-155	Fail
BIZIMEVLER 3	939	291	648	success
SUSURLUK	1216	1545	-329	Fail
HALKALI 2	3061	2547	514	success

Company Name: X

Date:01/11/2018-30/11/2018

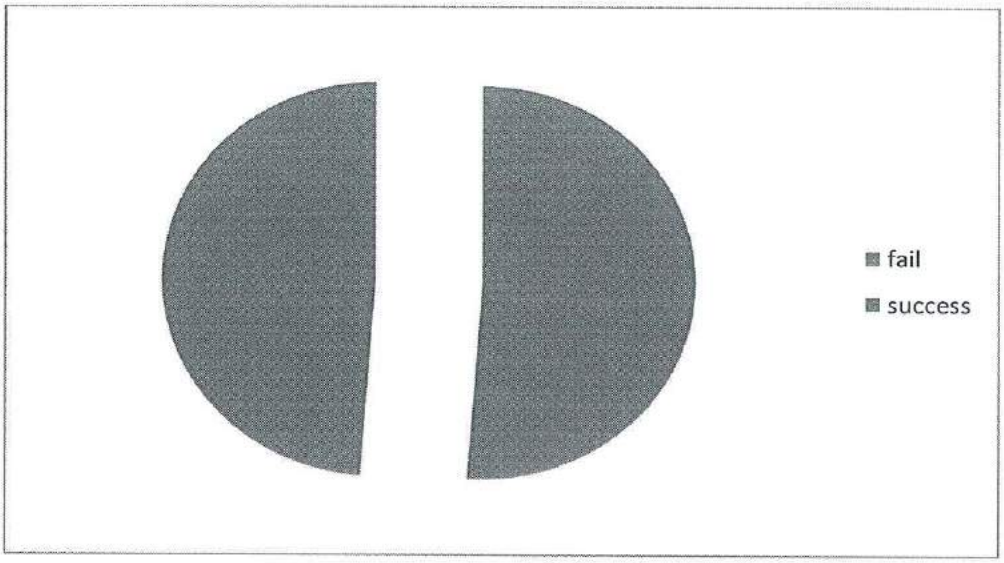
BRANCH	SALES	QUANTITY MUST BE SELL	DIFFRENCE	SUCCESS LEVEL
S.CESME	726	1183	-457	Fail
YUZUNCUYIL	1307	1414	-107	Fail
ESENYURT	2656	2385	271	success
BEYLIKDUZU (ESENBAHCE)	2271	1752	519	success
ICERENKOY	2094	2328	-234	Fail
YAKACIK	2359	2218	141	success
ADNANKAHVECI	1805	1862	-57	Fail
CAKMAK	2062	1254	808	success
DARICA	1283	1223	60	success
GEBZE	1694	1967	-273	Fail
SANCAKTEPE	2636	3166	-530	Fail
MALTEPE	6401	5045	1356	success
SULTANBEYLI MERKEZ	3885	6259	-2374	Fail
UMRANIYE METRO	2567	3211	-644	Fail
SILIVRI KİPTAŞ	1562	1198	364	success
MIMAROBA	2415	2234	181	success
CEKMEKOY (2)	2435	2971	-536	Fail
AKKOZA	810	783	27	success
MARMARAEVLERI3	3419	2982	437	success
BIGA 2	827	827	0	success
HADIMKOY	2417	1987	430	success
SAHINBEY	2016	2266	-250	Fail
SOGANLIK	2141	2688	-547	Fail
ZUMRUTEVLER TU.	1715	1607	108	success
FIKIRTEPE	2230	1788	442	success
KAZIMKARABEKIR	1125	1777	-652	Fail
U.CARSI	2080	1668	412	success
TASDELEN	2689	3765	-1076	Fail
SANTRAL	1427	1973	-546	Fail
ATAKENT	1939	2594	-655	Fail
HEKIMSUYU	1317	1736	-419	Fail
SERIFALI	2092	1740	352	success
ZUMRUTEVLER NIL	1407	1802	-395	Fail

BULGURLU	1202	1721	-519	Fail
ASYAPARK	2458	3634	-1176	Fail
KURTULUS	1215	1627	-412	Fail
KUCUKKOY MERKEZ	2145	2271	-126	Fail
PENDIK	1335	1544	-209	Fail
MALTEPE BELEDIYE	1482	1599	-117	Fail
ATASEHIR ORNEK	1891	2122	-231	Fail
ZEYTINBURNU	1421	1282	139	Success
FATIH HALIC CAD.	1022	1408	-386	Fail
KAYASEHIR GIRIS	2920	2753	167	Success
YENIKOY	995	1155	-160	Fail
BAKIRKOY REFERANS	1480	1412	68	Success
SEFAKOY SULTAN MURAT	1295	1026	269	Success
KOCATEPE	1420	1597	-177	Fail
MURATPASA	1042	1613	-571	Fail
YENIDOGAN	1666	1261	405	Success
GUNGOREN	1116	1005	111	Success
KARTALTEPE	1049	1014	35	Success
ATISALAN	1047	1320	-273	Fail
HALKALI DUMANKAYA MIKS	1977	2176	-199	Fail
BESYUZEVLER 2	2651	2403	248	Success
KAYASEHIR SEYRANSEHIR	2460	2522	-62	Fail
KURTKOY ATLANTIS AVM	3437	2808	629	Success
GONEN KULTUR MERKEZI	851	1035	-184	Fail
AHMET YESEVI	1706	1478	228	Success
ACISU	1408	1645	-237	Fail
YAKUPLU	2625	2367	258	Success
KAVAKLI	1713	1228	485	Success
ESENYURT PIRI REIS	2313	1344	969	Success
MARMARAEVLERI 2.ETAP	1187	1474	-287	Fail
BEYKENT 2	1770	1942	-172	Fail
ORTAKOY	3409	2964	445	Success
KUCUKYALI	1587	1252	335	Success
EYUP ISLAMBEY	1292	1270	22	Success
BEYLIKDUZU (KOCTAS AVM)	3151	3106	45	Success

ESENYURT MERKEZ	**1249**	**2327**	**-1078**	**Fail**
TOTAL	**270576**	**270576**		

Company Name :X

Date : 01/11/2018 – 30/11/2018



Company Name : X Full Beverage

Category Stores Performance

Date:01/11/2018-30/11/2018

BRANCH	SALES	QUANTITY MUST BE SELL	DIFFRENCE	SUCCESS LEVEL
CENNET	1517	1506	11	Success
CEKMECE	1689	1406	283	Success
GUMUSPALA	1102	1098	4	Success
SUKRUBEY	1156	1229	-73	Fail
AMBARLI	1170	1472	-302	Fail
SANAYI MAH.	2232	2068	164	Success
SEYRANTEPE	1703	1336	367	Success
BEYLIKDUZU (INNOVIA)	1449	1480	-31	Fail
SIRINEVLER	2386	2445	-59	Fail
FATIH	1215	1118	97	Success
ESENLER	1691	1633	58	Success
TUZLA	1778	1291	487	Success
KOCASINAN	1366	1387	-21	Fail
CUMHURIYET MAH.	1124	801	323	Success
IKITELLI	2040	2776	-736	Fail
YESILOVA	1671	1427	244	Success
MECIDIYEKOY	1752	1803	-51	Fail
HAZNEDAR	1101	1004	97	Success
BEYLIKDUZU (MARKACITY)	1808	1883	-75	Fail
BEYLIKDUZU (PRESTIJ)	1083	868	215	Success
KUCUKKOY	1567	1472	95	Success
TEPEUSTU	1694	1442	252	Success
SEFAKOY	1135	910	225	Success
BEYLIKDUZU (ZIGANA)	1372	1263	109	Success
CAMLIKAHVE	1215	1176	39	Success
BAHCESEHIR	1277	1408	-131	Fail
HALKALI	3508	3356	152	Success
K.MPASA	1842	1588	254	Success
KAGITHANE	1556	1913	-357	Fail
BESYUZEVLER	1753	1249	504	Success
SEYRANTEPE 2	1830	1662	168	Success
ARMUTLU FSM	1651	1658	-7	Fail

GOPASA	1839	1820	19	Success
BOMONTI	1568	1371	197	Success
CELIKTEPE	1430	1303	127	Success
BASAKSEHIR 5.ETAP	2734	2895	-161	Fail
ISPARTAKULE	1252	1735	-483	Fail
ESENKENT	1388	1393	-5	Fail
MUSTAFAKEMALPASA	630	629	1	Success
BIGA	815	1147	-332	Fail
KARACABEY 1	582	670	-88	Fail
HACIYUSUF	681	680	1	Success
ORDU	1416	928	488	Success
BANDIRMA MERKEZ	1398	1236	162	Success
GONEN	871	665	206	Success
PASABAYIR 1	798	778	20	Success
ERDEK	624	745	-121	Fail
BALIKESIR 1	1514	1091	423	Success
CAN	430	1051	-621	Fail
HAL SUBE BANDIRMA	629	416	213	Success
RESITPASA 1	1517	1559	-42	Fail
RESITPASA 2	1195	1340	-145	Fail
M.AKIF	1456	1641	-185	Fail
AVCILAR (HAVUZ)	803	878	-75	Fail
BIZIMEVLER 2	1025	957	68	Success
YESILPINAR	1965	1412	553	Success
EYUP	1652	1789	-137	Fail
BEYKENT	1166	985	181	Success
UMRANIYE	1062	1450	-388	Fail
BIZIMEVLER 3	503	186	317	Success
SUSURLUK	1101	989	112	Success
HALKALI 2	1652	1630	22	Success

Company Name : Y

Date:01/11/2018-

30/11/2018

BRANCH	SALES	QUANTITY MUST BE SELL	DIFFRENCE	SUCCESS LEVEL
S.CESME	592	757	-165	Fail
YUZUNCUYIL	1186	905	281	Success
ESENYURT	1700	1526	174	Success
BEYLIKDUZU (ESENBAHCE)	1306	1121	185	Success
ICERENKOY	1216	1489	-273	Fail
YAKACIK	1312	1419	-107	Fail
ADNANKAHVECI	1321	1191	130	success
CAKMAK	871	802	69	success
DARICA	815	783	32	success
GEBZE	1436	1259	177	success
SANCAKTEPE	1547	2025	-478	Fail
MALTEPE	2563	3228	-665	Fail
SULTANBEYLI MERKEZ	2120	4005	-1885	Fail
UMRANIYE METRO	1651	2054	-403	Fail
SILIVRI KİPTAŞ	1418	767	651	Success
MIMAROBA	1539	1429	110	Success
CEKMEKOY (2)	1402	1901	-499	Fail
AKKOZA	528	501	27	Success
MARMARAEVLERI3	2387	1908	479	Success
BIGA 2	626	529	97	Success
HADIMKOY	1447	1271	176	Success
SAHINBEY	1584	1450	134	Success
SOGANLIK	1406	1720	-314	Fail
ZUMRUTEVLER TU.	756	1028	-272	Fail
FIKIRTEPE	898	1144	-246	Fail
KAZIMKARABEKIR	449	1137	-688	Fail
U.CARSI	1034	1067	-33	Fail
TASDELEN	2175	2409	-234	Fail
SANTRAL	1109	1262	-153	Fail
ATAKENT	1299	1660	-361	Fail
HEKIMSUYU	1454	1110	344	success

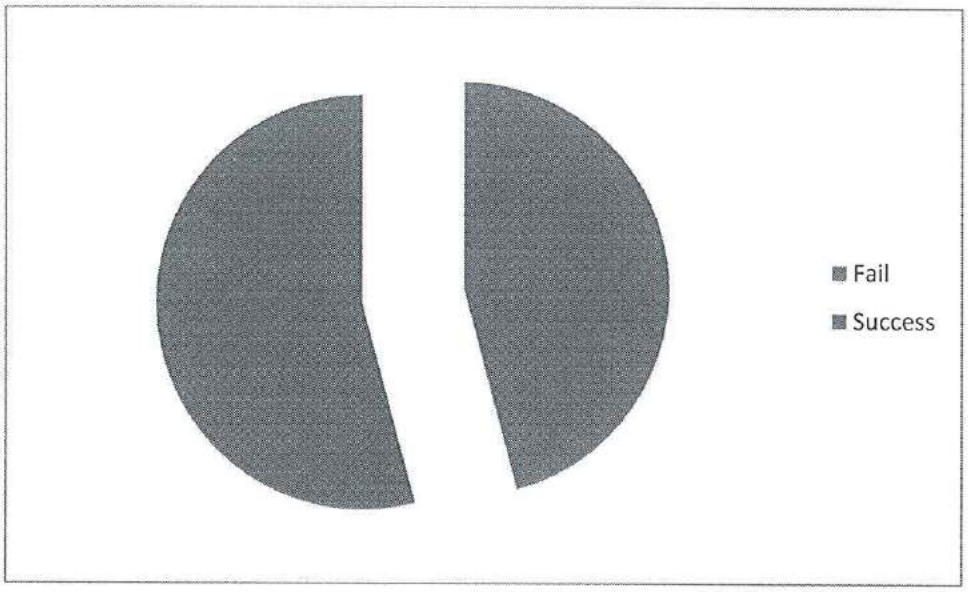
SERIFALI	796	1113	-317	Fail
ZUMRUTEVLER NIL	749	1153	-404	Fail
BULGURLU	834	1101	-267	Fail
ASYAPARK	1412	2325	-913	Fail
KURTULUS	992	1041	-49	Fail
KUCUKKOY MERKEZ	1761	1453	308	success
PENDIK	808	988	-180	Fail
MALTEPE BELEDIYE	764	1023	-259	Fail
ATASEHIR ORNEK	1006	1358	-352	Fail
ZEYTINBURNU	794	820	-26	Fail
FATIH HALIC CAD.	868	901	-33	Fail
KAYASEHIR GIRIS	1629	1761	-132	Fail
YENIKOY	464	739	-275	Fail
BAKIRKOY REFERANS	1047	904	143	success
SEFAKOY SULTAN MURAT	999	656	343	success
KOCATEPE	1164	1022	142	success
MURATPASA	975	1032	-57	Fail
YENIDOGAN	890	807	83	success
GUNGOREN	767	643	124	success
KARTALTEPE	1019	649	370	success
ATISALAN	706	845	-139	Fail
HALKALI DUMANKAYA MIKS	1286	1392	-106	Fail
BESYUZEVLER 2	2031	1537	494	success
KAYASEHIR SEYRANSEHIR	1663	1614	49	success
KURTKOY ATLANTIS AVM	2466	1797	669	success
GONEN KULTUR MERKEZI	717	662	55	success
AHMET YESEVI	1031	946	85	success
ACISU	986	1052	-66	Fail
YAKUPLU	1611	1515	96	success
KAVAKLI	1170	786	384	success
ESENYURT PIRI REIS	1384	860	524	success
MARMARAEVLERI 2.ETAP	709	943	-234	Fail
BEYKENT 2	1408	1242	166	success
ORTAKOY	2072	1897	175	success
KUCUKYALI	624	801	-177	Fail

EYUP ISLAMBEY	1177	812	365	success
BEYLIKDUZU (KOCTAS AVM)	2397	1988	409	success
ESENYURT MERKEZ	1308	1489	-181	Fail
SANCAKTEPE YENIDOGAN	77	101	-24	Fail
TOTAL	173120	173122		

Company Name : Y

Date : 01/11/2018 –

30/11/2018



Company Name : Y

Beverage Category Store

Performance

BRANCH	SALES	QUANTITY MUST BE SELL	DIFFRENCE	SUCCESS LEVEL
CENNET	421	506	-85	Fail
CEKMECE	384	472	-88	Fail
GUMUSPALA	331	369	-38	Fail
SUKRUBEY	371	413	-42	Fail
AMBARLI	373	494	-121	Fail
SANAYI MAH.	334	695	-361	Fail
SEYRANTEPE	357	449	-92	Fail
BEYLIKDUZU (INNOVIA)	213	497	-284	Fail
SIRINEVLER	584	821	-237	Fail
FATIH	477	375	102	Success
ESENLER	428	548	-120	Fail
TUZLA	390	434	-44	Fail
KOCASINAN	328	466	-138	Fail
CUMHURIYET MAH.	208	269	-61	Fail
IKITELLI	772	932	-160	Fail
YESILOVA	342	479	-137	Fail
MECIDIYEKOY	309	606	-297	Fail
HAZNEDAR	268	337	-69	Fail
BEYLIKDUZU (MARKACITY)	400	633	-233	Fail
BEYLIKDUZU (PRESTIJ)	201	291	-90	Fail

KUCUKKOY	366	494	-128	Fail
TEPEUSTU	211	484	-273	Fail
SEFAKOY	255	306	-51	Fail
BEYLIKDUZU (ZIGANA)	460	424	36	Success
CAMLIKAHVE	289	395	-106	Fail
BAHCESEHIR	361	473	-112	Fail
HALKALI	825	1127	-302	Fail
K.MPASA	483	533	-50	Fail
KAGITHANE	541	643	-102	Fail
BESYUZEVLER	384	419	-35	Fail
SEYRANTEPE 2	439	558	-119	Fail
ARMUTLU FSM	456	557	-101	Fail
GOPASA	684	611	73	Success
BOMONTI	343	461	-118	Fail
CELIKTEPE	371	437	-66	Fail
BASAKSEHIR 5.ETAP	1028	972	56	Success
ISPARTAKULE	315	583	-268	Fail
ESENKENT	413	468	-55	Fail
MUSTAFAKEMALPASA	577	211	366	Success
BIGA	804	385	419	Success
KARACABEY 1	516	225	291	Success
HACIYUSUF	685	228	457	Success

ORDU	922	312	610	Success
BANDIRMA MERKEZ	1869	415	1454	Success
GONEN	500	223	277	Success
PASABAYIR 1	724	261	463	Success
ERDEK	488	250	238	Success
BALIKESIR 1	654	366	288	Success
CAN	628	353	275	Success
HAL SUBE BANDIRMA	766	140	626	Success
RESITPASA 1	315	523	-208	Fail
RESITPASA 2	448	450	-2	Fail
M.AKIF	460	551	-91	Fail
AVCILAR (HAVUZ)	212	295	-83	Fail
BIZIMEVLER 2	398	321	77	Success
YESILPINAR	538	474	64	Success
EYUP	999	601	398	Success
BEYKENT	203	331	-128	Fail
UMRANIYE	337	487	-150	Fail
BIZIMEVLER 3	154	62	92	Success
SUSURLUK	646	332	314	Success
HALKALI 2	389	547	-158	Fail
S.CESME	248	254	-6	Fail
YUZUNCUYIL	650	304	346	Success
ESENYURT	460	513	-53	Fail

BEYLIKDUZU (ESENBAHCE)	266	377	-111	Fail
ICERENKOY	431	500	-69	Fail
YAKACIK	179	477	-298	Fail
ADNANKAHVECI	163	400	-237	Fail
CAKMAK	213	269	-56	Fail
DARICA	330	265	65	Success
GEBZE	421	423	-2	Fail
SANCAKTEPE	664	680	-16	Fail
MALTEPE	874	1084	-210	Fail
SULTANBEYLI MERKEZ	1461	1345	116	Success
UMRANIYE METRO	503	690	-187	Fail
SILIVRI KİPTAŞ	395	258	137	Success
MIMAROBA	367	480	-113	Fail
CEKMEKOY (2)	533	638	-105	Fail
AKKOZA	194	168	26	Success
MARMARAEVLERI3	792	641	151	Success
BIGA 2	391	178	213	Success
HADIMKOY	642	427	215	Success
SAHINBEY	305	487	-182	Fail
SOGANLIK	418	577	-159	Fail
ZUMRUTEVLER TU.	187	345	-158	Fail

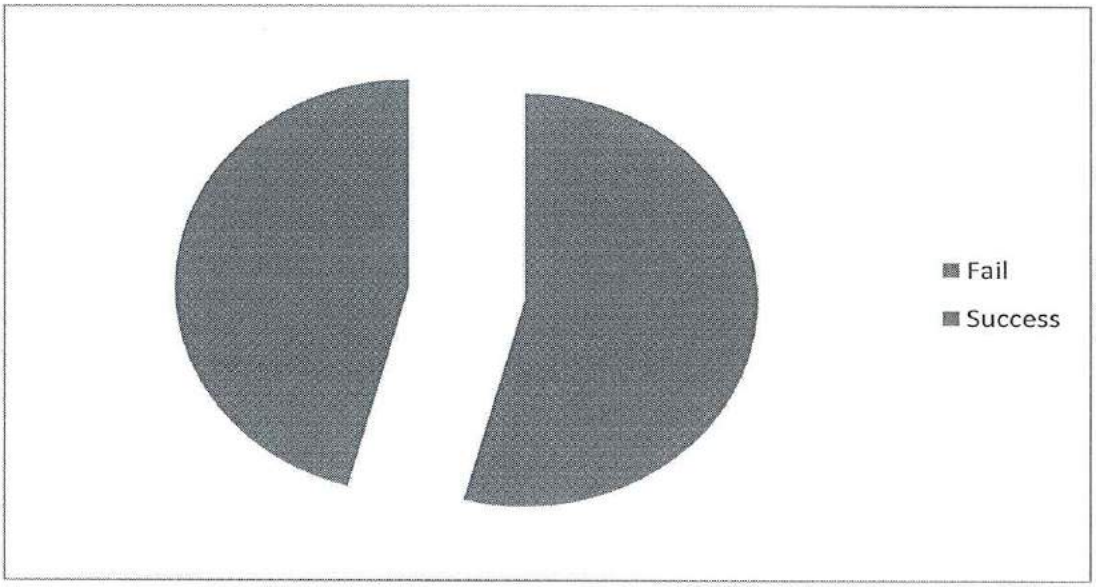
FIKIRTEPE	360	384	-24	Fail
KAZIMKARABEKIR	407	382	25	Success
U.CARSI	476	358	118	Success
TASDELEN	880	809	71	Success
SANTRAL	221	424	-203	Fail
ATAKENT	483	557	-74	Fail
HEKIMSUYU	468	373	95	Success
SERIFALI	329	374	-45	Fail
ZUMRUTEVLER NIL	341	387	-46	Fail
BULGURLU	597	370	227	Success
ASYAPARK	683	781	-98	Fail
KUCUKKOY MERKEZ	507	488	19	Success
PENDIK	225	332	-107	Fail
MALTEPE BELEDIYE	272	344	-72	Fail
ATASEHIR ORNEK	365	456	-91	Fail
ZEYTINBURNU	471	276	195	Success
FATIH HALIC CAD.	369	303	66	Success
KAYASEHIR GIRIS	720	592	128	Success
YENIKOY	110	248	-138	Fail
BAKIRKOY REFERANS	163	303	-140	Fail
SEFAKOY SULTAN MURAT	160	220	-60	Fail
KOCATEPE	220	343	-123	Fail

MURATPASA	239	347	-108	Fail
YENIDOGAN	296	271	25	Success
GUNGOREN	156	216	-60	Fail
KARTALTEPE	308	218	90	Success
ATISALAN	256	284	-28	Fail
HALKALI DUMANKAYA MIKS	298	468	-170	Fail
BESYUZEVLER 2	534	516	18	Success
KAYASEHIR SEYRANSEHIR	741	542	199	Success
KURTKOY ATLANTIS AVM	582	603	-21	Fail
GONEN KULTUR MERKEZI	440	222	218	Success
AHMET YESEVI	468	318	150	Success
ACISU	468	353	115	Success
YAKUPLU	504	509	-5	Fail
KAVAKLI	258	264	-6	Fail
ESENYURT PIRI REIS	302	289	13	Success
MARMARAEVLERI 2.ETAP	145	317	-172	Fail
BEYKENT 2	280	417	-137	Fail
ORTAKOY	455	637	-182	Fail
KUCUKYALI	255	269	-14	Fail
EYUP ISLAMBEY	191	273	-82	Fail

BEYLIKDUZU (KOCTAS AVM)	**400**	**667**	**-267**	**Fail**
ESENYURT MERKEZ	**250**	**500**	**-250**	**Fail**
SANCAKTEPE YENIDOGAN	**31**	**34**	**-3**	**Fail**
ALEMDAG	**0**	**0**	**0**	**Success**
ORNEK MAH. 2	**0**	**0**	**0**	**Success**
TOTAL	**57793**	**57792**		

Company Name : Z , Store performance

Date: 01/11/2018-30/11-2018



Company Name : Z Beverage Category Stores Performance