**3) Domain Understanding**

We had a pool of research papers to understand how significant and relevant data can be derived from past sales data.Research papers also gave insight about methods by which we can build business strategies on top of the derived data. It was beyond the scope of the project to read and understand all the papers from the pool of research papers. From the complete list we read three and understood the strategies adopted during the design and implementation of Data Warehousing. Please find our understandings about each paper detailed below.

1. **Nevo, Aviv and Catherine Wolfram,** [**"Why do Manufacturers Issue Coupons? An Empirical Analysis of Breakfast Cereals,"**](https://research.chicagobooth.edu/marketing/databases/dominicks/docs/2002_Why_Do_Manufacturers.pdf)***The RAND Journal of Economics*, 33 (Summer 2002): 319-339.**

The main objective of this research paper is to summarize the effect of Coupons in the increase or decrease in sales of any retail chain. This paper discusses the scenarios in which the coupons are introduced by a Manufacturers and the effect of it in detail. Paper also discusses that giving coupons is better than spending substantial amount in advertisements .This paper also explains how the price of commodities whose quality is not comparable to its competitors will decrease in long term .This is very important in formulating our strategies in later stages of the project for improving sales based on the meaningful data derived from data warehousing design methodologies.

This paper also discusses the different reasons behind a manufacturer introducing discount/coupon on a particular product. Firstly it can be for introducing a new product. This will give a larger pool of customers a taste/experience of the new product. Secondly coupons are introduced to boost up sales of a particular product which is lagging behind its customers or if it is getting perished in inventory. This is explained under the heading relationships between Coupons and Shelf price. Also the paper discusses how the perception of customer about a product can change if the coupons are made available continuously. Effects and correlation of price and coupons in different situations are derived and explained mathematically in the complete paper. This summarizes the complete project.

1. **Sivakumar, K.,**[**"Quality-Tier Competition and Optimal Pricing ,"**](https://research.chicagobooth.edu/marketing/databases/dominicks/docs/1995-Quality-TierCompetition.pdf)**Journal of Business Research 33 (1995): 251-260.**

This research paper talks about implications of quality-tier competition by developing a conceptual framework to investigate how optimal pricing decisions can be done the level of brand quality to which it belongs. This paper explained how comparative study can be done on 2 different products about its pricing. It also discusses the implication of the framework introduced and steps involved in the implementation of the framework. This will be very helpful in adopting strategies for pricing the items in DFF considering the competition faced by the product after getting results from the data warehouse we are planning to design in the upcoming stages of the project.

This paper also give insight about Customer decision model explaining what will be the possible decisions of a customer comparing the price and brand category of 2 products competing each other. This idea is very useful in determining the possible price of each product’s considering the utilities derived from it. The framework described in this paper proposes the empirical distribution of possible prices for a particular product. It also describes the profit available from each price in the distribution and managerial implication of the same. In total the paper draws a complete relation between academic research in marketing practices of pricing a product.

1. **Lira, Loreto,**[**"Why Do Some Prices in the Retail Sector Drop When Demand Rises? Evidence from the Chilean Case,"**](https://research.chicagobooth.edu/marketing/databases/dominicks/docs/2007-WhyDoSomePricesDrops.pdf)**Revista ABANTE 10 (Octubre 2007): 151-168**

The primary objective of this research whether the prices in retail sector decrease when there is a positive demand in the product. This explained in the backdrop of countercyclical relationship of in Chile between cost and increased demand of set of retail products. This paper discusses about various theories analyzing the effect and cause of prices in each theory scenario. Author discusses theories effecting the prices at Producer/Supplier level and Retail level. For example Pro cyclical Price elasticity proposed by Warner Barsky states that Producer price can drop for products experiencing increase in the elasticity of demand. This can happen due to transferring of elasticity of demands to suppliers in periods of generalized shocks in demand. If similar situation arises for a product in DFF for a particular week DFF management transfer the benefit to customers by applying the same principle.

So similarly applying other theories in the paper equations can be written for each product in DFF on weekly basis considering the changes in sales of the particular product in previous week. Even though applying equations for pricing on each product is not in the purview of the project even in later stages, we can apply these in 1 or 2 products if the time permits. The paper also says that above theories stand null and void when the demand of a product is artificially increased by applying coupons. All theories are explained with the variation in price of products in a retail chain at Chile. Results of the study proves that price of set of retail products fall when the demand increases, which is likely to be similar in case of DFF as the scenarios are same in both the cases.