Review of Black Orthodox Tea Suggestion Techniques

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Abstract-Tea Auction Center (TAC) is the place where the majority of the tea is sold. To enhance the quality and constancy, this auctioning procedure comes with a couple of problems. One noteworthy problem is that there need of 3 weeks cataloguing period. Because of this cataloguing period, the tea manufacture ends up paying the tea grower for their green tea leaves before the prepared tea is sold at the auction. But to secure the planter being underpaid in the process the Tea Board (Tea controlling the body of the government) has introduced an equation. Due to cataloguing and manufacturing time, manufactured tea is sold in next month, therefore the tea factory average in the equation is the last month average. The risk of using the last month average as this month average is if any sudden price drops occurred when the catalogued tea is sold, the manufacturers incorporate a great risk of getting a large trading loss, therefore it's of immense importance to minimize the amount of trading loss. If the factory can identify which grades of tea is going to get more attraction in the market and change its manufacturing process in order yield more outcome from prevailing market conditions minimizing the trading loss impact to the factory.

In this research project, the researcher attempts to summarize all the researches done in the domain.

Index Terms— tea price, regression, modelling, data mining, machine learning, ANN.

I. INTRODUCTION

Tea is manufactured using the younger portions of the leaves in tree scientifically known as Camellia Sinensis (Khan and Mukhtar, 2013) [1]. Presently there are 3 main methods to manufacture tea. Black tea, Green tea and oolong tea are produced by controlling various oxidation levels (Hilal and Engelhardt, 2007) [2]. When manufacturing Black Orthodox Tea about 31 different grades (Forbes and Walkes, 2018) [3] are produced. These grades are categorized according to size and appearance. Out of those grades, most of the factories tend to produce about 10 -15 grades as they are limited by tight dispatch schedules based on their monthly manufacture quantity. These manufactured teas are auctioned through eight world-renowned tea auction centres, namely Guwahati-India, Cochin -India, Kolkata–India, Colombo-Sri Lanka, Mombasa-Kenya, Jakarta-Indonesia, Malawi -South Africa and Chittagong-Bangladesh. (Statistical Bulletin of the Sri Lankan Tea Board, 2017) [4]. Mostly Tea Auction Centers(TAC) are used to market the manufactured tea and

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UAE, Russia, Turkey, Iran, Japan and Syria can be considered as major export destinations

To enhance the quality and constancy, this auctioning procedure comes with a couple of problems. One noteworthy problem is that there is a need of 3 weeks cataloguing period (Tea Exporters Association Sri Lanka, 2018) [5]. This time is utilized to send the samples of teas to purchasers across various countries, so they can appropriately bid on the teas. Because of this cataloguing period, the tea manufacture ends up paying the tea grower for their green tea leaves before the prepared tea is sold at the auction. But to secure the planter being underpaid in the process the Tea Boards (Tea controlling the body of the governments) has introduced an equation to determine minimum benchmark price (MBP).

 $Green Leaves Price = \frac{Elevation * 0.68}{4.65} + \frac{(NSA - Elevation) * 0.5 * 0.68}{4.65}$ (Basic Equation used by Sri Lankan Tea Board)

Due to cataloguing and manufacturing time, manufactured tea is sold in next month, therefore the tea factory average in the equation is the last month average. The risk of using the last month average as this month's average is, if any sudden price drop occurred when the catalogued tea is sold, the manufacturers incorporate a great risk of getting a large trading loss. Therefore, it's of immense importance to minimize the amount of trading loss. If the factory can identify which grades of tea is going to get more attraction in the market and change its manufacturing process in can yield more outcome from prevailing market conditions minimizing the trading loss impact to the factory

II. INDUSTRY

According to Gramza-Michalowska tea can be considered as the cheapest and popular beverage in the world second only to water (Gramza-Michalowska, 2014) [6]. Increasing numbers of people are enjoying tea in many different situations from formal meetings to informal gatherings. Unfortunately, because of various components, tea price seems to fluctuate drastically as shown in the below graph (figure 1). Resulting in the sudden market fluctuations tea factories consolidates with massive trading losses and profits making the cash flow within the factory highly unstable. Considering the flimsy cash flow,