Brewing the perfect cup: Understanding consumer preferences for attributes of packed tea

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Abstract

Tea is a typical beverage that has been consumed worldwide. A large number of brands of this beverage are available in the market. This study looked into the consumer preference for the attributes of selected, packed tea products available in the market. The study focused on attributes such as brand, price, strength and tea package. Conjoint analysis with an orthogonal design assessed consumer preference for different tea brands. The results showed that packaging was the attribute most preferred by the consumers (importance score of 36.083), followed by the brand of the Tea (31.084) and the strength of the Tea (21.518). The least preferred attribute was the price of the branded Tea. Further, the findings also revealed optimum attribute combination among the existing tea products in the market. The results of this study will be helpful to tea growers and will significantly advance research on beverages.

Keywords: Conjoint analysis, Consumer preference, Package, Price, Tea brand.

Introduction

Tea is the leading beverage consumed by people worldwide (Tea Association of USA,2020). People worldwide consume Tea, making it among the most well-liked, varied, and affordable drinks. China leads a global chorus of tea cultivation, followed by countries such as India, Kenya, Sri Lanka, and numerous other producers. Tea is regarded as one of the primary commodities of the global beverage market due to its growing demand (Majumder et al., 2010). During 2020–2025, the worldwide tea market is anticipated to grow at a compound annual growth rate (CAGR) of 4.7% (Mordor Intelligence, 2021). Many tea manufacturing businesses have produced a variety of tea flavours to provide clients with a wide selection of tea products (Mordor Intelligence, 2021). Customers commonly upgrade their tea purchases from loose-leaf to speciality teas that are packaged and bagged.

Ranking second globally in tea production and consumption, India is a significant player in the world's tea industry. The domestic population in India consumes over 80% of the country's entire tea production. In 2020, India witnessed a domestic tea consumption of approximately 1.14 million tonnes (Tea Board, 2020). As per the estimates of the Tea Board, the tea market in India is projected to witnessrobust growth in the forecast period of 2021-2026. Indian customers increasingly favour premium brands, fueled by the country's robust economic growth and the concomitant rise in the middle-class population.Due to their higher quality, accessible storage, and lower risk of adulteration, packaged beverage products are becoming increasingly popular in urban and rural locations. The demand for packed forms of tea with natural ingredients is also growing. Over the past ten years,

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the nation's per capita tea consumption has significantly increased from 1.03 MT to 1.23 MT (Tea Board, 2024). The key industry players in the tea market at the national level are TATA, HUL, Gujarat Tea Processors and Packers Ltd. (Export Market Research, 2020).

In South India, Kerala is the second-largest tea grower after Tamil Nadu, and the state consumes 45 lakh kg of Tea per month (The Hindu Business Line, 2020). The total area under tea cultivation in Kerala is 35871.16 hectares, and the total production is 63.09 M kg (Tea Board, 2020). Various national brands have their presence in the tea market of the state, along with some local brands. Hence, Tea has high demand and high market potential in Kerala. Despite having high consumption and marketing potential in the state, studies are scarce on consumer preference towards the attributes of branded tea.In this regard, this study attempts to understand consumers' preference for branded tea. This study attempted to fill this gap by understanding consumers' preference towards various attributes of packaged Tea, i.e. Brand, Strength, Price, and type of package.

Materials and Methods

The study was conducted at Kottiyur panchayath in Kannur district of Kerala. A purposive random sampling method was followed to select ten respondents from 10 different wards in Kottiyur. A total of 100. Though a larger sample size is generally recommended for consumer preference studies, smaller sample size is justified based on the argument that having respondents complete more cognitive tasks is approximately as good as having more respondents (Orme, 2010). Further, we also found support from the literature of using small sample size from previous studies as well (Situmorang et al., 2021; Conner et al., 2016).

The respondents took part in the study by giving their preference for 12 different attribute combinations ofpackaged tea. A preliminary survey

was conducted among the major shops and supermarkets in the study area to identify the various tea brands sold and their attributes. Only those who consumed at least one branded tea product in the last two years were considered for inclusion in the study. A structured interview schedule was used to collect data by conducting the household survey. Since the study demanded a comparison of the selected attributes to identify consumer preference, only those tea brands with the standard packages were included in the study. Further, for having a standardized comparison, only 100g packets of the product were considered. The survey was conducted in August and September 2021.

Conjoint Design
Attributes and the levels of attributes selected for the study are depicted below (Table 1). In this study, a total of 4 qualities were taken into account.

Table 1: Attributes and levels selected for the study

Attributes	Levels
Brands	AVT, Kannan Devan (KD) , Periya Peak (PP)
Price levels	Rs.28, Rs.32
Strength	Medium, Strong
Package	PET, LDPE, Tetra Pak

The purchasing decisions about branded tea are significantly influenced by the brand, which may indicate brand loyalty. With this, three different levels were identified in terms of brand, i.e., AVT, Kannan Devan (KD), and Periya Peak (PP), which were tea brands available in the study area. Moreover, these brands were commonly available in all the retail shops. Price is one of the most significant elements that influence consumers' purchase decisions on branded tea. Awareness of its price has a favourable impact on their intention to buy a branded good. In the present case, only two price levels were noted for the 100 g packets in the study area, i.e. Rs. 28 and Rs.32. The third attribute, strength, also has a considerable influence on consumers' preference towards a particular product in the case of tea. The levels chosen for the attribute Strength were Medium (Balanced flavour,

Table 2. Attribute Combinations generated for the study

Combination	Brand	Price (Rs.)	Strength	Package
1	PP	28	Medium	LDPE
2	PP	32	Strong	PET
3	AVT	28	Strong	Tetra Pak
4	KD	28	Medium	PET
5	AVT	28	Medium	PET
6	KD	32	Medium	Tetra Pak
7	PP	28	Medium	Tetra Pak
8	AVT	32	Medium	LDPE
9	KD	28	Strong	LDPE
10[a]	PP	28	Strong	PET
11[a]	KD	32	Medium	LDPE
12[a]	KD	32	Strong	Tetra Pak

[a]These combinations refer to hold-out cases

moderate astringency, amber colour) and Strong (Bold flavour, pronounced astringency, deep colour). These two levels were observed for different tea products that were available in the study's locality. Finally, the fourth attribute package also has a significant influence on the consumer's buying behaviour of branded tea. There are several choices for customers regarding the branded tea. The attribute levels of package chosen were PET, LDPE, Tetra Pak . These were the commonly available packages for a branded tea in the selected location.

Statistical Analysis
SPSS® 25 was used for the conjoint analysis with the orthogonal design. A total of 12 attributes with various combinations were generated, including holdout cases. Hold-out cases refer to a subset of respondents in the conjoint analysis who are not used in the estimation process but are instead held back to validate the accuracy of the model. For a sufficient number of alternatives to be evaluated by the participants, an orthogonal design was adopted. The generated combinations for the study are given below (Table 2).

The application of orthogonal design culminated in generating 12 product profiles or cards, including three hold-out cases. The specifying attributes and levels for each tea product were shown to survey respondents, who were asked to rank them based on their preference from one to 12 (1- most preferred and 12- least preferred). The implicit valuation

(utility/part worth) of the distinct components contributing to the choice to purchase tea was ascertained by examining how they chose between these combinations. With the help of Ordinary Least Squares (OLS) regression analysis, part-worth utilities were estimated. The relative relevance of the traits and the part-worth of each of their levels can be determined using this method.

Total worth of Brand $_{ij}$ = Part-worth of level 'i' for factor 1 + Part-worth of level 'j' for factor 2 + …………+ Part-worth of level n for factor m+ constant
Where the tea brand has 'm' attributes, each having 'n' levels.

Each attribute's part-worths and relative weights were estimated. The results of the study are interpreted through various values, such as utility score, average importance score, combination ranking, and correlation coefficient.

Results and Discussion

Socio-economic data was collected from an equal number of male and female respondents under the study area, and around 40 per cent of the respondents fell under the age group more than 50 years, followed by the age group of 25-50 and less than 25 years. In terms of monthly income, the majority (38 %) of the study participants had a monthly income range of Rs. 10,000 to 20,000, followed by less than Rs. 10,000 (28%), Rs. 20,000 to 40,000 (20%) and more than Rs. 40,000 (14%) respectively. It was also found that most of the respondents (84 %) had high school-level educational qualifications, and none were illiterate.

Utility Score
As part of the study, the Utility score and their standard errors for each attribute level were calculated, and the values are depicted in the table below (Table 3).

Table 3. Utility Score

Attributes	Levels	Utility Estimate	Std. Error
Brand	AVT	0.159	.024
	KD	0.095	.024
	PP	0.063	.024
Package	PET	0.183	.024
	Tetra Pak	-0.067	.024
	LDPE	-0.115	.024
Price	28	0.143	.036
	32	0.286	.072
Strength	Medium	0.149	.036
	Strong	0.298	.072
	Constant	4.611	.070

Higher utility values indicate a greater preference for the concerned attribute by the consumers. The table depicts that the brand KD had a greater preference among consumers as it has a high utility score of 0.095, followed by the brand PP and AVT, with utility scores of 0.063 and 0.159, respectively. Regarding package, PET package has the highest utility score of 0.183 and followed by Tetra Pak, -0.067. Interestingly, the LDPE had the least preference by the consumers with a least utility score of -0.115. The preference for PET package by consumers might be due to its reusable nature compared to other two packages. To continue, branded tea products with price Rs. 32 and Rs. 28 had the utility scores of 0.286 and 0.143 respectively. So, this indicates that consumers are less bothered about the price differences while purchasing a branded tea. Regarding strength, majority of the consumers prefer strong tea as it has a high utility score of 0.298 followed by medium tea with a utility score of 0.149.

Average Important Score
Table 4 depicts the average importance score of attributes selected for the study. These scores indicate the importance of each attribute to consumers' preferences.

Table 4: Average Importance score

Attributes	Importance Value
Brand	31.084
Package	36.083
Price	11.315
Strength	21.518

From the perusal of Table 4, it is evident that packages followed by brand are the most sought-after attributes that influence the overall consumer preference, as indicated by the importance values. Various studies have asserted the importance of product packaging on purchase intention of packaged tea products (Khuong and Tran, 2018; Shridhar and Shrivastava, 2018). Interestingly, price of the tea was the attribute with least influence. Since the unit price of the standard tea packages were almost comparable with only a slight difference observed among various brands, it might have mostly overlooked by the consumers. According to a study by Ghosh & Ghosh (2013), price is the least important factor that influences customer purchasing decisions, with colour, brand, and brand loyalty coming in second and third. In contrast, findings of Akshaya et al., (2021) pointed a significant role of attributes such as price and sensory factors on the purchase decision of branded tea. Ubeja & Jain (2013) indicated that consumer choice patterns fluctuate over time and are influenced by a variety of characteristics, including brand recognition, brand loyalty, scent, colour, and price, all of which are relevant in the context of this study.

Combination Ranking
Table 5 represents the ranking of 9 attribute level combinations selected under the study.

It was found that among the 9-attribute level combinations, the second combination with brand PP with price of Rs. 32, strong tea and PET package

Table 5: Combination Ranking

Card ID	Brand	Price	Strength	Package	Utility Score	Rank*
1	PP	28	Medium	LDPE	4.851	7
2	PP	32	Strong	PET	5.440	1
3	AVT	28	Strong	Tetra Pak	4.825	8
4	K.D.	28	Medium	PET	5.371	2
5	AVT	28	Medium	PET	4.927	5
6	KD	32	Medium	Tetra Pak	5.073	3
7	PP	28	Medium	Tetra Pak	4.899	6
8	AVT	32	Medium	LDPE	4.772	9
9	K.D.	28	Strong	LDPE	5.032	4

*The rank indicates the customer's preference level for buying a product with the given combination of attributes.

ranked first as it was most preferred by the buyers. The total utility score of this combination is 5.440. At next, the combination of brand KD priced at Rs. 32 with medium strength and PET package ranked second with the total utility score of 5.371

Correlation Coefficient

The study also used the correlation coefficient to find the relationship between the observed and estimated preferences of the consumers (Table 6). The table represents the correlation of the stimulus created in this study. The value of Pearson's R is 0.993, and that of Kendall's Tau is 0.944. With the value being close to 1, a strong relationship is observed between the observed and estimated preferences (Ong et al., 2021; Prasetyo et al., 2014).

Table 6: Correlation coefficients

Correlation coefficients	Values	Significancelevel
Pearson's R	0.993	0.000
Kendall's tau	0.944	0.000
Kendall's tau for Holdout	1.000	0.059

To assess the consistency of the responses, the study also included three holdouts. This results in a Kendall's coefficient for holdouts of 1.000, indicating the high calibre of the data that was gathered.

Conclusion

Tea is the leading beverage consumed by the people across the world. This study integrated the Conjoint Analysis approach to check preference for attributes of packed tea among consumers. 100 tea consumers who regularly purchase packed tea took part in the study, which had nine attribute combinations. Different characteristics including the brand, strength, package and the price levels of branded tea were assessed. The package of the branded tea was found to be the most important factor influencing consumer preference. The findings also revealed optimum attribute combination among the existing tea products in the market. The findings of this study may be useful to the tea marketing firms in the study locale to strategize their market interventions.

Limitations of the study

Because of the COVID-19 pandemic induced restrictions to free movement and interaction, the locale of the study was limited to a Panchayath with 100 respondents. Hence the results of the study are just indicative and not prescriptive and hence cannot be generalized for a larger consumer base. However, we believe that the findings will be signalling the key attribute preferences of the branded tea consumers in a rural setting.

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