International Journal of Psychosocial Rehabilitation, Vol. 23, Issue 01, 2019
ISSN: 1475-7192

Attitude of Millennial's of Bangalore towards Wine and Impact of Pairing Indian Wines with Indian Flavors of Food

M. Thashneem Thaqseen Bhanu and Dr.J.P. Prasanna Kumar

Abstract--- *Karnataka, is a state in the southern part of India and a popular wine producing region of the country. It has 16 wineries producing different types of wines focusing on quality wine making. According to [1], majority of the people in the Karnataka prefer beer and spirits; wine was always the least consumed beverage. According to the Wine Board of Karnataka, the wine consumption has been increased to 178 lakh liter from 13.71 lakh liter in 2007. The reason for this growth in the industry was due to high level income, changing lifestyle and health benefits of wine [2]. In order to increase the future consumption and attract consumers who prefer spirits and beer towards wine, one of the ways is to educate them on wines through wine and food pairing sessions as wine tasting create an impact on the purchase behaviour of consumers [3]. This paper therefore aims to understand the perfect match and level of liking among customers in regards to pairing Indian wines with the flavors of Indian cuisine. The study involved 21 respondents from Bangalore who were between the age group of 21 – 25 years (Millennials) who tasted the wine and food and analysed the wine pairing. The study examined 4 Indian wines which varied in price, colour and brand, namely Brand A - Shiraz, Brand B - Shiraz, Brand A - Sauvignon Blanc and Brand B - Sauvignon Blanc along with Indian Foods Chicken Tikka and Palak Paneer. The findings of the study were: the customers showed high level of liking towards wine and food pairing of Shiraz with Chicken Tikka and Sauvignon Blanc with Palak Paneer, the statistical difference between control and treatment group proved the importance of training on wine tasting, the overall higher level of liking was identified with a lower priced brand which proves that even wine pairing enhances the taste of liking towards wine irrespective of the price and brand. The results of the study could not be generalised for the whole country or state as it only focused on one city and the study has involved only 21 respondents. A future study can be done with more number of respondents and involving different Indian wine varieties along with a 15 minutes olfactory training session before tasting.*

Keywords--- *Indian Wine, Indian Wine – Food Pairing, Millennial Wine Consumption, Karnataka Wines, Olfactory Analysis.*

I. INTRODUCTION

The cuisine of India is famous for its intense flavor and heavy spiced character. Food items come in an array of curries, chutneys, sauces and so on which still makes the flavor profile complex. The other side the wine producing mainly happens in 3 states of the country namely Maharashtra, Karnataka and Himachal Pradesh.

M. Thashneem Thaqseen Bhanu, Faculty of Hospitality Management and Catering Technology, Ramaiah University of Applied Sciences, Bangalore, India.
Dr.J.P. Prasanna Kumar, Director, Admissions, Ramaiah University of Applied Sciences, Bangalore, India.

Received: 14 Nov 2018 | Revised: 23 Dec 2018 | Accepted: 06 Jan 2019

As this study focuses only on Karnataka, it is a state in the southern part of India which has 16 wineries running actively. The Government of Karnataka focuses on increasing the wine consumption in the state and hence established a board named Karnataka Wine Board which monitors the sales and engages in spreading awareness on wines among consumers. As a result, there was an increase from 13.71 lakh liter to 173 lakh liter from 2007 onward. Still the growth is found to be lesser when compared to other wine producing regions of India and other countries. According to the Karnataka State Beverage Control Limited (KSBCL), a government organization which receives the alcoholic beverage from its manufacturers and hands over it to the retailer's, state that the least beverage consumed is wine in Karnataka and the reason being customer's preference towards high alcoholic percentage in spirits and cheap rate of beers. In addition, in spite of wine board's effort on spreading awareness the consumers possess less knowledge on wines [4] and thus become less involved in wines. One of the way to attract consumers toward wine is wine and food pairing and becomes a best marketing tool to draw customer's attention is pairing regional wine with regional food [5]. The purpose of the study is to analyze the perfect wine and food match and examine the level of liking of wine – food pairing among consumers irrespective of wine's extrinsic factors

A. Millennials

In India there is less awareness about wines and the country doesn't follow any wine culture [4]. As the future wine market relies on the millennials, wine culture introduced to them will have an impact on the future wine markets as they are the perspective consumers. The study thus decided to involve millennials and educate them on wine and create a wow dining experience with combining wine with food.

B. Product Knowledge and Priori Tasting

Knowledge of the product is the factor that determines how involved a customer is to the product and how often he/she would involve in purchase of the product. [6] the rating of wine and food pairing would get affected by product knowledge. An idea was developed from this to analyze the difference between conditioned and unconditioned group were the conditioned group would go through a 15 minutes training session on wine and food pairing. Product knowledge plays an important role as it becomes an obstacle for wine marketing as [7] high involved customers purchase more wines as low involved consumers are reluctant on purchasing wines due to the fear of wrong choice. Increased wine knowledge of the customer was said to be the prominent tool in wine marketing [8]. The paper attempted to understand the difference between level of liking of consumers towards wine – food combination in a conditioned and non-conditioned group set up were the conditioned group would be provided knowledge about the product and wine-food pairing.

As there prevails less awareness on Indian wines among customers [4] the conceptual training would help in educating the consumer group as conceptual training had its impact on purchase intention [9].

C. Wine Tasting Session

The Indian wine market has good opportunities for new brands and price being important factor. With more awareness the social acceptance would grow high and so will the demand [4]. The group wine tours and wine tasting sessions increase the wine sales [3]. This may be because the customers are given different types of wines to taste and while tasting they develop a desire towards the wine and thus the taste influences the purchase.

Received: 14 Nov 2018 | Revised: 23 Dec 2018 | Accepted: 06 Jan 2019

D. Taste Profiles &Wines and Food combinations

The fizz level in a sparkling wine was refreshing and cleansing the palate and enhanced the taste when had with bitter and salty food items [10]. Indian cuisine is a flavorsome one and involves taste profiles like spicy, smoky, sauce profile, herbal element and so on. The Indian wine comes with a bouquet of aroma and various characters which can be still more enhanced when combined with the flavorsome cuisine.

Pairing foods with low priced wines can be done and it would be ideal so that it would compete with the beers [11]. This suggestion has taken and study involved a higher priced brand and slightly lower priced brand to prove the liking of wine –food combination irrespective of the price and brand name.

The effect of liking of wine and food influences the liking on its paring[12]. The gap identified was the study didn't involve any complex food and wine elements and the study used 2 wines and 2 food items. To bridge the gap, the proposed study would use 2 types of wines from 2 vineyards and 2 food items and involve complex elements like spicy, smoky, sauce profile and herbal elements.

E. Price

The grape varietal is the most important purchase driver [13]. The gap identified in this paper was that the purchase driver considered was grape varietal and price was not considered, therefore, this research study would involve price.

A study [14] examines whether taster's bias exist in wine tasting between wine guides during evaluation and proved that the bias exists on quality and evaluations. The study didn't involve price as a factor and therefore this study would include price as a factor which might influence the preference of the customers.

Customer's thought on inexpensive red wines and hybrid grapes creates a bias [15]. The gap identified was the study only focuses on inexpensive wines. This paper would bridge this gap by comparing both expensive red and white wines with less expensive wines.

F. Bangalore and Creating Awareness on Wine Consumption

Wine industry is growing fast in India [16]. Karnataka being one of the wine producing region should develop a wine culture among the consumers and the capital of the state, Bangalore being the hub for Karnataka's succession emphasis a research on ways to increase the wine consumption as according to [17] Bangalore can be promoted as a wine tourism destination and so the capital state requires awareness among consumers in the perspective of wine consumption.

II. PROBLEM STATEMENT

As per the preliminary study done with regards to understand the current trends and consumer preference towards wine pairing with Indian cuisine, various star hotels and popular standalone restaurants in Bangalore were contacted. It was understood that expect one hotel (Bene restaurant, Sheraton) which provides exclusive set menu of 4 courses with 3 glasses of pairing wine at the rate of Rs. 2500 for non – vegetarian and Rs. 2000 for vegetarian menu, no other restaurants have any exclusive concept of pairing wines with food.

Received: 14 Nov 2018 | Revised: 23 Dec 2018 | Accepted: 06 Jan 2019

The same would be done if a customer requests. In addition, the customer's request is also very minimal.

According to an interview conducted with the Karnataka State Beverage Control Limited, which is a non-profit Government body which was set to abolish wholesale distribution of liquor and this acts as a middleman between producers and retailers of alcoholic beverages, state that wine is the least consumed beverage as consumers are prone to spirits and beer due to high alcoholic percentage and cheaper price respectively. This is because the unawareness about wines among consumers. This is where knowledge and wine involvement would play a vital role. When the consumers are aware about the wine product that would create some sort of influence over purchase intentions. Knowledge should include the information about grape variety, the taste of wines and how pairing enhances the taste. This would not only boost the wine consumption but also increases the awareness among consumers who would become sensible and loyal wine drinkers.

Also, there are few false marketing done to improve the sale in restaurants. The marketing is done on exclusive wine pairing in different restaurants in Bangalore but when cross checked there is no such exclusive wine – food pairing is done. Therefore, this research paper focussed in proving the importance of pairing Indian wines with Indian foods.

III. RESEARCH APPROACH/ RESEARCH OBJECTIVE

This section connects the problem definition with the literature review and the problem statement being,

Analyzing the level of liking of Millennial customers towards Indian wine when paired with Indian food irrespective of the price and brand of the wine.

Both qualitative and quantitative research method was used. The research questions are as follows:

1. To what extent the wine – food pairing session benefit customers to understand the combination?
2. What would be the influence of priori tasting on wine – food combination?
3. What is the influence of price factor of wine on liking of the wine – food pairing?
4. How does the training session help in pairing particular grape varietal to the taste profiles of food?

The following are the research objectives of the study

- To determine the perfect match and its liking (Shiraz with Chicken Tikka, Sauvignon Blanc with Palak Paneer)
- To identify the impact of training on wine – food pairing
- To analyse the level of liking of wine – food pairing irrespective of the price and brand name

IV. METHODOLOGY

The study involved 21 respondents (group of students) who were between the age group 21 – 25 years, i.e. Millennials who reside in Bangalore. It comprised of 17 men and 4 women. The respondents were divided into 2 groups, namely, conditioned and non – conditioned group. The conditional group consisted of 14 respondents and the remaining were grouped under unconditioned.

The difference between the group was that a 15 minutes training was provided to the conditioned group in regards to tasting of wine using olfactory evaluation. The training involved educating consumers on grape varietal, wine's characteristics, food characteristics and they were explained how to taste both wine and food together to enhance the taste. This was done to determine the importance of training. The study had a wine and food pairing session and the respondents were requested to record their appreciation on a structured questionnaire (Cronbach's $\alpha = 0.9$) after tasting each wine with food. The study involved 4 Indian wines from 2 different vineyards that were made in Karnataka namely, Brand A – Sauvignon Blanc (white) and Shiraz (red) and Brand B - Sauvignon Blanc (white) and Shiraz (red). The brands are mentioned throughout the paper as Brand A and Brand B to maintain confidentiality. The two brands chosen differ in quality and price. The Brand A – Shiraz priced Rs 700 and Sauvignon Blanc Rs. 650. Brand B wines were priced, Rs. 545 for Shiraz and Rs. 495 for Sauvignon Blanc. The pairing foods chosen were Chicken Tikka to match the red wine and Palak Paneer to match with the white wines. The justification of the wine and food pairing is mentioned in Table 1. The respondents were requested not to discuss with each other as that might influence the evaluations. The data collected were statistically tested by using One – way ANOVA, Correlation, Paired t- test and Tukey test using Minitab 18 statistical software.

Table 1: Justification of Wine and Food Pairing

Factors	**Character of Shiraz**	**Character of Chicken Tikka**
Colour	Dark ruby red	Chicken starter where the boneless chicken is marinated with yoghurt and spices and cooked using skewers in the tandoor pot (process of roasting)
Aroma	Spicy and smoky notes	
Palate	Rich and full bodied Spice on the palate Pleasant finish	
Matching Food	Barbequed meat and game Spicy character an ideal accompaniment to Indian Cuisine	
Factors	**Character of Sauvignon Blanc**	**Character of Palak Paneer**
Colour	Brilliant, clear, pale straw yellow	Vegetarian main course consisting of paneer (cottage cheese) cooked in thick paste made from puréed spinach seasoned with garlic, garam masala and other spices
Aroma	Refreshing aromatic, notes of gooseberry, melons, capsicum and savory herbs	
Palate	Refreshing palate, carries the ripe taste of fruit	
Matching Food	Green vegetables, salads, rich fish and seafood dishes, tomato-based sauces and dishes cooked with herbs and vegetables	

V. FINDINGS AND DISCUSSION

Results

Determining the Ideal Wine – Food Match

Brand A's Shiraz with Chicken Tikka

A hypothesis was created and tested with one – way Anova to find out the ideal food and wine match. The result is depicted in Table 2.

Hypothesis

H_0 – There is no significant difference among the customer group in the level of liking while tasting Brand 'A' Shiraz with Chicken Tikka

H_1 - There is a significant difference among the customer group in the level of liking while tasting Brand 'A' Shiraz with Chicken Tikka

Table 2: One – Way Anova Results - Food and Wine Combination Brand A's Shiraz with Chicken Tikka

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Poor	21	2	0.09	0.09
Fair	21	8	0.38	0.24
Good	21	9	0.42	0.25
Very Good	21	2	0.09	0.09
Excellent	21	0	0	0

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	3.08	4	0.77	5.6	0.00	2.46
Within Groups	13.7	100	0.13			
Total	16.8	104				

According to Table 2, there exists a significant difference among the group and thus the null hypothesis is rejected (p value = 0.000>0.05). 43% of the respondents have found the wine and food match to be good. This proves that the ideal match of Brand A's Shiraz with Chicken Tikka.

Brand B's Shiraz with Chicken Tikka

A hypothesis was created and tested with one – way Anova to find out the ideal food and wine match. The result is depicted in Table 3.

Hypothesis:

H_0 – There is no significant difference among the customer group in the level of liking while tasting Brand B's Shiraz with Chicken Tikka

H_1 - There is a significant difference among the customer group in the level of liking while tasting Brand B's Shiraz with Chicken Tikka

Table 3: One – Way Anova Results - Food and Wine Combination Brand B's Shiraz with Chicken Tikka

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Poor	21	0	0	0
Fair	21	4	0.19	0.16
Good	21	8	0.38	0.24
Very Good	21	8	0.38	0.24
Excellent	21	1	0.04	0.04

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	2.70	4	0.67	4.79	0.001	2.462
Within Groups	14.09	100	0.14			
Total	16.8	104				

According to Table 3, the null hypothesis is rejected as the p value (0.001) is lesser than the alpha value (0.05). 38% of the respondents have found the wine and food match to be very good and other 38% of the respondents have mentioned the combination to be good. This proves that the ideal match of Brand B's Shiraz with Chicken Tikka.

Brand A's Sauvignon Blanc with Palak Paneer

A hypothesis was created and tested with one – way Anova to find out the ideal food and wine match. The result is depicted in Table 4.

Hypothesis

H_0 – There is no significant difference among the customer group in the level of liking while tasting Brand A's Sauvignon Blanc with Palak Paneer

H_1 - There is a significant difference among the customer group in the level of liking while tasting Brand A's Sauvignon Blanc with Palak Paneer

Received: 14 Nov 2018 | Revised: 23 Dec 2018 | Accepted: 06 Jan 2019

Table 4: One – Way Anova Results - Food and Wine Combination Brand A's Sauvignon Blanc with Palak Paneer

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Poor	21	2	0.09	0.09
Fair	20	11	0.55	0.26
Good	21	8	0.38	0.24
Very Good	21	0	0	0
Excellent	21	1	0.04	0.05

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	4.68	4	1.17	9.14	0.00	2.46
Within Groups	12.66429	99	0.127922			
Total	17.34615	103				

According to Table 4, result rejects the null hypothesis (there is a significant difference among the group) as the p value is lesser than the alpha value (0.000>0.05). 50% of the respondents have found the wine and food match to be fair and other 36% find the combination to be good. This proves that the ideal match of Brand A's Sauvignon Blanc with Palak Paneer.

Brand B's Sauvignon Blanc with Palak Paneer

A hypothesis was created and tested with one – way Anova to find out the ideal food and wine match. The result is depicted in Table 5.

Hypothesis

H_0 – There is no significant difference among the customer group in the level of liking while tasting Brand B's Sauvignon Blanc with Palak Paneer

H_1 - There is a significant difference among the customer group in the level of liking while tasting Brand B's Sauvignon Blanc with Palak Paneer

Received: 14 Nov 2018 | Revised: 23 Dec 2018 | Accepted: 06 Jan 2019

Table 5: One – Way Anova Results - Food and Wine Combination Brand B's Sauvignon Blanc with Palak Paneer

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Poor	21	3	0.14	0.12
Fair	21	10	0.47	0.26
Good	21	4	0.19	0.16
Very Good	21	4	0.19	0.16
Excellent	21	0	0	0

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	2.51	4	0.62	4.4	0.00	2.46
Within Groups	14.28	100	0.14			
Total	16.8	104				

According to Table 5, result rejects the null hypothesis and the p value is lesser than the alpha value (0.002>0.05). 48% of the respondents have found the wine and food match to be fair and one of the 19% find the combination to be good and other 19% state it to be very good. This proves that the ideal match of Brand B's Sauvignon Blanc with Palak Paneer.

Determining the Level of Liking of Wine – Food Pairing Among the Groups

Food and Wine Combination – Shiraz (Brand 'A' and Brand 'B') with Chicken Tikka – A Comparison between two Brands

A hypothesis was created and tested with a paired t – test done to find out the level of liking of food and wine match (Shiraz and Chicken Tikka) in comparison of wines from two vineyards, i.e., Brand A and B as they differ in terms of quality. The result is depicted in Table 6.

Hypothesis

H_0 – There is no significant difference among the customer group in the level of liking while tasting Brand A's Shiraz with Chicken Tikka in comparison with Brand B's Shiraz with Chicken Tikka

H_1 - There is a significant difference among the customer group in the level of liking while tasting Brand A's Shiraz with Chicken Tikka in comparison with Brand B's Shiraz with Chicken Tikka

Received: 14 Nov 2018 | Revised: 23 Dec 2018 | Accepted: 06 Jan 2019

Table 6: Paired t – test Results for Food and Wine Combination (Shiraz - Brand 'A' and Brand 'B' with Chicken Tikka)

t-Test: Paired Two Sample for Means

	Brand A - Shiraz	*Brand B– Shiraz*
Mean	3.09	3.28
Variance	1.09	0.71
Observations	21	21
Pearson Correlation	-0.14	
Hypothesized Mean Difference	0	
Df	20	
t Stat	-0.60	
P(T<=t) one-tail	0.27	
t Critical one-tail	1.72	
P(T<=t) two-tail	0.55	
t Critical two-tail	2.08	

According to Table 6, result accepts the null hypothesis as the p value is greater than the alpha value (0.55>0.05). As the group behaved similarly, this proves that the liking of the wine and food combination that is Shiraz wine with Chicken Tikka was similar irrespective of the quality, brand and price of wines.

The match of Brand B's Shiraz pairing (Mean = 3.29) was liked more than the Brand A's Shiraz pairing (Mean = 3.10) as per the mean value. The similarity between the groups states that Chicken Tikka was an ideal pair for the Shiraz red wine and thus accepting the null hypothesis (Group A = Group B = Group C).

Food and Wine Combination – Sauvignon Blanc (Brand A and Brand B) with Palak Paneer

A hypothesis was created and tested with a paired t – test was done find out the level of liking of food and wine match for Sauvignon Blanc from 2 different vineyards with the pairing of Palak Paneer. The Table 7 depicts the results.

Hypothesis:

H_0 – There is no significant difference among the customer group in the level of liking while tasting Brand A's Sauvignon Blanc with Palak Paneer in comparison with Brand B's Sauvignon Blanc with Palak Paneer

H_1 - There is a significant difference among the customer group in the level of liking while tasting Brand A's Sauvignon Blanc with Palak Paneer in comparison with Brand B's Sauvignon Blanc with Palak Paneer

Received: 14 Nov 2018 | Revised: 23 Dec 2018 | Accepted: 06 Jan 2019

Table 7: Paired t – test Results for Food and Wine Combination (Sauvignon Blanc (SB) - Brand A and Brand B with Palak Paneer)

t-Test: Paired Two Sample for Means

	Brand A - SB	*Brand B– SB*
Mean	2.619	2.333
Variance	1.348	0.533
Observations	21.000	21.000
Pearson Correlation	0.216	
Hypothesized Mean Difference	0.000	
Df	20.000	
t Stat	1.064	
P(T<=t) one-tail	0.150	
t Critical one-tail	1.725	
P(T<=t) two-tail	0.300	
t Critical two-tail	2.086	

The null hypothesis has been accepted (Group A = Group B = Group C) as the groups behaved similarly and the p value was greater than the alpha value (0.30> 0.05). The similar behaviour among the groups proves that the liking towards the pairing of Sauvignon Blanc and Palak Paneer was similar irrespective of the brand, price and quality of the wine.

The Brand A wine pairing (Mean = 2.62) was liked the most than Brand B wine pairing (2.33) as per the mean value. As the preferences are found to be equal the pairing of Palak Paneer and Sauvignon Blanc proves to be the ideal match. The preference analysis of the wine match in both Shiraz and Sauvignon is depicted in Table 7.

Preference of the Customers in the Perspective of Wine Food Combination

A one – way ANOVA (Table 8) and Tukey's HSD test (Table 9) was done to test the hypothesis to determine the preference towards the given food and wine combination.

Hypothesis:

H_0 – There is no significant difference among the customer group in the level of liking towards the wine – food pairing

H_1 - There is a significant difference among the customer group in the level of liking towards the wine – food pairing

Received: 14 Nov 2018 | Revised: 23 Dec 2018 | Accepted: 06 Jan 2019

Table 8: One – way ANOVA Results for the Preference of Wine Match

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Brand As - Shiraz	21	65	3.10	1.090
Brand B- Shiraz	21	69	3.29	0.714
Brand As - SB	21	55	2.62	1.348
Brand B- SB	21	49	2.33	0.533

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	11.952	3.000	3.984	4.324	0.007	2.719
Within Groups	73.714	80.000	0.921			
Total	85.667	83.000				

Table 9: Tukey's HSD Test Result – Preference towards Wine and Food Combination

Tukey HSD
HSD[.05]=0.78; HSD[.01]=0.95
M1 vs M2 non-significant
M1 vs M3 non-significant
M1 vs M4 non-significant
M2 vs M3 non-significant
M2 vs M4 P<.01
M3 vs M4 non-significant
Brand A Shiraz = 27%
Brand B Shiraz = 29%
Brand A SB = 23%
Brand B SB = 21%

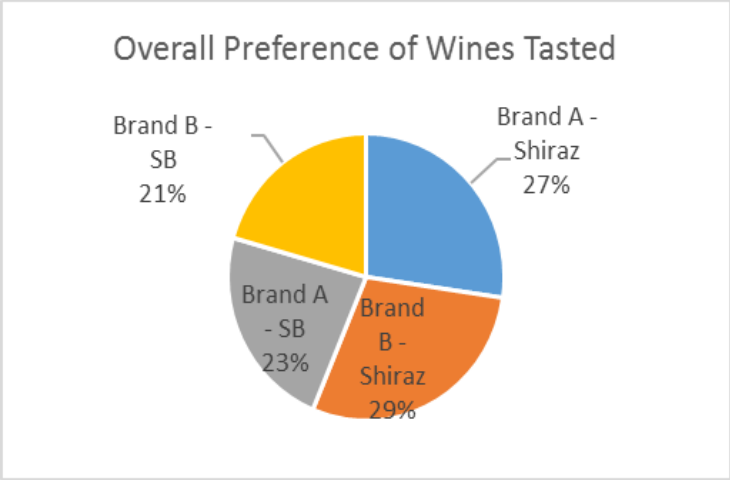

Figure 1: Comparison of Mean Values of Wine and Food Combination Preferences

The null hypothesis is rejected (Table 8) and proves a statistical difference among the groups as the p value is lesser than the significant value (0.01> 0.05). This proves there was difference in the overall liking of the wine – food pairing.

A Tukey's HSD test was done to identify where the difference exists (Table 9). The Tukey's HSD test result reveals a significant difference between Brand B Shiraz and Brand B Sauvignon Blanc pairing. Brand B Shiraz pairing had a highest mean of 3.29, followed by Brand A's Shiraz with the mean value of 3.10, then comes Brand A's Sauvignon Blanc with a mean of 2.62 and Brand B Sauvignon Blanc with 2.33 mean value.

The red wine pairing was preferred more when compared to the white wine pairing. The comparison of the mean is portrayed in Figure 1.

Inference

The results prove that the Brand B's Shiraz was liked more by the customers. When compared Brand B with Brand A, it is less popular and less priced. This finding hereby proves that the wine and food pairing can enhance the taste and flavour of the wine irrespective of the price, brand and quality.

Comparison of Treatment and Control Group

In regards to determine the effect of training on wine evaluation, the study involved a treatment group and control group. For analysing the same each pairing involved the two different groups and to test the hypothesis statistically a paired t –test was done. The results are portrayed in Table 10 and Table 11.

Hypothesis:

H_0 – There is no significant difference among the treatment and control group in wine – food pairing

H_1 - There is a significant difference among the treatment and control group in wine – food pairing

Received: 14 Nov 2018 | Revised: 23 Dec 2018 | Accepted: 06 Jan 2019

Table 10: Paired t – test Results – Comparison of Treatment and Control Group on Wine Evaluation (Brand A and Brand B Sauvignon Blanc Pairing with Palak Paneer)

t-Test: Two-Sample Assuming Unequal Variances

Brand A - Sauvignon Blanc and Palak Paneer	*Treatment Group*	*Control Group*	*Brand B- Sauvignon Blanc and Palak Paneer*	*Treatment Group*	*Control Group*
Mean	3.07	1.71	Mean	2.57	1.85
Variance	1.30	0.23	Variance	0.41	0.47
Observations	14.00	7.00	Observations	14.00	7.00
Hypothesized Mean Difference	0.00		Hypothesized Mean Difference	0.00	
Df	19.00		df	11.00	
t Stat	3.8		t Stat	2.28	
P(T<=t) one-tail	0.001		P(T<=t) one-tail	0.02	
t Critical one-tail	1.72		t Critical one-tail	1.79	
P(T<=t) two-tail	0.001		P(T<=t) two-tail	0.04	
t Critical two-tail	2.093		t Critical two-tail	2.201	

Table 11: Paired t – test Results – Comparison of Treatment and Control Group on Wine Evaluation (Brand A and Brand B Shiraz Pairing with Chicken Tikka)

t-Test: Two-Sample Assuming Unequal Variances

Brand A - Shiraz and Chicken Tikka	*Treatment Group*	*Control Group*	*Brand B- Shiraz and Chicken Tikka*	*Treatment Group*	*Control Group*
Mean	3.50	2.28	Mean	3.00	3.85
Variance	0.57	1.23	Variance	0.76	0.14
Observations	14.00	7.00	Observations	14.00	7.00
Hypothesized Mean Difference	0.00		Hypothesized Mean Difference	0.00	
Df	9.00		df	19.00	
t Stat	2.60		t Stat	-3.12	
P(T<=t) one-tail	0.01		P(T<=t) one-tail	0.00	
t Critical one-tail	1.83		t Critical one-tail	1.72	
P(T<=t) two-tail	0.02		P(T<=t) two-tail	0.00	
t Critical two-tail	2.26		t Critical two-tail	2.09	

As stated in Table 10, the p value of both Brand A and Brand B Sauvignon Blanc pairing is lesser than the alpha value (Brand A - 0.001 <0.05 and Brand B– 0.043 < 0.05), a significant difference between the conditioned and unconditioned group is evident. So the null hypothesis is rejected and hence treatment group ≠ control group.

As stated in Table 11, the p value of Shiraz (both Brand A and Brand B) pairing is lesser than the alpha value (Brand As - 0.029 < 0.05 & Brand B– 0.006 < 0.05) and hence rejects the null hypothesis and proves a significant difference, i.e., treatment group ≠ control group.

Therefore, the significant difference proved between the treatment and control groups proves the effect of training on wine evaluation and thus justifies the need of training.

VI. CONCLUSION

Wine knowledge and wine appreciation were proved to be the best tools to market wine [8]. Based on this, the study aimed to pair Indian wines with Indian food and analyse the liking of customers in the perspective of wine pairing. The study targets the Millennials between the age group 18 – 25 years and since the legal drinking age in Karnataka is 21 years the study used involved only respondents between 21 to 25 years. The group of millennial were focussed as they constitute the future wine market and anything changes done now would have a great impact on the wine consumption in the future. The millennials of Karnataka highly prefer beer and spirits and wine is a least consumed beverage [1]. This paper attempted to understand whether the level of liking towards Indian wines would be high when the same is paired with Indian cuisine. The findings of the study prove the ideal match of Shiraz wine with Chicken Tikka and Sauvignon Blanc with Palak Paneer. The groups behaved similar while tasting the wine pairing of wines from 2 different vineyards and the level of liking was found to be high. Therefore, answering to the research questions: the wine and food pairing session has proved the level of liking among customers and the groups behaved similar among themselves, priori tasting has proved that irrespective of the extrinsic aspects of the wine and the intrinsic aspect was given more priority by the respondents, the price had no influence on the tasting and liking of the wine food pairings, as the Brand B- Sauvignon Blanc with Palak Paneer pairing was liked more in comparison with other wine pairings irrespective of the cheap price of the wine, the training session found to be more effective as the groups which had a training of 15 minutes before the wine pairing session was able to enjoy and like the pairing more than the unconditioned group.

VII. CONTRIBUTIONS TO THE LITERATURE

Therefore, from the study the following are identified:

The study has tested and analysed the right pair of wine with food in the perspective of Indian wine and cuisine. The study involved 2 types of wines from 2 vineyards of Karnataka. The ideal match of wine and food has been proved by this study. The match of Brand A's Shiraz and Chicken Tikka was found to be good by the respondents (p value = 0.000, Table 2). The combination of Brand B's Shiraz and Chicken Tikka found to very good (p value = 0.001, Table 3). The pairing of Palak Paneer with Brand A's Sauvignon Blanc (p value = 0.000, Table 4) and Brand B's Sauvignon (p value = 0.002, Table 5) was found ideal as the respondents rated it to be fair.

A comparison was done in the level of liking of wine pairing with the respective food items as the study involved wines from 2 different wineries, both the Shiraz from Brand A (p value = 0.02 and Mean – 3.50) and Brand B (p value = 0.006 and Mean – 3.00) went along well with Chicken Tikka.

The Sauvignon Blanc from Brand A (p value = 0.001 and Mean – 3.07) and Brand B (p value = 0.04 and Mean – 2.57) were found to be liked by all the respondents as they behaved in a similar way in terms of liking the wine and food match.

The study involved high and low priced wines to understand whether the price influences the liking towards wine and food pairing among customers. The findings prove that the respondent's overall liking was toward the Brand B Shiraz pairing with Chicken Tikka (p value = 0.007, Table 8) though Brand B was a low priced wine in comparison to others wines involved in this study. This proves that the extrinsic factors will not influence the liking towards wine and food pairing. The findings of the study tested the food flavors like spicy, smoky, sauce profile and herbal element which is an improvisation when compared to [10] which tested the food flavors of bitterness and saltiness.

The effect of training is proved in this study as the findings prove a difference between conditioned and unconditioned group (p value = 0.001, Table 10 and 0.02, Table 11). The finding hereby fills the gap of [9] where a 25 minutes conceptual training was provided which will not to suit in a restaurant set up. The conditioned group were given a conceptual training for 15 minutes in regards to olfactory evaluation and pairing of wines and the effect of training has been proved positive.

The findings of the study can be practiced in a restaurant set up and in winery tours as this would increase the level of liking towards Karnataka wines among the consumers. This would make a wow dining experience for the customers as the combination enhances the taste and flavor of both wine and food irrespective of the price and quality of wines. The findings of the study can be used to sketch a marketing plan by the wineries and restaurants and would help to overcome the ban on alcoholic advertisement in India. A 15 minutes training session would create an impact and enhance the taste and dining experience which would probably make a customer to choose for a wine – food pairing in the next visit to the restaurant and thus turning the millennials to be some loyal wine consumers in the future. In a nutshell, the findings of the study would help the restauranteurs, wine marketers and wineries to boost the sale of wines by enhancing the taste of wine and food and spread awareness through the training session and implementing wine – food pairing to create high level of satisfaction among consumers.

VIII. LIMITATIONS

The limitations of the study are it involves a smaller sample size of 21 respondents as a future study can be done with a bigger sample size. The study involved only Millennials between the age group of 21 – 25 years and the results would vary if all age group are involved. The results of the study could not be generalised as it focusses only one city in Karnataka, that is, Bangalore and involved only 2 types of wines from 2 vineyards of Karnataka and the study involved 2 Indian food items only.

IX. SCOPE FOR FUTURE RESEARCH

The findings of the research give way to future study as well. The level of liking of wine and food pairing was not found to be excellent by the respondents and this may be due to involving unconditioned group which never received any sort of training of tasting and paring of wines.

A future study can be done to analyse the same and providing a 15 minutes olfactory training session to all the respondents as this might definitely show a varying result. A further study can be done with more number of respondents with more number of wines and pairing food items.

REFERENCES

[1] T. Bhanu and P. Kumar, "Impact of measure and time of wine on quality wine -food pairing," *in 7th Asia Euro Conference*, 2018.
[2] R. V. R. Raghuramapatruni and Reddy, "Indian Wine Industry: A Study," vol. 1, no. 1, 2011.
[3] F. N. Ho and M. P. Gallagher, "The Impact of Wine Tasting on Wine Purchases: Evidence from Napa, California," *Int. J. Wine Mark.*, vol. 17, no. 1, pp. 44–53, 2005.
[4] R. . Srivastava, "Perception Study of Wine MarketCulture of an Emerging Market-India-Will it Emerge from Infant to Growth Stage?," *J. Hotel Bus. Manag.*, vol. 03, no. 01, pp. 1–6, 2013.
[5] A. Duarte Alonso, A. Bressan, M. O'Shea, and V. Krajsic, "Educating winery visitors and consumers: An international perspective," *Curr. Issues Tour.*, vol. 17, no. 6, pp. 539–556, 2014.
[6] S. E. P. Bastian, C. M. Payne, B. Perrenoud, V. L. Joscelyne, and T. E. Johnson, "Comparisons between Australian consumers' and industry experts' perceptions of ideal wine and cheese combinations," *Aust. J. Grape Wine Res.*, vol. 15, no. 2, pp. 175–184, 2009.
[7] D. Roe and J. Bruwer, "Self-concept, product involvement and consumption occasions," *Br. Food J.*, vol. 119, no. 6, pp. 1362–1377, 2017.
[8] A. D. Alonso, "Wine Cellar Experiences in the Southeastern United States: Educating the Winery Visitor on Muscadine Wines," *J. Foodserv. Bus. Res.*, vol. 17, no. 1, pp. 1–18, 2014.
[9] K. A. LaTour, M. S. LaTour, and A. H. Feinstein, "The Effects of Perceptual and Conceptual Training on Novice Wine Drinkers' Development," *Cornell Hosp. Q.*, vol. 52, no. 4, pp. 445–457, 2011.
[10] R. J. Harrington and R. Hammond, "The impact of wine effervescence levels on perceived palatability with salty and bitter foods," *J. Foodserv. Bus. Res.*, vol. 12, no. 3, pp. 234–246, 2009.
[11] S. Kim and B. Lecat, "An Exploratory Study to Develop Korean Food and Wine Pairing Criteria," *Beverages*, vol. 3, no. 3, p. 40, 2017.
[12] R. J. Harrington and H.-S. Seo, "The Impact of Liking of Wine and Food Items on Perceptions of Wine–Food Pairing," *J. Foodserv. Bus. Res.*, vol. 18, no. 5, pp. 489–501, 2015.
[13] E. S. King, T. E. Johnson, and S. E. P. Bastian, "Consumer liking of white wines: segmentation using self-reported wine liking and wine knowledge," *Int. J. Wine Bus. Res.*, vol. 24, no. 1, pp. 33–46, 2012.
[14] S. Castriota, D. Curzi, and M. Delmastro, "Tasters' bias in wine guides' quality evaluations," *Appl. Econ. Lett.*, vol. 20, no. 12, pp. 1174–1177, Aug. 2013.
[15] K. Peterson, "The Snob Effect of Red Wine: Estimating Consumer Bias in Experimental Blind Wine Tastings," *Am. Econ.*, vol. 59, no. 1, pp. 76–89, 2014.
[16] S. S. Gawande, P. Shukla, and A. A. Mishra, "Study on Wine Policies, Regulations and Standards in Maharashtra, India," vol. 1, no. 2, pp. 12–22, 2017.
[17] D. N. S. Kumar, "of Recent Scientific Research Article Impact of Quality Factors and Internal Factors in the Buying Decisions of Wine Patrons : Critical Factor in Bench Marking Wine Tourism Development and Management 1092 | P a g e," vol. 5, pp. 1091–1097, 2014.