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UNCW BAN 530 APPLICATIONS IN BUS ANALYTICS

Market Saturation Report on Restaurants in

Bengaluru (aka Bangalore), India

## Objectives –

* Examine Types of restaurants in the area by city using JMP’s Text Explorer.
  + By Restaurant Types:
    - What is the most common Cuisine in each city location?
    - What are the most liked dishes in each city location?

## Predictive Analytics – What should new restaurants offer?

### **A close-up of words Description automatically generatedReviews about Bengaluru, Overall**

Figure 1 WordCloud created by JMP’s Text Explorer

* + Using JMP’s Text Explorer tool, we can comprehensively look at the Customer’s Reviews through a data mining viewpoint. Looking at the WordCloud above, it is easy to see that customers like to have **great service** by **staff** at their **restaurants**, **friendly ambience** and they really love their **chicken biryani**! However, you can also see the other cuisines creep in such as **pizza**, **fish**, **burgers**, and **cakes**. Looking closer at the Term and Phrase lists detailed in Figure 2, you can see how many more times chicken is mentioned (406,157 times) compared to pizza (132,926 times), which denotes its popularity in Bengaluru. Looking on the right of Figure 2, you can see a couple of the Chinese cuisine’s favorite dishes, Fried Rice, and Chicken Wings, as well as a few other popular dishes: Chicken Biryani, Butter Chicken, Peri Peri Chicken and even French Fries.A screenshot of a computer

    Description automatically generated

Figure 2 Term and Phrase Lists detailed by JMP’s Text Explorer

### **Reviews about Cuisines by City Location –** using JMP’s Text Explorer Tool

* + **A screenshot of a menu

    Description automatically generatedBuffet** cuisines popularity can be summarized by 4 cuisines: Indian, Continental, Chinese, and Italian. Indian dishes would be those native to Bengaluru such as Chicken Biryani, Butter Chicken, or Peri Peri Chicken. Continental Foods would be European dishes such as French Toast, Chicken Sandwiches, Pancakes, Caesar Salads, and Burgers[[1]](#footnote-1). Chinese cuisines are always blending with other cultures which inspire dishes such as Bangalore Mandarin, sweet corn soup, the Chinese Rice Pot, Chili Chicken, and Cantonese Noodles[[2]](#footnote-2). Italian dishes can also be very savory with pumpkin and ricotta filled tortellini called Tortelli di Zucca, cooked lamb ragu called Pappardelle al Ragu di Agnello, or a flavorful chicken dish known as Pollo Piccata[[3]](#footnote-3). What ties these cuisines together is the freshness of their local ingredients. In Figure 3, you can see the Lavelle and Residency Road locations both prefer Indian Chinese cuisines.

Figure 3 Buffet Cuisines by City Location

* + **A screenshot of a menu

    Description automatically generatedCafés** serve a variety of light dishes such as soups, salads, and often cater to a certain group of customers like vegetarians[[4]](#footnote-4). In figure 4 to the left, it can be clear that Bengaluru likes a variety of cafes. The most popular cuisine is still the Continental foods, but it also prefers an Italian flare to its cafes such as the Onesta franchises with about 85 locations. From looking at the overall Reviews above, this is probably where the love of pizza shows through. It is very easy to appeal to travelers with pizza as it can be topped with vegetarian toppings or even cut-up Butter Chicken. In Figure 4, Lavelle and Residency Road are shown as agreeing with most City locations in their love for Continental Italian Café cuisines and probably pizza.
  + **A close-up of a logo

    Description automatically generatedDelivery** cuisine is a new and growing category in Bengaluru and around the world thanks to the Covid-19 pandemic. Third party businesses are providing chefs with smart kitchens and order processing software which allow these chefs to utilize their talents in the kitchen without being overwhelmed by the business aspects[[5]](#footnote-5). One example is the American Food Hall concept where businesses can go from Food trucks to serving dishes where all they need are a few people to cook their wide variety of cuisines and someone to run the cash register and everything else is handled by the Food Hall employees. From there, the Food Hall or delivery service like Door Dash can take the prepared foods to the customer themselves, all while making it so the customer does not have to be in public yet receives fresh, high-quality meals at home or work. This concept allows multiple chefs with different cuisines to be in the same building and gives the customers more choices in one location. This type of third-party service is most often seen in urban areas with enough customers for the third-party businesses to thrive and it is almost non-existent in rural settings for lack of customers to drive its profit margins up. In Bengaluru, almost every City Location loves the Indian Chinese cuisine, including Lavelle and Residency Road as shown in the WordCloud of Figure 5.

Figure 5 Delivery Cuisines by City Location

Figure 4 Cafes Cuisines by City Location

* + **Dine Out** is somewhat the opposite of delivery in that it means the customer goes to the restaurant and is served by employees who help create the friendly ambience in the overall reviews. It is not a cuisine in and of itself but a category of Type of Restaurant. It shares the same love of Chinese and Indian food that the Delivery Type exhibits. Only the Whitefield City Location included Continental in addition to Indian as its most popular cuisine.
  + **A screenshot of a menu

    Description automatically generatedDessert’s** cuisines were most popular as having a Bakery, Ice Cream, with Indian foods and Beverages. In the Bakery cuisines, Bengaluru has its share of restaurant chains such as Dunkin-Donuts, Krispy Kreme, Baskin-Robbins, and Corner House Ice Cream, but it also has world cuisines such as French pastries from Lamara Patisserie, Smoor Chocolates, and Glen’s Bakehouse’s famous cupcakes. The overall look at the Dessert cuisine in Figure 6 shows that in addition to Baked goods and Ice Cream, having yummy beverages is a winner, too!

A screenshot of a computer

Description automatically generated Earlier on when looking at the Top 15 Dessert restaurants in Bengaluru, it was noticed that Lavelle and Residency Roads were number 12 and 13, respectively, out of 30 City Locations. So, they did not have the most nor the least of this type of Restaurant. When filtering Bakery and Ice Cream in the Dessert cuisine with the locations of Lavelle and Residency Road (see Figure 7), there are minimal restaurants that show up. This means that this is an underserved cuisine type despite the overall popularity in these locations.

Figure 6 Dessert Cuisines by City Location

Figure 7 Dessert Cuisines having Bakery or Ice Cream in Lavelle and Residency Road locations.

* + **A chart with green dots and black dots

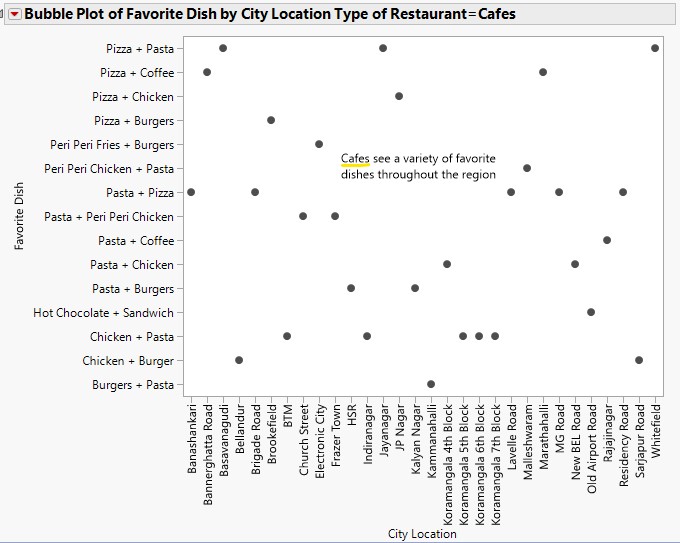
    Description automatically generated with medium confidenceDrinks & Nightlife** plus **Pubs & Bars** have been combined as the Pubs and Bars chart (see Figure 8) has very similar information, however, it only shows the 17 city locations that are listed with the Pubs and Bars cuisines. The most popular cuisine is Indian + Continental much like the Delivery and Dine Out Types of Restaurants above. Yet, these Types of Restaurants bring in an additional category, Finger Foods. Some examples of this include Nachos or French Fries covered in cheese or spicy toppings as well as Chicken Wings or Chips with Salsa. Additionally, there were some drinks offered at these locations which include cocktails and mocktails as well as beer or wine.

Figure 8 Drinks & Nightlife Cuisines by City Location

**Summary of Cuisines by City Location** – Buffets, Delivery, and Dine Out cuisines all have Indian + Chinese cuisines listed as the most popular in most of their city Locations. These foods include Chicken dishes such as Chicken Biryani, Butter Chicken, and Fried Rice. Cafés add in Italian + Continental as a preference which includes Salads, Soups and Pizza. Desserts have a large variety of sweet goods but shows that the people of Bengaluru love their Bakeries with Ice Cream! The Drinks, Nightlife, Pubs and Bars sector enjoy the Continental foods plus finger foods so be sure to have their Sandwiches and other finger foods like chicken wings ready to snack on with their Chili Chicken French Fries!

When focusing on Lavelle and Residency Road locations specifically, their popular cuisines agree with the overall Bengaluru taste preferences with Buffets, Cafes, Delivery, Dine Out and Desserts. However, they have very little Dessert restaurants with Bakeries and/or Ice Cream cuisines. They also have few Drinks and Nightlife Locations while having no Pubs or Bars listed in this Dataset. Since Alcohol is getting more expensive, a focus should be put on Dessert restaurants.

### **Customer’s Favorite Dishes by City Location** – There were so many favorite dishes that R Studio was challenged to create factors to analyze so Data Mining was the best way to organize and view summaries on favorite dishes.

* + A chart with different colored dots

    Description automatically generatedBuffets have many favorite dishes as they hold many different types of foods in one location. When asked about their favorite dishes, customers listed Chicken and Biryani in multiple places. It is important to note that Biryani is not always a chicken dish as it can be made with chicken, mutton (sheep), fish, or even kept as a vegetarian dish. However, chicken dishes kept coming up as favorite dishes which includes chicken pizzas, chicken fried rice, or even chicken sandwiches. Buffets also showed their popularity as a breakfast choice in Figure 9 which includes the continental cuisine such as French Toast or Pancakes. In Lavelle and Residency Road locations, a salad buffet was popular as whereas biryani dishes.

Figure 9 Favorite Dishes in Buffets by City Location

* + Cafés have a large variety of liked dishes as well. The Italian side shows up in the love for pizza and pasta throughout the chart in Figure 10. Yet, the data points in that chart show the wide range of tastes that customers have in cafes. Burgers, Chicken, Coffee, and even Hot Chocolate show up to go with the Italian Fare. Even though there are generally less Cafes than there are Dessert locations in Bengaluru, it may be because it is hard to specialize in cafes with so many favorite dishes in cafes. Without a specialty, it would be hard to attract new customers to your restaurant.

Figure 10 Favorite Dishes in Cafés by City Location

* + A screenshot of a menu

    Description automatically generatedDelivery plus Dine Out favorite Dishes both showed that Indian cuisine held their favorite Dishes. Chicken Biryani is the most popular of 27 of the 30 city locations. Rajajinagar enjoys its Masala Dosa as Banashankari and Basavanagudi enjoy their Dosa dishes. The Chinese cuisine did not show up under favorite dishes even though it was the second most favorite cuisine. Bengaluru residents clearly like the dishes of their own country more than the quick Chinese dishes. Lavelle and Residency Road again agree with the most popular dishes being Chicken and Biryani.

Figure 11 Favorite Dishes in Dine Out by City Location

A screenshot of a menu

Description automatically generated

* + Favorite dishes in Desserts have almost as many different favorites as Cafés. Chocolate, Ice Cream and Cake seem to be the favorites in Bengaluru. Chocolates can include brownies, fudge, artisan chocolate, and chocolate ice cream. Ice Cream can be Italian gelato, frozen custard, or milk-based ice cream. Cows are very political in Bengaluru as “the state’s overall milk production has increased 20-30 percent in the past two decades”[[6]](#footnote-6), but the Karnataka Prevention of Slaughter and Preservation of Cattle Act of 2020 creates difficulties for dairy farmers who only utilize milking cows for a certain number of years before turning them over. Ice Cream can utilize other milks such as coconut milks and can be made without milk in sorbets and other frozen delights. As Figure 12 shows, Lavelle and Residency Roads locations follow the trend of enjoying their ice cream and Chocolate goods. Perhaps a focus more on baked goods with chocolate would be a starting point for a new business with Ice Cream added later, after the politics with slaughtering cows has calmed down.

Figure 12 Favorite Dishes in Desserts by City Location

* + A screenshot of a menu

    Description automatically generatedDrinks & Nightlife plus Pubs & Bars are yet again combined as only 16 City locations gave feedback on favorite dishes in Pubs & Bars and the results were similar to Drinks and Nightlife. As shown previously, these favorite dishes had wide variety to them, but they often included Cocktails and Beer. Also, not shown in Figure 13, are the popular Mocktails which contain no alcohol but are like well-known cocktails such as a Virgin Strawberry Daiquiri or a Shirley Temple. If you do go out at Night and enjoy some drinks, there is likely a good Long Island Iced Tea or Mint-based Mojito being offered. Again, some form of chicken dish would be a good pairing for your cocktail, or you might like some pizza or nachos. If Cocktails are too fancy for you, there is a growing popularity of craft beers, locally sourced at local microbreweries. In Lavelle and Residency Road locations, they too enjoy cocktails and chicken menu items at their Nightlife locations.

Figure 13 Favorite Dishes in Drinks & Nightlife by City Location

**Summary of Favorite Dishes by City Location** – Buffets, Cafés, and Desserts all have a wide variety of favorite dishes amongst their city Locations. This amounts to city locations not having a specialty that they’re known for as far as favorite dishes. Buffets had a common theme of Chicken and/or Biryani, Cafés should have pizza and pasta while Dessert’s restaurants should have chocolate, and cake with their Bakery and Ice Cream selections. Delivery and Dine Out restaurants should emphasize their home-cooked Indian cuisine over their quick and inexpensive Chinese food choice. Restaurants with Drinks, Nightlife, Pubs or Bars should offer a variety of alcoholic and non-alcoholic cocktails or craft beer with their chicken and finger food options.

## Predictive Analytics Summary – What should new restaurants offer?

## As Lavelle and Residency Road locations have very few Café and Dessert focused restaurants, it is recommended that the focus be given to the Dessert Type of Restaurant at one or both locations as they appear of equal value. A café presents difficulty in finding a specialty cuisine and there are too many different styles to choose from. This would result in difficulty branding a new restaurant. When focusing on the Dessert menu, a primary focus on Italian Bakery foods would be best as Ice Cream should be offered as an addition after the Cow Slaughtering Act of 2020 has calmed down, politically. Instead, an offering of chocolate brownies, cakes, and/or artisan chocolates should be offered.

1. <https://timesofindia.indiatimes.com/life-style/food-news/what-is-continental-food-7-continental-dishes-we-are-in-love-with/photostory/84287887.cms?picid=84287895> [↑](#footnote-ref-1)
2. <https://bangaloremirror.indiatimes.com/bangalore/others/veeragallus-is-home-but-not-yet/articleshow/69995680.cms> [↑](#footnote-ref-2)
3. <https://www.slurrp.com/article/love-italian-check-out-the-top-10-restaurants-in-bengaluru-1681452881616> [↑](#footnote-ref-3)
4. <https://lbb.in/bangalore/this-italian-cafe-in-race-6c1013/> [↑](#footnote-ref-4)
5. <https://ikcon.josequal.net/> [↑](#footnote-ref-5)
6. <https://timesofindia.indiatimes.com/city/bengaluru/dairy-farmers-may-prefer-to-rear-buffaloes-say-experts/articleshow/80868163.cms> [↑](#footnote-ref-6)