SWIGGY

FOOD DELIVERY APP

SWIGGY ANALYSIS

Task 1: Top 10 Areas with Most Restaurants

Area	Count
Rohini	257
Chembur	209
Kothrud	149
HimayatNagar	147
Andheri East	135
Navrangpura	132
Indiranagar	130
Kurla	130
Koramangala	125
Shivajinagar	124

Method: After Data Cleaning, the entire table was selected, and Pivot was inserted to the table. By keeping Area is the row's column and Restaurants in the Value column I could get the count of restaurants in each area. By filtering through larger number first, I could get the list of Top 10 restaurants in each area.

Task 2: Most Popular Food Types Served by Swiggy Restaurants in Each City

Here are the most popular food types served by restaurants in each city according to the dataset:

- Bangalore: South Indian
- Hyderabad: South Indian
- Mumbai: Chinese
- Pune: Chinese
- Kolkata: Indian
- Delhi: North India
- Chennai: Indian
- Ahmedabad: Indian
- Surat: Fast Food

Method: By using Pivot, Keeping City is the row's column and Food type in the Value column I get the count of food type in each city. By individually clicking each row I got the list of food types in each city. By using the 'countif' function I could get the list of repeated food type in each city, of which the most popular food type in each city was calculated.

Task 3: Top Rated Swiggy Restaurants (In Percentage)

I have calculated the restaurants which are above the rating value of 4.5. Before arriving to the average value, I have added a new column to the sheet names "Weighted average" as it also takes in account of the number of rating for each such restaurants, where of the list 38 restaurants where above the mentioned rating out of 8680 restaurants

% Calculation = (38/8680) *100 = 0.43%

Task 4: Correlation of Factors Affecting Average Rating

Average Rating vs Delivery Time

Correlation	Column 1	Column 2
Column 1	1	-0.161
Column 2	-0.161	1

A correlation value of -0.161 between delivery time and average ratings of restaurants indicates a weak negative correlation. Hence, we can conclude,

1. Restaurants with longer delivery times have lower ratings, but the relationship needs to be more robust to make definitive conclusions.
2. The negative sign indicates that when delivery time increases, average ratings tend to decrease.
3. Delivery time might be a minor factor influencing customer satisfaction and ratings. Other variables, such as food quality, customer service, price, or ambiance, could have a more substantial impact on restaurant ratings.

Method: By keeping the average rating column and delivery time column side by side, using the function CORREL, I was able to compute the correlation value. Based on the value, I have concluded the above points.

Task 5: Correlation Between Restaurant Price and Average Rating

A correlation value of 0.107 between average bill value and average ratings of restaurants indicates a very weak positive correlation. Hence, we can conclude,

1. There is only a slight tendency for restaurants with higher average bill values to have higher ratings. Still, the relationship needs to be more robust to make definitive conclusions.
2. The average bill value increases and average ratings tend to increase, but this increase is very slight.
3. Average bill value might be a minor factor influencing customer satisfaction and ratings. Customers might be rating restaurants based on factors other than just cost, such as food quality, service, ambiance, or overall dining experience.

Method: By keeping the average rating column and delivery time column side by side, using the function CORREL, I was able to compute the correlation value. Based on the value, I have concluded the above points

City	No.of.Restaurants
Ahmedabad	717
Bangalore	946
Chennai	1106
Hyderabad	1075
Kolkata	1346
Mumbai	1277
New Delhi	611
Pune	1090
Surat	512
Total	8680

Method: This table was computed by inserting a pivot to my data. The names of the cities were inserted into the Row area, and the number of restaurants was inserted into the value area, from which the number of restaurants in each city was determined.

Task 7: Price Analysis

Ahmedabad:

- ✓ The average bill value for restaurants is approximately 318.13.
- ✓ Half of the restaurants have bill values below 300 and half above 300.
- ✓ The most frequently occurring bill value among the restaurants is 200.
- ✓ The bill values vary significantly, with an average deviation of 174.91 from the mean.

Bangalore

- ✓ The average bill value for restaurants is approximately 382.5243
- ✓ Half of the restaurants have bill values below 300 and half above 300.
- ✓ The most frequently occurring bill value among the restaurants is 200.
- ✓ The bill values vary significantly, with an average deviation of 268.1959 from the mean.

Chennai

- ✓ The average bill value for restaurants is approximately 356.2477
- ✓ Half of the restaurants have bill values below 300 and half above 300.
- ✓ The most frequently occurring bill value among the restaurants is 300.
- ✓ The bill values vary significantly, with an average deviation of 262.574 from the mean.

Hyderabad

- ✓ The average bill value for restaurants is approximately 299.9265
- ✓ Half of the restaurants have bill values below 300 and half above 250
- ✓ The most frequently occurring bill value among the restaurants is 200.
- ✓ The bill values vary significantly, with an average deviation of 194.7101 from the mean.

Kolkata

✓ The average bill value for restaurants is approximately 362.2942
✓ Half of the restaurants have bill values below 300 and half above 300.
✓ The most frequently occurring bill value among the restaurants is 300.
✓ The bill values vary significantly, with an average deviation of 241.0108 from the mean.

Mumbai

✓ The average bill value for restaurants is approximately 393.7948
✓ Half of the restaurants have bill values below 300 and half above 300.
✓ The most frequently occurring bill value among the restaurants is 300.
✓ The bill values vary significantly, with an average deviation of 257.9421 from the mean.

New Delhi

✓ The average bill value for restaurants is approximately 333.3011
✓ Half of the restaurants have bill values below 300 and half above 300.
✓ The most frequently occurring bill value among the restaurants is 300.
✓ The bill values vary significantly, with an average deviation of 187.6595 from the mean.

Pune

✓ The average bill value for restaurants is approximately 353.7633
✓ Half of the restaurants have bill values below 300 and half above 300.
✓ The most frequently occurring bill value among the restaurants is 300.
✓ The bill values vary significantly, with an average deviation of 353.7633 from the mean.

Surat

✓ The average bill value for restaurants is approximately 270.1719
✓ Half of the restaurants have bill values below 300 and half above 250.
✓ The most frequently occurring bill value among the restaurants is 200.
✓ The bill values vary significantly, with an average deviation of 122.8503 from the mean.

Method: To analyze the price of all the restaurants in each city, I computed general statistical data like mean, meridian, mode, and standard deviation for the number of restaurants in each city. This helps us understand the average bill value and the most frequently occurring value, which will help analyze not only the price but also its relationship with other factors.

Task 8: Delivery Time Analysis

Ahmedabad

✓ The average delivery time for restaurants is approximately 46.28 minutes.
✓ Half of the restaurants have delivery times below 46 minutes and half above 46 minutes.
✓ The most frequently occurring delivery time among the restaurants is 44 minutes.

- ✓ The delivery times vary, with an average deviation of 11.23 minutes from the mean.

Bangalore

- ✓ The average delivery time for restaurants is approximately 50.52 minutes.
- ✓ Half of the restaurants have delivery times below 52 minutes and half above 52 minutes.
- ✓ The most frequently occurring delivery time among the restaurants is 55 minutes.
- ✓ The delivery times vary, with an average deviation of 9.16444 minutes from the mean.

Chennai

- ✓ The average delivery time for restaurants is approximately 58.96835 minutes.
- ✓ Half of the restaurants have delivery times below 59 minutes and half above 59 minutes.
- ✓ The most frequently occurring delivery time among the restaurants is 64 minutes.
- ✓ The delivery times vary, with an average deviation of 12.89 minutes from the mean.

Hyderabad

- ✓ The average delivery time for restaurants is approximately 49.93 minutes.
- ✓ Half of the restaurants have delivery times below 49 minutes and half above 49 minutes.
- ✓ The most frequently occurring delivery time among the restaurants is 35 minutes.
- ✓ The delivery times vary, with an average deviation of 14.91 minutes from the mean.

Kolkata

- ✓ The average delivery time for restaurants is approximately 67.80 minutes.
- ✓ Half of the restaurants have delivery times below 69 minutes and half above 69 minutes.
- ✓ The most frequently occurring delivery time among the restaurants is 76 minutes.
- ✓ The delivery times vary, with an average deviation of 14.17 minutes from the mean.

Mumbai

- ✓ The average delivery time for restaurants is approximately 48.31 minutes.
- ✓ Half of the restaurants have delivery times below 49 minutes and half above 49 minutes.
- ✓ The most frequently occurring delivery time among the restaurants is 52 minutes.
- ✓ The delivery times vary, with an average deviation of 08.14 minutes from the mean.

New Delhi

- ✓ The average delivery time for restaurants is approximately 50.73 minutes.
- ✓ Half of the restaurants have delivery times below 49 minutes and half above 49 minutes.
- ✓ The most frequently occurring delivery time among the restaurants is 46 minutes.
- ✓ The delivery times vary, with an average deviation of 13.05 minutes from the mean.

Pune

- ✓ The average delivery time for restaurants is approximately 55.85 minutes.
- ✓ Half of the restaurants have delivery times below 56 minutes and half above 56 minutes.
- ✓ The most frequently occurring delivery time among the restaurants is 54 minutes.
- ✓ The delivery times vary, with an average deviation of 14.19 minutes from the mean.

Surat

- ✓ The average delivery time for restaurants is approximately 48.48 minutes.
- ✓ Half of the restaurants have delivery times below 48 minutes and half above 48 minutes.
- ✓ The most frequently occurring delivery time among the restaurants is 46 minutes.
- ✓ The delivery times vary, with an average deviation of 11.34 minutes from the mean.

> Method: To analyze the delivery time of all the restaurants in each city, I have computed general statistical data like mean, meridian, mode, and standard deviation for the number of restaurants in each city. This helps us understand the average delivery time and the most frequently served delivery time, which will help us analyze not only the time factor but also its relationship with other factors like average restaurant ratings.

Task 9: Cuisine Analysis

- ✓ Indian-based Foods: Appears in all cities, indicating it's the most universally popular cuisine.
- ✓ Chinese: Also very popular, as it is dominating in 7 out of 9 cities.
- ✓ Fast Food: Dominating in 6 out of 9 cities, suggesting a high preference for fast food options by people.
- ✓ North Indian: Common in 4 cities, indicating a significant preference for this regional cuisine.
- ✓ Beverages: Dominating in 2 cities, which indicates a moderate level of popularity.
- ✓ Dessert is only dominant in one city, suggesting it needs to be more emphasized than other food types.

- ❖ Regional Insights:

- ✓ North Indian Cuisine is more prevalent in northern cities like New Delhi and Mumbai.
- ✓ Chinese Cuisine is universally popular, likely due to its adaptability and flavor.
- ✓ Fast food is trendy in cities with fast-paced lifestyles like Pune, New Delhi, and Mumbai.
- ✓ Beverages and desserts are less commonly highlighted but are essential in cities like New Delhi, Chennai, and Bengaluru.

- ❖ Implications for Businesses:

- ✓ Restaurant Chains should prioritize offering Indian and Chinese cuisines, with a secondary focus on Fast Food, especially in cities like Pune, New Delhi, and Mumbai.
- ✓ Specialty Restaurants can explore niche markets in cities like Bengaluru (Desserts) and Chennai (Beverages).

- ✓ Tailor marketing campaigns to highlight popular cuisines in specific cities. For example, focus on Indian and Fast Food in Surat while emphasizing a diverse menu in New Delhi.

Method: By looking at the popularity of restaurants in each city and analyzing the preference for such food types in each city, I have given my analysis on cuisine, with regional analysis and some business implicated, which can help the restaurant tap potential business.

Task 10: Area-wise Restaurant Analysis

City – Ahmedabad					
Navrangpura	132	Ramdev Nagar	4	Hatkeshwar	1
Vastrapur	94	Shyamal	4	Kalupur	1
Ellisbridge	50	Jashoda Nagar	3	Madhupura	1
Maninagar	45	Juhapura	3	Narayan Nagar	1
Naranpura	30	Kankaria	3	Narol	1
Ambawadi	25	Khanpur	3	Nava Naroda	1
Paldi	25	Vatva	3	Nehrunagar	1
Lal Darwaja	24	Danilimda	2	Noble Nagar Tenament	1
Memnagar	24	Ghatlodia	2	Odhav	1
Isanpur	22	Gidc Naroda	2	Old Wadaj	1
University Area	18	Jivraj Park	2	Panjarapole Cross Road	1
Paldi & Ambawadi	16	Jodhpur Cross Road	2	Raikhad	1
Gulbai Tekra	12	Jodhpur Tekra	2	Ranip	1
Vastral	12	Khamasa	2	Sardar Colony	1
Khokhra	11	Mahadev Nagar Tekra	2	Sarkhej Road	1
Prahlad Nagar	11	Motera	2	Shah-E-Alam Roja	1
Ahmedabad	9	Navjivan	2	Sherkotda	1
Jodhpur Village	8	Saijpur Bogha	2	Sindhu Bhavan Road	1
Kuber Nagar	8	Thaltej	2	Vasna	1
Chandkheda	7	Acher	1	Cg Road	1
Satellite	7	Akhbar Nagar Circle	1	Chanakyapuri	1
Usmanpura	7	Ambavadi	1	Drive In Road	1
Bodakdev	6	Bapunagar	1	Dudheshwar	1
Gurukul	6	Bhadra	1	Ghodasar	1
Khadia	6	Shahpur	5	Girdhar Nagar	1
Vishala	6	Naroda	4	Gomtipur	1
Narolgam	5	Nava Vadaj	4		

City – Bangalore					
Adugodi	8	Gandhinagar	9	Residency Road	1
Armane Nagar	2	Ganganagar	3	Richmond Town	10
Ashok Nagar	113	Guttahalli	3	Rt Nagar	1

Azad Nagar	1	Halsuru	1	Sampangiram Nagar	7
Banashankari	11	Indiranagar	130	Sanjay Nagar New road	1
Basavanagudi	54	J.C.Nagar	1	Sarvagnanagar	1
Basaveshwaranagar	1	Jayamahal	1	Seshadripuram	10
Battarahalli	1	Jayanagar	51	Shankarapura	8
Benson Town	2	Jogupalya	8	Shanti Nagar	10
Brigade Road	2	Kadugondanahalli	1	Shantinagar	12
Cambridge Layout	1	Kodihalli	6	Sheshadripuram	1
Central Bangalore	73	Koramangala	125	Shivaji Nagar	19
Chamrajpet	6	Langford Gardens	4	Sivanchetti Gardens	10
Chickpet	9	Lingarajapuram Kammanahali	1	Someshwarpura	1
Church Street	1	Majestic	11	Srirampura	5
Commercial Street	1	Malleshwaram	49	Sudhama Nagar	3
Cooke Town	1	Mantri Sqare Mall	1	Ulsoor	4
Cox Town	4	Nagarathpete	2	Vasanth Nagar	16
Cunningham Road	3	Neelasandra	1	Victoria Layout	2
Domlur	21	New Tippasandra	9	Vijayanagar	4
Ejipura	7	Pulikeshi Nagar	21	Viveka Nagar	1
Frazer Town	12	R.T. Nagar	3	Vv Puram	1
Gandhi Bazaar	1	Rajajinagar	38	Wilson Garden	4

City – Chennai					
Alwarpet	45	Gandhi Nagar	5	Poongavanapuram	5
Aminjikarai	11	George Town	34	Purasaiwakkam	61
Anna Nagar	73	Gopalapuram	17	Raja Annamalai Puram	13
Anna Nagar West	1	Jamalia	3	Royapettah	35
Anna Nagar West Extension	4	Kilpauk	58	Royapuram	6
Anna Salai	1	Kodambakkam	34	Saligramam	1
Annamalai Colony	5	Kodungaiyur	10	Santhome	1
Annanagar	40	Kolathur	2	Sastri Nager	1
Annanagar East	19	Kotturpuram	2	Shenoy Nagar	9
Arumbakkam	18	Koyambedu	4	Srinivas Towers	1
Ashok Nagar	1	Madhavaram	3	T. Nagar	65
Ayanavaram	13	Mandaveli	2	Teynampet	31
Balavinayagar Nagar	5	Mmda Colony	1	Thirunagar Signal Vadapalani	1
Chennai	18	Mogappair	2	Thousand Lights	48
Chetpet	10	Mylapore	42	Tiruvalleeswarar Nagar	2
Chintadripet	1	Nandanam	3	Tondiarpet	3
Choolai	4	Nehru Stadium	1	Triplicane	17

Choolaimedu	18	Nungambakkam	52	Vadapalani	28
Cit Nagar	9	Old Washermanpet	20	Valasaravakkam	1
Dr.Radhakrishnan Salai-Mylapore	1	Perambur	89	Villivakkam	6
Ea Mall Royapettah	1	Peravallur	1	Vishnu Garden	1
Egmore	57	Periyamet	6	Vyasarpadi	3
Express Avenue Mall	1	Ponniammanmedu	5	Wallace Garden	1
West Mambalam	11	Washermanpet	3		

City – Hyderabad					
A.S. Rao Nagar & Sainikpuri	2	Humayun Nagar	4	New Mallepally	2
Abids	23	Hyderabad	4	New Nallakunta	11
Abids & Koti	4	Hyderguda Old Mla Home	1	Old Malakpet	9
Adarsh Nagar	4	Jam Bagh	5	Old Mla Quarters	1
Adikmet	7	Jillelaguda	1	Padma Nagar Colony	1
Afzal Gunj	1	Jubilee Hills	3	Padmarao Nagar	8
Aliabad	1	Jyothi Nagar	1	Pathar Gatti	2
Amberpet	12	Kachiguda	19	Peerzadiguda	1
Ameerpet	33	Kalasiguda	3	Punjagutta	17
Ashok Nagar	1	Kalyan Nagar X Roads	1	Rajamohallah	1
Asif Nagar	2	Karkhana	4	Ramanthapur	1
Balkampet	1	Kavadiguda	12	Ramgopalpet	6
Banjara Hills	114	Khairtabad	22	Ramkote	1
Basheer Bagh	14	Kharkhana & Trimulgherry	4	Ramnas Pura	1
Begum Bazar	1	Khilwat	1	Rani Gunj	1
Begumpet	13	King Koti	1	Redhills	6
Bhavani Nagar Uppal	1	Kiran Nagar	1	Sai Nagar	1
Bn Reddy Nagar	2	Kothapet	25	Saidabad	5
Boudhanagar Colony	1	Kothapet & Dilsukhnagar	66	Sanjeeva Reddy Nagar	3
Bowenpally	2	Koti	23	Santosh Nagar	6
Brindavan Colony	2	Krishna Nagar Colony	1	Santoshnagar & Saidabad	14
Chanakyapuri	1	L.B Nagar	1	Sarvodaya Colony	1
Chanchalguda	1	Lakdikapul	9	Secunderabad	2
Chandrapuri Colony	1	Lal Darwaza	1	Shivaji Nagar	4
Chandrayangutta	1	Langar Houz	1	Sithaphalmandi	1
Charminar	25	Lb Nagar	1	Somajiguda	9
Chilakalguda	1	Lnt Mall Musarambagh	1	Somajiguda & Khairtabad	7
Chintal	1	Madannapet Colony	2	Sri Durga Enclave	1
Chudi Bazaar	1	Madhura Nagar	1	Sri Hanuman Nagar Colony	1
Darulshifa	1	Malakpet	4	Sri Sai Tarun Enclave	1

Dilsukhnagar	17	Malkajgiri	2	Tad Bun	1
Feelkhana	3	Masab Tank	6	Takara Basthi	1
Film Nagar	4	Mehdipatnam	22	Talab Katta	1
Gaddiannaram	5	Moghalpura	2	Tarnaka	6
Ghansi Bazaar	5	Moosarambagh	1	Tarnaka Nacharam & Malkajigiri	13
Golconda Fort	2	Murad Nagar	2	Zamistanpur	2
Gowliguda	2	Musheerabad	1	Toli Chowki	39
Gowlipura	2	Nacharam	2	Uppal	32
Gudimalkapur	2	Nagole	4	Vanasthalipuram	3
Gunrock Enclave	1	Nalgonda	1	Velly View Enclave	1
Gunti Jangaiah Nagar	1	Nallakunta	1	Venkateshwara Colony	1
Habsiguda	7	Nallakunta & Vidyanagar	45	Vidyanagar	2
Hakimpet	1	Nampally	11	Vijaya Nagar Colony	2
Himayatnagar	147	Narayanguda	19	West Marredpally	5
Huda Colony	1	New Gayatri Nagar	2	Yakhutpura	2
Huda Complex	5	New Malakpet	14	Yousufguda	2

City – Kolkata					
Ahiritola	2	Gariahat	19	New Area	2
Alipore	26	Girish Park	1	North Dumdum	7
Amarpalli	1	Gobra	5	Opp Padmashree Movie Hall	1
B.B.D. Bagh	3	Golf Green	1	Paikpara	12
Baguihati	14	Golpark	22	Park Circus	4
Ballygunge	67	Haltu	7	Park Street Area	29
Bangur	1	Hatibagan	5	Picnic Garden	1
Barabazar Market	8	Hedua	2	Purba Barisha	1
Baranagar	14	Hindustan Park	1	Rabindra Sarovar	1
Behala	16	Jadavpur	31	Rabindrapally	1
Beleghata	25	Jodhpur	1	Raja Bazar	4
Belgachia	1	Jodhpur Park	16	Rajarhat	1
Beltala Road	1	Jorabagan	3	Rammandir	1
Beniapukur	8	Jorasanko	3	Ruby Area	27
Bentinck St.	3	Kakurgachi	2	Ruby Park	1
Bhowanipore	63	Kalighat	47	Salt Lake	76
Bidhannagar	123	Kankurgachi	23	Saltlake Sector 1	1
Bong Chinese Ruby Area	1	Kasba	24	Sanitytestarea	8
Borough	2	Kestopur	14	Santoshpur	4
Bosepukur	1	Kestopur Rabindrapally	1	Sarat Bose Rd	1
Bowbazar	2	Kidderpore	2	Sarat Park	1
Broad Street	1	Kolkata	11	Sector 3	1
Broadway Mall	1	Kustia	1	Sector V Salt Lake	8
Burrabazar	25	Lake Gardens	8	Selimpur	2

Central Kolkata	63	Lake Market	2	Shobhabazar	4
Chetla	2	Lake Town	69	Shyam Bazar	10
Chinar Park	1	Lal Bazar	2	Shyambazar Crossing	1
Chiriamore	4	Lord Sinha Rd	1	Sinthee	7
Circus Avenue	1	Machuabazar	12	Smarpally Kestopur	1
College Square	3	Manicktala	6	South Dumdum	4
College Street	1	Manohar Pukur Road	1	South Kolkata	52
Cossipore	4	Mg Road	1	Southern Avenue Gariahat	1
Dhakuria	4	Nagerbazar	1	Sovabazar	2
Dum Dum	50	Naktala	1	Sreebhumi	1
East Kolkata Township	12	Near 7 Point Crossing	1	Tala	2
Ekdalia	1	Near City Centre 1 Petrol Pump	1	Taltala	41
Elgin	21	Near Gurudas Park	1	Tangra	18
Entally	12	Near Lal Gate Ramlal Bazarsapuipara	1	Tiljala	7
Esplanade	5	Near Rupbani Cinema	1	Tiretti	4
Garfa	5	New Alipore	17	Tollygunge	10
Topsia	16	Ultadanga	4		

City – Mumbai						
Andheri East	135	Ghatkopar East		43	Mahim	1
Andheri West Area	1	Ghatkopar Vikhroli		21	Marol Maroshi Road	3
Antop Hill	10	Ghatkopar West		25	Marol Sakinaka	76
Asalpha	6	Govandi East		4	Matunga	17
Bandra Area	31	Jogeshwari East		1	Matunga East	1
Bandra East	26	Juhu		3	Matunga Wadala	20
Bandra Kurla Complex	1	Kailash Plaza		1	Mukti Nagar	1
Bandra West	5	Kalina		10	Mumbai	8
Bkc	14	Khar East		2	Phoenix Mall	1
Chembur	209	Khar West		22	Powai	114
Dharavi	5	Kurla		130	Saki Naka	54
Garodia Nagar	1	Kurla East Nehru Nagar		1	Sakivihar	5
Gautam Buddha Nagar	2	Kurla West		26	Santacruz East	117
Ghatkopar	6	Lower Parel Area		2	Santacruz West	2
Scruz Bandra East	49	Sion Koliwada		1	Vikhroli	1
Shivaji Nagar	1	Station Road Ghatkopar West		1	Vikhroli West	4

Sion	37	The New Sion Co-Operative Housing Society	1	Vile Parle	1
Sion Bhakti Park	17	Vakola	1		

City - New Delhi					
Ashok Nagar	1	Pitampura	43	Sector 3 Rohini	5
Ashok Vihar	5	Prashant Vihar	1	Sector 37	2
Begampur	3	Prashant Vihar Rohini	7	Sector 4 Rohini	1
Behra Enclave Paschim Vihar	1	Punjabi Bagh	15	Sector 5 Rohini	2
Block Gg1 Vikaspuri	1	Rajouri Garden	17	Sector 51	1
Budh Vihar	6	Rajouri Garden Extension	1	Sector 6	1
Central Market Punjabi Bagh	4	Ramesh Nagar	6	Sector 6 Rohini	2
Delhi	3	Rani Bagh	1	Sector 7 Rohini	19
Janakpuri	2	Rithala Rohini	1	Sector 73	1
Karam Pura	1	Rohini	257	Sector 8	1
Keshav Puram	1	Rohini Sector 7	1	Sector 8 Rohini	12
Kg-Iii	1	Sainik Vihar Pritampura	2	Sector 9 Rohini	11
Kirti Nagar	3	Sector 1 Rohini	2	Shakurpur	1
Krishan Vihar	1	Sector 10 Rohini	6	Shalimar Bagh	9
Krishna Park Tilak Nagar	1	Sector 11 Rohini	4	South West	1
Moti Nagar	6	Sector 13 Rohini	2	Sri Nagar	1
Mukherjee Nagar	1	Sector 14 Rohini	3	Subhash Nagar Petrol Pump	1
Nangloi	1	Sector 15	1	Tagore Garden Extension	18
Nsp	16	Sector 15 Rohini	2	Tilak Nagar	7
Pacific Mall Subhash Nagar	1	Sector 16 Rohini	3	Tri Nagar	1
Paharganj	1	Sector 16 Rohini	1	Uttam Nagar	1
Paschim Vihar	62	Sector 2 Rohini	2	Vardhman Premium Mall	1
Patel Nagar	1	Sector 24 Rohini	1	Vikaspuri	2
Peeragarhi Camp	1	Sector 29	2	Vishnu Garden	4
Wazirpur Industrial Area	1				

City - Pune					
Agarkar Nagar	6	Ganesh Peth	1	Lullanagar	4
Ambegaon	1	Ganga Dham	4	Magarpatta	5
Anand Nagar	14	Ganj Peth	1	Maharshi Nagar	8
Appa Balwant Chowk Pune	1	Ghorpadi	3	Mangawadi	2
Ashok Nagar	2	Gokhalenagar	8	Modi Colony	5
Aundh	49	Gultekdi	5	Mohammed Wadi	12

Balaji Nagar	1	Guru Nanak Nagar	4	Mundhwa	4
Baner	25	Hadapsar	4	Narayan Peth	16
Bavdhan	1	Jm Road	1	Narhe	3
Bhawani Peth	7	Kalas	2	Nibm Post Office Road	1
Bibwewadi	29	Kalyani Nagar	30	Old Sangvi	3
Bopodi	4	Karve Nagar	26	Parvati Paytha	12
Budhwar Peth	1	Kasba Peth	2	Pashan	11
Camp	34	Katad Khana	1	Pcmc	1
Dapodi	1	Katraj	2	Range Hills	3
Deccan Gymkhana	20	Kausar Baugh Nibm Road	1	Rasta Peth	4
Dhankawadi	24	Kondhwa	64	Raviwar Peth	2
Dhole Patil Road	1	Kondhwa Budruk	4	Sadar Bazaar	1
Erandwane	52	Koregaon Park	72	Sadashiv Peth	19
Fathima Nagar	1	Kothrud	149	Salunkhe Vihar	4
Fc Road	2	Law College Road	1	Sangamvadi	8
Sangvi	4	Sinhgad Road	17	Viman Nagar	13
Satara Road Bibvewadi	1	Somwar Peth	2	Visharant Wadi	6
Shaniwar Peth	5	Somwarpeth	1	Vishrantwadi	9
Sheela Vihar Colony	1	Swargate	36	Wadgaon Sheri	9
Shivajinagar	124	Tingre Nagar	3	Wanowrie	29
Shukrawar Peth	6	Vadgaon Budruk	9	Wanwadi	5
Warje	14	Yerawada	7		

City – Surat					
Adajan	74	Honey Park	1	Parvat Patiya	8
Adajan Gam	2	Kapodra Patiya	1	Patel Nagar	4
Adajan Patiya	5	Katargam	4	Piplod	64
Althan	2	Khatodra Wadi	3	Puna Patia	1
Amroli	4	L.P.Savani	1	Rander	1
Anand Nagar	1	Laxmi Encleve – Katargam	1	Rustampura	1
Ashok Bhai– Citylight	1	Magdalla	2	Safal Square Vesu	1
Athwa	101	Magob	1	Sagrampura	4
Athwa Station Road	1	Mahalaxmi Rd	1	Salabatpura	2
Begampura	17	Majura Gate	3	Sanjay Nagar	4
Bhagal	1	Mitul Square Piplod	1	Sarthana	11
Bharthana	3	Moonlight Cream Sagrampura	1	Sayedpura	3
Bhatar Athwa	1	Mota Varachha	5	Shahpore	3
Bhatha	1	Nana Varachha	7	Sima Nagar	2
Bhimrad	1	Nanpura	13	Singanpor	2
Chowk Bazar	1	Narotam Nagar	6	Surat	8
Chowpati Athwa	1	Navsari Bazaar	3	Udhna	5
Dabholi	1	Near Rto Pal Gam	1	Umarwada	4
Dahin Nagar	3	New Magdalla	8	Umra Jakat	1

Dindoli	1	New Rander Road	1	Uttran	2
Ghod Dod Road	2	New Textile Market	2	Varachha	30
Gopipura	12	Pal Gam	4	Vesu	21
Haripura	3	Palanpur	5	Vip Road	1
Hirabaugh	2	Pankaj Nagar	3	Vishal Nagar	6
Yamuna Nagar	3	Yoginagar Society	1		

Method: All these tables were computed by inserting pivots into my original data. The names of the cities and Restaurant Areas were inserted into the Row tab, and the number of restaurants was inserted into the value area, from which the number of restaurants in each area was determined.

Task 11: Correlation Analysis

	Price	Avg.Rating	Delivery time
Price	1	0.107	0.076
Avg.Rating	0.107	1	–0.161
Delivery time	0.076	–0.161	1

❖ Correlation between Restaurant Price and Average Rating (0.107)

  ✓ This correlation is positive but very weak. There is a slight tendency for higher-priced restaurants to have higher average ratings, but the relationship could be more robust.
  ✓ Price is not a strong predictor of a restaurant's average rating. Other factors likely have a more significant impact on ratings.

❖ Correlation between Average Rating and Delivery Time (-0.161)

  ✓ This correlation is negative and weak, indicating a slight tendency for restaurants with higher ratings to have shorter delivery times
  ✓ While there is a slight inverse relationship between rating and delivery time, it is not strong enough to conclude that delivery time significantly affects ratings. However, it might suggest that better-rated restaurants strive for quicker delivery times.

❖ Correlation between Restaurant Price and Delivery Time (0.076)

  ✓ This correlation is positive but very weak, suggesting a negligible relationship between restaurant price and delivery time.
  ✓ Price does not seem to influence delivery time significantly. Restaurants at different price points tend to have similar delivery times.
  ✓ Summary The given correlations suggest that there are only weak relationships between restaurant price, average rating, and delivery time. Specifically: –
  ✓ There is a slight positive correlation between restaurant price and average rating. Still, it needs to be more robust to be of practical significance. –

- ✓ There is a slightly stronger negative correlation between average rating and delivery time, suggesting that better-rated restaurants might offer faster delivery, but again, the relationship is weak.
- ✓ The correlation between restaurant price and delivery time is almost negligible, indicating no meaningful relationship.
- ✓ Overall, these weak correlations imply that other factors are likely more influential in determining restaurant ratings, prices, and delivery times. For a more comprehensive analysis, additional variables and data would be needed to understand the dynamics at play better.

Method: Using the Excel function of CORREL, a correlation factor was found between three factors: restaurant average bill value, delivery, and average ratings of each restaurant. This resulted in the above conclusions.

Task 12: Customer Feedback Analysis

	Column 1	Column 2
Column 1	1	
Column 2	0.157900329	1

- ✓ It indicates a weak positive correlation where the average value slightly increases when the number of people who give the rating is higher.

- ✓ Since the value is close to Zero, it also indicates that other factors are responsible for the average rating increasing. The trend observed is not strong enough to make predictions.

- ✓ Below is the list of top 20 restaurants with maximum number of ratings

S.no	Restaurant Name	City	No.of.Ratings
1	Grand Hotel	Hyderabad	10000
2	Mehfil	Hyderabad	10000
3	Bawarchi	Hyderabad	10000
4	Shah Ghouse Cafe & Restaurant	Hyderabad	10000
5	4M Biryani House	Hyderabad	10000
6	Lucky Restaurant	Hyderabad	10000
7	Sarvi Restaurant	Hyderabad	5000
8	Bachan'S Dhaba	Kolkata	5000
9	Cafe 555 & Aqeeq Restaurant	Hyderabad	5000
10	Abar Khaboo	Kolkata	5000
11	Meridian Restaurant	Hyderabad	5000
12	Gulab Wala	New Delhi	5000
13	Capital Multi Cuisine Restaurant	Hyderabad	5000
14	Hotel Shadab	Hyderabad	5000
15	Mughal Arsalan Biryani	Kolkata	5000
16	Shah Ghouse Cafe & Restaurant	Hyderabad	5000
17	The Bowl Company	Chennai	5000
18	Cafe Bahar Since 1973	Hyderabad	5000
19	Kolkata@99	Kolkata	5000
20	Guru Kripa (Sion West)	Mumbai	5000

Method: Using the filter option in Excel, arranging the number of ratings received in descending order, I could fetch the data of top 20 in the list.

Task 13: Geographical Mapping

Mapping of restaurants belonging to each city has been done in PowerBI.

Task 14: Business Recommendations

❖ For Delivery

  ✓ Delivery time of 44 minutes is quite common, which sets an expectation for customers.
  ✓ Delivery times are moderately consistent among restaurants.
  ✓ Faster delivery times might contribute to higher satisfaction levels.
  ✓ Route optimization software can help achieve delivery times closer to expectations.
  ✓ Restaurants with longer delivery times but higher-quality food or service can position themselves as premium options.
  ✓ Planning on staff and logistics better ensures that delivery times remain efficient during peak hours.

❖ For Price

  ✓ A bill value of 200 is quite common, which is a potential value for competitive pricing.
  ✓ Higher-priced restaurants are perceived as providing better value or quality as their average rating remains constant.
  ✓ Resourcing raw materials efficiently can reduce the price of food, which can reduce the price and also provide a good margin to the business.

❖ For Average Rating:

  ✓ We have to regularly collect feedback from users who are ordering from our restaurants.
  ✓ We can offer incentives to customers who provide brief feedback, which can help us identify areas for improvement and thereby increase the rating.
  ✓ Communicating the expected delivery time beforehand can help create more transparency among customers, which will improve ratings.
  ✓ Based on the reviews, we can improve the quality of food and introduce new food types to increase the customer base, which would indirectly help increase the rating.

<u>Other Methods Used:</u>

For Data Cleaning, I created a copy of the Excel sheet and used the function Proper to remove any irregularities in the Data.

Below are the cities in which duplication and corrections were made

- ✓ Ahmedabad – Lal Darwhaga (Duplication was erased)
- ✓ Banglore – Shanthi Nagar, Sampangiram, Malleshwaram, Koramangala, Gandhi Nagar, Central Banglore (Duplication was erased)
- ✓ Chennai – T. Nagar, Purasalwakkam, R.A Puram, Old Washermanpet, Mogappair, Madhavaram (Duplication was erased)
- ✓ The elaborated address was cut short in Chennai for Nehru Stadium, Nungambakkam.
- ✓ Delhi –Sector 8 Rohini, Sainik Vihar Pritampura, Sector 16 Rohini, Punjabi Bagh, Sector 5 Rohini, Pitampura, Central Market Punjabi Bagh
- ✓ Sector –6 was renamed to Sector 6; Sector –15 was renamed to Sector 15; Sector –9 Rohini was renamed to Sector 9 Rohini; Sec 9 Rohini was renamed to Sector 9 Rohini; Secot 24Rohini was renamed to Sector 24 Rohini (Duplication was erased)
- ✓ Hyderabad – Banjara Hills, Gaddiannaram, Kothapet & Dilsukhnagar, Lakdikapul, Toli Chowki, Uppal, Vijaya Nagar Colony, Yakhutpura, Himayatnagar (Duplication was erased)
- ✓ Kolkata – Baguihati, Ballygunge, Borough, Dum Dum, Kankurgachi, Manicktala, Ruby Area, Salt Lake, Ultadanga (Duplication was erased)
- ✓ Mumbai – Chembur, Ghatkopar, Kalina, Kurla, Lower Parel Area, Marol Sakinaka, Powai, Saki Naka, Sakivihar, Santacruz East (Duplication was erased)
- ✓ Pune – Bibwewadi, Dhankawadi, Karve Nagar, Koregaon Park, Parvati Paytha, Salunkhe Vihar, Shivajinagar, Wadgaon Sheri (Duplication was erased)
- ✓ Surat – Athwa, Ghod Dod Road, Palanpur, Sagrampura (Duplication was erased)
- ✓ Ashok Bhai– Citylight was renamed to Ashok Bhai
- ✓ Dehli was changed to New Delhi since the map in Power BI shows the Location in the Western countryside.
- ✓ Bldg No15 /402 Aniket Building Shivaji Nagar was renamed to Shivaji Nagar
- ✓ Fdl_Scruz Bandra East was renamed Bandra East
- ✓ Bhavani Nagar Uppal – Hyderabad was shortened to Bhavani Nagar Uppal

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