A STUDY OF E-PAYMENT SYSTEM ON FOOD DELIVERY INDUSTRY: A CASE STUDY ON SWIGGY

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ABSTRACT

E-commerce in India is expected to see an auxiliary growth by 2020, making it the fastest growing e-commerce market in the world. E-commerce is also witnessing a spurt in online food & restaurant service companies. With a population of over 1.2 billion, India is undeniably one of the biggest consumer markets in the world today. The changing of Business strategies along with transaction processing, increase of internet access, use of smart phones in emerging markets has been the main driver for e-transaction growth in the field of Food Order Delivery (Shinde, 2014).

In the present study, attempt has been made to check the association between Customer and Food Business with respect to demographic variables like Income, Profession, Age etc. as well as analyzing consumer perceptions and preferences which influences them to assess various services through e-payment transaction (Fromm & Garton, 2013). Thereby the aim of the study is to identify the most important factor that influences their transaction preferences and the key drivers for e-payment penetration in the food industry.

For this study, the researchers have used the statistical tool ANOVA to check the association between the demographic variables of the Customers and Online Food Business. Few factors have been taken to examine the impact of e-transaction processing system in the field of Food Delivery industry like Swiggy. Again, Factor analysis is used to find out what are the exact factors that influences customers' mode of payment preferences.

100 samples were collected for this study through the survey and given a positive conclusion from the consumer view with reference to Kolkata, India. The conclusion will help the industry as well as new entrepreneur for their new marketing strategy and provide significant input to Decision Support System.

Keywords: E-payment, Buying Pattern, Start-up Business, Customer Preferences

INTRODUCTION

Entire India is going through a wave of digitalization, by which every segment of our life has been benefitted. One of the segments is organized food segment with an approximate value of INR 3.24 trillion, out of which food delivery is INR 1.01 trillion. With the urban life style changing from relaxed to overstressed and increasingly competitive, people are relying more on online food delivery (Best, 2005). This change is more seen in big metros, where traffic jams and high density of population has amplified the time to travel within a city and reduced the personal time specially for the working professionals. As a result, more and more Indians have started ordering from online food delivery services, rather than cooking at home. Currently online food delivery in India is estimated to be worth of INR 10.27 Billion, which tells us there is a tremendous growth opportunity in the coming years. Research tells us that online food delivery market in India is expected to grow by 34-36% over 2015 to 2020.

For online food delivery platforms, more than 80% of orders are now coming from the top five cities (Kolkata, Delhi, Mumbai, Pune and Chennai) out of more than 20 cities, in India where online food delivery is more prominent. Due to this concentration of orders, food delivery players in India have limited their expansion to newer towns and are now focusing on achieving operational efficiencies and profitability in Tier 1 cities only. There are multiple factors like changing demographics, rising income, consumption levels, favorable lifestyle changes, the convenience of ordering, and aggressive marketing strategies are currently driving growth in the online food delivery industry.

In this research paper we will consider the growth trends and its associated impacting factors with respect to one of major dominant players Swiggy in Indian food delivery market.

Swiggy was founded by the trio of Rahul Jaimini,
Sriharsha Majety and Nandan Reddy. Swiggy began its initial round of operations in Bengaluru. They focused specifically on Koramangala which is one of the upcoming neighborhoods in Bengaluru. They initially started delivering with just six delivery executives and with only 25 restaurants on its platform. Over a period of time, their business grew steadily with 6,000 delivery executives operating across Kolkata, Delhi, Mumbai, Hyderabad, Chennai and Pune at present. Swiggy’s business model was born out of the need to create a seamless ordering and delivery experience for the customer, who wants a home delivery. Swiggy came out with an Online App whereby customers can order from any nearby restaurants through the click of a few buttons with both Cash on Delivery and Online payment options. Swiggy earns through a certain percentage of commissions that it receives from restaurants for getting them orders and a nominal delivery fee from customers who order below a minimum x amount, which varies from city to city.

LITERATURE REVIEW

According to Chavan et al., (2015), digital restaurant uses smart phones to take customer orders. PDA interface was replaced with smart phones to provide customer user interface to view menu or track their orders. With secured login system, customers have the facility to view menu, place orders, track their orders, receive real time updates and make online payment and collect receipts from smart phone itself increasing customer comfort.

Bhandge et al., (2015) proposed an automated food ordering system which will not only enable used to give order without any personal interfacing but also will keep track of orders smartly. Digital ordering system was developed by means of android application. For Tablet and PCs this system was implemented. The front end was developed using JAVA (Khairunnisa et al., 2009).

According to Bhargave et al., (2013) ordering system will not only ease out customer operations and attract them but also will increase efficiency in restaurant’s operation of taking orders and billing and the maintenance of it.

Dabholkar (1995), stated online well-designed ordering systems provide customers substantial control over the choice and amount of transaction which helps them to limit the amount of personal interaction they experience.

Hui & Bateson (1991), according to them increased level of control by virtue of online food ordering system has been shown to lead to higher customer satisfaction and greater intent to use or recommend the service.

According to M. Hyde et al., (2017), consumers are served with assorted platter of goods along with increasing amount of decision relevant information which influence them in purchasing. It also shows the effect of demographic variables on the buying behavior of consumers.

Objectives:

- To study the impact of those factors influencing the customers’ behavior to make online payment for Swiggy Food Delivery System.
- To study the affinity towards online payment to Swiggy with reference to their demographic variables.

RESEARCH METHODOLOGY

Data collection methodology and sample plan

Research type: Empirical in nature.

Population: Customers who pay the money through e-payment to order food from Swiggy Food Delivery Service in Kolkata.

Research design: The study has been partly descriptive and partly analytical. The study is based on both primary and secondary data.

i) Primary data collection: Primary data was collected through a well-structured closed ended questionnaire based on 5 Point Likert Scale consisting of 15 questions from customers who were ordering food through Swiggy and uses e-payment.

ii) Secondary data collection: The data from secondary sources was collected through books, journals, research studies, internet sources.

Sampling Area: Kolkata (West Bengal, India)

Sampling Frame: Selected Customer list from Swiggy Database.

Sample Units: E-payment Users of Swiggy.

Sample Size: 100

Sampling Method: Multistage sampling technique was used for this study. Based on the single district the subdivision has classified into 2 and each subdivision has 3 blocks. The District is divided into 2 Stratums: Stratum1-North Kolkata, Stratum 2-South Kolkata. Each sub division was divided into 3 blocks. Stratified random sampling has been used to collect random data from the 2 Stratums.
Sampling Design

Data Analysis Methodology

The data collected from the survey is subject to data cleaning to identify missing values, data redundancy, sample characteristics and meet the assumptions of normality. Descriptive statistics are used to summarize the respondents' demography. To ensure the content validity and reliability we have used Cronbach’s Alpha test and KMO and Bartlett's test.

### Reliability test on 15 variables

**Case Processing Summary**

<table>
<thead>
<tr>
<th>Cases</th>
<th>Valid</th>
<th>Excluded*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>100</td>
<td>0</td>
</tr>
</tbody>
</table>

**Reliability Statistics**

- **Cronbach’s Alpha**: 0.719
- **No. of Items**: 15

**KMO and Bartlett’s Test**

- **Kaiser-Meyer-Olkin Measure of Sampling Adequacy**: 0.765
- **Bartlett’s Test of Sphericity**
  - **Approx. Chi-Square**: 329.624
  - **Df**: 105
  - **Sig.**: 0.000

From the above table we can say that since the result of both the tests are more than 70%, the data are both valid and reliable and we can use it for further analysis.
### Total Variance Table

<table>
<thead>
<tr>
<th>Section</th>
<th>Initial Eigen values</th>
<th>Extraction Sums of Squared Loadings</th>
<th>Rotation Sums of Squared Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>% of Variance</td>
<td>Cumulative %</td>
</tr>
<tr>
<td>3</td>
<td>1.350</td>
<td>8.999</td>
<td>45.909</td>
</tr>
<tr>
<td>4</td>
<td>1.150</td>
<td>7.666</td>
<td>53.575</td>
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<tr>
<td>5</td>
<td>1.002</td>
<td>6.677</td>
<td>60.252</td>
</tr>
<tr>
<td>6</td>
<td>0.992</td>
<td>6.614</td>
<td>66.866</td>
</tr>
<tr>
<td>7</td>
<td>0.805</td>
<td>5.369</td>
<td>72.235</td>
</tr>
<tr>
<td>8</td>
<td>0.733</td>
<td>4.887</td>
<td>77.122</td>
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<td>9</td>
<td>0.668</td>
<td>4.456</td>
<td>85.659</td>
</tr>
<tr>
<td>10</td>
<td>0.612</td>
<td>4.080</td>
<td>92.619</td>
</tr>
<tr>
<td>11</td>
<td>0.592</td>
<td>3.944</td>
<td>95.375</td>
</tr>
<tr>
<td>12</td>
<td>0.453</td>
<td>3.017</td>
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</tr>
<tr>
<td>13</td>
<td>0.413</td>
<td>2.756</td>
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</tr>
<tr>
<td>14</td>
<td>0.361</td>
<td>2.404</td>
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</tr>
<tr>
<td>15</td>
<td>0.333</td>
<td>2.221</td>
<td></td>
</tr>
</tbody>
</table>

### Scree Plot

The Scree Plot displays the number of factors versus its corresponding Eigen Value, when no rotation is done, the Eigen values of the correlation matrix equal the variances of the factors.

The above scree plot shows that 5 factors are extracted from the graph after the factor analysis.

Following Matrix showing the five important factors:

<table>
<thead>
<tr>
<th>Rotated Component Matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Component</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>-------------------------</td>
</tr>
<tr>
<td>Save time</td>
</tr>
<tr>
<td>Expense</td>
</tr>
<tr>
<td>Transaction Speed</td>
</tr>
<tr>
<td>User Friendly</td>
</tr>
<tr>
<td>Security</td>
</tr>
<tr>
<td>Data Compromise</td>
</tr>
<tr>
<td>Cash Back</td>
</tr>
<tr>
<td>Referral Coupon</td>
</tr>
<tr>
<td>Payment through Portal</td>
</tr>
<tr>
<td>First Order</td>
</tr>
<tr>
<td>Digital Payment</td>
</tr>
<tr>
<td>Exact fare</td>
</tr>
<tr>
<td>Multi option payment</td>
</tr>
<tr>
<td>Life style</td>
</tr>
<tr>
<td>Reduces hurdle cash</td>
</tr>
</tbody>
</table>
Descriptions of 5 Factors

1) **Customer Convenience**: The product delivery and service accomplishment of Swiggy is designed and operationalized in such a way that it saves consumers time. Online payment for ordering food also reduces the hurdle of arranging cash. This eliminates the risk of giving any extra fare because we know sometimes when we have no change we must pay more than the price (Eskildsen & Kristensen, 2007).

2) **Secured payment architecture**: Swiggy maintains a unique and multi-tiered payment architecture. The payment architecture uses encrypted and coded technology for protecting the payment information of their customers from cyber criminals. Thus, the payment is delivered online without any hurdle. This helps in increasing trust ability of the consumer and helps in repeated ordering of food through online transaction (Carroll & Broadhead, 2001).

3) **Strategy for referral coupon**: Referral coupon is an attractive strategy for attracting the consumers. It helps in giving discount to the first-time users. This is very smart idea where Swiggy incentivize the existing customers to advertise Swiggy Food Delivery to their friends and relatives. This not only helps in increasing order for food but also helps in increasing brand loyalty value and brand recognition.

4) **Payment preference of the customers**: Swiggy provides multiple options of online payment like payment by debit/credit card, use of online e-wallets like Paytm etc. Recently the payment portals and e-wallets have gained extensive popularity and have their own brand equity and secured status. This promotes consumer to order online via online payment through their preferential portal.

5) **Discount by Portals**: Swiggy has association with various payment portals and e-wallets for payment. Swiggy uses these associations to get discounts from payment portals and e-wallets and passes the same to their customer base. This incentivize customers to avail Swiggy app for online food ordering.

**Analysis for Objective 2:**

- ANOVA is used to check the association between the demographic variables of the customers availing Online Food Services and their payment preferences.

**H0:** There is no association between **online payment behavior** and **Gender**.

**H1:** There is an association between **online payment behavior** and **Gender**.

**ANOVA**

<table>
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<tr>
<th></th>
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<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Convenience</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>68.651</td>
<td>1</td>
<td>68.651</td>
<td>4.001</td>
<td>0.048</td>
</tr>
<tr>
<td>Within Groups</td>
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<td>98</td>
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</tr>
<tr>
<td>Total</td>
<td>1750.040</td>
<td>99</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secured Payment Architecture</td>
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<td></td>
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<tr>
<td>Between Groups</td>
<td>15.738</td>
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<td>15.738</td>
<td>1.995</td>
<td>0.161</td>
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<tr>
<td>Within Groups</td>
<td>773.222</td>
<td>98</td>
<td>7.890</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>788.960</td>
<td>99</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strategy for Referral Coupon</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Between Groups</td>
<td>9.168</td>
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<td>9.168</td>
<td>1.697</td>
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<tr>
<td>Within Groups</td>
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<td>5.401</td>
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<tr>
<td>Total</td>
<td>538.510</td>
<td>99</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Payment Preference of customers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
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<td>1</td>
<td>0.015</td>
<td>0.004</td>
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<td>Within Groups</td>
<td>401.985</td>
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<tr>
<td>Total</td>
<td>402.000</td>
<td>99</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discount by portals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>1.420</td>
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<td>1.420</td>
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<td>Within Groups</td>
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<td>Total</td>
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</table>

From the above analysis it is distinct that there is an association between **online payment behavior** and **Gender**. The p-value of one variable is <0.05, so we can say that Alternative hypothesis is accepted.

**H0:** There is no association between **online payment behavior** and **Age Group**.

**H1:** There is an association between **online payment behavior** and **Age Group**.

**ANOVA**

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
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</thead>
<tbody>
<tr>
<td>Customer Convenience</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
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<tr>
<td>Secured Payment Architecture</td>
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<td></td>
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</tr>
<tr>
<td>Between Groups</td>
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<td>10.275</td>
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<td>Within Groups</td>
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<td></td>
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<tr>
<td>Between Groups</td>
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<td>Payment Preference of customers</td>
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<td></td>
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</tr>
<tr>
<td>Between Groups</td>
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<tr>
<td>Discount by portals</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Between Groups</td>
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<tr>
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</tbody>
</table>

From the above analysis there is an association between **online payment behavior** and **Age Group**. The p-value of two variables is 0.007 and 0.003, so we can say that Alternative hypothesis is accepted.

**H0:** There is no association between **online payment behavior** and **Education**.
From the above analysis it is distinct that there is an association between online payment behavior and Education. The \( p \)-value of four variables is 0.005, 0.002, 0.002 and 0.021, so we can say that Alternative hypothesis is accepted.

H0: There is no association between online payment behavior and Marital status.

H1: There is an association between online payment behavior and Marital status.

From the above analysis it has been proven that there is an association between online payment behavior and Profession. The \( p \)-value of three variables are 0.000, 0.007 and 0.003, so we can say that Alternative hypothesis is accepted.

H0: There is no association between online payment behavior and Income.

H1: There is an association between online payment behavior and Income.

From the above analysis it has been proven that there is an association between online payment behavior and 
Profession. The \( p \)-value of three variables are 0.001, 0.01 and 0.039, so we can say that Alternative hypothesis is accepted.
Results from objective 2

<table>
<thead>
<tr>
<th>SL No</th>
<th>Study Factor</th>
<th>Variable Name</th>
<th>P-value</th>
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<tbody>
<tr>
<td>1</td>
<td>Gender</td>
<td>i. Customer Convenience</td>
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</tr>
<tr>
<td>2</td>
<td>Age</td>
<td>i. Customer Convenience</td>
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<tr>
<td></td>
<td></td>
<td>ii. Strategy for Referral Coupon</td>
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<td>Education</td>
<td>i. Customer Convenience</td>
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<tr>
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<td>ii. Secured Payment Architecture</td>
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<td></td>
<td>iii. Strategy for Referral Coupon</td>
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<tr>
<td></td>
<td></td>
<td>iv. Payment Preference of customers</td>
<td>0.021</td>
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<td>Status</td>
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<tr>
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<td>iv. Payment Preference of customers</td>
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<td>ii. Strategy for Referral Coupon</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>iii. Payment Preference of customers</td>
<td>0.039</td>
</tr>
</tbody>
</table>

CONCLUSION

- Ordering Food Online or through an App is a new concept in India, especially in Kolkata. We tried to find out in this research paper what are the factors that have a positive impact on this new concept and how are the demographic variables associated with it.
- The result shows that 5 factors have been extracted from 15 variables which influences customers' mode of payment preferences, they are:
  - Customer Convenience
  - Secured payment architecture
  - Strategy for referral coupon
  - Payment preference of the customers
  - Discount by Portals
- The survey conducted revealed a positive attitude and behavior towards E-payment while ordering Food Online through Swiggy App. The study also shows that there is significant association between online payment behaviors with respect to Demographic variables.
- This study will help the industry as well as the new entrepreneur to formulate marketing strategies in such a way that they can increase the volume of sale.

LIMITATION AND FUTURE SCOPE OF THE STUDY

Research is an ongoing process. The study was confined in and around Kolkata in the field of customer preferences and their perception of e-payment system about the Food Delivery apps Swiggy-

- In future, researchers can extend their area of study to other districts or even other states of India.
- In future, researchers can explore further with their innovative ideas and will continue to find more influencing factors which has an impact on online food delivery system.

REFERENCES


