



“ANALYZING THE FACTORS IMPACTING ORDER RATES WITHIN THE QUICK COMMERCE SECTOR IN BANGALORE CITY”

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I. Abstract:

The rapid expansion of the quick commerce sector in Bangalore city has brought about significant transformations in the way goods and services are delivered to consumers. With the rise of on-demand delivery platforms and the emergence of dark stores, the dynamics of consumer behavior and operational strategies have evolved rapidly. However, despite its burgeoning growth, there remains a paucity of research into the factors that influence order rates within this sector.

This study seeks to fill this gap by conducting a comprehensive analysis of the factors impacting order rates within the quick commerce sector in Bangalore. Utilizing a mixed-methods approach, including surveys and interviews with key stakeholders such as quick commerce service providers and delivery partners, this research aims to shed light on the complexities of the industry and elucidate the mechanisms that drive order rates.

Key Words: Quick Commerce, Order Rates, Dark stores, Factors, Delivery Partners, Efficiency, Challenges, Strategies.

II. Introduction:

Quick commerce refers to the rapid delivery of goods, typically groceries and other daily essentials, often within an hour of ordering. It's a service that's gained popularity, especially in urban areas where people value convenience and speed. In Bangalore, with its bustling urban lifestyle, quick commerce services have seen significant demand. Companies like Dunzo, Swiggy Instamart, and Grofers Instamart(Blink it) are some of the players offering such services in the city. These platforms leverage technology and a network of delivery personnel to ensure swift deliveries, catering to the fast-paced lifestyle of Bangaloreans.

III. Review of Literature:

Ramakrishnan and Siva Subramanian (2019) examine the attitude of consumers towards online grocery stores in the article "A Study about Consumer Attitude towards Online GroceryStores" The study finds that consumer attitudes towards online grocery stores are positively influenced by perceived usefulness, perceived ease of use, and perceived trustworthiness of theonline platform. The authors also find that the perceived risk associated with online grocery shopping has a negative impact on consumer attitudes towards online grocery stores. The study concludes that retailers must focus on building trust with consumers, providing a seamless anduser-friendly online platform, and reducing perceived risks associated with online grocery shopping to increase consumer adoption and usage of online grocery stores.

IV. Scope of the Study:

The primary objective of this study is to pinpoint and analyze the challenges encountered by quick commerce enterprises and delve into their strategies for overcoming these obstacles. Additionally, the study aims to identify the determinants influencing the order rates specifically within the domain of dark stores. The investigation places a particular emphasis on elucidating the operational dynamics of dark stores, shedding light on their functioning and how companies adeptly navigate inventory management challenges while maintaining a delicate equilibrium in their associations with delivery partners.

V. Research Methodology:

This research is both Quantitative and Descriptive in nature. Both the primary and secondary data are used. This research design is used among the employees of quick commerce in dark stores to identify the challenges faced by the quick commerce industry in the Bangalore market.

VI. Research Design:

This research is Quantitative and Descriptive in nature. Both the primary and secondary data are used. This research design is used among the employees of dark stores of rapid delivery companies to identify the challenges faced by the quick commerce industry in Bangalore City. The aim of the quantitative research is to find the challenges faced by the quick commerce industries that affect their order rates to gain a better understanding of the business in the current market.

Source of Data:

Primary Data: Offline survey was conducted using a questionnaire made through Google Forms, and the results were used as a primary data source.

Secondary Data: The secondary data sources are published articles, journals, and research papers by various authors in the field of Quick commerce and On-demand delivery.

Methods and Sources:

The research examines primary data obtained by preparing a questionnaire and examining the challenges faced by the Quick Commerce service in delivering groceries and other necessary products. The critical survey also considers secondary data obtained from many research papers. Respondents are dark store employees. Main data analysis was done based on data obtained from the questionnaire circulated to respondents. The questions used focused on research topics, including maintaining inventories, everyday challenges, and competitions they face while providing their services.

Sample Type:

The sampling type used in this research is non-probability sampling, as the number of Dark stores present in Bangalore City is unknown. The Non-probability sampling type used for this research is Convenience sampling.

Sample Size:

The number of dark stores in Bangalore is unknown, and the sample size (n) is determined as 30 for this research.

VII. Data Analysis:**Descriptive Statistics – Challenges affecting order rates:**

	N	Mean	Std. Deviation
Safety and security concerns	30	3.90	1.185
Managing delivery partners	30	3.77	1.223
High operating costs	30	3.53	1.074
Handling sensitive products	30	3.50	1.225
Logistical challenges	30	3.47	1.279
Product quality issues	30	3.40	1.102
Unethical customers	30	3.33	1.348
Maintaining suppliers	30	3.33	1.241
Last-mile delivery challenges	30	3.27	1.311

High competition	30	3.13	1.224
Insufficient dark store space	30	3.10	1.125
Payment management issues	30	3.10	1.213
Limited SKUs	30	2.97	1.402
Regulatory challenges	30	2.87	1.008
Employee theft	30	2.77	1.165
Valid N (listwise)	30		

Table 2 Descriptive statistics for challenges affecting order rates

Interpretation:

The challenges are grouped into three groups based on their mean value as highly important, moderately important and unimportant. A mean value above 3.5 belongs to a Highly important group, values above 3-3.5 are considered moderately important and values below 3 are considered unimportant.

Highly Important Factors:

Safety and security concerns, managing delivery partners, High operating cost, Handling sensitive product.

Moderately Important Factors:

Logistical challenges, Product quality issues, Unethical customers, Maintaining suppliers, Last-mile delivery challenges, High competition, Insufficient dark store space, Payment management issues.

Least Important factors

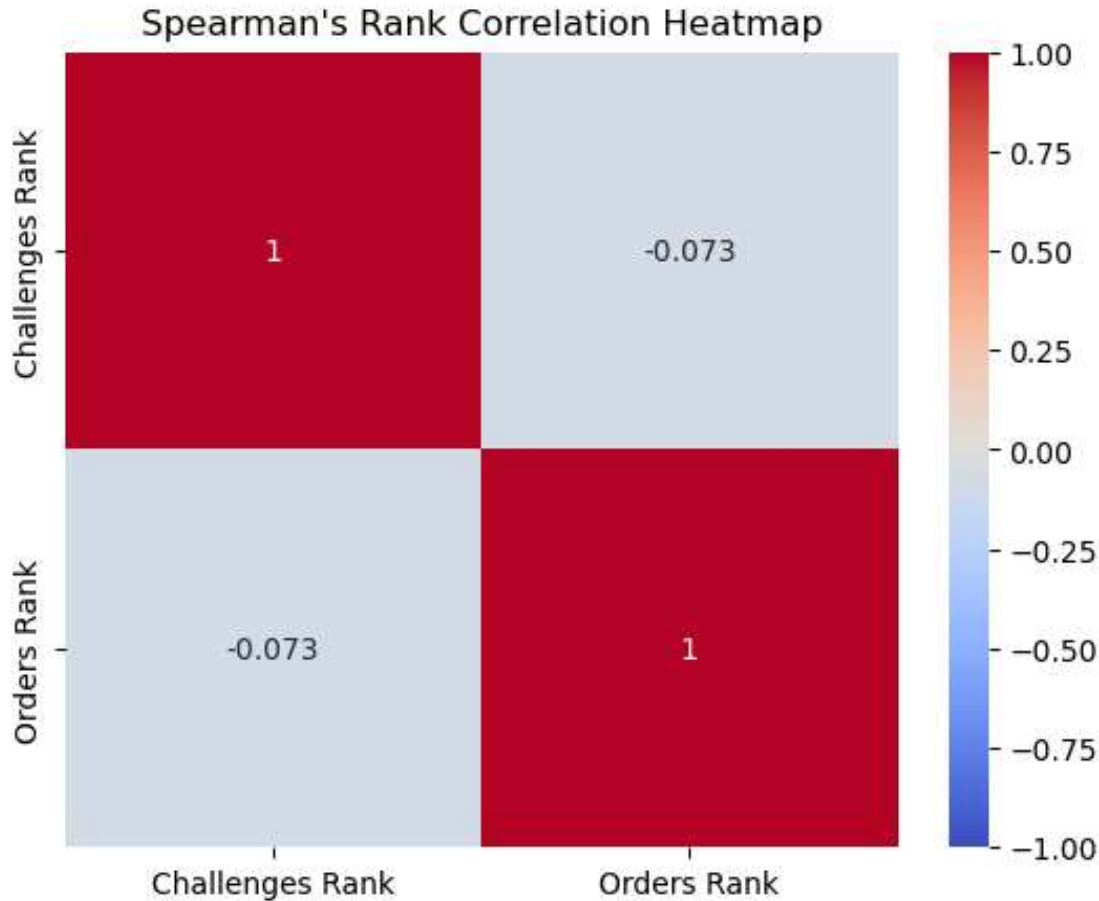
Limited SKUs, Regulatory challenges, Employee theft.

The brands should focus more on the highly and moderately important factors to increase their order rates. They should come up with solutions to solve this problem effectively in order to gain competitive advantage and sustain in the market.

HYPOTHESIS 1

Spearman's Rank Correlation Coefficient: -0.07301370247094735

P-value: 0.7013994284123449



Source: Python

Interpretation

Spearman's Rank Correlation Coefficient (-0.073):

- The Spearman's rank correlation coefficient measures the strength and direction of the relationship between two variables. In this case, the coefficient of -0.073 indicates a very weak negative correlation between employee welfare factors (working hours, job security, wages, and company support) and order rates.
- A negative correlation suggests that as one variable increases, the other tends to decrease, albeit very weakly in this case.

P-value (0.701):

- The p-value is used to determine the significance of the correlation coefficient. It indicates the probability of observing the correlation coefficient (or more extreme) if the null hypothesis (no correlation) is true.

- In this analysis, the p-value of 0.701 is quite high, indicating that there is a 70.1% probability of observing a correlation coefficient of -0.073 or more extreme under the assumption that there is no true correlation between employee welfare factors and order rates.

Insights

Weak Negative Correlation:

- The very weak negative correlation coefficient (-0.073) suggests a minor tendency for order rates to decrease slightly as certain employee welfare factors increase. However, this correlation is not strong enough to draw definitive conclusions. This could mean that as working hours increase, job security improves, wages increase, or company support becomes more favorable, there might be a slight decrease in order rates. However, the impact of these factors appears to be minimal.
- The high p-value (0.701) indicates that the correlation observed (-0.073) is not statistically significant. This means that the data does not provide enough evidence to reject the null hypothesis, which suggests that there is no significant correlation between employee welfare factors and order rates.

HYPOTHESIS 2

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•                               OLS Regression Results
• =====
•                               Dep. Variable:      Order_Rates_Encoded      R-squared:
•                               0.050
•                               Model:                OLS              Adj. R-squared:
•                               0.016
•                               Method:              Least Squares      F-statistic:
•                               1.482
•                               Date:                 Tue, 05 Mar 2024      Prob (F-statistic):
•                               0.234
•                               Time:                22:47:16          Log-Likelihood:
•                               -30.680
•                               No. Observations:    30              AIC:
•                               65.36
•                               Df Residuals:        28              BIC:
•                               68.16
•                               Df Model:           1
•                               Covariance Type:    nonrobust
• =====
•                               coef      std err      t
•                               P>|t|      [0.025      0.975]
• -----
•                               const            1.5686      0.167      9.404
•                               0.000      1.227      1.910
•                               Technological_Advancements_Encoded      0.2319      0.190      1.217
•                               0.234      -0.158      0.622
• =====
•                               Omnibus:           2.877      Durbin-Watson:
•                               1.712
•                               Prob (Omnibus):     0.237      Jarque-Bera (JB):
•                               1.867
•                               Skew:              0.393      Prob (JB) :
•                               0.393
•                               Kurtosis:          2.064      Cond. No.
•                               2.19
• =====

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Source: Python

Interpretation

R-squared (0.050):

The R-squared value measures the proportion of the variance in the dependent variable (Order Rates Encoded) that is explained by the independent variable (Technological Advancements Encoded). In this case, the R-squared value of 0.050 indicates that only about 5% of the variation in order rates is explained by technological advancements.

F-statistic (1.482):

- The F-statistic tests the overall significance of the regression model. Here, the F-statistic is 1.482, and the associated p-value is 0.234.
- A high F-statistic with a low p-value (below the chosen significance level, often 0.05) indicates that the overall model is statistically significant. However, in this case, the p-value is relatively high.

Coefficients:

- The coefficient for the constant term (constant) is 1.5686. This represents the estimated average order rate when the independent variable (Technological Advancements Encoded) is zero.
- The coefficient for Technological Advancements Encoded is 0.2319. This indicates the change in the average order rate for a one-unit increase in the technological advancements variable.

P-values:

- The p-value associated with the coefficient of Technological Advancements Encoded is 0.234.
- A p-value above 0.05 suggests that the variable is not statistically significant at the 5% level of significance.

Insights

Low Impact of Technological Advancements:

The low R-squared value (0.050) indicates that only a small portion (5%) of the variation in order rates can be explained by technological advancements (AI utilization, automation, real-time tracking). This suggests that these specific technological factors might not have a substantial impact on the order rates within quick commerce operations in Bangalore.

Non-Significant Coefficient:

The coefficient for Technological Advancements Encoded is 0.2319, but the associated p-value is 0.234, which is above the typical significance level of 0.05. This indicates that the variable for technological advancements is not statistically significant in predicting order rates. The confidence interval for the coefficient (-0.158 to 0.622) includes zero, further supporting the idea that this variable may not have a significant impact.

Statistical Significance:

The F-statistic of 1.482 with a p-value of 0.234 suggests that the overall regression model is not statistically significant at the conventional 5% level. This implies that the model, including the technological advancements variable, does not provide strong evidence to reject the null hypothesis.

Implications:

Based on these results, it seems that the specific technological advancements analyzed (AI utilization, automation, real-time tracking) might not be significant drivers of order rates within quick commerce operations in Bangalore.

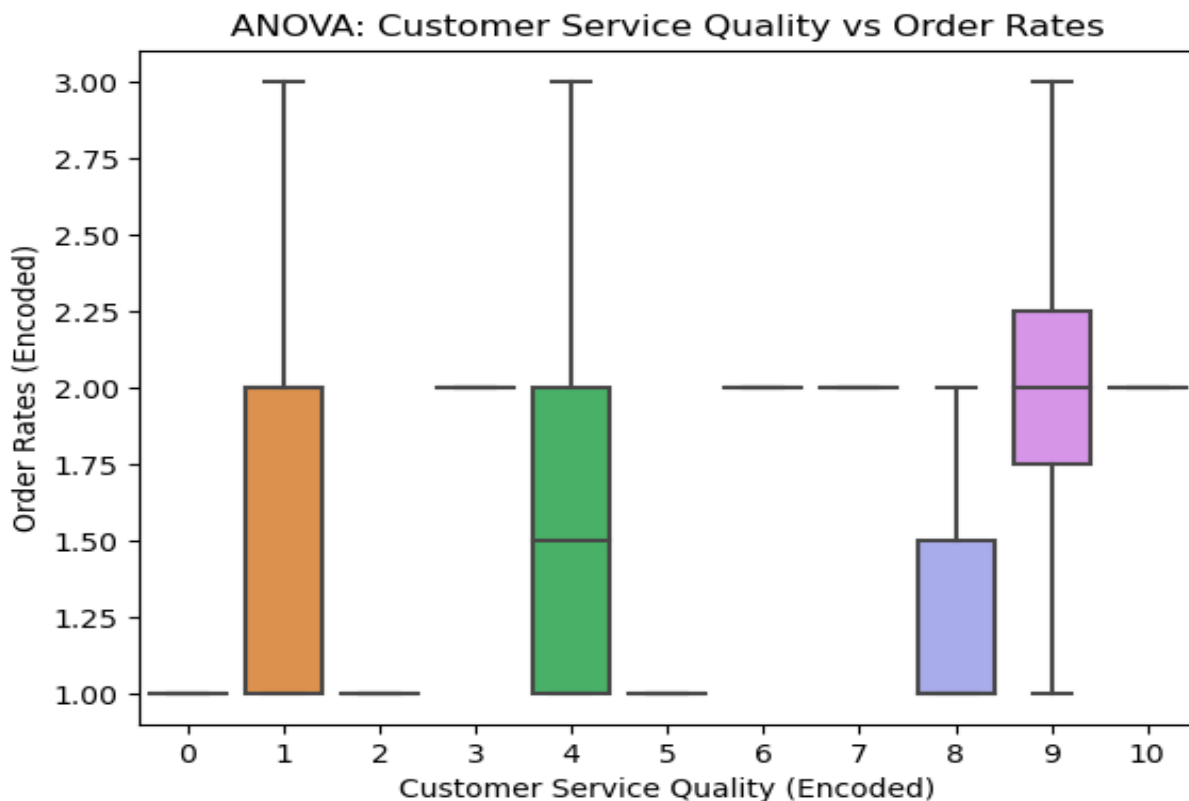
The regression analysis suggests that the examined technological advancements (AI utilization, automation, real-time tracking) may not have a significant impact on order rates within quick commerce operations in Bangalore.

The low R-squared value, non-significant coefficient, and the overall model's non-significance indicate that other factors might play a more substantial role in influencing order rates.

HYPOTHESIS 3

F-Statistic: 19.875776397515526

P-value: 3.841998509073457e-05



Source: Python

Interpretation

F-Statistic: 19.875776397515526

- The F-statistic measures the ratio of variation between groups (due to customer service quality) to the variation within groups (within different levels of customer service quality).
- A higher F-statistic indicates a more significant difference between groups, suggesting that the independent variable (customer service quality) has a stronger impact on the dependent variable (order rates).

P-value: 3.841998509073457e-05 (approximately 0.00003842)

- The p-value associated with the F-statistic is extremely low, well below the typical significance level of 0.05.
- This low p-value indicates strong evidence against the null hypothesis, suggesting that customer service quality does indeed have a significant impact on order rates in the quick commerce industry in Bangalore.

Significant Impact of Customer Service Quality:

- The low p-value of 3.841998509073457e-05 (or 0.00003842) indicates strong evidence against the null hypothesis.
- This suggests that customer service quality, including factors such as easy return policies, complaint resolution procedures, and dedicated support teams, significantly affects order rates in the quick commerce industry in Bangalore.

High F-Statistic:

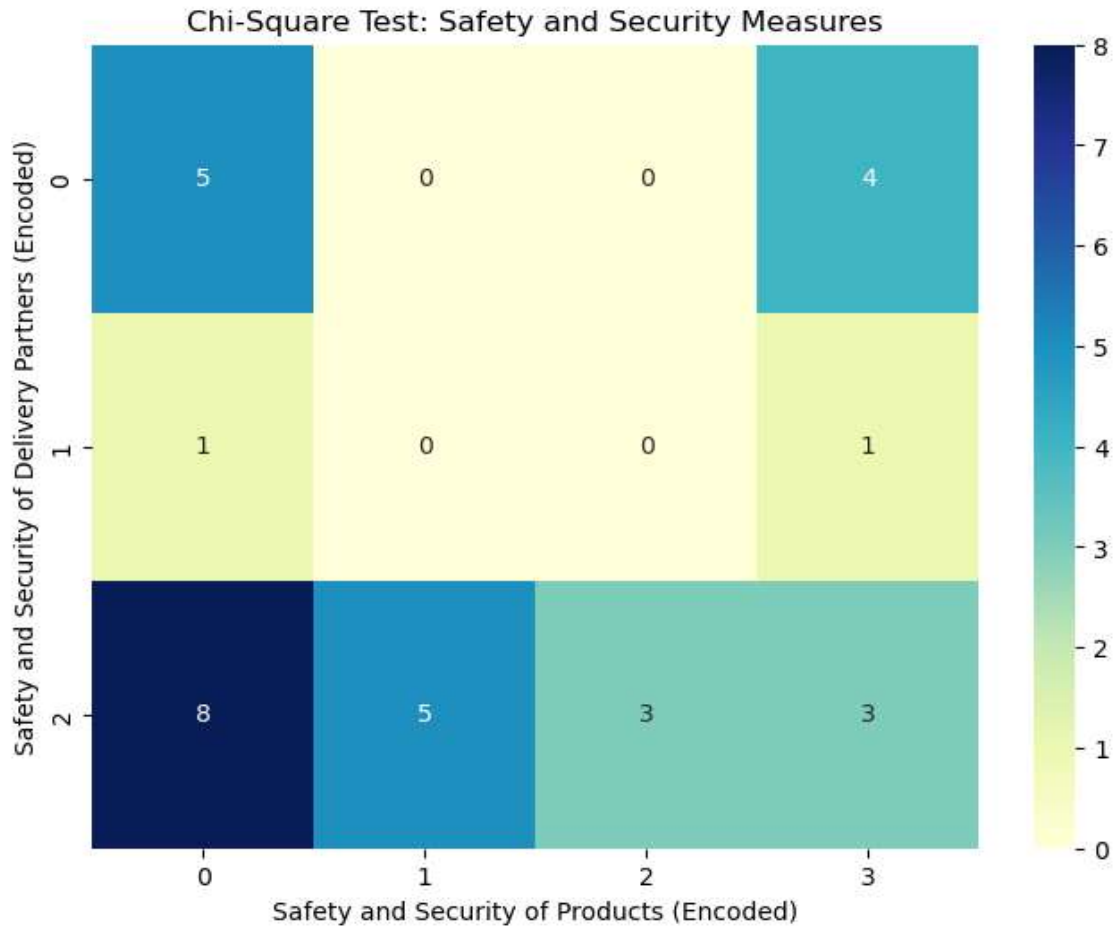
- The F-statistic of 19.875776397515526 is relatively high, indicating a substantial variation between groups when considering customer service quality and its impact on order rates.
- This further supports the idea that customer service quality plays a significant role in influencing order rates in the quick commerce sector.

Practical Implications:

- Based on these results, it is clear that customer service quality has a notable impact on the ordering behaviour of customers in the quick commerce industry in Bangalore.
- Companies that focus on providing excellent customer service, including easy returns, efficient complaint resolution, and dedicated support teams, are likely to experience higher order rates and improved customer satisfaction.

In conclusion, the ANOVA test results indicate that customer service quality, encompassing factors such as easy return policies, complaint resolution procedures, and dedicated support teams, significantly affects order rates in the quick commerce industry in Bangalore.

HYPOTHESIS 4



Source: Python

Interpretation

Chi-Square Statistic: 7.1914160401002505

- The Chi-Square statistic measures the association between categorical variables in a contingency table.
- A higher Chi-Square value suggests a stronger association between the variables.

P-value: 0.30350749780600983

- The p-value associated with the Chi-Square statistic is 0.3035.
- The p-value represents the probability of observing the Chi-Square value (or more extreme) if the null hypothesis (H_0) is true.

Degrees of Freedom: 6

The degrees of freedom in this analysis are 6, which is determined by the number of categories minus

- The Chi-Square test results indicate that safety and security measures for delivery partners and products do not have a significant influence on order rates within the quick commerce sector in Bangalore. With a p-value of 0.3035, which is higher than the conventional significance level of 0.05, there is not enough evidence to reject the null hypothesis.
- The Chi-Square statistic of 7.1914, while measuring the association between these measures and order rates, does not demonstrate a statistically significant relationship. This suggests that other factors beyond safety and security, such as customer preferences, pricing strategies, competition, or marketing efforts, may play a more substantial role in determining order rates in this industry.

VIII. FINDINGS

- The employees of quick commerce companies are found to be unsatisfied with their job and work environment. Delivery partners are facing many challenges during their delivery.
- Some Dark-stores are struggling to incorporate technology in their business model.
- Some stores are receiving less order per day due to improper inventory management system.
- Factors that are highly affecting the order rates are safety and security concerns, managing delivery partners, High operating costs and handling sensitive products.
- Factors that have medium impact on the order rates are found to be Logistical challenges, Product quality issues, Unethical customers, Maintaining suppliers, Last mile delivery challenges, high competition, Insufficient dark store space and Payment management issues.
- Q-commerce companies are not proving employee friendly policies.
- A large proportion 46% of stores use all product delivery safety measures, including using secure packaging, contracting with reliable vendors, and training employees on handling products.
- In most stores, 13% receive at least 200 orders daily, with 44% receiving 200-400 orders and another 43% receiving more than 400 orders.
- Blink It and Instamart are facing more regulatory challenges than Zepto. Blink It, and Instamart are facing the frequent challenges in maintaining suppliers than Zepto.
- The study found a minor correlation between employee welfare factors (working hours, job security, wages, company support) and order rates. While factors like job security and company support may have some influence, their impact on order rates appears to be relatively minor. Stakeholders are advised to maintain positive aspects of employee welfare to potentially enhance order rates.
- Despite prevalent technological advancements (AI utilization, automation, real-time tracking), their direct impact on order rates was not statistically significant. Stakeholders should view technology as an enabler rather than a standalone factor for improving order rates. Continued investment in technology aligned with broader business strategies could enhance efficiency and customer experience.

- The study provided compelling evidence that customer service quality significantly affects order rates. Features such as easy return policies, efficient complaint resolution, and dedicated support teams are crucial for driving customer satisfaction and loyalty. Stakeholders are urged to prioritize investments in customer-centric services to boost order rates and overall business success.
- Safety and security measures for delivery partners and products were found to have no significant influence on order rates. While essential for trust and brand reputation, these measures alone may not directly impact order rates. Stakeholders should maintain these measures as foundational elements of operations for customer trust and satisfaction.

XI. Suggestions

- Dark stores can use a real-time inventory management system that updates the stock levels of products in the store as soon as a purchase is made. This will allow the store to keep track of the products that are available for purchase and those that are out of stock.
- They can adopt “Amazon Go checkout free” approach and include AI to have live track of the customer’s cart.
- Companies should analyse their sales data to determine the requirement of stocks based on seasons and trends.
- The companies can use autonomous mobile robots and collaborative robots to reduce the workload of the employees.
- Dark stores should consider offering more employee-friendly policies to improve the satisfaction and retention of their delivery partners.
- Stores should implement training programs for their delivery partners to ensure safe driving practices and reduce the incidence of road accidents.
- Dark stores should consider implementing automated workload management systems to reduce the burden on their staff.
- Stores should ensure that their packaging is secure to prevent damage to products during transportation to ensure the safety of the product.
- Dark stores should consider implementing a mix of wage systems to incentivize their delivery partners and improve their performance.
- Stores should consider implementing technology to optimize delivery routes and reduce delivery time and costs.

XII. Conclusion:

Quick commerce companies should not emphasize solving issues related to Safety and security concerns, managing delivery partners, High operating costs, and handling sensitive products. They should come up with creative solutions to gain a competitive advantage and increase their order rates. In order to be successful and penetrate the market, Q-commerce companies should understand the current trends and understand the needs and expectations of the customers. However, customer service quality emerges as a significant driver of order rates, with robust return policies, efficient complaint resolution, empowered support teams, and personalized customer engagement

strategies playing pivotal roles. Safety and security measures, while important for trust and reputation, do not directly impact order rates according to the study.

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