

Modelling Customer Satisfaction and Loyalty Using Structural Equation Modeling Based on Service Quality Measurement in the 10-Minute Online Grocery Delivery Industry

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Abstract

With lives getting faster and customers becoming more demanding and impatient, companies are wagering on attaining the customers' needs fleetly. The impatient nature of the customer has led to the ballooning of a new concept known as "10-minute delivery". In the competitive landscape of the online grocery delivery industry, merely delivering the product to customers is no longer enough to claim the coveted title of an industry leader - a thorough analysis of the intricate factors that underpin customer satisfaction and loyalty is an absolute imperative. This research aims to study the impact of 10-minute online grocery delivery service quality on the satisfaction and loyalty of customers in Kolkata. The study targeted online grocery shoppers in the city of Kolkata & collected 274 responses. A structural equation model was developed to study the relationships between the established seven dimensions (app interface, information quality, grocery quality, delivery service, sales promotion, packaging & customer support) of grocery service quality and customer satisfaction and loyalty. The findings of the study suggest that companies should focus on improving the app interface, grocery quality, delivery service, and customer support to enhance customer satisfaction in this industry. The study also found a significant association between customer satisfaction and loyalty, indicating that customers who are satisfied with the quality of 10-minute online grocery delivery services are more likely to remain loyal to the grocery delivery service provider. Overall, this study not only offers essential insights to companies striving to enhance their 10-minute grocery delivery services and gain a competitive edge in this industry but also contributes to the body of knowledge in this relatively new and unexplored area of research.

Keywords: Customer Loyalty, Customer Satisfaction, Grocery Delivery, Grocery Shopping, Online Grocery Shopping, Service Quality

1. Introduction

In this age of globalization, the internet is being utilized more frequently to facilitate online business transactions. These transactions are taking place not only between various business entities but also between business entities and customers. One of the business applications that makes use of the Internet that has garnered a lot of attention over the past few years is online grocery shopping.

Online grocery shopping typically refers to consumers using the websites of retailers to purchase groceries by clicking the mouse button next to the desired items which are then delivered by the retailer. But now, as a result of the proliferation of various facilitators, enterprises such as Zepto and Blinkit are providing a common platform to consumers and retailers alike, on which they can engage in buying and selling activities. The promise to deliver groceries within 10 minutes

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is the fundamental competitive advantage that these companies have developed for themselves.

When compared to traditional grocery shopping, online grocery buying provides several benefits. Convenience is undoubtedly one of the service's most significant benefits. Customers can now buy groceries without leaving their homes, saving them time and effort that would have been spent on commuting to the store, standing in a queue, or searching for products. The wide selection of choices that this platform provides helps the customers to choose the products and compare prices across different stores. The fact that the order will be delivered in only 10 minutes is the icing on the cake, providing the customer with plenty of leeway in the event of hiccups or the need to make quick revisions.

Although online grocery shopping provides a plethora of advantages and convenience to customers; nevertheless, the service does have a few drawbacks as well. The 10-minute grocery delivery service relies significantly on technology as it requires access to a computer or mobile device and internet connectivity. Online grocery shopping doesn't allow the same degree of freedom in terms of product selection, quality checking, and price bargaining as opposed to traditional grocery shopping. Some consumers may miss the tactile shopping experience and the ability to interact with store employees. Most importantly, the ten minutes online delivery relies extensively on the efficiency and competence of the seller & the delivery agent as they need to pack & deliver the items within the stipulated time.

There has also been some criticism about the 10-minute delivery. According to several critics, although speedy delivery of services is beneficial from a customer's perspective, it can create a hazardous precedent that can have disastrous long-term implications for delivery partners' well-being (Sharma, 2022).

In the recent few years, we are witnessing a shift in the country's pattern of grocery shopping away from traditional shopping and toward shopping conducted online. The flexibility and convenience offered by these

aggregators are harmonizing well with the requirements of the customers. Given the massive size of the global grocery industry estimated at USD 11,324.4 billion in 2021 and projected to expand at a CAGR of 3.0% from 2022 to 2030 (Grand View Research, 2022), it is apparent that the market for online grocery shopping has a great lot of untapped potential.

Studying consumer behaviour in online grocery shopping has become very crucial at this stage for multiple reasons, given that the business is in its infancy and little is known about how customers will behave in this industry. By analyzing online grocery buying behaviour, businesses can acquire insight into customer preferences, needs, and behaviour patterns. This information can be utilized to enhance the overall customer experience by providing products and services that are in line with customer demands. Since online grocery shopping is a relatively young industry that is undergoing rapid revenue development and growing popularity, businesses must understand customer behaviour to capitalize on the growing market and stand out from competitors.

The United Kingdom is generally considered one of the most evolved Internet grocery sectors in the world (Note, 2007). However, a study from Mintel indicates that purchasing groceries through the internet is still a very limited market and that this trend is not likely to catch on (Mintel International Group Limited, 2007). The online grocery buying sector in India is still in its early stages. There hasn't been much research on this market recently. Even though there has been a lot of interest in researching shopping online, studies on how people behave when they buy groceries online or the dimensions of customer satisfaction in online grocery shopping are still uncharted sectors and are just starting to emerge. This research aims to study the relationship between six dimensions (app usage, information quality, grocery quality, delivery service, discounts/offers and packaging) on customer satisfaction in the ten minutes grocery delivery service. The research will also take a close look at the relationship between customer satisfaction and loyalty in the ten minutes grocery delivery service.

2. Literature Review

Electronic grocery shopping, also known as online grocery shopping, is a form of e-commerce that facilitates individuals and businesses to easily purchase food items and other household necessities, especially perishable items. Electronic grocery shopping is also commonly known as online grocery shopping. The majority of individuals place their orders with the help of a smartphone app or an online retailer these days.

Research into online grocery shopping began in the late 1990s when found that high-tech baby boomers did a lot of shopping at home (Park *et al.*, 1996). People wanted these services because they wanted to make their lives easier, and online shopping was one way to make things easier, especially for items that replenish very quickly. Most people place orders these days through a mobile app or an online store.

Grocery shopping, relative to other shopping activities, is widely recognized in the extant literature as utilitarian, goal-driven, and a chore (Aylott & Mitchell, 1998; Geuens *et al.*, 2003; Melis *et al.*, 2016). Shoppers want a convenient, efficient, and smooth customer experience from the time they start looking for a product to the time they receive it, return it and get their money back (Hübner *et al.*, 2016; Yumurtacı Hüseyinoğlu *et al.*, 2017; Galipoglu *et al.*, 2018). Customarily, going grocery shopping has been considered a tedious and time-consuming activity (Aylott & Mitchell, 1998; Geuens *et al.*, 2003).

Consumers dread grocery shopping almost as much as going to the dentist, according to a poll performed by Peapod.com's creators (Corral, 1999). However, the rising rates of internet adoption and time poverty among consumers, predict that people would welcome the efficiency of online grocery shopping with open arms (Lakin, 2002; Lakin, 2003; Lakin, 2003). However, the adoption of online grocery services has been noticeably slower than expected. According to research by PriceWaterhouseCoopers, just approximately 1% of monthly US grocery trips are captured by online retailers. Regarding grocery shopping, just 7% of respondents who have shopped

online say they conduct at least half of their shopping from home using the internet, while over 50% say they only do "very little" online food shopping (Pastore, 2000). Similarly, in the United Kingdom, online consumer spending represented barely 0.4% of the £95 billion food industry (Peppers & Rogers, 2001).

Even for Tesco, the most successful online supermarket, the internet segment comprises less than 2% of the company's overall revenues (Rigby, 2005).

It appears that the cost that is charged for delivery by food stores is one of the reasons why there is such a poor uptake. In point of fact, according to the findings of a survey that was carried out by PriceWaterhouseCoopers (Clark, 2000), nearly half of the internet users cite the availability of free delivery for large orders as the factor that will most likely convince them to use an online grocery service shortly. According to a study carried out by OMD snapshots, the prospect of having to pay for delivery prevented twenty per cent of respondents from doing their grocery shopping online (Online groceries in the bag, 2014).

The percentage of people who buy groceries online is, on the other hand, far smaller than the overall percentage of people who shop online. In other words, a significant number of consumers who do not purchase groceries online have previous experience with online shopping for other types of items. Internet grocery shopping, like many other advances (Frambach *et al.*, 1998), has had a tough time penetrating the consumer market (Ring & Tigert, 2001; Geuens *et al.*, 2003).

Although the concept of purchasing groceries online is still in its infancy in India, the practice has been gradually gaining popularity in several other countries for some time (Laato *et al.*, 2020). The percentage of Americans who do their weekly grocery shopping online has been relatively low, but it's been rising. Approximately 43% of Americans made an online grocery purchase in 2019, with 21% doing so regularly and 10% doing so twice a month (Cohen *et al.*, 2020; Clifton *et al.*, 2022). Parents and those with affluent incomes (above \$100,000) are more likely to buy groceries online. Working adults were somewhat more

likely to do their grocery shopping online. Avoiding crowds and lengthy lines, taking care of a sick family member, or moving to a new home are some of the other pre-pandemic reasons why people shopped for groceries online. The annoyance of waiting for deliveries, delivery costs, out-of-stock goods, and improper substitutes were obstacles to online food shopping. Before the epidemic, 83% of Americans shopped in person for groceries at least once per week; by 2021, this percentage had decreased to 79% (Clifton *et al.*, 2022; Brennan, 2021).

A rise in the urge for consumer satisfaction is almost inevitable in the online grocery market, just as it has been in other industries. It is difficult to foresee a profitable future for a business that does not have satisfied customers since the customer is the most important part of any firm. It is critical to maintain a strong tie with the organization's customers to ensure continued success.

Customers are an essential element of both the firm and the market as a whole. For companies to thrive in today's hypercompetitive environment, they need to provide goods and services that are, on average, of very high quality. Consumers will be satisfied with an organization's performance if it is commensurate with the customer's expectations; on the other hand, customers will be unsatisfied with the organization if it performs poorly in comparison to the customer's expectations (Swan & Combs, 1976).

According to Reibstein (2002), to attract and retain customers, the significance of customer satisfaction and the variables influencing customer satisfaction is of growing relevance to any organization. The significance of maintaining satisfied customers must not be overlooked. In today's hypercompetitive environment, businesses must place a high priority on the satisfaction of their customers; failing to do so will result in their complete elimination from the market.

Customers who are delighted with a company tend to stay loyal to it and buy more from it (Williams & Naumann, 2011). Though the notion of loyalty is particularly difficult to define due to its complexity

(Raj G. Javalgi & Moberg, 1997), the American Marketing Association oversimplifies the concept by describing it as the situation in which a consumer typically purchases the same manufacturer-originated product or service repeatedly over time as opposed to purchasing from multiple suppliers within the category. It is generally agreed that customer satisfaction is the basic foundation for the process that ultimately results in customer loyalty.

Loyal customers talk positively about the company and its products, give the company new ideas, pay less attention to competing brands, and are less sensitive to price. When a consumer is satisfied with a particular store, whether it be an online or a brick-and-mortar location, there is a high likelihood that they will return to that location for future purchases (Kotler *et al.*, 2018).

It is a commonly acknowledged theory that a business's prosperity and long-term development are inextricably linked to the level of customer satisfaction and loyalty that the firm maintains. According to previous studies, loyal customers not only help a company elevate its profits by demonstrating an undying loyalty to the organization but also allow it to reduce the expenses associated with acquiring new consumers (Reichheld *et al.*, 2000). According to Kim *et al.*, (2009) and Suhartanto *et al.*, (2018), repeat consumers are likely to buy more than customers who are just joining the business. Creating a loyal customer requires providing advantages that go above and beyond what the customer is aware of. Acquired customers pay premium pricing, recommend new customers to the company, and help the company reduce its operational expenses. Acquired customers pay premium pricing, recommend new customers to the company, and help the company reduce its operational expenses.

As a result of rising disposable incomes, shifting customer preferences, and the convenience of new digital platforms, the Indian retail business has seen a dramatic shift in how people shop for food and grocery items. As consumers dedicate less time to shopping and more time to other activities, their need for convenience has intensified, and they have often

redirected their focus to buying online as an alternative medium.

Considering the Indian market for food and groceries as a whole, the market for online grocery shopping is a niche industry. Even at this juncture, purchasing groceries online is a relatively new phenomenon. In the last few years, however, this industry has grown substantially owing to the rise and popularity of e-commerce websites, the rising urbanization of life, the shift in customer lifestyles, and the preference of technologically savvy young people to purchase groceries online.

The trend of buying online is becoming more ubiquitous, and many industry experts believe that groceries will be the next major retail sector to be upended by the rise of e-commerce (Danziger, 2018).

Even though these works looked at online grocery shopping in a more general sense, the research works set didn't set any variables to study customer satisfaction and loyalty in the online grocery shopping industry, and none of the work has been carried out without taking the country India as a sample area, which allows us to delve deeply into the understanding of the impact of 10-minutes Grocery Service Quality on the Satisfaction and Loyalty of Customers in India.

2.1 Conceptual Model and Hypothesis Development

2.1.1 Application/User Interface

An application interface is a connection between human and computer interaction in which humans interact with computers or machines to accomplish operations. According to the definition, the app interface is a component of a system that serves as an intermediate between users and systems, allowing users to engage with the system more efficiently (Pratama & Cahyadi, 2020).

The user experience is an essential component of a high-quality software product and is the source of a defensible competitive advantage for enterprises, in particular for new entrepreneurs who are introducing brand-new offerings. End-users physically, perceptually, and

intellectually interact with the user interface (Meixner *et al.*, 2011). As the majority of businesses in today's world are conducted through websites or applications, and customers spend a significant amount of time on applications to search for products or place orders, businesses must provide customers with a streamlined experience as this will contribute significantly towards the satisfaction of the customers.

H1: There is no significant relationship between app interface and customer satisfaction

2.1.2 Information Quality

A consumer's perception of the correctness, relevance, timeliness, completeness, consistency, and format of the information presented on a website or application concerning goods and transactions is referred to as information quality (DeLone & McLean, 2003). Customers today are more inclined toward shopping from the couch, they make purchase decisions based on the information provided on the site or application. If the information that is provided has inconsistencies, it has the potential to produce a negative impression in the minds of the clients. According to various research studies, websites that provide quality information substantially and favourably impact consumer satisfaction (Ma Sabiote *et al.*, 2012; Szymanski & Hise, 2000; Tzeng *et al.*, 2021). According to Park and Kim (2003), the quality of product information provided is the most important element which directly impacts consumer satisfaction. Websites that give quality information contribute significantly to consumer loyalty. If the quality of the information that is offered on the website or application is below par, customers will be unsatisfied with the brand and will not make any purchases from the company's website. They also can disseminate unfavourable word-of-mouth promotion (Cyr, 2008).

H2: There is no significant relationship between information quality and customer satisfaction

2.1.3 Product Quality

Quality describes a state of being exceptional or outstanding (Zeithaml, 1988). Kotler and Armstrong (2022) defined product quality as the aspects of a

good or service that influence its ability to satisfy the explicit or implicit expectations of consumers. It is quintessential to bear in mind that the firm does not assess the quality of the product from its perspective; rather, the quality of the product is analyzed from the viewpoint of the consumers. As the ultimate purpose of any firm is to meet the needs and wants of the consumers, the quality of the product plays a key part in achieving these demands.

Several studies have shown that there is a strong connection between the quality of the product and the level of satisfaction experienced by the consumer (Flynn, Schroeder, & Sakakibara, 1994; Porter & Linde, 1995; Olasanmi, 2019). Increases in consumer satisfaction lead to a greater likelihood of repeat purchases, which in turn boosts revenue.

H3: There is no significant relationship between grocery quality and customer satisfaction

2.1.4 Delivery Service

In today's online market, customers place a premium on timely and dependable delivery. People nowadays prefer to buy online from the convenience of their own homes, and they have high expectations for the timeliness and efficiency of their deliveries. Customers are becoming more impatient, expecting their items to be delivered as fast as feasible. As a consequence, most e-commerce platforms are restructuring their distribution models to deliver items as quickly as possible.

Contrary to previous times, customers, today can switch incredibly easily from one online platform to another by just clicking away in case of delayed, unsafe, and unsatisfactory product delivery (Ziaullah, Feng, & Akhter, 2014). Several studies have shown that satisfactory delivery performance is an important factor in ensuring repeat business and a high level of customer satisfaction and delayed delivery of the product can make customers dissatisfied (Chakraborty, Srivastava, & Marshall, 2007; Ulaga, 2003; Hedin, Jonsson, & Ljunggren, n.d.; Liu, He, Gao, & Xie, 2008; Lin, Wu, & Chang, 2011).

H4: There is no significant relationship between delivery service and customer satisfaction

2.1.5 Sales Promotion

Sales promotion strategies are a common marketing tactic for attracting consumers by delivering an additional value or incentive, which motivates people to buy the offered items immediately (Xu & Huang, 2014). The main aim of sales promotion strategies is to enhance the sales of items and brands, often in a short period (Wierenga & Soethoudt, 2010).

When seen from the perspective of the customer, sales promotion methods like discounts and special offers serve as a benefit to the customer, which in turn encourages the customer to get captivated by the product (Bin Yusuf, 2010).

To increase their customer base, the majority of companies and businesses in the modern day give promotions and discounts on the services and goods they sell. According to Calvo-Porrall and Lévy-Mangin, organizations that offer a significant number of discounts on their products are the most successful at retaining consumers which eventually enhances customer satisfaction (Calvo-Porrall & Lévy-Mangin, 2019; El-Adly, 2019). In practice, most loyalty programs are tied to offers and discounts that are intended to benefit customers, which in turn facilitates sales for businesses.

H5: There is no significant relationship between sales promotion and customer satisfaction

2.1.6 Packaging

According to Prendergast and Pitt, there are mainly two uses of packaging-logistical and promotional. The logistical role of packing is to safeguard the product while it is in transit. The second purpose of packaging, however, is marketing, which is closely related to sales since it serves to draw consumers' attention to a product and reinforce the product's image (Prendergast & Pitt, 1996).

When it comes to grocery items, packing takes on an even greater significance. The necessity to prevent things from being lost, stolen, damaged, or otherwise contaminated justifies spending extra time & money on packing. It's a creative method to promote the brand.

Packaging affects customer satisfaction and hence may affect either consumer attitudes or behaviour. As a result, the marketing industry is placing an increasing emphasis on package design and the function of packaging as a medium for communication and brand development (Rettie & Brewer, 2000).

H6: There is no significant relationship between packaging and customer satisfaction

2.1.7 Customer Service

Customer service encompasses all of the measures used to improve customers' shopping experiences (Nijssen *et al.*, 2003). It has become one of the most crucial organizational processes that businesses use to attract entrepreneurial prospects for increased profitability and better access to the market as well as to increase customer satisfaction and loyalty levels in light of the increasing competition (Kahn *et al.*, 2002). It is a worthy activity that produces a considerable amount of value, better products, an edge in the market, profit potential, and ultimately higher revenue (Goffin & Price, 2001).

H7: There is no significant relationship between customer service and customer satisfaction

2.1.8 Customer Satisfaction and Loyalty

One of the most important instruments for a successful business is the count of satisfied customers. Customer satisfaction is characterized as a comprehensive evaluation by the customers based on the overall purchase and consumption of the goods purchased or services experienced (Fornell *et al.*, 1996). According to Setyabudie (2014), customer satisfaction is a state of contentment that is attained by consumers as a result of receiving value from businesses. This value may originate from a good, service, or system, or it may also be derived from an emotional experience.

Customer satisfaction is generally considered a primary marketing objective as all business activities are undertaken with the ultimate aim to satisfy the customers (Kotler, 2000). According to Beerli *et al.* (2004), customer loyalty may be defined as the practice of repeatedly buying products from the same brand while ignoring opportunities to purchase products from other brands. The level of satisfaction experienced by customers has always been seen as an essential factor in maintaining the long-term relationship between a brand and a customer (Fornell *et al.*, 1996; Jones & Sasser, 1995; Oliver, 1980).

Various research studies have successfully implanted the notion of a positive relationship between customer satisfaction and loyalty (Zeithaml *et al.*, 1996; Anderson & Sullivan, 1993; Athanassopoulos, Gounaris, & Stathakopoulos, 2001; Bloemer & De Ruyter, 1998).

H8: There is no significant relationship between customer satisfaction and customer loyalty

3. Methods

The researchers utilized a quantitative technique to analyze the association between the various variables. A structured questionnaire was used to gather primary data from the city of Kolkata. The questionnaire was divided into two sections, the first of which queried the respondent about socio-demographic characteristics.

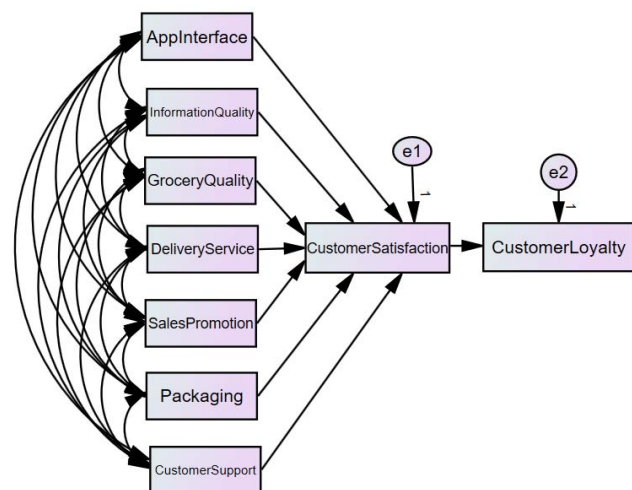


Figure 1. The research conceptual model.

The second section of the questionnaire included items ranked on a Likert scale of 1 to 7, with 1 indicating “strongly disagree” and 7 indicating “strongly agree.” The questions were designed to assess respondents’ degrees of agreement with each of the study variables’ propositions. Structural Equation Modelling (SEM) data analysis is used to examine the hypothesis. Path analysis is conducted with AMOS program version 25.0 as SEM allows researchers to efficiently and precisely examine hypothesized linkages among theoretical constructs and between the constructs and their empirical indications.

There were 550 questionnaires sent in all, and 287 of them were returned, leading to a response rate of almost 52%. 40 questionnaires were disregarded as they were either incomplete or incorrectly completed. So, the effective sample size for this study boiled down to 247, which is well above the recommended threshold of 200 for analyzing the data in SEM (Hoogland & Boomsma, 1998; Boomsma & Hoogland, 2001; Kline, 2005). All of the information acquired for this study is derived from primary sources, which is crucial for generating accurate results. Items for measuring customer satisfaction (Anderson & Sullivan, 1993; Fornell, 1992; Levesque & McDougall, 1996), customer loyalty (Gerrard & Barton Cunningham, 1997; Allred & Lon Addams, 2000), information quality (Park & Kim, 2003), delivery service (Chen *et al.*, 2012; Liu *et al.*, 2008), sales promotion (Mehrabian & Russell, 1974), product quality (Ahn *et al.*, 2004; Beneke & Zimmerman, 2014), app interface (Schrepp *et al.*, 2017; Mahmood *et al.*, 2000; Kim *et al.*, 2012; Chan *et al.*, 2015), packaging (Prendergast & Pitt, 1996; Gelperowic & Beharrell, 1994; McCarthy, O’Sullivan, & O’Reilly, 1999; Madden, Hewett, & Roth, 2000) & customer support (Fornell *et al.*, 1996) were adapted from previous studies.

4. Results and Discussions

4.1 Demographic Analysis

The descriptive analysis was used to illustrate the social demographic profile of the respondents. 124 men (51.82%) and 119 women (61.6%) participated in the survey. The age distribution was 66 respondents in the age bracket of 18-28 years (26.72%), 73 respondents

from 29 to 39 years (29.55%), 55 respondents from 40 to 50 (22.27%), and 53 respondents above 50 (21.46%). Table 1 provides a detailed demographic profile of the respondents. The sample got a good mix of male and female respondents as well as married and unmarried respondents, so the findings of the research will be more representative of the population as a whole rather than focusing on the perspectives of any specific demographics in particular. From Table 1, we can also see that the majority of the consumers of online grocery shopping are in the age bracket of 29-39 years followed by 18-28 years, which infers that the young generation of the country is inclined towards availing of this service.

4.2 Respondents’ Purchasing Behaviour

Table 1. Demographic profile of the respondents

| | | Count | % |
|---------------------------|----------------|------------|---------------|
| Age | 18-28 | 66 | 26.72 |
| | 29-39 | 73 | 29.55 |
| | 40-50 | 55 | 22.27 |
| | 50+ | 53 | 21.46 |
| Total | | 247 | 100.00 |
| Marital Status | Married | 128 | 51.82 |
| | Un-married | 119 | 48.18 |
| Total | | 247 | 100.00 |
| Sex | Male | 124 | 50.20 |
| | Female | 123 | 49.80 |
| Total | | 247 | 100.00 |
| Educational Qualification | Undergraduate | 75 | 30.36 |
| | Master | 83 | 33.60 |
| | Doctor & Above | 89 | 36.03 |
| Total | | 247 | 100.00 |
| Residence | Urban | 115 | 46.56 |
| | Rural | 132 | 53.44 |
| Total | | 247 | 100.00 |
| Monthly Income | Below 20,000 | 47 | 19.03 |
| | 20,001-30,000 | 50 | 20.24 |
| | 30,001-40,000 | 55 | 22.27 |
| | 40,001-50,000 | 51 | 20.65 |
| | Above 50,000 | 44 | 17.81 |
| Total | | 247 | 100.00 |

Table 2. Respondents' purchasing behaviour

| | | Count | % |
|--|----------------------|------------|------------|
| Frequency of Online Order | Once a week | 77 | 31.17 |
| | 2 - 3 times per week | 91 | 36.84 |
| | More than 3 times | 79 | 31.98 |
| Total | | 247 | 100 |
| Most frequently purchased grocery item | Cold drinks & Juices | 31 | 12.55 |
| | Cooking Essentials | 44 | 17.81 |
| | Vegetables | 49 | 19.84 |
| | Dairy Products | 38 | 15.38 |
| | Meats & Eggs | 38 | 15.38 |
| | Fruits | 47 | 19.03 |
| Total | | 247 | 100 |

Table 2 shows the respondents' preferences for online food ordering. 77 respondents (31.17%) order once per week, 91 respondents (36.44%) order two to three times per week, and 79 respondents (31.98%) order more than three times per week. The survey results also indicated that vegetables (19.84) are the most frequently purchased grocery items, followed by fruits (19.03) and cooking essentials (17.81%). As a result, vegetables, fruits, and kitchen basics account for about 57% of the commodities bought on the ten minutes platforms; thus, businesses should arrange their supply accordingly.

4.3 Reliability Test

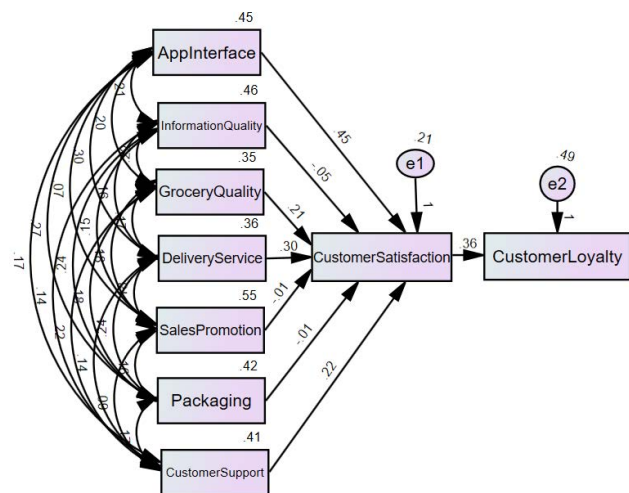
Table 3. Reliability test

| Variables | Cronbach's Alpha |
|-----------------------|------------------|
| App Usage | 0.785 |
| Information quality | 0.821 |
| Grocery Quality | 0.789 |
| Delivery Service | 0.93 |
| Sales Promotion | 0.856 |
| Packaging | 0.857 |
| Customer Service | 0.889 |
| Customer Satisfaction | 0.896 |
| Customer Loyalty | 0.878 |

"Cronbach Alpha" was utilized as a reliability statistic to test internal consistency. Table 3 displays the reliability test results for the nine items. All obtained

values were more than the recommended 0.7 threshold (Kline, 2005; DeVellis & Thorpe, 2021). As a result, it is possible to infer that the items reliably measure all the defined constructs.

4.4 Modeling Customer Satisfaction and Loyalty Based on 10-Minutes Grocery Delivery Service Quality Dimensions

**Figure 2.** Modelling customer satisfaction based on 10-minute grocery delivery service quality dimensions.

4.5 Model Fit Analysis

Table 4. AMOS-summary statistics for model fit

| Model fit index | Recommended values | Recommended by | Observed values |
|-------------------------------|--------------------|--------------------------------------|-----------------|
| Chi-square/degrees of freedom | <5 | (Tabachnick, Fidell, & Ullman, 2013) | 1.563 |
| GFI | >0.80 | (Hair, 2010) | .944 |
| AGFI | >0.80 | (Hair, 2010) | .842 |
| CFI | >0.90 | (Carmines, 1981) | .936 |
| RMSEA | <0.05 | (Byrne, 2013) | .035 |
| TLI | >0.90 | (Hu & Bentler, 1999) | .971 |

The results of the SEM analysis indicate that the model offers a good fit for the data. All the model fit indices are well within the recommended thresholds.

4.6 Relationship Between 10-Minutes Grocery Delivery Service Quality Dimensions and Customer Satisfaction

A correlation test was used to determine the strength of the relationship between customer satisfaction and the 10-minute grocery delivery service quality dimensions (App interface, Packaging, Information quality, Delivery service, Discounts & Offers, Grocery Quality, and Customer Support). The above table shows that Customer satisfaction is positively highly correlated (0.714) with the App interface and it is highly significant at the (.000) level. Delivery service (.658) is also found to be highly correlated with customer satisfaction followed by Grocery Quality (.554), Packaging (.516), and Customer Support (.517). Information quality (.380) & Discounts Offers (.230) were also found to be positively correlated.

4.7 Relationship between Customer Satisfaction and Customer Loyalty in the 10-Minute Grocery Delivery Service Quality

Customer satisfaction and loyalty were also found to have a positive correlation (0.358) at the .000 level.

4.8 Regression Weights

The above hypothesis result tables reveal that increasing the App interface by one unit increases customer satisfaction by .451 units and is highly significant at the (.000) level. When grocery quality elevates by one unit, consumer satisfaction increases by .208 units, which is significant at the (0.000) level. When the grocery quality and customer support dimension is increased by one unit, customer satisfaction increases by .298 and 224 units respectively and both are statistically significant at the (0.000) level. It has also been found

Table 5. Relationship between 10-minute grocery delivery service quality dimensions and customer satisfaction

| | | App interface | Packaging | Information quality | Delivery service | Sales Promotion | Grocery Quality | Customer Support |
|-----------------------|---------------------|---------------|-----------|---------------------|------------------|-----------------|-----------------|------------------|
| Customer Satisfaction | Pearson Correlation | .714** | .516** | .380** | .658** | .230** | .554** | .517** |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | N | 247 | 247 | 247 | 247 | 247 | 247 | 247 |

**Correlation is significant at the 0.01 level (2-tailed).

Table 6. Relationship between customer satisfaction and customer loyalty in the 10-minute grocery delivery service quality

| | | Customer Loyalty |
|-----------------------|---------------------|------------------|
| Customer Satisfaction | Pearson Correlation | .358** |
| | Sig. (2-tailed) | .000 |
| | N | 247 |

**Correlation is significant at the 0.01 level (2-tailed).

Table 7. Regression weights

| | | | Estimate | S.E. | C.R. | P | Label |
|-----------------------|------|------------------------------|-------------|-------------|--------------|------------|-------|
| Customer Satisfaction | <--- | App Interface | .451 | .077 | 5.881 | *** | |
| Customer Satisfaction | <--- | Information quality | -.051 | .057 | - .900 | .368 | |
| Customer Satisfaction | <--- | Grocery Quality | .208 | .074 | 2.817 | *** | |
| Customer Satisfaction | <--- | Delivery Service | .298 | .082 | 3.619 | *** | |
| Customer Satisfaction | <--- | Discounts & Offers | -.009 | .050 | - .189 | .850 | |
| Customer Satisfaction | <--- | Packaging | -.013 | .066 | - .200 | .841 | |
| Customer Satisfaction | <--- | Customer Support | .224 | .058 | 3.873 | *** | |
| Customer Loyalty | <--- | Customer Satisfaction | .360 | .060 | 6.014 | *** | |

that when customer satisfaction increases by one unit, customer loyalty increases by 0.360 units and is significant at the (0.000) level.

From the correlation study and regression analysis, we can see that the interface of the app significantly impacts customer satisfaction. Because the application is the first and most important link between the consumer and the company, efforts must be made to ensure that the application is user-friendly and that consumers can easily browse through the options. A well-designed application interface improves user experience by making it simple to comprehend and interact with the application, increasing engagement. A good application interface should be simple and intuitive, enabling users to quickly locate what they're searching for and complete activities without aggravation. A consistent and professional-looking interface may help an application's overall brand image and increase its perceived worth. The delivery service, which is the fundamental competitive advantage of delivering the order within ten minutes, should conform to the expectations of the customers to maintain that edge. Companies need to ensure their distribution strategy will allow them to meet their claimed delivery time. In case they are not able to deliver within the promised time, the customer support team should be able to provide the necessary information and resolution to the customers. Since the delivery agents and the customer service team will be interacting directly with the customers, they must adhere to a standard operating procedure that ensures all interactions with the customers are consistent and adhere to a set of guidelines, which will help to improve the customer experience. Good customer support assists in resolving customer concerns and answering customer queries, leading to enhanced customer satisfaction and retention. A business with excellent customer service can develop a great reputation in the market, which can attract new consumers and enhance the brand's overall image. Customer satisfaction is also found to positively impact customer loyalty in the ten minutes online grocery delivery segment which is in line with the previous research. (Zeithaml *et al.*, 1996; Anderson & Sullivan, 1993; Athanassopoulos, Gounaris, & Stathakopoulos, 2001; Bloemer & De Ruyter, 1998).

5. Conclusion

This research aims to examine the influence of Kolkata's 10-minutes grocery delivery service quality on customer satisfaction and loyalty. The 10-minute delivery paradigm is very new, and there has been minimal research in this area; thus, this study contributes to the body of knowledge in this field.

The researchers established seven hypotheses to assess the relationship: *app usage, Information quality, grocery quality, delivery service, sales promotion, packaging, and customer service*. A hypothesis was also established to determine the impact of customer satisfaction on customer loyalty.

The results indicated that *App Interface, Grocery Quality, Delivery Service, and Customer Support* are the most significant variables related to customer satisfaction. Customer satisfaction has a significant influence on customer loyalty as well. The app interface of the firm that provides the 10-minute grocery delivery service has been identified as a critical predictor of customer satisfaction. This implies that the business must construct its applications with considerable attention to ensure that they are user-friendly and that consumers have no difficulty navigating the application. The quality of the groceries delivered to consumers is another important dimension that should be taken of utmost importance to companies operating within the 10-minute delivery ecosystem or aiming to enter it. Because the retailers are using the 10-minute delivery as a competitive advantage and the customers who are ordering through this medium have the perception that their items will be delivered within the specified time frame, retailers should centre on their logistics services, including warehousing and transportation. Customer support was identified as a significant factor in this research; hence, companies must ensure that they provide prompt assistance to their customers in case of any issues.

The present study covered a lot of ground, but it had some limitations that should be addressed in future research. First, the current study covered only the population of Kolkata, and the results of the

current study were not generalizable to other cities. Second, the sample size of the current study was 247 respondents, and in future research studies, the sample size can be enlarged to get better results. Third, future research studies can include independent variables like a delivery fee, surge charges, and minimum order value to examine their impact on customer satisfaction & loyalty. There is also scope to compare customer satisfaction and loyalty levels between metro and non-metro cities, as well as across various platforms providing the ten-minute delivery service.

6. References

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