

Deployment of ecologically responsible technology by the Zepto enterprise in Bangalore, India : An analysis using the UTAUT model

Kiran Kumar Thoti *

Department of Operation and Logistics

M. S. Ramaiah Institute of Management

Bangalore 560054

Karnataka

India

Gururaj B. Urs [†]

Department of Human Resource Management

NITTE School of Management

Bengaluru

Karnataka

India

G. Padmavathy [§]

Department of Business Administration

SRM Institute of Science and Technology

Vadapalani Campus

Chennai

Tamil Nadu

India

P. R. Kumuda [‡]

Department of Finance and Banking, Financial Services and Insurance

M.S. Ramaiah Institute of Management

Bangalore 560054

Karnataka

India

* ORCID-ID: 0000-0002-6678-9425

* E-mail: kiran.kt@msrim.org (Corresponding Author)

† E-mail: gururaj@nsom.ac.in

§ E-mail: padmavag1@srmist.edu.in

‡ E-mail: kumuda@msrim.org

M. Girish Babu [@]

*School of Business and Management
Christ University
Bangalore 560029
Karnataka
India*

V. Ramakrishnan [#]

*Department of Management
Periyar University
Palkalai Nagar
Periyar 636011
Tamil Nadu
India*

Abstract

The purpose of this research is to find out whether Zepto's quickest delivery service is more popular with customers than the standard one. A survey was administered to a subset of Zepto customers as part of the study approach. Specifically, we wanted to know how satisfied customers were with the quickest delivery options, what their delivery preferences were, and what demographics we might use for future surveys. Insights on e-commerce customers' delivery service preferences are provided by this study. Many different types of businesses are under the umbrella of the technology industry. Electronics and software, computer hardware, artificial intelligence (AI), and IT services are just a few of the many areas in which these companies operate. In pursuit of greater future potential, technology businesses are known to engage substantially in R&D and to embark on riskier ventures. Computers, smartphones, wearable electronics, household appliances, televisions, and a host of other consumer goods are all made by them. Software development, logistics system management, database security, etc. are all areas where businesses rely on technological advancements. There are many different areas that rely on the fast-expanding technology sector. Thanks to its substantial exports of both money and technology, it has emerged as an important player in the country's economy. Numerous employments have been generated and substantial amounts of foreign direct investment have been drawn to the industry. Cybersecurity, AI, and blockchain technology have been areas of focus for the government's several programs that aim to bolster the sector.

Subject Classification: 94A60 – Computation and complexity.

Keywords: Technology, E-commerce, Delivery, Software, Online shopping.

[#] ORCID-ID: 0000-0001-6245-4110

[@] E-mail: directorgirishbabu@gmail.com

[#] E-mail: go2ramakrishnan@gmail.com

1. Introduction

Fast-growing e-commerce startup Zepto is revolutionizing the world of grocery delivery by leveraging several cutting-edge technologies [1]. The company's unique selling proposition is the ability to deliver groceries in just 10 minutes, which is made possible through the strategic use of technology and innovative business processes. The core of Zepto's operations is its mobile application. The app is designed to provide a seamless user experience that makes ordering groceries fast, easy, and hassle-free. It has an intuitive user interface and a wide range of products to meet the diverse needs of its customer base [2]. The core of Zepto's technology infrastructure is its real-time demand-based sensing and dynamic pricing strategy. This technology allows Zepto to quickly respond to changes in demand, ensuring optimal inventory management and minimizing waste. In addition, Zepto uses an AI application that integrates with Google's API. It provides all the relevant information on the Zepto App dashboard, which contributes a lot to the success of the business. With the help of an application powered by artificial intelligence, Zepto can analyze customer behavior, forecast demand, and optimize its supply chain. The company's business model is highly dependent on the operation of blind stores [3]. These strategically placed blind stores ensure fast and efficient fulfillment of orders. The use of blind stores combined with an efficient last-mile delivery system allows Zepto to deliver orders in less than ten minutes. In addition, Zepto's commitment to an efficient supply chain is reflected in its technological investments. The company uses technology to improve its operations, reduce costs, and improve customer satisfaction [4]. Finally, Zepto's technological ability to deliver a wide range of products in less than ten minutes sets a new standard in the grocery delivery industry. Thanks to the use of innovative technology, Zepto not only delivers food it also offers convenience, speed, and efficiency to its customers. ZEPTO represents a cutting-edge advancement in technology, often referring to innovations at the scale of zeptometers, or 10⁻²¹ meters. On this scale, quantum effects dominate, offering unparalleled opportunities for manipulating matter and energy. ZEPTO holds promise across numerous fields, including quantum computing, nanotechnology, materials science, and medicine [5]. However, realizing this potential requires overcoming significant hurdles in understanding, development, and integration. The first step in bridging the gap with ZEPTO is understanding its fundamentals. This includes comprehending the principles of quantum mechanics, which govern behavior at the

zeptometer scale [6]. Quantum mechanics departs from classical physics, introducing concepts like superposition, entanglement, and uncertainty. Grasping these principles is crucial for appreciating ZEPTO's capabilities and limitations.

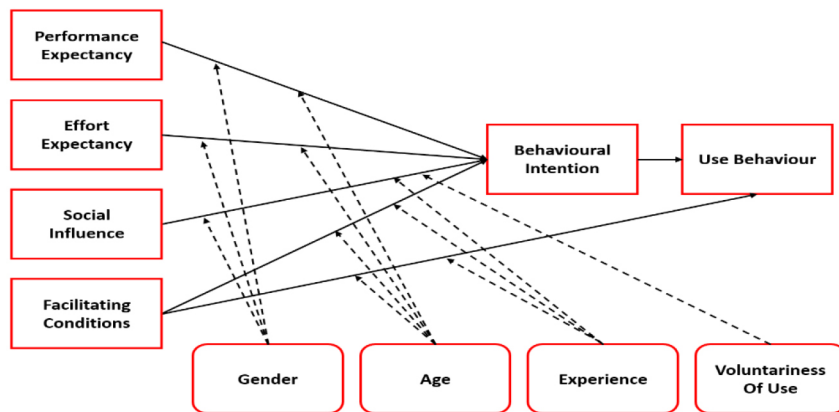
2. Challenges in ZEPTO Adoption:

Despite its promise, ZEPTO faces several challenges that hinder widespread adoption:

1. **Technical Complexity:** Developing ZEPTO-scale technologies requires expertise in quantum mechanics, nanotechnology, and other specialized fields. This complexity poses barriers to entry for many organizations.
2. **Resource Intensiveness:** Building and operating ZEPTO-scale systems demands substantial resources, including funding, specialized equipment, and skilled personnel. Limited resources can impede progress in ZEPTO research and development.
3. **Integration Issues:** Integrating ZEPTO technologies into existing infrastructure and workflows presents challenges due to differences in scale, compatibility, and operational requirements.
4. **Regulatory and Ethical Considerations:** ZEPTO technologies raise novel regulatory and ethical concerns, particularly regarding safety, security, and potential misuse. Addressing these considerations is crucial for gaining regulatory approval and public acceptance.
5. **Education and Awareness:** Many stakeholders lack understanding of ZEPTO and its implications, leading to skepticism, misinformation, and missed opportunities. Educating stakeholders and raising awareness is essential for fostering support and collaboration. This research investigates the factors influencing brand love (BL) in online food delivery (OFD) services in India [7].

3. Unified Theory of Acceptance and Use of Technology (UTAUT) Model

The paradigm that describes the relationship between users' goals and the technology's actual performance [8]. The model proposes that four primary elements impact the probability of a user embracing a technology:



Source: UTAUT (Venkatesh et al., [11])

Figure 1

UTAUT Model adopted from Venkatesh et al., [11]

1. Anticipated results User confidence in the technology's ability to boost productivity on the job Expected effort.
2. The level of ease with which a person can operate the technology.
3. Perceptions of social impact, Whether or if the user thinks that influential people think they should utilize the technology.
4. Creating favourable circumstances- confident a user is that the necessary organizational and technological frameworks are in place to assist the technology

The research is to find the usage and adopted the ZEPTO app by the customer through the performance expectancy, effort expectancy, social influence and facilitating conditions. The efficiency of ZEPTO app applications acceptance through shown in the figure 1, UTAUT [9].

4. Significance of the Study

ZEPTO's significance lies in its transformative potential across diverse domains. In quantum computing, for instance, ZEPTO-scale systems could revolutionize data processing, enabling exponentially faster calculations and solving current intractable problems. Similarly, in medicine, ZEPTO technologies hold promise for precise drug delivery, targeted cancer treatments, and advanced diagnostics. Understanding

ZEPTO's significance is essential for motivating investment and driving adoption efforts.

5. Research objectives

- Analyse the combined influence of technology and multiple non-technology factors on user attitudes in OFD services.
- Assess the development of brand-related concepts in OFD due to these factors.
- Investigate the emergence of brand image and brand love in OFD services.
- Evaluate the role of brand love in OFD services, a service-based setting.

6. Methodology

Survey research with a nomological model tested using structural equation modelling (SEM) and the questionnaire was farmed using Nominal and ordinal scale. The data was tested using the Chi-Square test.

7. Problem Statement

To explore and analyse the gap between public perception and actual experiences of Zepto Delivery systems, identifying factors influencing buyer satisfaction, with the aim of improving service quality and enhancing the overall commuter experience.

8. Data Analysis and Interpretation

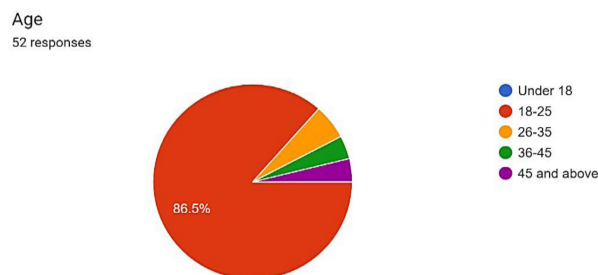


Figure 2
Age Group of the Respondent

According to the Figure 2, The provided data indicates the distribution of the respondents' age with 52 responses. Where the age gap of 18-25 respondents have used the ZEPTO app and its services with a majority of 45 responses which is 86.5% and 3 respondents coming under the age gap of 26-35 have used the app and its services which is only 5.8%, 2 respondents in the age gap of 36-35 have used the services which is 3.8% and 2 respondents coming under the age gap of 45 and above have used their services which is also 3.8%.

Gender
52 responses

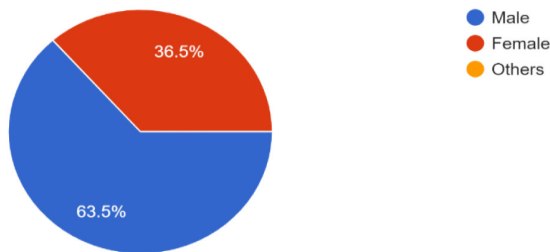


Figure 3
Age group of the respondents

According to the Figure 3, The provided data indicates the gender distribution of respondents, With 52 total responses. Among the respondents, 33 respondents are MALE, accounting for 63.5% of the total, while 19 identifies as FEMALE making up 36.5% of the total.

Have you ever availed services from ZEPTO?
52 responses

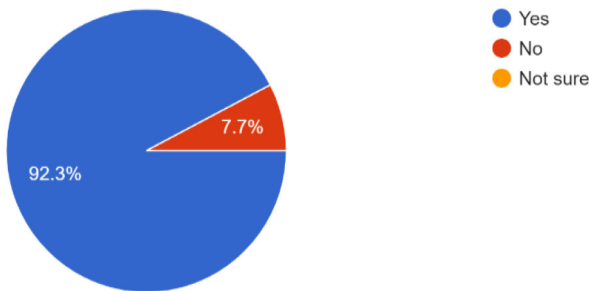


Figure 4
Usage of the ZEPTO ECommerce in Bangalore

According to the Figure 4, The above data indicates the service level indicates that out 52 respondents (100%), 48 respondents have availed the services which is 92.3% and the rest 4 respondents have not availed the services which is on 7.7%.

How often do you avail services from ZEPTO?

52 responses

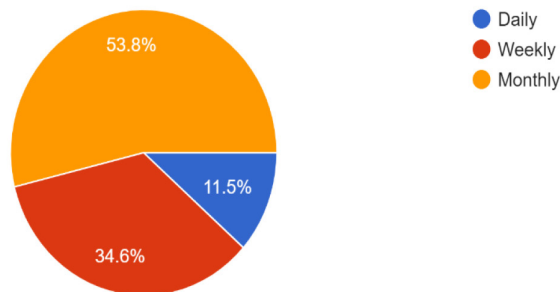


Figure 5

Usage of the ecommerce app Zepto for ordering

According to the Figure 5, The data represents the frequency of ZEPTO services usage among 52 respondents. Among them, 6 respondents (11.5%) reported using the services daily, 18 respondents (34.6%) reported using the services weekly and the majority 28 respondents (53.8%) reported using the services monthly.

How do you believe ZEPTO technology compares to existing technologies in similar fields?

52 responses

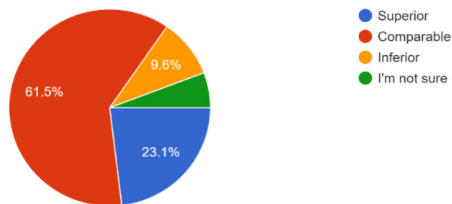


Figure 6

ZEPTO technology usage

According to the Figure 6, The above data shows opinions regarding how well ZEPTO technology compares with other existing technologies in similar fields. 12 respondents (23.1%) voted for SUPERIOR, majority of 32 respondents (61.5%) voted for COMPARABLE, 5 (9.6%) voted for INFERIOR and the minority of 3 respondents (5.8%) voted for NOT SURE.

What do you believe is the most significant advantage of ZEPTO Technology?
52 responses

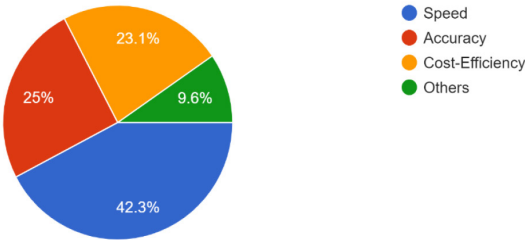


Figure 7
Usage of ZEPTO technology

According to the Figure 7, The above data indicated that a significant majority of 22 respondents (42.3%) voted for SPEED as the significant advantage of ZEPTO technology, 13 respondents (25%) voted for ACCURACY. 12 respondents (23.1%) voted for COST-EFFICIENT, and 5 respondents (9.6%) voted for OTHERS.

How likely are you to recommend learning about ZEPTO app and its Technology to a friend or a colleague?
51 responses

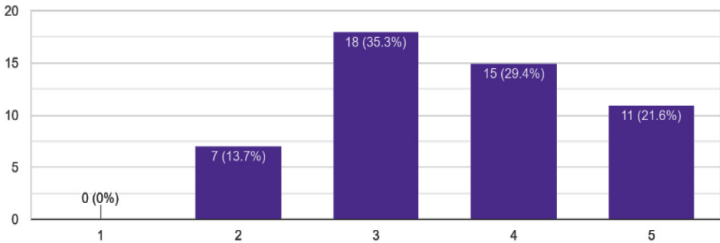


Figure 8
Recommend technology friendly of Zepto app

1- Strongly disagree, 2- disagree, 3- neutral, 4- agree & 5- Strongly agree

According to the Figure 8, The above data indicates that a substantial portion of respondents (35.3%) have rated 3 on a scale of 5 for recommendation, while 7 respondents have rated 2 on 5 which is 13.7% , 15 respondents have rated 4 on 5 which is 29.4% and lastly 11 respondents have voted a perfect score 5 on 5 which is 21.6%.

What is your primary source of information about ZEPTO services and their Technologies?
52 responses

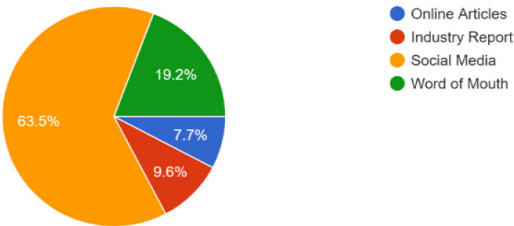


Figure 9

Primary sources of information on ZEPTO services on technologies

According to the Figure 9, The above data reflects the range of “primary source of information” is majorly through social media, which is 63.5% with 33 respondents, 5 respondents have voted for industry report which is 9.6%, and the remaining respondents have choses for Word of mouth and online articles.

How familiar are you about ZEPTO?
52 responses

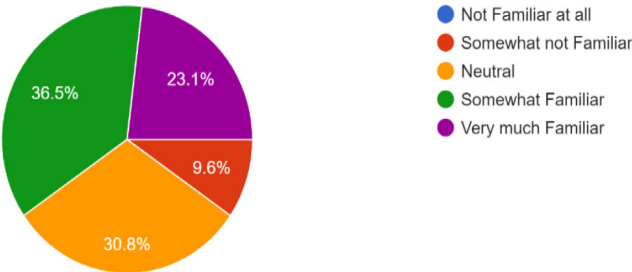


Figure 10

Familiar with ZEPTO app usage

According to the Figure 10, The data reveals a balanced distribution of familiarity about ZEPTO. None of the respondents have voted for NOT FAMILIAR. 5 respondents (9.6%) voted for SOMEWHAT NOT FAMILIAR. 16 respondents (30.8%) voted for NEUTRAL. Majority of 19 respondents (36.5%) voted for SOMEWHAT FAMILIAR and 12 respondents (23.1%) voted for VERY MUCH FAMILIAR.

ZEPTO services are readily available when I need them.

52 responses

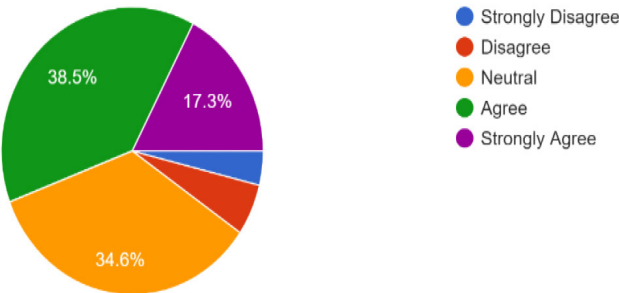


Figure 11
ZEPTO services available 24/7

According to the Figure 11, The above data suggests that 2 respondents (3.8%) strongly disagreed with the readily available services in ZEPTO. While 3 respondents (5.8%) disagreed, 18 respondents (34.6%) are NEUTRAL. 20 respondents with a majority of 38.5% AGREED and 12 respondents (23.1%) STRONGLY AGREED.

ZEPTO deliveries are always on time.

52 responses

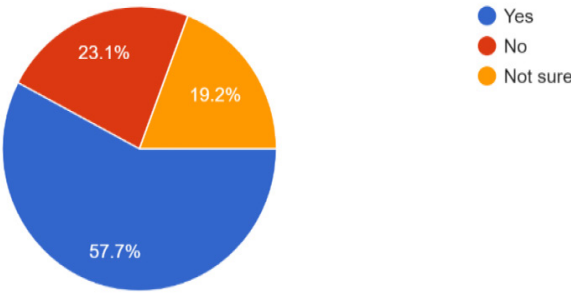


Figure 12
ZEPTO deliveries on time as per schedule

According to the Figure 12, The above data reveals that a major percent of respondents (57.7) have voted for a timely delivery option, 12 respondents (23.1%) have Voted for NO option and the remaining 10 respondents (19.2%) have voted for the NOT SURE Option.

The prices of commodities offered by ZEPTO are within your expectations.

52 responses

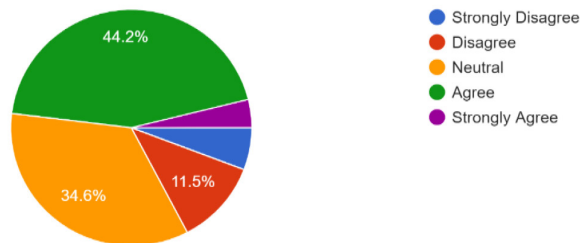


Figure 13

Prices on commodities offered by ZEPTO

According to the Figure 13, Offering price by zepto people feels within their expectation whereas 45% of people, which is 23 out of 50 agree with price offered are within the expectations. Whereas 35% people are neutral with their prices and 12% feels high prices offered by Zepto.

9. Testing of Hypothesis: Chi- Square Test

H0: Not have Significant behavioural intention toward usage of Zepto App for friendly application of ecommerce shopping

H1: Significant behavioural intention toward usage of Zepto App for friendly application of ecommerce shopping

According to the Figure 6 data was consider for observed value.

Table 1
Chi Square Test

Parameters	Observed (O)	Expected (E)	O-E	(O-E) ²	(O-E) ² /E
Speed	22	13	9	81	6.23
Accuracy	13	13	0	0	0
Cost-Efficiency	12	13	-1	1	0.07
Other	5	13	-8	64	4.92
Total	52				11.22

The calculation value of chi-square is 11.22

- The level of significance is 0.05, degree of freedom = $n-1 = 4-1 = 3$
- Chi Square table value is 7.815

According to the table 1, the calculation value of the chi-square i.e., 11.22; The table value was lesser than calculation value (7.815) i.e., chi square table value (7.815) < chi square calculates value (11.22). Hence, the Null hypothesis was rejected and accepted the alternative hypothesis i.e., Significant behavioural intention toward usage of Zepto App for friendly application of ecommerce shopping

10. Findings of the Study

This study investigates the current state of online grocery shopping in the United States. Here are the key findings:

- **Online grocery shopping is not yet mainstream:** Only 31% of the surveyed population reported ever using online grocery shopping.
- **Younger demographics are more likely to adopt online grocery shopping:** There is a significant correlation between age and online grocery shopping habits, with younger people being more likely to shop online.
- **Fresh produce is being purchased online:** Contrary to popular belief, online grocery shoppers purchase all types of groceries, including fresh produce and dairy products.
- **Multiple delivery methods are preferred:** While there is no single most popular delivery method, online grocery shoppers use a variety of options including in-store pickup, curbside pickup, home delivery by retailers, and third-party delivery services.
- **Opportunities exist for enticing new customers:** The study suggests there is potential to grow the online grocery market by attracting new customers from various demographics.
- Both technology and non-technology factors influence brand image and brand love in OFD services.
- App design is a particularly strong contributor to brand image.
- This research is the first to examine the combined effect of multiple technology and non-technology factors on brand image and brand love in OFD services, where the core service (food preparation) isn't provided by the service provider itself.

The study also identified areas for future research, such as how to encourage more people to shop for groceries online and how agricultural producers can benefit from the online grocery market. The document

describes an online food and grocery delivery application designed for a specific area. The application aims to address the needs of people who are too busy or unable to go out to shop for groceries.

11. Conclusion

Mumbai-based e-commerce startup Zepto has revolutionized the grocery delivery industry with its 10-minute delivery time. This remarkable achievement is achieved through a combination of strategic micro-warehousing, efficient inventory management and cutting-edge delivery technologies. Zepto's network of micro warehouses, also known as "cloud stores", are carefully placed across the city to ensure proximity to customers, which significantly reduces delivery times [10]. These warehouses have a wide range of products covering more than 3,000 items to meet the immediate needs of consumers. The company uses a sophisticated inventory management system that predicts demand patterns and ensures that products in high demand are readily available, minimizing the risk of running out of stock. The cornerstone of Zepto's operations is its proprietary technology that optimizes deliveries. Using advanced algorithms, Zepto's system can calculate the most efficient routes for CEOs, allowing them to complete orders in an amazing average of less than 9 minutes. This system is complemented by a dedicated delivery staff trained to navigate the urban landscape quickly and safely. In addition, Zepto improves customer experience by offering real-time order tracking. This feature not only adds transparency to the shipping process but also allows customers to plan when their orders will arrive. Essentially, Zepto's success is based on an agile approach to logistics and an unwavering commitment to technology-oriented solutions. By integrating these elements, Zepto has set a new benchmark for fast business, offering unparalleled convenience to its customers.

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