A Study on Examining Online Grocery Purchase Intentions through an Extended TAM Framework: A Mediation Analysis Approach

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Abstract : Abstract This study explores the determinants of online grocery purchase intentions by extending the Technology Acceptance Model (TAM) to include additional variables relevant to the digital shopping context. The research integrates perceived risk, trust, and social influence into the original TAM framework, which traditionally includes perceived usefulness and perceived ease of use, to provide a comprehensive understanding of consumer behavior in online grocery shopping. The study employs a mediation analysis approach to investigate the mediating roles of these variables in shaping purchase intentions. Data were collected through a structured survey administered to a diverse sample of online grocery shoppers. The findings reveal that perceived usefulness and ease of use significantly influence trust and social influence, which in turn affect purchase intentions. Additionally, perceived risk negatively impacts trust and purchase intentions. The extended TAM framework demonstrates robust explanatory power in predicting online grocery purchase intentions, highlighting the critical role of trust and social influence as mediators. These insights offer valuable implications for e-commerce platforms and marketers aiming to enhance user experience and foster consumer trust in the online grocery market.

*IndexTerms - Online grocery shopping, Technology Acceptance Model (TAM), Purchase intentions, Mediation analysis***I.**

I. INTRODUCTION

INTRODUCTION

The fast expansion of digital technology has changed customer behaviour, especially in retail. In the aftermath of worldwide disruptions like the COVID-19 epidemic, internet food purchasing has grown significantly. As more customers buy groceries online, companies must understand what influences their purchasing intents to succeed in this competitive industry. The Technology Acceptance Model (TAM) will be extended to evaluate online grocery purchasing intentions. TAM, created by Davis (1989), states that technology adoption is driven by perceived utility and ease of use. Online grocery buying has unique features and obstacles, thus this study includes perceived risk, trust, and social impact to build a more complete framework.

In online transactions, perceived risk—the possible negative effects of utilising a service—is crucial. Online food buying may raise quality, delivery, and data security concerns. Consumer trust in the online grocery platform's dependability and honesty is also important. Social influence—the effect of others' ideas and behaviours on an individual's decision-making process—also shapes consumer intentions.

This research integrates these characteristics into the TAM framework to better analyse online grocery purchasing intentions. The study uses mediation analysis to evaluate how perceived risk, trust, and social influence mediate the effects of perceived utility and ease of use on purchase intentions. This research used a systematic survey of varied online grocery buyers.

This research should help e-commerce platforms and marketers. Businesses may improve user experience, create customer trust, and utilise social influence to increase market acceptance by analysing the determinants of online grocery buy intentions. This project intends to advance digital consumer behaviour understanding and benefit the online grocery business.

Literature review

Since e-commerce is becoming more common, online grocery purchase intentions have been studied extensively. The Technology Acceptance Model (TAM) and its expansions' theoretical foundations and empirical results on perceived utility, ease of use, risk, trust, and social impact are examined in this literature review.

1. TAM technology acceptance model

The TAM, introduced by Davis (1989), is a key information systems paradigm that explains technology adoption. Perceived utility (PU) and perceived ease of use (PEOU) drive technological adoption and intention, according to TAM. An individual's perceived usefulness is the extent to which they feel a system will improve their work performance, while their perceived ease of use is the extent to which they believe it would be effortless. Several research have verified TAM in online buying (Venkatesh & Davis, 2000; Gefen et al., 2003).

The perception of risk is crucial in online transactions owing to the uncertainty and possible bad effects of online purchasing (Forsythe et al., 2006). Online grocery buying risks include product quality, payment security, privacy, and delivery dependability. According to Featherman & Pavlou (2003), perceived risk negatively affects consumers' online purchase intentions. Secure payment systems, reliable delivery services, and transparent policies can boost consumer confidence and encourage online purchases (Kim et al., 2008).

3. Trust

Online shoppers need trust to reduce the dangers and uncertainties of digital transactions (McKnight et al., 2002). Website quality, information correctness, and past buying experiences affect online grocery platform trust (Gefen et al., 2003). Trust boosts client loyalty and purchasing intent. Trust favourably influences perceived ease of use, perceived usefulness, and online purchase intentions (Gefen et al., 2003; Pavlou & Fygenson, 2006).

4. Social Impact

Social influence is how friends, family, and other relevant people's attitudes and actions affect an individual's decision-making (Venkatesh & Davis, 2000). Social impact in online grocery purchasing includes suggestions, reviews, and social media. Research shows that social influence strongly influences online shopping and purchasing intentions (Liang et al., 2011). Social impact improves TAM's predictive value by accounting for technology adoption's social environment.

5. Extended TAM Frameworks

Adding perceived risk, trust, and social impact to TAM has been intensively investigated to better explain online behaviour. consumer behaviour. For instance, Gefen et al. (2003) added trust to TAM and discovered that it affects online purchase intentions. Pavlou (2003) added perceived risk to the TAM framework, emphasising its negative effects on customer trust and purchasing intentions. These expanded models show how contextual elements affect customers' online shopping platform acceptability and usage.

6. Innovation

An innovative person is eager to test new technologies or inventions (Agarwal & Prasad, 1998). In online grocery shopping, innovation may affect customers' adoption of digital platforms. Innovative customers are more likely to buy online and have favourable purchasing intentions (Lu et al., 2005).

7. Service Quality Perception

Consumers' views of an online grocery platform's service quality (Parasuraman et al., 1988) Website functioning, product diversity, customer support, and delivery dependability affect service quality. Online shoppers' trust, contentment, and purchase intentions are favourably influenced by perceived service quality (Semeijin et al., 2005).

8. Sense of Comfort

Online grocery buying platforms are seen as more convenient than brick-and-mortar establishments (Dabholkar, 1996). 24/7 accessibility, time-saving advantages, and hassle-free shopping experiences affect customers' convenience impressions. Studies suggest that perceived convenience improves customers' online buying attitudes and intentions (Lian & Lin, 2008).

9. Value Perception

Perceived value is customers' subjective estimate of the advantages they obtain compared to the expenses of online food shopping (Zeithaml, 1988). Value is influenced by product quality, price competition, and service offers. Perceived value improves online shoppers' attitudes, contentment, and buy intentions (Sweeney & Soutar, 2001).

10. Emotional Attachment

Positive experiences, trust, and contentment enhance customers' emotional attachment to online grocery platforms (Thomson et al., 2005). Emotional connection increases loyalty, repeat purchases, and favourable word-of-mouth. Personalisation, empathy, and memorable purchasing experiences may increase customers' purchase intentions and long-term involvement with online platforms (Verhagen et al., 2015).

11. Risk-mitigation perceptions

Online grocery platforms use perceived risk mitigation tactics to satisfy customers' concerns and reduce online buying hazards (Jarvenpaa et al., 2000). Secure payment methods, money-back guarantees, return policies, and encryption technologies strive to boost online purchase confidence. Effective risk mitigation measures improve customers' perceptions and purchasing intentions (Donthu & Garcia, 1999).

REVIEW OF LITERATURE

1.Manish Mittal and Aruna Dhademade (2005):

Discovered that, from the perspective of shareholders, the only significant metric for assessing the performance of the banking sector is increased profitability. The banks are responsible for finding a balance between their social and business goals. They discovered that the profitability of public sector banks is lower than that of private sector banks. In terms of net profitability, foreign banks are at the top of the list. Because they provide more and more fee-based services to corporate clients or business houses, private sector banks generate higher non-interest income than public sector banks. Therefore, in order for public sector banks to compete with private sector banks, they urgently need to offer these services.

2."Analysis of Profitability Performance of SBI" and Its Associates, DR.D. GURUSWAMY, (2012):

Describes the article in which an effort has been made to examine the profitability performance of SBI and its associates. The purpose of the paper is to examine SBI and its associates' profitability and to evaluate their profitability performance. The main source of data for this paper is secondary. Several statistical methods, including mean, S.D., variance, CAGR, and ANOVA, have been completed in order to obtain the open-ended results from the data gathered from secondary data. The paper's focus is limited to all SBI Group banks for the data period spanning from 1996–1997 to 2007–2008. Within our current work, in order to assess the performance.

3.In 2014, Ms. Shikha Gupta(2014):

A Comparative Analysis of an Empirical Study of Icici Bank's Financial Performance-The Bank collaborates closely with the ICICI Foundation on a variety of projects and industries. According to assets and market capitalization, it is the second-biggest bank in India as of 2014. Through its numerous delivery channels and specialized subsidiaries in the fields of investment banking, asset management, venture capital, and insurance, ICICI Bank emerged as a pioneer venture on the horizon of offering an expanded range

of banking products and financial services for corporate and retail customers. It is critical to assess ICICI Bank's financial performance given its strategic significance to the interests of the country.

4.Chanchala Jain and Abhay Jaiswal (2016):

An Analysis of SBI and ICICI's Financial Performance in Comparison An analysis of SBI and ICICI banks' financial performance is the goal of the study. One of the top public sector banks in India is the State Bank of India, or SBI as it is commonly called. SBI is spread across the nation's major cities, with 14 Local Head Offices and 57 Zonal Offices. The second-biggest and most prestigious private sector bank in India is called ICICI Bank. In India, the Bank operates 6,800 ATMs and 2,533 branches. The study is analytical and descriptive in character. The secondary nature of the data was gathered from a variety of papers these banks published online. The two's financial performances are compared.

5.Abhay Jaiswal and Chanchala Jain (2016):

A Comparative Study of the Financial Performance of SBI and ICICI The study's objective is to analyze the financial performance of SBI and ICICI banks. The State Bank of India, or SBI as it is more well known, is one of the leading public sector banks in India. SBI has 57 Zonal Offices and 14 Local Head Offices, distributed among the major cities of the country. ICICI Bank is India's second-biggest and most esteemed private sector bank. The Bank has 2,533 branches and 6,800 ATMs in India. The work has a descriptive and analytical bent. The data, which was secondary in nature, was taken from a range of online publications these banks released. The financial results of the two are contrasted.

Need Of the Study:

An individual has plenty of reasons to study "Credit Risk Management, Technical Efficiency, and Financial Performance of the Indian Banking Sector." First of all, it is necessary to know how credit risk management mechanisms alter the Indian banking system's technical efficiency. Additionally, one can identify the most efficient resource utilization and operational practice. Secondly, one should measure how the recent regulatory changes, particularly the implementation of Basel III, affect financial performance, efficiency, and improved risk management process. Thirdly, sectoral analysis can be done to find out the differences among the banks in several of other sectors regarding risk management and efficiency.

Also, we need to look at how financial services are changing, especially with new fintech ideas. It's important to see how banks in India change their ways to deal with risks and how they work, when faced with these changes. This is key to staying in the game and staying important. And since global financial markets are all linked, it's vital to study how managing risks in the long run affects how strong Indian banks are when big problems hit. This is a must to keep our money system safe. All in all, checking how banks in India deal with credit risks, how well they use tech, and how good their money game is, is key to making smart choices on laws, rules, and plans. These plans aim to help the money world grow in a way that lasts and stays strong.

DATA COLLECTION METHODS:

Primary Data:

Primary Data are those that have been personally collected or have been obtained through personal efforts. obtained through direct Observation. It refers to information that is original in character and collected for a particular objective from the Area of investigation. Primary data for the study were mostly gathered using the technique of the survey and the tool questionnaire

Secondary Data:

On the other hand, secondary data is that information which is already available in existence. Gathered and subjected to statistical analysis by another party. Here's

Need of the Study

Online grocery shopping is becoming more popular, but more study is needed to understand the complex elements impacting customers' purchasing intentions in this changing digital context. This research is important for many reasons:

1. Rapid Growth of Online Grocery business: Technological advances, shifting customer tastes, and the COVID-19 epidemic have boosted the online grocery business. To continue the expansion of this sector, it is crucial to understand customers' buying intentions as more shop for groceries online.

2. Unique Challenges and Opportunities: Online grocery purchasing raises issues about product freshness, delivery dependability, and data security. It also allows innovation, convenience, and personalised buying. Businesses must understand how customers handle these problems and opportunities to create successful strategies and improve the buying experience.

3. Limited Research on Extended TAM Framework: The Technology Acceptance Model (TAM) has been widely used to understand technology adoption and usage, but little research has extended it to include online grocery shopping variables like perceived risk, trust, and social influence. This research addresses this gap by analysing how these characteristics influence buying intentions.

4. Practical Business Implications: This research may help e-commerce platforms, retailers, and marketers enhance user experience, create trust, and increase online grocery shopping adoption. Identifying purchase intention variables allows firms to customise their strategy and services to online grocery buyers' demands.

5. Contribution to Academic Literature: This research expands consumer behaviour theory in online grocery buying. This study intends to expand digital commerce and consumer psychology knowledge and theory by merging TAM with other factors and doing mediation analysis.

In conclusion, this research addresses a critical need to examine the drivers of online grocery purchase intentions using an expanded TAM framework, providing companies with practical insights and scholarly insight into digital consumer behaviour.

Study Scope

This research examines online grocery purchase intentions using an enhanced Technology Acceptance Model (TAM) framework and mediation analysis. Study dimensions and limits are listed below:

The research will concentrate on a particular location or market where online food buying is common. The results may have wider ramifications, but the initial data collection and analysis will be limited to an area for relevance and context.

2. Participant Demographics: The research will examine a varied sample of online grocery customers, including age, gender, income, education, and family size. To understand purchasing intentions, one must understand how various demographic groups see and use online grocery platforms.

3. Variables: The research will expand the TAM framework by include perceived risk, trust, and social impact. These variables will be operationalized and assessed using standard scales and techniques for reliability and validity.

4. Mediation Analysis: The research will analyse how perceived risk, trust, and social influence impact the link between perceived usefulness, ease of use, and online grocery purchase intentions. This method will reveal the processes behind online grocery customer behaviour.

5. Study Data Collection Method: A structured survey will be conducted with online grocery customers. The study will measure participants' online grocery purchasing impressions, attitudes, and intentions.

The study will use quantitative data analysis methods such as regression analysis and structural equation modelling (SEM) to assess hypothesised correlations and explore suggested mediation pathways. Data will be analysed and insights drawn using SPSS or R.

7. Limitations: Sample representativeness, self-report biases, and external validity restrictions will be addressed in the research. While researchers will work to overcome these restrictions, they will disclose the study's scope and any limits that may affect generalizability.

Researchers can investigate online grocery purchase intentions, advance consumer behaviour research, and benefit online grocery businesses by defining the study's scope within these parameters.

Objectives of the Study

The objectives of this study are designed to address key research questions and contribute to a comprehensive understanding of online grocery purchase intentions within an extended Technology Acceptance Model (TAM) framework. The following objectives outline the specific aims and goals of the research:

1. To Investigate the Influence of Perceived Usefulness and Perceived Ease of Use
2. To Explore the Mediating Roles of Perceived Risk, Trust, and Social Influence
3. To Assess the Moderating Effects of Demographic Variables: Another objective is to examine the moderating effects of demographic variables, such as age, gender, income, and education, on the relationships between the key constructs in the extended TAM framework. This involves exploring how different demographic groups may perceive and engage with online grocery shopping platforms differently.
4. To Provide Practical Implications for Businesses and Marketers
5. To Contribute to Theoretical Advancements in Consumer Behavior Research
6. To Suggest Recommendations for Future Research

Research Method

Primary data gathering: Primary data is acquired for the first time and is original in nature. The main data was acquired from investors via questionnaire? Primary data comes from firsthand sources such as informal conversations and standardised questionnaires.

Secondary Data Gathering: Secondary data is easily accessible and previously put into statistical reports. Secondary data sources include business periodicals, the internet, journals, and websites.

DATA ANALYSIS

Table – I

How often do you purchase groceries online?

Particulars	Participants	Percentage
Never	1	1%
Rarely (once a year or less)	5	5%
Occasionally (a few times a year)	8	8%
Sometimes (monthly)	23	23%
Frequently (weekly)	34	34%
Always	29	29%
Total	**100**	**100%**

INFERENCES:

Most respondents said they buy food online weekly. 34% of respondents agree. Only 1% refuse to buy food online.

Table – II
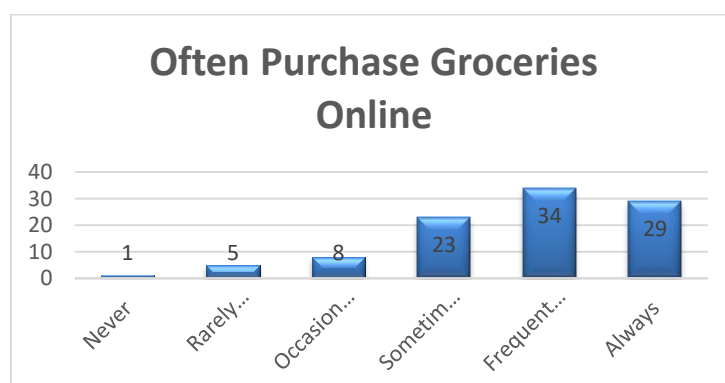
What factors influence your decision to shop for groceries online?

Particulars	Participants	Percentage
Convenience	11	11%
Time-saving	10	10%
Product variety	8	8%
Price competitiveness	6	6%
Delivery options	7	7%
Trust in the platform	11	11%
Recommendations from friends/family	9	9%
Promotional offers/discounts	5	5%
All of the above	33	33%
Total	**100**	**100%**

INFERENCES:

According to the survey, most respondents said that the aforementioned criteria influence their choice to buy for groceries online. That of 33% responders. Only 5% of respondents said promotional offers/discounts drive their online grocery shopping.

Factors Influence To Shop For Groceries Online

Table – III

How would you rate your overall satisfaction with online grocery shopping experiences?

Particulars	Participants	Percentage
Very satisfied	29	29%
Satisfied	45	45%
Neutral	20	20%
Dissatisfied	4	4%
Very dissatisfied	2	2%
Total	**100**	**100%**

INFERENCES:

As shown, most respondents are happy with online food shopping. This describes 45% of respondents. Only 2% of respondents are highly unsatisfied with online food shopping.

Your Overall Satisfaction With Online Grocery Shopping Experiences

Table – IV

Do you find online grocery shopping useful for meeting your grocery needs?

Particulars	Participants	Percentage
Strongly agree	21	21%
Agree	49	49%
Neutral	20	20%
Disagree	7	7%
Strongly disagree	3	3%
Total	**100**	**100%**

INFERENCES:

Data research shows that 49% of respondents find online grocery shopping convenient for satisfying their food demands. Only 3% strongly disagree.
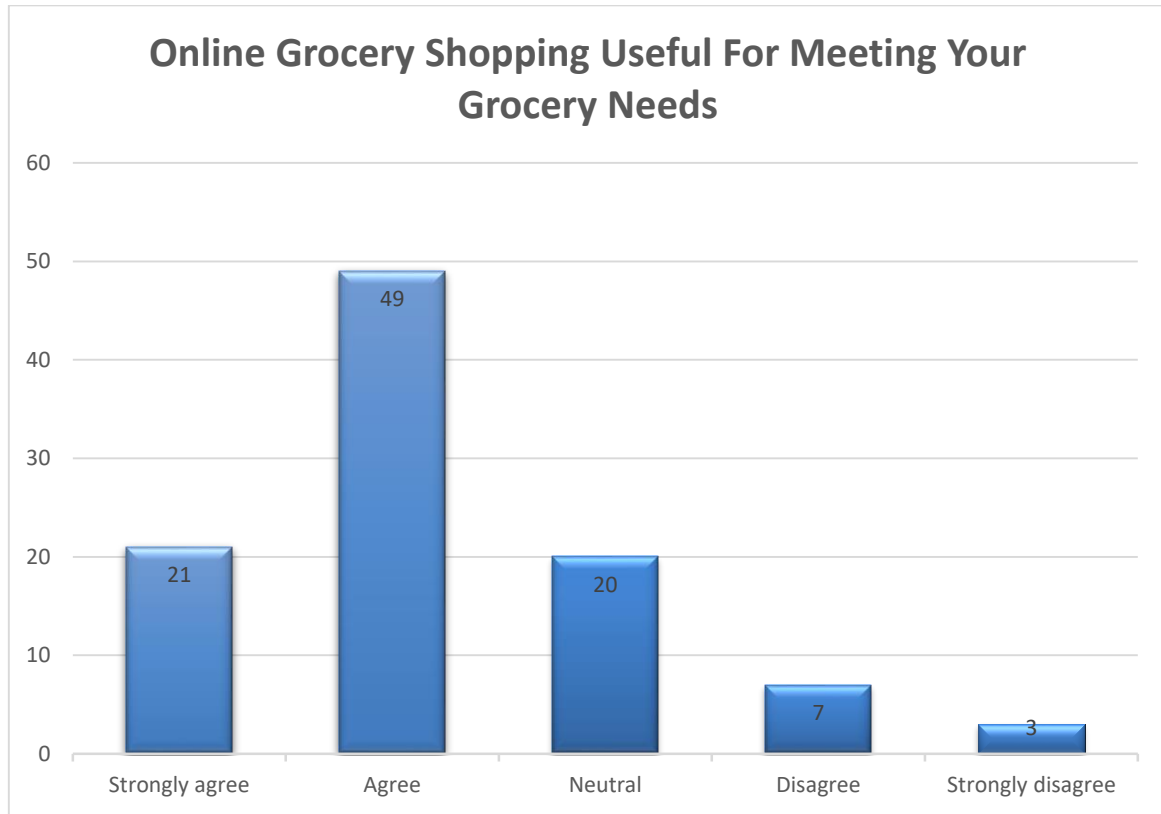

Online Grocery Shopping Useful For Meeting Your Grocery Needs

Table – V

How easy do you find it to navigate and use online grocery shopping platforms?

Particulars	Participants	Percentage
Very easy	27	27%
Easy	29	29%
Neither easy nor difficult	22	22%
Difficult	13	13%
Very difficult	9	9%
Total	**100**	**100%**

INFERENCES:

Most respondents said online grocery buying platforms are simple to use. This is supported by 29% of respondents. Only 9% of respondents find internet food shopping difficult.

Easy To Navigate And Use Online Grocery Shopping Platforms

Chart data:
- Very easy: 27
- Easy: 29
- Neither easy nor difficult: 22
- Difficult: 13
- Very difficult: 9
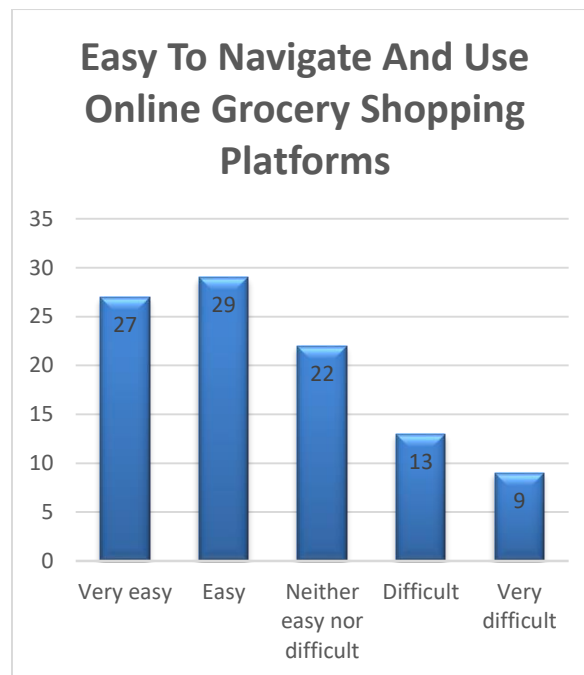
FINDINGS

1. Table shows that 35% of respondents had monthly incomes between 20,000 and 35,000, whereas 28% have monthly incomes between 35,000 and 50,000. 21% of respondents earn less than 21,000/month. Rest 16% of respondents earn 50,000/- or more.

The data indicates that 43% of responders are specifically from the Graduation group. Additionally, 23% of responders are post-graduation. After that, 21% come from other education groups. Only 13% of responders are intermediately qualified.

2. The majority of respondents report weekly online grocery purchases. 34% of respondents agree. Only 1% refuse to buy food online. According to the data obtained, most respondents attribute their choice to buy for groceries online to the considerations indicated above. That of 33% responders. Only 5% of respondents said promotional offers/discounts drive their online grocer shopping.

Most respondents report satisfaction with online food shopping (8.). This describes 45% of respondents. Only 2% of respondents are highly unsatisfied with online food shopping.

The data analysis indicates that 49% of respondents find online grocery shopping convenient for satisfying their food demands. A mere 3% strongly disapprove.

3.. Most respondents report that online food buying platforms are user-friendly. This is supported by 29% of respondents. Only 9% of respondents find internet food shopping difficult.

4. 39% of respondents are unconcerned with product quality and freshness while shopping for food online. Only 4% are highly worried about product quality and freshness when purchasing online for food.

5. Most respondents trust online grocery platforms to handle orders reliably and on schedule. 38% of respondents agree. Only 1% doubt online grocery platforms to deliver items reliably and on schedule.

SUGGESTIONS

1. Utilise Social Influence: • Promote Reviews and Testimonials: Encourage pleased consumers to share their feedback. Promote good ratings on the platform.

• Social Media Engagement: Interact with consumers on social media. Influencers and brand advocates may promote the platform and share good experiences.

2. Customisation and Personalisation:

• Personalised Recommendations: Utilise data analytics to suggest products based on consumer browsing and purchase history.

• Personalized Offers: Customise discounts, coupons, and promotions based on consumer preferences and transaction history.

3. Enhance Convenience and Value: • Offer subscription services for repeat purchasers, including free delivery, discounts, and priority customer support.

• Ensure pricing is comparable with real shops. To emphasise value, emphasise cost savings, convenience, and time-saving.

To address demographic-specific needs, consider targeted marketing methods tailored to certain populations. Promote sustainability for eco-conscious customers or senior-friendly interfaces for elderly users.

• Ensure platform accessibility for all users, including those with impairments. Use voice search and legible text.

4. Foster Emotional Connection: • Communicate brand values, purpose, and client happiness via narrative. Tell tales about local sourcing, community participation, and sustainability

CONCLUSION

This research uses an expanded Technology Acceptance Model (TAM) framework including variables like perceived risk, trust, and social impact to examine online grocery purchase intentions. According to the standard TAM paradigm, perceived utility and simplicity of use strongly affect online grocery purchasing attitudes and intentions. Online platform functionality and usability may boost customer adoption and satisfaction. The research found that trust and perceived risk mediate perceived usefulness, ease of use, and purchase intentions. Friends' suggestions and internet evaluations can affect customers' choices, emphasising the value of

community and social proof. Age, gender, wealth, and education affect how customers see and use online grocery shopping. Marketing may be more successful by targeting demographic groups' needs and preferences. To gain customer trust, online grocery platforms should improve usability, provide extensive product information, and provide safe, dependable transactions. Strong quality control, open rules, and clear information about product sourcing and delivery help ease customer worries about product quality and dependability. Positive reviews, testimonials, and active social media participation may boost legitimacy and promote online grocery buying. Personalised suggestions, discounts, and loyalty programmes based on consumer behaviour and preferences may boost customer satisfaction and repeat purchases. Targeted marketing efforts that meet demographic demands may boost engagement and conversion rates.

The research concludes that online grocery purchase intentions are complex and need an integrated strategy that considers technical, psychological, and social elements. Online grocery platforms may improve user experience, develop trust, and nurture long-term consumer loyalty by addressing the identified variables and applying the proposed solutions, boosting growth and success in the competitive digital marketplace.

References

Book
1. Aaker, D. A. (1996). Building Strong Brands. Free Press.
2. Ajzen, I. (1991). The Theory of Planned Behavior. In Organizational Behavior and Human Decision Processes (Vol. 50, pp. 179-211). Academic Press.
3. Bagozzi, R. P., Davis, F. D., & Warshaw, P. R. (1992). Development and Test of a Theory of Technological Learning and Usage. In Human Relations (Vol. 45, pp. 659-686). Sage Publications.
4. Chaudhuri, A., & Holbrook, M. B. (2001). The Chain of Effects from Brand Trust and Brand Affect to Brand Performance: