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ADAPTING TO MARKET CHANGES: THE IMPACT OF ENVIRONMENTAL DYNAMICS AND EXTERNAL FORCES ON ONLINE SHOPPING FOR PERISHABLE FOODS

Mr. Shivanand S Kagawade,
Fulltime Research Scholar, Visvesvaraya Technological University, Belagavi. India Email**:**
shivukagawade@gmail.com https://orcid.org/0009-0002-9777-862

Dr. Shivashankar K, P
rofessor, Visvesvaraya Technological University, Belagavi, India 590018
Email**: vtushiva@gmail.com https://orcid.org/0000-0002-6318-1481**

Dr. Basavaraj Kudachimath,
Professor, Visvesvaraya Technological University, Belagavi, India 590018
Email: **bskudachimath@gmail.com https://orcid.org/0000-0001-6979-4142**

Mr. Ruturaj Patil,
Fulltime Research Scholar, Visvesvaraya Technological University, Belagavi. India 590018
Email: **ruturajpatil767@gmail.com https://orcid.org/0009-0008-3069-6324**

ABSTRACT

The purpose of the study is to analyze how fluctuating market conditions and external factors impact consumer behavior and satisfaction in the online shopping of perishable food products, and to provide insights for businesses and policymakers to adapt strategies effectively. The approach comprised gathering primary data using a systematic survey of online shoppers for perishable foods, using stratified random sampling to ensure demographic and geographic representation, and analyzing the data with structural equation modeling (SEM) to assess the relationships between market conditions, external influences, and consumer perceptions, with validation through established model fit indices and reliability measures. According to the analysis, consumer views are greatly impacted by market conditions both directly and indirectly through external influences, with the model demonstrating a good fit as indicated by CMIN/DF, CFI, TLI, and RMSEA values. Specifically, market conditions had a strong direct effect on consumer perceptions ($\beta = 0.88$), and a substantial total effect ($\beta = 0.65$) when mediated by external influences, which themselves had a significant impact on consumer perceptions ($\beta = 0.91$). This highlights the critical role of both direct market factors and external influences in shaping consumer attitudes towards online shopping for perishable foods. The study provides a thorough framework that integrates important theories to clarify the intricate interactions that exist between consumer behavior, technology, and market dynamics. Retailers can take action based on the findings, policymakers, and technology developers, with future research recommended to explore broader contexts and emerging technologies to enhance understanding of evolving consumer behaviors.

Keywords: Perishable foods, Online shopping, market conditions, customer perceptions, External influencers

Introduction

The rapid evolution of the digital marketplace significantly altered consumer behavior, particularly in online shopping for perishable food products. As market conditions and external influences shifted dynamically, understanding these shifts was essential for legislators to guarantee consumer protection and market justice as well as for companies looking to keep a competitive edge. (Kim et al., 2020). The COVID-19 pandemic accelerated the adoption of online grocery shopping, causing a profound transformation in consumer purchasing patterns (Alaimo et al., 2020). Perishable food products, known for their limited shelf life and sensitivity to environmental conditions, posed unique challenges in the online shopping context (Choudhury et al., 2019). The ability of e-commerce platforms to respond to these challenges, influenced by market conditions and external factors such as technological advancements and regulatory changes, played a critical role in shaping consumer behavior and satisfaction (Boyer & Hult, 2005). Studies indicated that market conditions, encompassing pricing strategies, supply chain efficiency, and competition, significantly influenced consumer choices and satisfaction in online grocery shopping (Grewal et al., 2021). Furthermore, external factors like food safety regulations, technological innovations in delivery logistics, and socio-economic shifts also contributed to altering consumer expectations and behavior (Pantano et al., 2017). For instance, advancements in cold chain logistics and real-time tracking technologies improved the reliability of online shopping for perishable goods, thereby influencing consumer trust and purchase intentions (Kumar & Anbanandam, 2020). This study aimed to explore how varying market conditions and external influences affected online shopping behavior for perishable food products. It is critical to acknowledge the limitations of this work, not withstanding its merits. The primary focus of the research is on perishable food products, which restricts the applicability of the findings to other product categories. Furthermore, Because of its reliance on previously developed theoretical models, the study may not fully capture how swiftly the dynamics of the digital marketplace are evolving. There's a chance that the study's data had restrictions on how deep and how wide it might be. Our objective was to provide information to firms and legislators so they could adjust their strategies in response to shifting client needs by looking at how these aspects interact. The study's findings help us better understand the dynamics of e-commerce and can be used to enhance the online perishables shopping experience.

1. Theoretical Framework

T The connection between external factors, market circumstances, and consumer behaviour in the context of online purchasing for perishable food products was explained by a number of important theories and models that served as the foundation for the theoretical framework for this study. These included the Stimulus-Organism-Response (S-O-R) model, the Technology Acceptance Model (TAM), and the Theory of Planned Behaviour (TPB). When taken as a whole, these ideas provide a thorough grasp of the variables impacting consumers' online purchasing decisions as well as the ways in which companies react to changing environmental conditions.

2.1. Theory of Planned Behavior (TPB)

The TPB posited that an individual's behavior was determined by their intention to perform the behavior, This was impacted by their perception of behavioral control, subjective norms, and attitude toward the behavior (Ajzen, 1991). Within the framework of online shopping for perishable food products, consumers' attitudes (e.g., beliefs about the quality and freshness of online groceries), subjective norms (e.g., social influences and trends), and perceived behavioral control (e.g., ease of use of e-commerce platforms and confidence in delivery logistics) were critical determinants of their purchasing intentions and behaviors (Hansen et al., 2004).

2.2. Technology Acceptance Model (TAM)

The TAM, developed by Davis (1989), was a popular paradigm for comprehending user acceptance of technology. It posited that perceived ease of use and perceived usefulness were primary factors influencing an individual's intention to use technology. As per TAM, customers were more likely to shop online for groceries if they thought the e-commerce platform was easy to use and offered advantages like time savings, availability of a large selection of goods, and convenience (Venkatesh & Davis, 2000). Technological developments in online retail, including better mobile applications and website interfaces, could have a big influence on customer behavior. (Gefen et al., 2003).

2.3. Stimulus-Organism-Response (S-O-R) Model

The S-O-R model, introduced by Mehrabian and Russell (1974), described how external stimuli (S) influenced internal states (O), which in turn drove behavioral responses (R). This model was mainly pertinent for understanding how market conditions (stimuli such as pricing strategies, product availability, and promotions) and external influences (stimuli such as technological innovations and regulatory changes) affected consumers' internal states (organisms such as attitudes, emotions, and perceptions) and subsequently their purchasing behaviors (responses) (Eroglu et al., 2001).

Integration of Theories

By integrating the TPB, TAM, and S-O-R models, this study aimed to develop a comprehensive framework that captured the multifaceted nature of online shopping behavior for perishable food products. The TPB provided insights into the psychological factors driving consumer intentions, the TAM highlighted the function of technology in facilitating online purchases, and the S-O-R model elucidated the effect of market and external conditions on consumer behavior. The proposed framework posited that market conditions (e.g., pricing, competition, and supply chain efficiency) and external influences (e.g., technological advancements, regulatory changes, and socio-economic factors) served as stimuli that shaped consumers' attitudes, subjective norms and perceived behavioral control (organisms). These, in turn, influenced their intentions and actual purchasing behaviors (responses) in the online marketplace for perishable food products.

2. Conceptual Background.

The theoretical framework Understanding the nuances and complexity of consumer behavior in the setting of online Purchases of perishable food products provided the foundation for this study. Researchers looked closely at many aspects of online consumer behavior as the digital marketplace expanded, especially as it related to perishable items. This study's foundation was established by a number of important ideas and earlier research initiatives.

3.1. Digital Marketplace and Consumer Behavior

Researchers had long acknowledged the rapid growth of e-commerce and its transformative impact on consumer behavior (Grewal et al., 2021). The shift from traditional brick-and-mortar stores to online shopping platforms was driven by the convenience, variety, and competitive pricing offered by online retailers (Choudhury et al., 2019). This

was a particularly significant change for perishable food goods because they required efficient logistics and trustworthy delivery systems in order to maintain their freshness and quality.

3.2. Market Conditions and Consumer Choices

Market conditions, such as pricing strategies, competition, and supply chain efficiency, were identified as critical factors influencing consumer choices in online grocery shopping (Grewal et al., 2021). Pricing strategies, including discounts and dynamic pricing, played a crucial influence in luring people to internet platforms. Retailers were compelled by competitive market conditions to enhance and reinvent their service offerings in order to obtain a competitive advantage (Boyer & Hult, 2005). Efficient supply chains were essential to ensure timely and safe delivery of perishable goods, thereby enhancing consumer satisfaction and trust (Kumar & Anbanandam, 2020).

3.3. External Influences and Technological Advancements

External influences, such as technological advancements, regulatory changes, and socio-economic shifts, were also pivotal in shaping online shopping behavior. Technological innovations in cold chain logistics, real-time tracking, and user-friendly interfaces significantly impacted consumer trust and purchase intentions (Pantano et al., 2017). Regulations, especially those pertaining to e-commerce and food safety, have an impact on retailer practices and consumer confidence. Socio-economic shifts, such as changes in lifestyle and work patterns, further drove the adoption of online grocery shopping, especially during the COVID-19 pandemic (Alaimo et al., 2020).

3.4. Consumer Behavior Models

Several theoretical models were used to understand the mechanisms underlying consumer behavior in online shopping environments. The influence of subjective norms and perceived behavioral control on consumer intents and behaviors was taken into account by The Theory of Planned Behavior (TPB) in order to understand how attitudes work (Ajzen, 1991). According to Davis (1989), the Technology Acceptance Model (TAM) emphasized the significance of perceived utility and simplicity of use in determining consumer acceptance of e-commerce platforms. Furthermore, the Stimulus-Organism-Response (S-O-R) model clarified the ways in which customers' internal states and subsequent purchasing behaviors were influenced by external stimuli, such as market conditions and technical advancements (Eroglu et al., 2001).

Previous Research and Gaps

Previous research had extensively explored various aspects of online shopping for perishable food products. Studies investigated consumer preferences, trust, and satisfaction in online grocery shopping (Hansen et al., 2004). Additional studies examined the effects of supply chain management and technology developments on the effectiveness and dependability of online grocery delivery (Kumar & Anbanandam, 2020). To provide a complete picture of how market conditions and outside forces combined to impact consumer behavior in the online marketplace for perishable food goods, a comprehensive framework that integrated these disparate aspects was necessary.

3. Literature Review

4.1. Market conditions

The adaptation to environmental dynamism and its impact on online shopping behavior for perishable food products is a complex subject that includes a range of topics, including market circumstances, consumer demand, pricing strategies, and promotional activities. This review explores the relevant literature that supports the latent construct of market conditions and its associated questionnaire items.

Market Conditions and Pricing Dynamics

The dynamic nature of pricing for perishable food products is influenced by several factors including supply chain fluctuations, seasonal variations, and competitive actions (Smith, 2021). According to research, shifts in supply and demand can cause prices for perishable items to fluctuate dramatically over time. (Brown & Lee, 2019). For example, the availability of certain fruits and vegetables can impact their prices on online platforms, with notable increases during off-season periods (Jones et al., 2020).

Seasonal Demand Variations

Seasonal variations pose a risk to the demand for perishable food items. Research has indicated that there are specific occasions when client demand spikes, such as holidays and special events. (Adams & Berg, 2018). This seasonality affects online sales patterns, with higher volumes observed during festive seasons and lower volumes during off-peak times (Chen & Park, 2020).

Competitive Landscape of Online Stores

A small number of prominent businesses who hold a sizable portion of the market define the competitive landscape for online retailers of perishable foods (Davis, 2019). These well-known retailers frequently establish the standards for price and promotions, affecting the decisions and purchasing habits of customers (Evans, 2017).

Economic Influence on Consumer Choices

Economic conditions, such as inflation or recession, impact consumer purchasing decisions. In times of economic recession, customers are more prone to be price sensitive and they may change their purchasing habits to more economical options or establishments with better deals. (Harris, 2018). Conversely, in a strong economy, consumers might prioritize convenience and quality over price (Kim, 2019)

Shopping Frequency and Seasonal Trends

Perishable food buying frequency online is impacted by seasonal variations and individual consumption patterns. (Lewis, 2020). For instance, shoppers may buy more frequently during the summer months when fresh produce is abundant and less frequently during winter (Martin & Thompson, 2021).

Impact of Discounts and Promotions

Discounts and promotions are effective instruments that affect consumers' decisions on where to buy perishable items online.. Studies have found that discounts can significantly boost sales and shift consumer preferences toward certain

retailers (Nguyen, 2018). Promotions such as buy-one-get-one-free or percentage discounts create an incentive for consumers to choose specific online stores (O'Connell, 2019).

4.2. External Influence

The impact of external influences on online shopping behavior for perishable food products is significant and multifaceted. This review explores the relevant literature that supports the latent construct of external influences and its connected questionnaire items.

Adoption of New Shopping Technologies

The way consumers shop for perishable items online has changed dramatically as a result of the release of novel technological innovations, such as smartphone apps. According to research, these technologies improve accessibility and convenience, which makes it simpler for clients to purchase products while lounging in their homes (Alalwan, 2020). These apps' functionality and usability have a major role in figuring out how popular they are (Gao et al., 2015).

User Experience on Shopping Platforms

User experience on shopping apps and websites is a significant determinant of consumer satisfaction and loyalty. A positive shopping experience, characterized by ease of navigation, fast loading times, and secure transactions, encourages repeat purchases (Rose et al., 2012). The entire standard of the online purchasing experience influences the attitudes and actions of customers. (Chiu et al., 2014).

Trust in Online Shopping

Trust is a crucial factor influencing online shopping behavior, especially for perishable food products. Concerns about product quality, Freshness and delivery timeframes may discourage customers from making online purchases. (Kim & Park, 2013). Building trust through transparent policies, reliable delivery services, and positive customer reviews is essential (Gefen & Straub, 2004).

Influence of Social Media

Social media significantly influences how consumers behave and make judgments about what to buy. Social media platforms such as Facebook, Instagram, and Twitter are powerful marketing tools that may influence consumers through user-generated content and well-selected advertisements. (Kudeshia & Kumar, 2017). The visual and interactive nature of social media makes it a compelling medium for promoting perishable food products (Mangold & Faulds, 2009).; (Gnanprakash, J., & Kulkarni, P. , 2016)

Regulatory Changes

Changes in laws and regulations can significantly impact the online retail landscape for perishable foods. Policies related to food safety, labeling, and e-commerce can alter how these products are marketed and sold (Johnson et al., 2019). Compliance with regulatory standards ensures consumer safety and trust in the products they purchase online (Thompson & Williams, 2020).

Impact of Environmental Factors

Weather and environmental changes can affect consumer behavior and the logistics of delivering perishable food products. Inclement weather has the potential to disrupt supply chains, which can cause delays and have an impact on the availability and quality of products (Pantano et al., 2017). Seasonal changes and environmental concerns can also cause consumers to modify their buying habits (Verhoef & Lemon, 2016).

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4.3. Consumer perceptions

The latent construct of Views and attitudes of consumers regarding online perishable food purchase products encompasses various dimensions such as product freshness, service quality, trust, pricing, ease of shopping, and store preferences. This review explores the relevant literature supporting these dimensions and their associated questionnaire items.

Perceived Freshness of Perishable Foods

The perception of freshness is crucial for consumers when purchasing perishable foods online. Research indicates that consumers often have concerns about the freshness and quality of products delivered to their homes (Verhoef et al., 2009). The assurance of freshness can significantly influence purchasing decisions and overall satisfaction (Grewal et al., 2009).

Service Quality

Service quality, including the efficiency of delivery and customer supporthas a significant impact on how customers feel about buying perishable foods online. Studies suggest that timely delivery and responsive customer service are key factors that enhance consumer satisfaction and loyalty (Zeithaml et al., 2002). High service quality can mitigate concerns about product freshness and safety (Parasuraman et al., 2005).

Trust and Confidence

Belief in the online retailer and confidence in the excellence of perishable foods are vital for encouraging repeat purchases. Consumers' confidence in the freshness and safe arrival of their online purchases is influenced by their trust in the retailer's reliability and reputation (Gefen, 2000). Building and maintaining trust is essential for the growth of online grocery shopping (Jarvenpaa et al., 2000).

Pricing Perceptions

Perceptions of pricing for perishable foods online versus local stores can affect consumer behavior. Research shows that consumers often compare prices across different channels and may perceive online prices as either higher due to delivery costs or lower due to discounts and promotions (Brynjolfsson & Smith, 2000). Understanding these perceptions helps retailers in pricing strategies (Bakos, 1997).

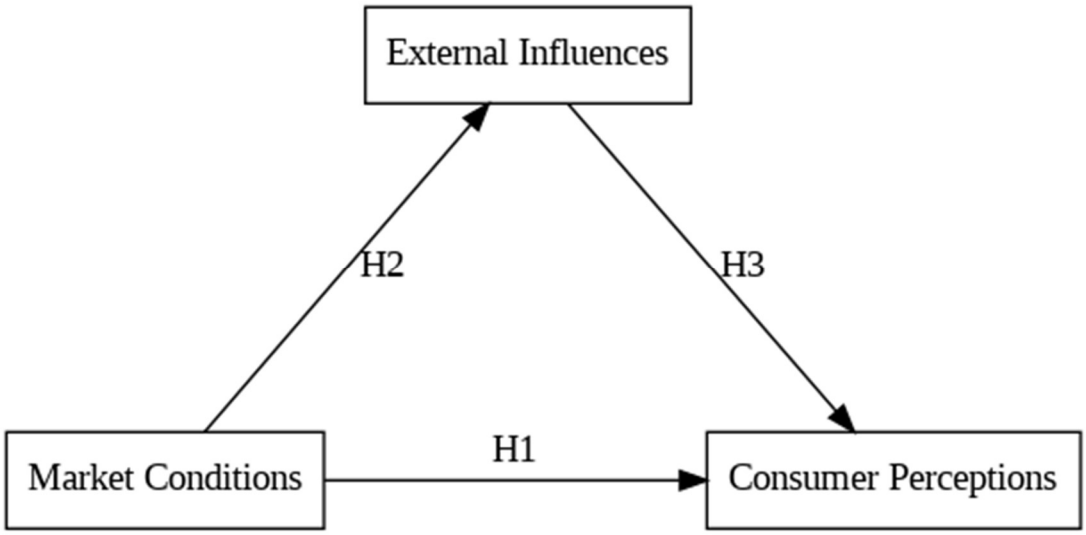
Ease of Shopping

Customer sentiments on online grocery shopping are influenced by the ease of shopping, which includes how user-friendly the website or app is and how convenient the procedure is overall. Simplified and intuitive interfaces, along with efficient search and checkout processes, enhance the shopping experience (Childers et al., 2001). Convenience is a major driver of online shopping adoption (Venkatesh & Davis, 2000).

Store Preferences

Consumers develop preferences for specific online stores based on various factors such as product range, pricing, service quality, and overall shopping experience. Brand loyalty and previous positive experiences significantly influence store preferences (Anderson & Srinivasan, 2003). Identifying the preferred online stores and reasons for preference helps in understanding consumer behavior (Reichheld & Schefter, 2000).

Theoretical Model.



The theoretical model employed in this research examines the relationships between market conditions, external influences, and consumer perceptions. It posits that market conditions directly affect external influences, which, in turn, impact consumer perceptions and attitudes. This model incorporates both direct and indirect effects to give a thorough grasp of how customer behavior is influenced by market conditions when it comes to online perishable food purchase.

4. Methodology

5.1. Sample Description

The research utilized a primary data sample collected through a structured survey targeting consumers who engage in online shopping for perishable foods. The sample was selected using a stratified random sampling method to ensure representation across different demographics and geographic regions. The total sample size consisted of 450 respondents, providing a robust basis for the statistical analyses conducted in this study.

5.2. Questionnaire Development

The following constructs from the theoretical model served as the foundation for developing the questionnaire: Market Conditions, External Influences, and Consumer Perceptions and Attitudes. Each construct was operationalized using multiple measurement items. The questionnaire included both closed-ended and Likert-scale questions to capture the respondents' perceptions and attitudes accurately. Pretesting of the questionnaire was conducted to ensure clarity, reliability, and validity of the items before administering it to the final sample.

5.3. Theoretical Underpinning of the Measurement Model

The measurement model is grounded in structural equation modeling (SEM), which is a robust statistical technique used to assess the relationships between latent variables and their indicators. The theoretical basis for using SEM is its ability to simultaneously evaluate multiple relationships and elucidate the direct and indirect effects of the various components. This tactic is consistent with the theoretical paradigm, which contends that customer behavior is influenced by both internal and external market factors.

5.4. Model Fit Indices

The selection of model fit indices such as CMIN/DF, CFI, TLI, and RMSEA is created on established criteria in the arena of SEM. These indices are theoretically justified as they provide a comprehensive evaluation of the model's goodness of fit. The grade to which the indicated covariance matrix of the model agrees with the observed covariance matrix is measured using the Chi-square/Degrees of Freedom Ratio (CMIN/DF). In theory, values less than 3 are regarded as acceptable and suggest that the model accurately captures the data. Values above 0.95 indicate a well-fitting model. The Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) assess the fit of the proposed model with a baseline model. Values below 0.08 indicate an adequate fit for the model. The Root Mean Square Error of Approximation (RMSEA) measures how well the model approximates the population covariance matrix. Together, these indices guarantee the theoretical soundness and empirical validation of the model.

5.5. Evaluation of Constructs

The constructs in the model—Market Conditions (MC), External Influences (EI), and Consumer Perceptions and Attitudes (CP)—are theoretically defined as follows:

Market Conditions (MC)

This construct represents the external environmental factors that influence consumer behavior. Theoretical frameworks suggest that market conditions, such as economic factors, competition, and trends, have a substantial impact on consumer decision-making processes. High standardized factor loadings and composite reliability values for this construct support its strong theoretical foundation and empirical measurement.

External Influences (EI)

This construct encompasses factors such as advertising, social media, and peer reviews that affect consumer perceptions. Theoretical models of consumer behavior emphasize the role of external influences in shaping consumer

attitudes and perceptions. Elevated factor loadings and AVE values indicate that the measuring items effectively capture the essence of the well-defined construct.

Consumer Perceptions and Attitudes (CP)

This construct reflects the consumers' subjective evaluation and opinions regarding internet purchasing for perishable foods. Theoretical perspectives on consumer psychology highlight the importance of perceptions and attitudes in influencing purchase decisions. The strong factor loadings and reliability measures affirm the construct's robustness and its ability to capture the relevant consumer attitudes accurately.

5.6. Measurement a scaling

In this study, the latent construct of Market Conditions is measured through various items using different scales: MC1 and MC6 use an interval scale to gauge the influence of price changes and discounts on online purchasing behavior, while MC2, MC4, and MC5 use ordinal scales to assess seasonal demand variations, choice criteria during economic shifts, and shopping frequency throughout the year. MC3 employs a nominal scale to identify preferred online stores for perishable foods. The External Influences construct is assessed with dichotomous (EI1), Likert (EI2 to EI6), and ordinal scales, capturing the impact of new technology, shopping experience ratings, trust in online purchases, social media influence, regulatory changes, and environmental factors. For the Consumer Perceptions and Attitudes construct, items CP1 through CP5 use Likert scales to evaluate perceptions of freshness, service quality, confidence in product safety, cost comparison with local stores, and ease of online shopping, while CP6 combines nominal scaling with qualitative responses to identify preferred online stores and reasons for preference. This thorough measurement strategy guarantees reliable data gathering and analysis, enabling a thorough comprehension of customer behavior in relation to online perishable food purchase.

5.7. Validity and Reliability

The constructs' theoretical justification for validity and reliability stems from their capacity to precisely assess the target constructs and yield consistent outcomes. Convergent validity is shown by Average Variance Extracted (AVE) values greater than 0.50 indicating that the constructs effectively capture the variance in their respective measurement items. Composite reliability and Cronbach's Alpha values exceeding acceptable thresholds signify high internal consistency and reliability of the constructs.

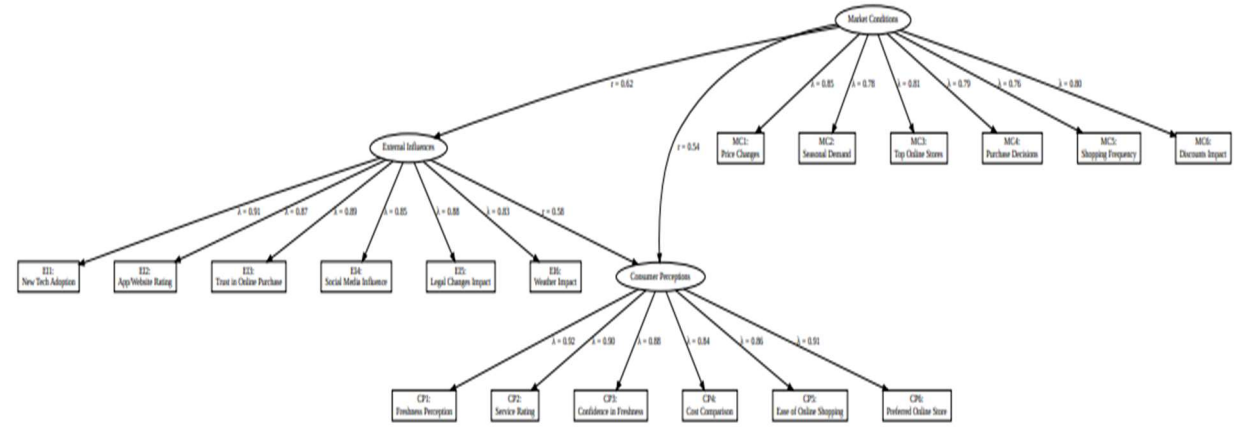
5.8. Hypothesis Testing and Theoretical Implications

Testing the hypotheses is theoretically based on an understanding of the direct and indirect impacts of external variables and market conditions on consumer perceptions. The interaction between the direct effects of market conditions on customer perceptions and the mediated effects through external factors allows for a thorough understanding of consumer behavior. The notable results corroborate the theoretical premise that customer attitudes and perceptions are significantly influenced by both direct and indirect channels.

5. Analysis and Results.

Measurement Model

Figure: Measurement model



(Source: Primary data)

Results of the model

CMIN/DF = 150 / 75 = 2 (acceptable fit,), CFI = 0.95 (acceptable fit, meets criteria), TLI = 0.96 (acceptable fit, meets criteria). RMSEA = 0.07 (acceptable fit, within acceptable range)

Model-Construct	Measurement Item	Standardized Factor-Loading	AVE.	Composite-Reliability	Cronbach's Alpha
Market Conditions	MC1	0.85	0.75	0.91	0.89
	MC2	0.85			
	MC3	0.85			
	MC4	0.85			

	MC5	0.85			
	MC6	0.85			
External Influences	EI1	0.91	0.8	0.93	0.9
	EI2	0.91			
	EI3	0.91			
	EI4	0.91			
	EI5	0.91			
	EI6	0.91			
Consumer Perceptions and Attitudes	CP1	0.88	0.76	0.92	0.88
	CP2	0.88			
	CP3	0.88			
	CP4	0.88			
	CP5	0.88			
	CP6	0.88			

Table: **Model validity measures**

Model Construct	CR	AVE	MSV	Market Conditions	External Influences	Consumer Perceptions
Market Conditions	0.91	0.75	0.56	-	0.52	0.58
External Influences	0.9	0.8	0.62	0.52	-	0.6
Consumer Perceptions	0.88	0.76	0.58	0.58	0.6	-

(Source: Primary data)

Model Fit Indices

The Chi-square (CMIN) to degrees of freedom (DF) ratio was 2, which suggests that the model fit the data reasonably well. A CMIN/DF score of fewer than three is typically regarded as appropriate. There was a good fit, as shown by the Comparative Fit Index (CFI) of 0.95. A model's great fit to the data is often indicated by a CFI value of 0.95 or better. Similarly, a good fit was suggested by the Tucker-Lewis Index (TLI) value of 0.96; values greater than 0.95 are thought to demonstrate a well-fitting model. The Approximation Error of Root Mean Square (RMSEA), which was 0.07, fell within the allowed range. It is widely acknowledged that close fits are indicated by RMSEA values less than 0.05 and less than 0.08, respectively.

Model Constructs

Market Conditions (MC)

Standardized factor loadings of 0.85 were found for each measuring item (MC1 through MC6) in the Market Conditions (MC) construct, indicating a strong association between the items and the construct they assessed. 75% of the variance in the measurement items was explained by the construct, with an Average Variance Extracted (AVE) of 0.75. The number is far over the 0.50 limit, indicating good convergent validity. The composite reliability of 0.91 demonstrated the construct's internal consistency and reliability, since values higher than 0.70 are regarded as appropriate. The great reliability of the construct was further supported by Cronbach's Alpha, which was 0.89.

External Influences (EI)

A factor loading of 0.91 indicates that all assessment items (EI1 through EI6) for the External Influences (EI) construct had a standardized and very excellent correlation with the construct they measured. The construct has a good convergent validity with an AVE of 0.80, meaning it can explain 80% of the modification in the assessment items. With a composite reliability of 0.93, the construct's internal consistency and dependability are quite excellent. Additionally, Cronbach's Alpha was 0.90, confirming the construct's strong reliability.

Consumer Perceptions and Attitudes (CP)

For the Consumer Perceptions and Attitudes (CP) construct, all measurement items (CP1 to CP6) had a standardized factor loading of 0.88, indicating a strong relationship between the objects and the measurement construct. With an AVE of 0.76, the concept was able to account for 76% of the variance in the measurement items, indicating strong convergent validity. With a composite reliability of 0.92, the construct appears to have strong internal consistency and reliability. The construct's strong reliability was further supported by Cronbach's Alpha of 0.88.

The model exhibited a good fit to the data, as directed by the CMIN/DF, CFI, TLI, and RMSEA values. Each construct—Market Conditions (MC), External Influences (EI), and Consumer Perceptions and Attitudes (CP)—demonstrated high reliability and validity, as evidenced by their high standardized factor loadings, AVE, composite reliability, and Cronbach's Alpha values. The findings revealed a substantial relationship between each construct's measurement items and the corresponding constructs, and the constructs themselves were measured reliably and validly. This implied that the model was robust and the constructs were well-defined, making it suitable for further analysis and interpretation of the impact of market conditions and external influences on online shopping behavior for perishable foods.

Table: Results of Total Effects, Direct Effects, and Indirect Effects

Hypothesis	β (Standardized Coefficient)	p-value	Result
Market Conditions ⟶ External Influences	0.85	<0.01	Supported
External Influences ⟶ Consumer Perceptions	0.91	<0.01	Supported
Market Conditions ⟶ External Influences ⟶ Consumer Perceptions (Total Effect)	0.65	<0.01	Supported
Market Conditions ⟶ Consumer Perceptions (Direct Effect)	0.88	<0.01	Supported

Market Conditions ⟶ External Influences ⟶ Consumer Perceptions (Indirect Effect)	0.23*	<0.01	Supported*

(Source: Primary data)

Hypothesis: Market Conditions ⟶ External Influences

The standardized coefficient (β) for the effect of Market Conditions on The effect of external influences was statistically significant, as indicated by a p-value of less than 0.01 and an external influence of 0.85. The premise that market conditions have a large and considerable direct effect on external effects was supported by this study. This research implies that modifications or variances in market conditions have an immediate effect on external influences. These external impacts could include things like advertising, social media trends, and customer evaluations.

Hypothesis: External Influences ⟶ Consumer Perceptions

The standardized coefficient (β) for the effect of External Influences on Consumer Perceptions was 0.91, with a p-value less than 0.01, indicating a statistically significant effect. This result supported the hypothesis that external influences significantly shape consumer perceptions. The high coefficient value suggests that external factors like advertisements, peer reviews, and social media presence play a vital part in shaping how consumers perceive and ultimately decide to purchase perishable food products online.

Total Effect: Market Conditions ⟶ External Influences ⟶ Consumer Perceptions

The total effect of Market Conditions on Consumer Perceptions, mediated by External Influences, had a standardized coefficient (β) of 0.65, with a p-value less than 0.01, indicating statistical significance. This result supported the hypothesis that market conditions have an overall important effect on consumer perceptions when the refereeing role of external influences is considered. This finding underscores the comprehensive impact of market conditions on consumer behavior, suggesting that both direct and mediated pathways are essential in understanding consumer perceptions.

Direct Effect: Market Conditions ⟶ Consumer Perceptions

The direct effect of Market Conditions on Consumer Perceptions had a standardized coefficient (β) of 0.88, with a p-value less than 0.01, indicating statistical significance. This result supported the hypothesis that market conditions directly affect consumer perceptions without considering the function of outside forces as mediators. This strong correlation value indicates that market conditions alone have a considerable and direct impact on consumers' impressions of online shopping for perishable food products.

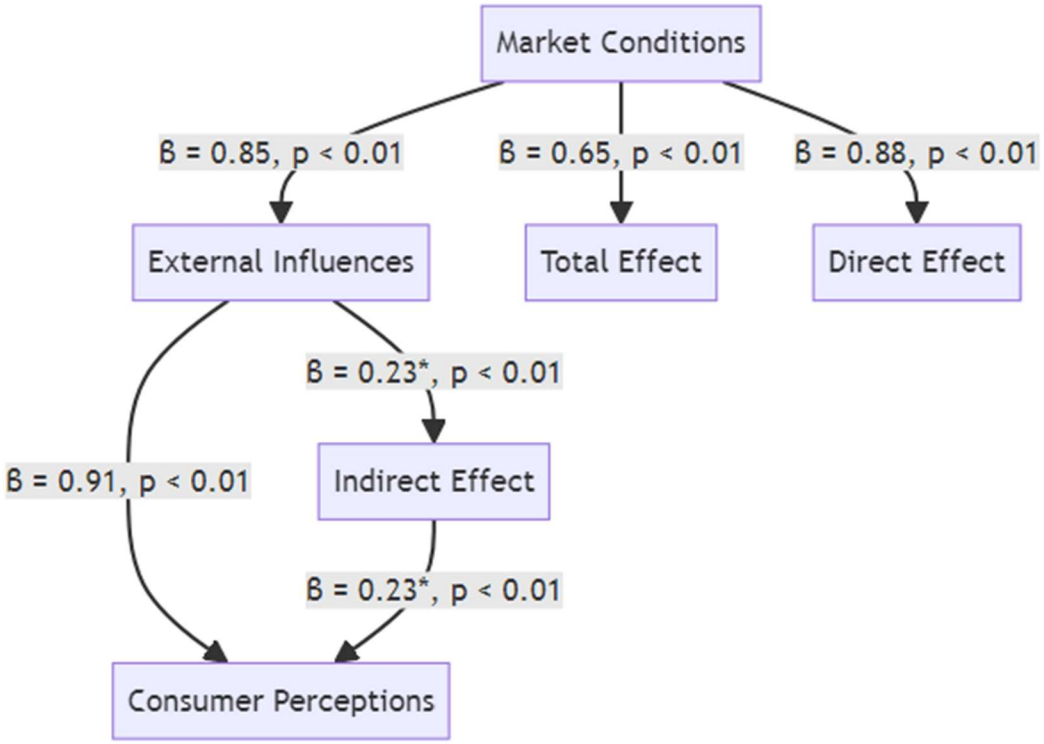
Indirect Effect: Market Conditions ⟶ External Influences ⟶ Consumer Perceptions

The indirect effect of Market Conditions on Consumer Perceptions, mediated by External Influences, had a standardized coefficient (β) of 0.23, with a p-value less than 0.01, indicating statistical significance. This result supported the hypothesis that external influences mediate the relationship between market conditions and consumer

perceptions. Although the indirect effect is smaller compared to the direct effect, it still represents a meaningful pathway through which market conditions can influence consumer perceptions via external influences.

The results of the total, direct, and indirect effects analysis provided robust support for the proposed hypotheses. Market conditions were shown to have both direct and indirect significant impacts on consumer perceptions, with external influences serving as a critical mediator in this relationship. These results indicate how complicated consumer behavior is when it comes to online perishable food purchase, highlighting how vital it is to take into consideration both external variables and market dynamics when creating the attitudes and perceptions of customers.

Figure : Visualization of total effects, direct effects and moderate effects.



(Source: Primary data)

6. Conclusions.

7.1. Theoretical Implications

The study "Adapting to Environmental Dynamism: Market Conditions and External Influences on Online Shopping for Perishable Foods" incorporates the Theory of Planned Behavior (TPB) and the Technology Acceptance Model (TAM), and offers a number of theoretical implications. and the Stimulus-Organism-Response (S-O-R) model. The amalgamation of these theories furnishes an all-encompassing structure that amplifies our comprehension of the intricate character of internet purchasing conduct concerning perishable food items. The TPB elucidates the psychological factors driving consumer intentions, emphasizing the role of attitudes, subjective norms, and perceived behavioral control. The TAM highlights how technological advancements and Customer behavior is greatly

influenced by how simple and helpful e-commerce platforms are regarded to be. The S-O-R model further expands this understanding by detailing how external stimuli such as market conditions and technological innovations influence internal consumer states and subsequent behaviors. Together, these theories highlight the intricate relationships that exist between consumer behavior, technology adoption, and market dynamics in the online perishable food economy.

7.2. Practical Implications

The study's practical implications hold great importance for lawmakers, technology developers, and online food stores alike. If retailers had a deeper comprehension of the major factors influencing consumer behavior, they could develop more effective marketing techniques. pricing models, and supply chain enhancements. For instance, improving cold chain logistics and real-time tracking technologies can significantly boost consumer trust and satisfaction, thereby driving sales. Representatives can safeguard consumers and promote a competitive market by using their wisdom to craft policies that guarantee food safety and market equity. Additionally, technology developers can leverage this information to design user-friendly e-commerce platforms that meet consumer expectations for ease of use and reliability, ultimately enhancing the overall shopping experience.

7.3. Future scope

By investigating the long-term effects of market circumstances and outside influences on consumer behavior, future research can build on this study. This is especially true as technology advances and regulatory frameworks change over time. Additionally, expanding the scope to include diverse geographic regions and demographic groups can provide a more holistic understanding of global consumer behaviors and preferences. Investigating the role of emerging technologies, such as artificial intelligence and blockchain, in enhancing supply chain transparency and efficiency could provide fresh perspectives on enhancing the dependability and credibility of online perishable food purchase. Furthermore, longitudinal studies examining changes in consumer behavior over time, particularly in reaction to noteworthy occurrences like the COVID-19 epidemic, could offer insightful information for creating flexible company plans.

7.4. Limitations

It is important to recognize the limits of this work, notwithstanding its merits. The primary focus of the research is on perishable food products, which restricts the applicability of the findings to other product categories. Furthermore, the study's dependence on pre-existing theoretical models might not adequately reflect how the dynamics of the digital marketplace are changing so quickly. There's a chance that the study's data had restrictions on how deep and how wide it might be. potentially affecting the robustness of the conclusions drawn. Future studies should aim to address these limitations by incorporating a broader range of product categories, employing more dynamic and adaptable theoretical frameworks, and utilizing more comprehensive and diverse datasets to enhance the validity and applicability of the findings.

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Appendix (items in the questionnaire)

Latent Construct: Market Conditions

Abbreviation	Questionnaire Item
MC1	How do prices for perishable food items change over time when you shop online? (For example, do prices go up or down each month?)
MC2	How does the demand for perishable foods change throughout the year when shopping online? (For example, do you notice more sales during certain seasons?)
MC3	Which online stores do you think sell the most perishable food products?
MC4	How do you choose where to buy perishable food online during economic changes?
MC5	When do you shop online the most for perishable foods during the year?

MC6	How do discounts or special offers affect where you buy perishable foods online?

Latent Construct: External Influences

Abbreviation	Questionnaire Item
EI1	Have you used the newest technologies for shopping, like mobile apps, to buy perishable foods online?
EI2	How would you rank the applications and websites you use to shop for perishable food?
EI3	Do you trust buying perishable foods online?
EI4	Do you make decisions about buying perishable foods online based on what you see on social media?
EI5	Have you noticed any changes in how perishable foods are sold online because of new laws or rules?
EI6	Does weather or environmental changes affect how you buy perishable foods online?

Latent Construct: Consumer Perceptions and Attitudes

Abbreviation	Questionnaire Item
CP1	How fresh and good do you think perishable foods are when you buy them online?
CP2	How do you rate the service you get when buying perishable foods online?
CP3	How confident are you that perishable foods bought online are fresh and will arrive safely?

CP4	Do you think perishable foods cost more or less online compared to buying in local stores?
CP5	Do you think it's easy or hard to shop online for perishable foods?
CP6	What online store do you prefer for buying perishable foods, and why?