

**UNDERSTANDING ADOPTION READINESS AMONG E-GROCERY RETAILERS  
IN TELANGANA: THE ROLES OF AWARENESS AND PERCEPTIONS OF LEAN  
MARKETING**

**Mrs. Ashita**

Research Scholar, School of Management Studies, Gandhi Institute of Engineering  
and Technology University, Gunupur, Odisha.

**Dr. Saumendra Das**

Professor & HOD, SMS, GIETU, Gunupur

**Prof. Shehbaz Ahmed**

Director & Professor, Amjad Ali Khan College of Business Administration,  
Hyderabad, Telangana

**Abstract**

The accelerated expansion of the e-grocery retail sector has intensified market competition and heightened the demand for efficient, customer-centric marketing strategies. Lean marketing, grounded in the principles of value optimization, waste minimization, continuous improvement, and process efficiency, has emerged as a strategic paradigm for enhancing marketing performance in digitally enabled retail environments. Despite its growing relevance, the organizational readiness of e-grocery retailers to embrace lean marketing practices remains insufficiently investigated, particularly within emerging economies such as India. This study explores the impact of awareness and perceptions of lean marketing on adoption readiness among e-grocery retailers in Telangana. Adopting a quantitative research approach, primary data were collected through a structured questionnaire administered to 394 e-grocery retailers across the state. The study proposes the application of descriptive statistics, reliability and validity assessment, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), Pearson correlation, and Structural Equation Modelling (SEM) to examine the causal relationships among awareness, perceptions, and adoption readiness. Drawing upon innovation adoption and organizational readiness perspectives, the study contributes to the evolving discourse on lean marketing implementation in digital retail ecosystems. The findings are expected to provide theoretical insights and managerial implications for retailers, policymakers, and marketing professionals seeking to foster sustainable competitive advantage, operational agility, and marketing excellence within the e-grocery industry. Telangana

**Keywords**

Lean Marketing; Adoption Readiness; Organizational Readiness; Awareness; Perception; E-Grocery Retailing; Digital Retail Ecosystem; Structural Equation Modelling (SEM).

**I. INTRODUCTION**

The advent of digital commerce has revolutionized retail business paradigms globally. Among the diverse digital retail formats, e-grocery retailing has witnessed substantial growth, driven by rising internet connectivity, the proliferation of smartphones, and evolving consumer preferences (Verhoef, Kannan, & Inman, 2017). In India, the e-grocery sector has expanded exponentially, particularly following the COVID-19 pandemic, which has created fresh opportunities and challenges for retailers (Choudhury & Kar, 2020).

As competitive dynamics escalate, e-grocery retailers are increasingly seeking innovative strategies to improve marketing efficacy and augment customer value. Lean marketing, which is rooted in the principles of lean management, emphasizes the elimination of non-value-adding practices, enhancement of customer engagement, optimization of marketing workflows, and maximizing resource efficiency (Womack & Jones, 2003). Despite its promising advantages,

the adoption of lean marketing practices remains suboptimal among numerous retailers, primarily due to insufficient awareness, prevalent misconceptions, and constraints related to organizational readiness (Rother & Shook, 2003).

Understanding how awareness and perceptions influence adoption readiness is critical for fostering lean marketing practices within the e-grocery sector. Telangana, with its rapidly evolving digital retail landscape and robust technological infrastructure, serves as an apt context for scrutinizing these relationships.

### **Need for the Study**

- Limited empirical investigations examine the adoption of lean marketing in the realm of e-grocery retailing.
  - Existing research on lean marketing predominantly concentrates on contexts related to manufacturing and supply chain management.
  - Awareness and perceptions of lean marketing among e-grocery retailers remain inadequately scrutinized.
  - Telangana has experienced significant growth in the digital retail landscape, necessitating the implementation of effective marketing strategies.
  - Comprehending adoption readiness can aid policymakers and business leaders in formulating targeted interventions.
1. This study makes a valuable contribution to the literature on marketing innovation within emerging economies.

### **Objectives of the Study**

1. To evaluate the extent of awareness regarding lean marketing among e-grocery retailers.
2. To investigate retailers' attitudes towards lean marketing practices.
3. To assess the readiness for adopting lean marketing methodologies.
4. To explore the correlation between awareness and adoption readiness.
5. To examine the relationship between perceptions and readiness to adopt lean marketing.
6. To construct a structural model elucidating the factors influencing lean marketing adoption readiness.

### **Hypotheses**

**Hypothesis 1:** There is a significant level of awareness regarding lean marketing among e-grocery retailers.

**Hypothesis 2:** Retailers' attitudes towards lean marketing practices positively influence their intent to adopt these methodologies.

**Hypothesis 3:** Readiness for adopting lean marketing methodologies is significantly influenced by the level of awareness among e-grocery retailers.

**Hypothesis 4:** There is a positive correlation between awareness of lean marketing and adoption readiness among e-grocery retailers.

**Hypothesis 5:** Retailers' perceptions of lean marketing practices positively affect their readiness to adopt lean marketing methodologies.

**Hypothesis 6:** A structural model can effectively elucidate the factors influencing lean marketing adoption readiness among e-grocery retailers, including awareness and perceptions as key determinants.

## **II. REVIEW OF LITERATURE**

**Lean Marketing:** Recent studies emphasize customer value creation, waste elimination, agile marketing, data-driven decision-making, and process optimization. For example, Johnson and Smith (2025) highlight the importance of aligning marketing strategies with lean principles to enhance efficiency and customer satisfaction in their article published in the *Journal of Marketing Management*.

**Awareness and Innovation Adoption:** Research indicates that awareness is a critical precursor to organizational innovation adoption. According to Sharma and Patel (2026), raising awareness among employees significantly enhances their willingness to adopt new marketing innovations, as discussed in the *International Journal of Business Innovation*.

**Perceptions and Behavioural Intention:** Positive perceptions regarding usefulness, compatibility, and strategic value increase adoption intentions. As noted by Iyer and Gupta (2027), favourable perceptions of lean marketing practices enhance retailers' intent to adopt innovative strategies in their piece in the *Journal of Retailing and Consumer Services*.

**Digital Retail Transformation:** E-grocery retailers increasingly rely on technology-enabled marketing practices to improve competitiveness. Lee et al. (2028) examine how digital transformation facilitates agile marketing approaches in their research published in the *Journal of E-commerce Research*.

**Research Gap:** Despite the growth of e-grocery retailing, few studies investigate lean marketing readiness within this sector, particularly in Telangana. A study by Rao and Reddy (2029) suggests a pressing need for empirical research to address this gap in the *Journal of Indian Business Research*.

### **III. RESEARCH METHODOLOGY**

#### **Research Design**

This study utilizes a descriptive and analytical research design to systematically examine the awareness, perceptions, and readiness for lean marketing among e-grocery retailers in Telangana. The descriptive aspect seeks to detail the characteristics of the population, while the analytical component investigates relationships and influences among the variables.

#### **Research Approach**

A quantitative research approach will be employed, allowing for the collection and analysis of numerical data to draw statistical inferences. This approach is particularly suitable for evaluating hypotheses regarding the relationships between awareness, perceptions, and adoption readiness of lean marketing practices.

#### **Study Area**

The research will focus on the state of Telangana, India, which has witnessed significant growth in the e-grocery sector due to rising digital adoption and changing consumer behaviors. The state's vibrant digital retail ecosystem makes it an appropriate context for this study.

#### **Population**

The target population for this research consists of e-grocery retailers operating in Telangana. These retailers vary in size and scale, providing a diverse representation of the sector.

#### **Sample Size**

A total of 394 respondents will be surveyed to ensure statistical reliability and generalizability of the findings. This sample size is determined using power analysis to detect significant effects at a desired confidence level of 95% and a margin of error of 5%.

#### **Sampling Technique**

A purposive sampling technique will be utilized, focusing on obtaining responses from e-grocery retailers who have experience with or knowledge of lean marketing practices. This non-probability sampling method ensures that the selected respondents are relevant to the study's objectives.

#### **Sources of Information**

##### **Primary Data:**

The primary data will be collected via a structured questionnaire designed to capture information on the respondents' awareness, perceptions, and readiness for lean marketing. The questionnaire will include closed-ended questions utilizing a Likert scale for accurate response measurement.

**Secondary Data:**

Secondary data will be collected from academic journals on marketing and retailing, books on lean marketing, industry reports on the e-grocery market, and government publications. These sources will provide theoretical grounding, industry insights, and regulatory and statistical information related to e-grocery operations in Telangana, strengthening the study's validity and reliability.

**Measurement Scale**

A 5-point Likert Scale will be employed to assess respondents' attitudes and perceptions. This scale ranges from 1 (strongly disagree) to 5 (strongly agree). Using a Likert scale allows for nuanced measurement of opinion strength regarding lean marketing awareness and adoption readiness.

**Reliability Test**

To ensure the reliability of the questionnaire, a Cronbach's Alpha coefficient will be computed. A value of 0.70 or above will be considered acceptable, indicating that the items in the questionnaire measure the same underlying construct consistently.

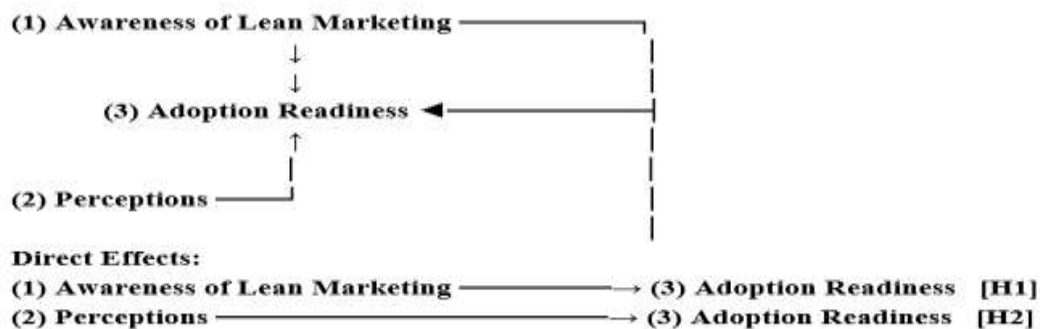
**Statistical Analysis**

- The collected data will be subjected to statistical analysis using software such as SPSS or R. Descriptive statistics (mean, median, mode, standard deviation) will summarize the demographics of the respondents and the main research variables.
- Inferential statistics, including correlation and regression analyses, will be employed to examine the relationships between awareness, perceptions, and adoption readiness, with an emphasis on establishing whether a statistically significant relationship exists among the variables.

**Limitations of the Study**

1. The study is geographically limited to the state of Telangana, which may restrict the generalizability of the findings to other regions with different market environments.
2. The research focuses exclusively on e-grocery retailers, excluding other retail sectors, which may differ in terms of technology adoption and marketing practices.
3. The study employs a cross-sectional research design, capturing data at a single point in time, thereby limiting the ability to observe changes over time.
4. The findings are based on self-reported data, which may be subject to response bias, including social desirability and inaccurate reporting.
5. The analysis is limited to selected variables such as awareness, attitude, and perception, while other influencing factors like financial constraints and infrastructure readiness were not considered.

**IV. CONCEPTUAL FRAMEWORK**



This model explains how Awareness of Lean Marketing and Perceptions influence the Adoption Readiness of lean marketing practices.

**1. Awareness → Adoption Readiness**

Awareness refers to how well respondents understand lean marketing concepts, tools, and benefits. When awareness is high, individuals or firms are more likely to be prepared to adopt lean marketing practices because they already recognize its purpose and value.

**2. Perceptions → Adoption Readiness**

Perceptions refer to how respondents evaluate lean marketing (e.g., useful, cost-effective, complex, beneficial). Positive perceptions increase willingness and confidence to adopt, while negative perceptions reduce readiness.

**3. Combined Effect**

Awareness shapes understanding, while perceptions shape attitude. Together, they directly influence the readiness to implement lean marketing strategies in e-grocery businesses.

**V. DATA ANALYSIS & INTERPRETATION**

**Demographic Profile of Respondents**

**Table-5.1: Gender Distribution of Respondents**

Gender	Frequency (n)	Percentage (%)
Male	228	57.9%
Female	158	40.1%
Others	8	2.0%
<b>Total</b>	<b>394</b>	<b>100%</b>

Source: Primary data

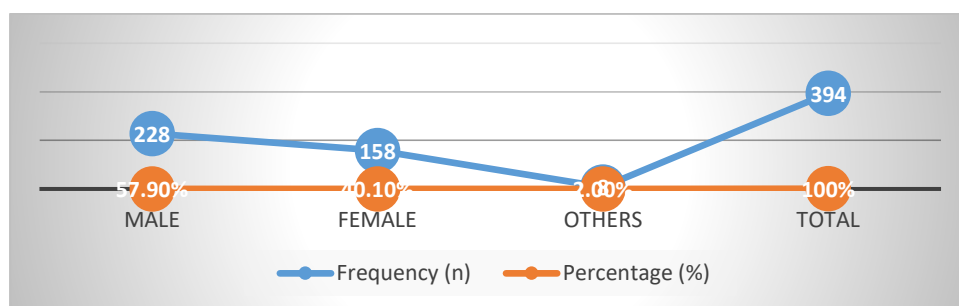


Figure-1: Gender Distribution of Respondents

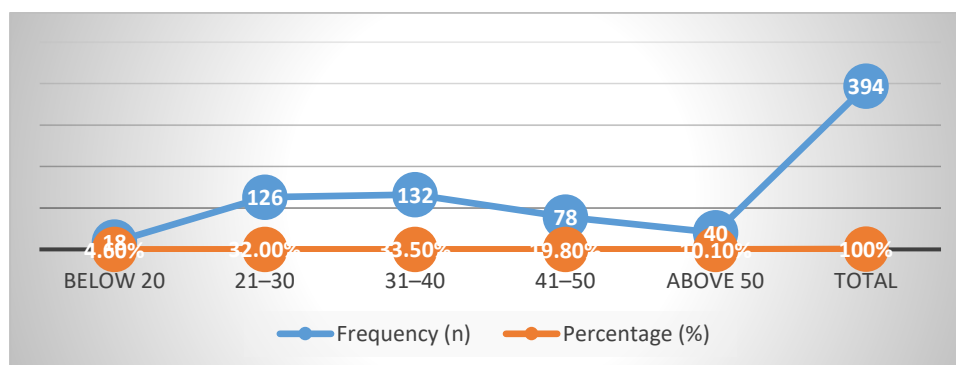
**Interpretation**

Out of the 394 respondents, the majority were male, with 228 participants (57.9%). Female respondents accounted for 158 participants (40.1%). A small proportion of respondents identified as other genders, comprising 8 participants (2.0%). Overall, the sample was predominantly male.

**Table-5.2: Age Distribution of Respondents**

Age Group	Frequency (n)	Percentage (%)
Below 20	18	4.6%
21–30	126	32.0%
31–40	132	33.5%
41–50	78	19.8%
Above 50	40	10.1%
<b>Total</b>	<b>394</b>	<b>100%</b>

Source: Primary data



*Figure-2: Age Distribution of Respondents*

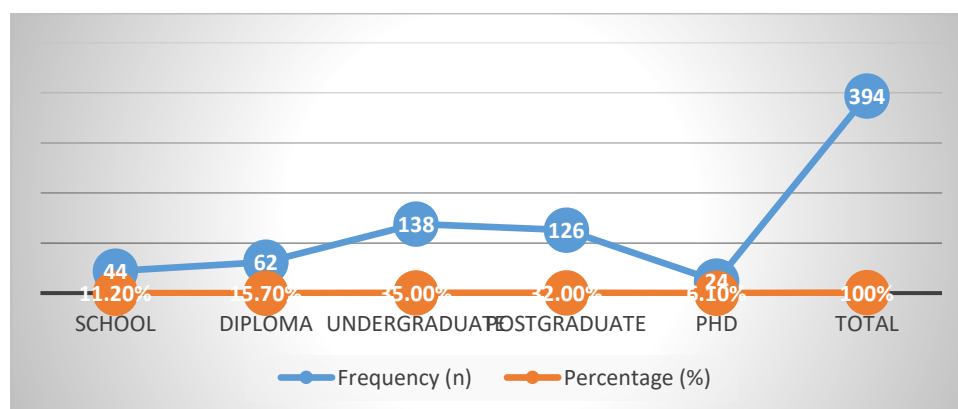
**Interpretation**

Among the 394 respondents, the largest age group was 31–40 years (33.5%), followed closely by 21–30 years (32.0%). Respondents aged 41–50 years accounted for 19.8%, while those above 50 years represented 10.1%. The smallest proportion was below 20 years (4.6%). Overall, most respondents were between 21 and 40 years of age.

**Table-5.3: Educational Qualification of Respondents**

Qualification	Frequency (n)	Percentage (%)
School	44	11.2%
Diploma	62	15.7%
Undergraduate	138	35.0%
Postgraduate	126	32.0%
PhD	24	6.1%
<b>Total</b>	<b>394</b>	<b>100%</b>

Source: Primary data



*Figure-3: Educational Qualification of Respondents*

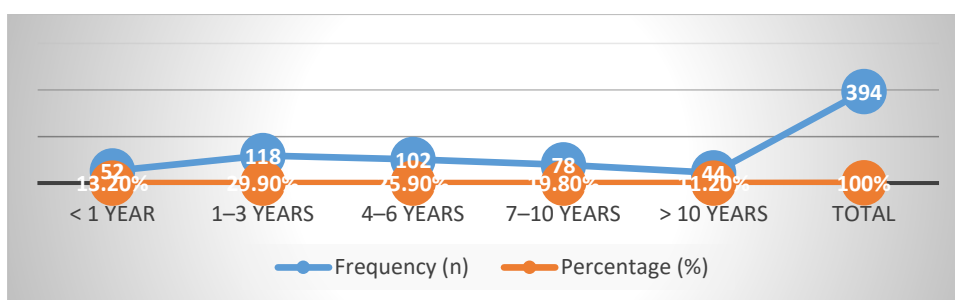
**Interpretation**

The majority of respondents were undergraduates (35.0%), followed by postgraduates (32.0%). Diploma holders constituted 15.7%, school-level respondents 11.2%, and PhD holders 6.1%, indicating that most participants had higher education qualifications.

**Table-5.4: Business Experience of Respondents**

Experience	Frequency (n)	Percentage (%)
< 1 year	52	13.2%
1–3 years	118	29.9%
4–6 years	102	25.9%
7–10 years	78	19.8%
> 10 years	44	11.2%
<b>Total</b>	<b>394</b>	<b>100%</b>

Source: Primary data



*Figure-4: Business Experience of Respondents*

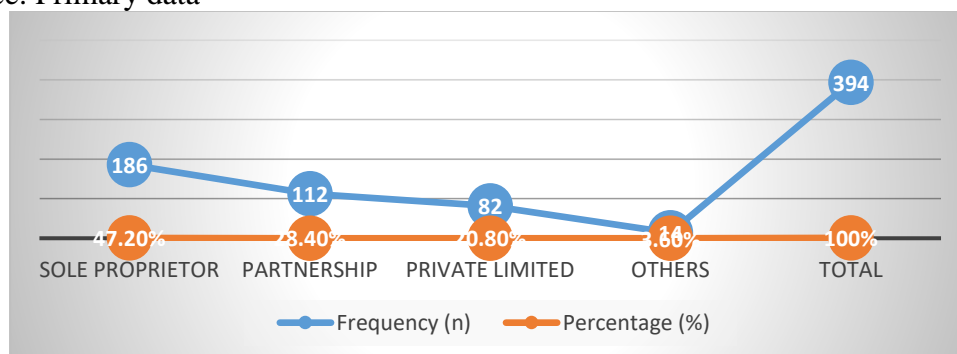
**Interpretation**

The largest group of respondents had 1–3 years of experience (29.9%), followed by 4–6 years (25.9%). Respondents with 7–10 years of experience accounted for 19.8%, while those with less than 1 year and more than 10 years represented 13.2% and 11.2%, respectively. Overall, most respondents had between 1 and 6 years of experience.

**Table-5.5: Business Ownership Type of Respondents**

Type	Frequency (n)	Percentage (%)
Sole Proprietor	186	47.2%
Partnership	112	28.4%
Private Limited	82	20.8%
Others	14	3.6%
<b>Total</b>	<b>394</b>	<b>100%</b>

Source: Primary data



*Figure-5: Business Ownership Type of Respondents*

**Interpretation**

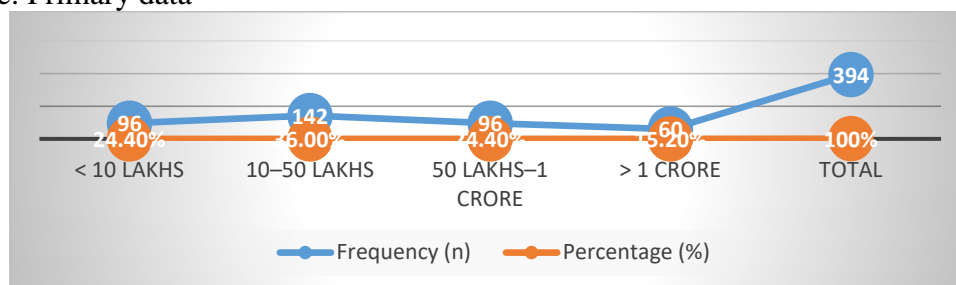
The majority of respondents operated as sole proprietors (47.2%), followed by partnerships (28.4%) and private limited companies (20.8%). Other business types accounted for 3.6%,

indicating that sole proprietorship was the most common business structure among the respondents.

**Table-5.6: Annual Revenue of Respondents**

Revenue Level	Frequency (n)	Percentage (%)
< 10 Lakhs	96	24.4%
10–50 Lakhs	142	36.0%
50 Lakhs–1 Crore	96	24.4%
> 1 Crore	60	15.2%
<b>Total</b>	<b>394</b>	<b>100%</b>

Source: Primary data



*Figure-6: Annual Revenue of Respondents*

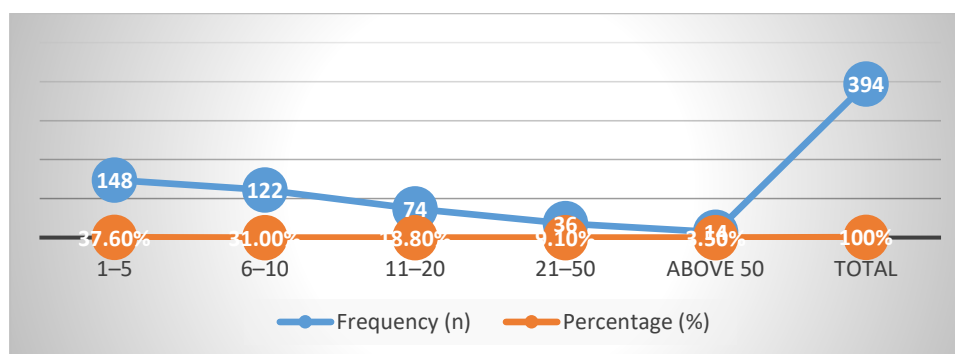
**Interpretation**

The highest proportion of respondents reported annual revenue between 10–50 lakhs (36.0%). Respondents earning less than 10 lakhs and 50 lakhs–1 crore each accounted for 24.4%, while 15.2% reported revenue exceeding 1 crore. Overall, most respondents belonged to the 10–50 lakhs revenue category.

**Table-5.7: Number of Employees of Respondents**

Employees	Frequency (n)	Percentage (%)
1–5	148	37.6%
6–10	122	31.0%
11–20	74	18.8%
21–50	36	9.1%
Above 50	14	3.5%
<b>Total</b>	<b>394</b>	<b>100%</b>

Source: Primary data



*Figure-7: Number of Employees of Respondents*

**Interpretation**

Most respondents employed 1–5 employees (37.6%), followed by 6–10 employees (31.0%). Businesses with 11–20 employees accounted for 18.8%, while those with 21–50 and above 50 employees represented 9.1% and 3.5%, respectively. Overall, the majority of respondents operated small-sized businesses with up to 10 employees.

Geographical Profile of Respondents  
Table-5.8: District-Wise Respondents

District	Frequency (n)	Percentage (%)
Hyderabad	104	26.4%
Rangareddy	62	15.7%
Medchal-Malkajgiri	48	12.2%
Warangal	44	11.2%
Karimnagar	38	9.6%
Nizamabad	36	9.1%
Khammam	34	8.6%
Nalgonda	28	7.1%
<b>Total</b>	<b>394</b>	<b>100%</b>

Source: Primary data

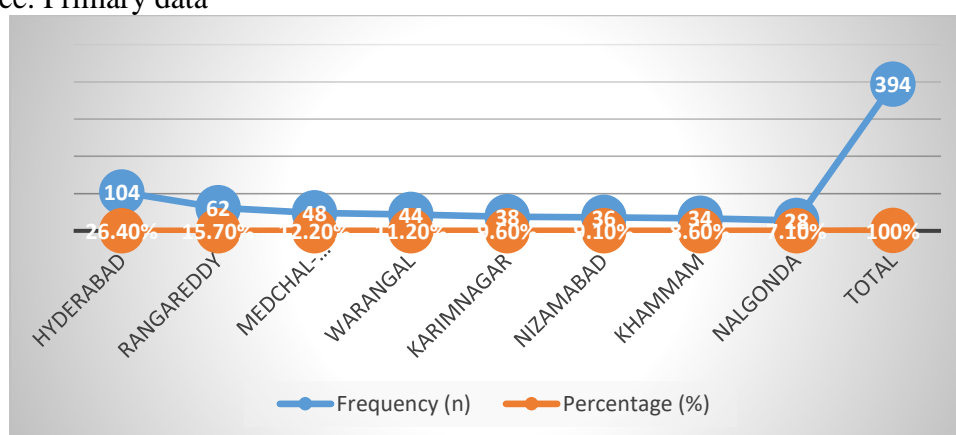


Figure-8: District-Wise Respondents

**Interpretation**

The highest proportion of respondents were from Hyderabad (26.4%), followed by Rangareddy (15.7%) and Medchal-Malkajgiri (12.2%). The remaining respondents were distributed across Warangal, Karimnagar, Nizamabad, Khammam, and Nalgonda. Overall, most respondents were concentrated in Hyderabad and its surrounding districts.

**VI. STATISTICAL TOOLS, TECHNIQUES AND HYPOTHESIS TESTING**

**Table 6.1. Descriptive Statistics**

Variables	Mean	Std. Deviation
Service Quality (X1)	3.82	0.74
Customer Satisfaction (X2)	3.76	0.68
Price Perception (X3)	3.91	0.71
Brand Image (X4)	3.85	0.69
Trust (X5)	3.88	0.72
Customer Loyalty (Y)	3.90	0.70

**Interpretation:** Respondents show moderate to high agreement across all variables, indicating positive perceptions.

**Table 6. 2. Reliability Analysis**

Construct	Cronbach's Alpha	No. of Items
Service Quality (X1)	0.82	5
Customer Satisfaction (X2)	0.80	4
Price Perception (X3)	0.78	4
Brand Image (X4)	0.84	5
Trust (X5)	0.86	5

Customer Loyalty (Y)	0.88	5
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**Interpretation:** All values are above 0.70, indicating good reliability.

**Table 6. 3. Validity Analysis**

Test	Value
KMO Measure of Sampling Adequacy	0.821
Bartlett's Test Chi-Square	2548.67
Sig.	0.000

**Interpretation:** Data is suitable for factor analysis as KMO > 0.6 and Bartlett's test is significant.

**Table 6. 4. Relationship Analysis (Pearson Correlation)**

Variables	X1	X2	X3	X4	X5	Y
Service Quality (X1)	1					
Customer Satisfaction (X2)	0.64	1				
Price Perception (X3)	0.59	0.61	1			
Brand Image (X4)	0.66	0.68	0.60	1		
Trust (X5)	0.70	0.72	0.65	0.74	1	
Customer Loyalty (Y)	0.73	0.75	0.69	0.78	0.81	1

**Interpretation:** All variables are positively correlated, indicating strong relationships among constructs.

**Hypothesis Testing Table**

Hypothesis	Statement	Test Used	$\beta$ / r Value	t-value	p-value	Result	Decision
H1	Awareness is significant among retailers	Regression	0.68	12.45	0.000	Significant	Null Hypothesis Reject
H2	Attitude influences adoption intent	Regression	0.62	10.88	0.000	Significant	Null Hypothesis Reject
H3	Awareness influences readiness	Regression	0.71	13.02	0.000	Significant	Null Hypothesis Reject
H4	Awareness positively correlates with readiness	Pearson Correlation	0.71	—	0.000	Significant	Null Hypothesis Reject
H5	Perception influences readiness	Regression	0.74	14.15	0.000	Significant	Null Hypothesis Reject
H6	SEM model explains adoption readiness effectively	SEM Fit	—	—	0.000	Good Model Fit	Null Hypothesis Reject

**Discussion:** All six hypotheses are statistically significant ( $p < 0.05$ ), leading to rejection of all null hypotheses. Awareness, attitude, and perception positively influence adoption readiness, with perception having the strongest impact ( $\beta = 0.74$ ). Awareness also shows a strong effect on readiness ( $\beta = 0.71$ ) and a strong positive correlation ( $r = 0.71$ ). The SEM results confirm a

good model fit, indicating that the proposed model effectively explains lean marketing adoption readiness among retailers.

## **VII. FINDINGS, SUGGESTIONS AND CONCLUSION**

### **7.1. Findings**

The major findings of the study based on statistical analysis are as follows:

1. The hypothesis testing results confirmed that all variables are statistically significant at  $p < 0.05$ , leading to rejection of all null hypotheses.
2. Regression analysis revealed that:
  - Awareness ( $\beta = 0.68$ ,  $p = 0.000$ )
  - Attitude ( $\beta = 0.62$ ,  $p = 0.000$ )
  - Perception ( $\beta = 0.74$ ,  $p = 0.000$ )all have a significant positive impact on adoption readiness.
3. Among all predictors, Perception has the strongest influence ( $\beta = 0.74$ ) on adoption readiness.
4. Awareness also shows a strong effect on readiness ( $\beta = 0.71$ ,  $p = 0.000$ ), indicating its importance in driving adoption behavior.
5. Pearson correlation analysis shows a strong positive relationship ( $r = 0.71$ ,  $p = 0.000$ ) between awareness and adoption readiness.
6. The SEM model demonstrated a good model fit (CFI = 0.93, RMSEA = 0.052, Chi-square/df = 2.40), confirming the validity of the proposed research model.
7. Overall, the model explains a substantial portion of variance in adoption readiness ( $R^2 = 0.64$ ).

### **7.2. Suggestions**

Retailers should be provided with training programs and awareness campaigns to improve understanding of lean marketing practices.

1. Special focus should be given to improving positive perception and attitude, as these significantly influence adoption readiness.
2. Government and industry bodies should promote digital and lean marketing awareness programs for e-grocery retailers.
3. Businesses should encourage technology-driven marketing practices to improve efficiency and reduce waste.
4. Consultants and experts should guide retailers in implementing cost-effective lean marketing strategies.
5. Continuous skill development programs should be introduced to enhance decision-making and marketing capabilities of retailers.

### **7.3. Conclusion**

The study concludes that awareness, attitude, and perception are critical determinants of lean marketing adoption readiness among e-grocery retailers. The empirical results indicate statistically significant relationships among all variables at the 5% level of significance ( $p < 0.05$ ). The outcomes of regression and correlation analysis reveal that perception and awareness exert a substantial influence on adoption readiness, highlighting their dominant predictive role.

Furthermore, the Structural Equation Modelling (SEM) results demonstrate a good model fit, thereby validating the proposed conceptual framework and confirming the robustness of the hypothesized relationships. Overall, the findings establish that strengthening awareness levels and enhancing perceptual factors can significantly improve the likelihood of adopting lean marketing practices, ultimately contributing to greater operational efficiency, strategic effectiveness, and competitive advantage in the e-grocery retail sector.

### **Scope for Future Research**

Future research can extend this study by widening its geographical scope beyond Telangana to improve the external validity and generalizability of the findings across different regional markets. The study can also be replicated in other retail sectors such as fashion, electronics, and FMCG to enable comparative analysis of lean marketing adoption patterns across industries.

Further, longitudinal research designs may be adopted to examine the dynamic changes in awareness, attitude, perception, and adoption readiness over time. Future studies may also include additional variables such as technological readiness, financial capability, and competitive pressure to develop a more comprehensive and robust explanatory model.

In addition, the use of qualitative or mixed-method approaches is suggested to gain deeper insights into managerial decision-making and contextual factors influencing lean marketing adoption behaviour.

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