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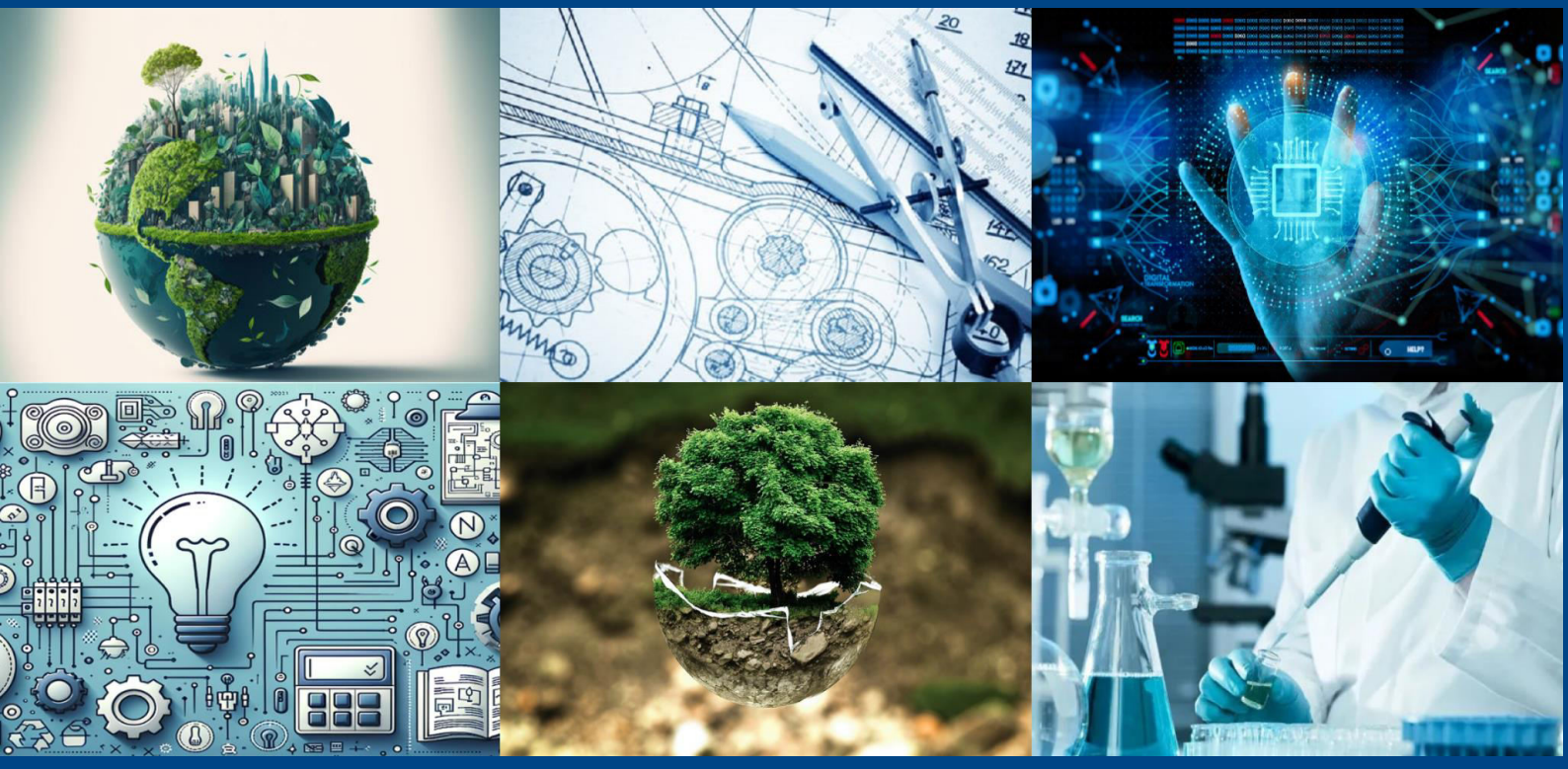

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A Study on Freight Forwarding Operations at Cargo Companies, Chennai.

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ABSTRACT: Freight forwarding operations are vital for logistics efficiency, cost-effectiveness, and customer satisfaction. This study evaluates Cargo Companies, Chennai, focusing on documentation, transportation, customer handling, and multimodal logistics. Primary data from customers and stakeholders were analyzed using percentage, Chi-square, and correlation analysis. Findings reveal efficient documentation, reliable services, and satisfactory support, but transportation delays, communication gaps, and limited awareness of value-added services remain. The study recommends digital logistics tools, improved communication, real-time tracking, and stronger service promotion.

KEYWORDS: Freight Forwarding Operations, Logistics Management, Customer Satisfaction, Documentation Process, Transportation Efficiency

I. INTRODUCTION

Freight forwarding is a vital component of global logistics, ensuring the timely, secure, and cost-effective movement of goods across markets. It includes transportation, documentation, customs clearance, warehousing, cargo handling, insurance, and coordination among stakeholders. This study examines freight forwarding operations to assess efficiency, identify challenges, and evaluate existing practices. It focuses on reducing delays and costs while improving service quality. Technological advancements, including digital tracking and integrated logistics platforms, enhance operational efficiency, transparency, customer satisfaction, and business competitiveness.

Statement of the Problem

Freight forwarding operations face challenges such as poor stakeholder coordination, documentation and customs delays, fluctuating freight rates, limited technology adoption, and inadequate tracking transparency. Infrastructure constraints and regulatory changes further affect performance, increasing costs and reducing customer satisfaction. This study analyzes these challenges, identifies their causes, and recommends improvements to enhance operational efficiency, reduce costs, and ensure smooth logistics management.

Objectives of the Study

The objectives of this study are

1. To study the freight forwarding operations at Cargo Companies, Chennai.
2. To analyze customer satisfaction towards services provided by Cargo Companies, Chennai.
3. To evaluate the efficiency of logistics services like transportation and documentation in the Organization.
4. To assess the performance of import and export operations in the firm.
5. To identify factors influencing customer preference and loyalty in the Company.

Scope of the Study

1. The study focuses on analyzing the freight forwarding operations of Cargo Companies.
2. It covers customer satisfaction levels regarding logistics services such as transportation, documentation, and clearance.
3. The study includes evaluation of import and export service performance and operational efficiency.
4. It examines customer awareness and usage of value-added services offered by the company.

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Limitations of Study

1. The study covers Cargo Companies only, limiting generalization across the logistics industry.
2. Employee responses may contain bias, incomplete information, or subjective perceptions.
3. Time constraints limited detailed analysis of all freight forwarding operations.
4. Confidential data restrictions reduced comprehensive assessment of company operational practices.

II. REVIEW OF LITERATURE

In a study by **Martin Christopher** (2023), titled "Logistics and Supply Chain Strategies for Competitive Advantage", published in International Journal of Logistics Management (Vol. 34 Issue No. 1), it was concluded that efficient freight forwarding operations improve delivery performance and customer satisfaction.

Another study by **Goh & Lim** (2022), titled "Customer Relationship Management in Freight Forwarding Operations", published in International Journal of Logistics Management (Vol. 33 Issue No. 4), it was concluded that proactive communication, integrated customer portals and tailored service packages enhance client retention and operational effectiveness.

In a research by **Amin & Sadat** (2020), titled "Risk Management Practices in Freight Forwarding", published in International Journal of Logistics Research and Applications (Vol. 23 Issue No. 1), it was concluded that risk assessment, insurance coordination and contingency planning help freight forwarders mitigate disruptions and maintain service continuity.

Further study by **Hwang & Shin** (2020), titled "Digital Transformation in Global Freight Forwarding", published in Journal of Supply Chain Management (Vol. 56 Issue No. 5), it was concluded that digital platforms, blockchain and real-time visibility tools increase operational transparency and reduce supply chain lead times in forwarding operations.

Company Profile

Cargo Companies are logistics and freight forwarding companies providing domestic and international cargo solutions. Its services include air and ocean freight, road transportation, customs clearance, warehousing, door-to-door delivery, FCL and LCL shipments, and documentation. Supported by experienced professionals and global partners, the company emphasizes customer satisfaction, reliability, technology adoption, operational efficiency, compliance, and continuous improvement to strengthen its competitive position.

Industry Profile

The cargo and logistics industry support global trade through freight forwarding, transportation, warehousing, customs clearance, and cargo handling. Major modes include road, rail, air, and sea. Technology, e-commerce, automation, real-time tracking, and sustainability are transforming the industry, while fuel costs, regulations, congestion, and supply-chain disruptions remain key challenges.

World Scenario

Global logistics is expanding with international trade and e-commerce. AI, IoT, blockchain, automation, predictive analytics, and digital freight platforms improve efficiency and visibility. Major trends include supply-chain resilience, green logistics, real-time tracking, and customer-centric services.

National Scenario

India's logistics sector is rapidly developing through GST, infrastructure investment, multimodal transport, 3PL services, e-commerce, and digitalization. Dedicated Freight Corridors, logistics parks, modern warehouses, and advanced technologies are improving connectivity and efficiency.

State Scenario

Tamil Nadu benefits from strategic ports, strong industrial clusters, highways, railways, and air connectivity. Chennai and other industrial hubs support freight forwarding, warehousing, exports, and logistics services.

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Future Outlook

The industry will increasingly emphasize digital transformation, sustainability, multimodal transportation, resilience, predictive analytics, and customer-focused logistics.

III. RESEARCH METHODOLOGY

Research methodology refers to the systematic procedures used to collect, process, analyze, and interpret information. The study uses surveys and questionnaires to obtain relevant data.

Research Design: The study adopts a descriptive research design to describe and evaluate freight forwarding operations, practices, and challenges at Cargo Companies, Chennai.

Source of Data

- **Primary Data**: Collected directly from respondents through a structured questionnaire and organizational visits.
- **Secondary Data**: Obtained from journals, websites, reports, and other relevant sources.

Research Approach: The study follows a survey method, collecting information from selected respondents through structured questions.

Research Instrument: A structured questionnaire was used as the primary research instrument for collecting relevant information from respondents.

Sample Plan

- **Sample Unit**: The study covers clients associated with Cargo Companies, Chennai.
- **Sample Size**: The population consists of 178 clients, from which 106 respondents (clients) were selected for the study.
- **Sampling Procedure**: Convenience sampling was adopted to select respondents based on their accessibility and availability.

Tools Used for Analysis

The collected data were analyzed using percentage analysis, Chi-square test, and correlation analysis to identify patterns, relationships, and significant findings related to freight forwarding operations.

Percentage Analysis: Percentage analysis was used to compare data and express relationships between different categories in percentage terms.

$$\textbf{Percentage} = \frac{\textit{No.of Respondents in a Category}}{\textit{Total No.of Respondents}} \textbf{ x 100}$$

Chi-Square Test: Chi-square determines whether variables are associated, including analytics usage, performance, awareness, decision-making, and departmental usage.

$$\chi^2 = \frac{\sum (\mathbf{0i} - \mathbf{Ei})^2}{\mathbf{Ei}}$$

Correlation Analysis: Correlation analysis is a statistical tool used to measure the relationship between two variables. It is denoted by "r" and shows the strength and direction of the relationship. It helps to identify whether variables such as business analytics usage and organizational performance are related

$$\mathbf{r} = \frac{n\,(\sum xy) - (\sum x)\,(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2\,[n\sum y^2 - (\sum y)^2}}$$

Data Analysis and Interpretation

Data analysis involves systematically organizing and examining data to answer research questions, often using visual tools like tables and charts. Data, collected through various methods, is meaningless until analyzed. Analysis identifies

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patterns and insights through techniques like classification and comparison. Interpretation gives meaning to findings, aligns them with research goals, and generates insights for informed decision-making and future studies.

Table: 1 Age of the Respondents

Age Group	No. of Respondents	%
25 – 35	37	35
36 – 45	32	30
46 – 55	21	20
56 – 65	16	15
Total	**6**	**100**

From the above table, it is interpreted that, 35% of the respondents belong to 25 – 35 Age group, 30% to 36 – 45 age group, 20% to 46 – 55 age grouped 15% to 56 – 65 age group.

Table: 2 Business Occupations

Business Occupations	No. of Respondents	%
Proprietors	32	30
Agents	54	51
Traders	20	19
Total	**106**	**100**

From the above table, it is interpreted that 30 % of respondents are proprietors, 51% are Agents and 19% are traders who are doing business with Cargo Companies, Chennai.

. Table: 3 Educational Qualification

Educational Qualification	No. of Respondents	%
SSLC	18	17
HSC	22	21
Undergraduate	38	36
Postgraduate	28	26
Total	**106**	**100**

From the above table it is interpreted that 17 % of clients have SSLC, 21% have HSC, 36% have Undergraduate and 26% have Post graduate qualification.

Table: 4 Monthly Income

Monthly Income	No. of Respondents	%
Below Rs.10,000	16	15
Rs.10,000-Rs.20,000	28	26
Rs.20,000-Rs.50,000	40	38
Above Rs.50,000	22	21
Total	**106**	**100**

It is interpreted that 15% of respondents have less than Rs. 10,000, 25% between Rs.10,000 – 20,000, 38 % between 20,000 – 50,000 and 21% more than 50,000 as average monthly income

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Table: 5 Years of Experience in Cargo Business

Years of Experience in Cargo Business	No. of Respondents	%
Up to 5 Years	36	34
5 – 10 Years	40	38
Above 10 Years	30	28
Total	**106**	**100**

From the above table it is interpreted that 34% have 5 years of experience in cargo business, .38% have experience of 5 – 10 years in cargo business and 28% have more than 10 years of business experience.

Table: 6 Frequency of Export & Import Business with Cargo Operations

Frequency of Export and Import Business	Daily		Weekly		Fortnightly		Monthly	
	Res	%	Res	%	Res	%	Res	%
Export	28	26	36	34	22	21	20	19
Import	26	24	38	36	22	21	20	19

It is interpreted that the maximum export frequency is weekly (34%), while import business also peaks weekly at 36%, indicating regular trade activity.

Table:7 Mode of Operations of Cargo Business

Mode of Operations of Cargo Business	No. of Respondents	%
Company-Company	30	28
Company-Port	26	25
Port-Port	20	19
Port-Company	30	28
Total	**106**	**100**

It is interpreted that 30% of clients operate company to company mode, 25% to Company to port, 19% from Port to Port and 28 % from Port to company in cargo operations.

Table:8 Services Dealing with Cargo Business

Services Dealing with Cargo Business	No. of Respondents	%
Freight Forwarding	38	36
Inland Transportation	26	25
Custom Clearance	22	21
Warehousing	20	18
Total	**106**	**100**

It is interpreted that 36% of clients operate freight forwarding services 25% as Inland Transportation, 21 % as customs clearance agents and 18 % do warehousing operations services.

Table: 9 Reasons for doing Cargo Business

Reasons for doing Cargo Business	No. of Respondents	%
Freight Forwarding	38	36
Inland Transportation	26	25
Custom Clearance	22	21
Warehousing	20	18
Total	**106**	**100**

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It is interpreted that 36% of clients operate freight forwarding services 25% as Inland Transportation, , 21 % as customs clearance agents and 18 % do warehousing operations services.

Table: 10 Suggested Process for Improvement

Suggested Process for Improvement	No. of Respondents	%
Documentation	16	15
Customer Service	24	23
Operation	20	19
Accounting	12	11
Transportation	34	32
Total	**106**	**100**

It is interpreted that 15 % of clients suggested improvement for Documentation, 23 % for Customer Service, 19 % for Operation, 11% for Accounting, and 32 % for Transportation.

Table: 11 Respondents Satisfactory level with Cargo Operations

Influencing Factors of satisfactory level with cargo operations	Highly Satisfied		Satisfied		Neutral		Dissatisfied		Highly Dissatisfied	
	Res*	%	Res*	%	Res*	%	Res*	%	Res*	%
Reliability	28	26	36	34	18	17	14	13	10	10
Employee Responsiveness	26	25	38	36	18	17	14	13	10	9
Quality Assurance	27	25	37	35	18	17	14	13	10	10
Freight Forwarding Operations	29	27	39	37	17	16	13	12	8	8
Documentation Process	28	26	38	36	18	17	12	11	10	10
Handling Hazardous Goods	26	25	37	35	19	18	14	13	10	9
Multimodal Transportation	27	25	38	36	18	17	13	12	10	10
Logistics Facilities provided	26	25	40	38	18	17	12	11	10	9
Overall Freight Forwarding Process	30	28	42	40	16	15	10	9	8	8

Res* Respondents

Interpretation

The table indicates that respondents generally have a positive level of satisfaction with cargo operations. The highest satisfaction is recorded for the Overall Freight Forwarding Process, where 40% are satisfied and 28% are highly satisfied, giving a combined satisfaction level of 68%.

Among individual factors, Freight Forwarding Operations records 37% satisfied and 27% highly satisfied (64%), followed by Logistics Facilities with 38% satisfied and 25% highly satisfied (63%). Employee Responsiveness also shows a favourable result, with 36% satisfied and 25% highly satisfied (61%).

The Documentation Process records 36% satisfied and 26% highly satisfied (62%), while Multimodal Transportation has 36% satisfied and 25% highly satisfied (61%). Reliability shows 34% satisfied and 26% highly satisfied (60%).
The relatively lower satisfaction levels are observed for Quality Assurance (50%) and Handling Hazardous Goods (60%) when combining satisfied and highly satisfied responses. Overall, the findings show that respondents are predominantly satisfied with cargo operations, although improvements in quality assurance and specialized cargo handling could further enhance customer satisfaction.

IV. CHI SQUARE TEST–I

A chi – square test is a statistical test that is used to compare observed and expected results.

Relationship Between Occupation and Satisfaction Level on Overall Performance of Freight Forwarding Operations

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Null Hypothesis: H0:
There is no significant relationship between occupation and satisfaction level on overall performance of freight forwarding operations.

Alternative Hypothesis: H1:
There is significant relationship between occupation and satisfaction level on overall performance of freight forwarding operations.

Observed Frequency: The observed frequency for Chi Square Test is given in the table below:

Table 12: Observed Frequency

	Overall Performance of Freight Forwarding Operations					
Occupations	Highly Satisfied	Satisfied	Neutral	Dissatisfied	Highly Dissatisfied	Total
Proprietors	10	12	5	3	2	32
Agents	15	22	8	5	4	54
Traders	5	8	3	2	2	20
Total	**30**	**42**	**16**	**10**	**8**	**106**

Source: Primary Data

$$\textbf{Expected Frequency} = \frac{Row\ Total\ x\ Coloum\ Total}{Grand\ Total}$$

The Calculation is as follows

1. Row1 Total × Column1 Total / Grand Total = 32 x 30 / 106 = **09.06**
2. Row1 Total × Column2 Total / Grand Total = 32 x 42 / 106 = **12.68**
3. Row1 Total × Column3 Total / Grand Total = 32 x 16 / 106 = **04.83**
4. Row1 Total × Column5 Total / Grand Total = 32 x 10 / 106 = **03.02**
5. Row1 Total × Column5 Total / Grand Total = 32 x 08 / 106 = **02.41**
6. Row2 Total × Column1 Total / Grand Total = 54 x 30 / 106 = **15.28**
7. Row2 Total × Column2 Total / Grand Total = 54 x 42 / 106 = **21.40**
8. Row2 Total × Column3 Total / Grand Total = 54 x 16 / 106 = **08.15**
9. Row2 Total × Column4 Total / Grand Total = 54 x 10 / 106 = **05.09**
10. Row2 Total × Column5 Total / Grand Total = 54 x 08 / 106 = **04.08**
11. Row3 Total × Column1 Total / Grand Total = 20 x 30 / 106 = **05.66**
12. Row3 Total × Column2 Total / Grand Total = 20 x 42 / 106 = **07.92**
13. Row3 Total × Column3 Total / Grand Total = 20 x 16 / 106 = **03.02**
14. Row3 Total × Column5 Total / Grand Total = 20 x 10 / 106 = **01.89**
15. Row3 Total × Column5 Total / Grand Total = 20 x 08 / 106 = **01.51**

Table 13: Expected Frequency

	Overall Performance of Freight Forwarding Operations					
Occupations	Highly Satisfied	Satisfied	Neutral	Dissatisfied	Highly Dissatisfied	Total
Proprietors	9.06	12.68	4.83	3.02	2.41	32
Agents	15.28	21.40	8.15	5.09	4.08	54
Traders	5.66	7.92	3.02	1.89	1.51	**20**
Total	**30**	**42**	**16**	**10**	**8**	**106**

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$$\chi^2 = \frac{\sum (0i - Ei)^2}{Ei}$$

Table 14: Calculation of Chi Square

Observed frequency	Expected frequency	Oi–Ei	$(Oi–Ei)^2$	$(Oi–Ei)^2/Ei$
10	9.06	-0.94	0.8836	0.0975
12	12.68	0.68	0.4624	0.0365
5	4.83	-0.17	0.0289	0.0060
3	3.02	0.02	0.0004	0.0001
2	2.42	0.42	0.1764	0.0729
15	15.28	0.28	0.0784	0.0051
22	21.4	-0.6	0.36	0.0168
8	8.15	0.15	0.0225	0.0028
5	5.09	0.09	0.0081	0.0016
4	4.08	0.08	0.0064	0.0016
5	5.66	0.66	0.4356	0.0770
8	7.92	-0.08	0.0064	0.0008
3	3.02	0.02	0.0004	0.0001
2	1.89	-0.11	0.0121	0.0064
2	1.51	-0.49	0.2401	0.1590
106			**Total**	**0.4842**

$\sum[(Oi–Ei)^2 / Ei] = 0.4842$

Degrees of freedom = (No. of Rows – 1) (No. of Columns – 1) = (3-1) x (5-1) = 8

At 5% level of significance the value is **15.507**. Calculated value = **0.4842**

Table value >Calculate value, H0 is accepted.

Inference

There is no significant relationship between occupation and satisfaction level on overall performance of freight forwarding operations

Coefficient of Correlation

Correlation coefficient is the statistical tools used to measures the degree to which two variables are linearly related to each other. Correlation measures the degree of association between two variables.

Table 14 Relationship Between Year of Experience and Satisfaction Level on Logistics Facilities

Years of Experience (X)	Logistics Facilities provided (Y)	X^2	Y^2	XY
36	26	1296	676	936
40	40	1600	1600	1600
30	18	900	324	540
0	12	0	144	0
0	10	0	100	0
$\sum X = 106$	**$\sum Y = 106$**	**$\sum X^2 = 3796$**	**$\sum Y^2 = 2844$**	**$\sum XY = 3076$**

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Source: Primary Data
Formula:

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2}}$$

$\sqrt{}$ (5 x (3796) $-(106)^2 \times$ 5 x (2844) $-(106)^2$
r =0.8621
Calculated value = **0.8621**

Interpretation
It is inferred that the correlation value **r = 0.8621** is **positive**, therefore there is a positive relationship between the Year of Experience and Satisfaction Level on Logistics Facilities.

Suggestions for Better Prospects
Cargo Companies should enhance customer service, transportation efficiency, documentation, digital tracking, employee training, and internal coordination. Promoting value-added services, competitive pricing, CRM, feedback systems, and continuous innovation will improve satisfaction, loyalty, operational efficiency, and competitiveness.

V. CONCLUSION

The study concludes that Cargo Companies demonstrates strong freight forwarding performance, reliability, and customer satisfaction. Customers appreciate its documentation, employee responsiveness, multimodal transportation, and reasonable pricing. However, improvements are needed in customer service, transportation efficiency, communication, and awareness of value-added services. Adopting digital technologies and customer-centric strategies will enhance service quality, operational efficiency, satisfaction, competitiveness, and sustainable growth.

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