



Personal Selling As A Key Driver in The Promotion Mix for Water Treatment Chemicals in Industrial Markets

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Abstract – Industrial markets for water treatment chemicals are characterized by high technical complexity, substantial purchase value, and the need for long-term buyer–seller relationships. Within the promotion mix, personal selling is widely regarded as the most effective communication tool due to its ability to address technical requirements and build buyer confidence. This study examines the association between the effectiveness of personal selling and the purchase decisions of industrial buyers using the Chi-Square test. Primary data were collected from a sample of 350 industrial respondents, including engineers, procurement managers, and plant operators. The statistical results reveal a significant relationship between personal selling effectiveness and purchase decisions, thereby confirming personal selling as a key driver in the promotion strategies of water treatment chemical companies operating in industrial markets.

Keywords - Personal Selling, Promotion Mix, Industrial Marketing, Water Treatment Chemicals, Purchase Decision.

I. INTRODUCTION

In industrial marketing, particularly in technologically intensive sectors such as water treatment chemicals, customer requirements extend beyond basic product features to include customized solutions, technical guidance, and after-sales support. The buying process in this sector is complex and involves multiple decision-makers, making effective communication a critical factor in marketing success. Among the elements of the promotion mix, personal selling plays a strategic role by enabling direct interaction between industrial buyers and technically trained sales engineers. This approach facilitates in-depth understanding of customer needs, real-time clarification of technical issues, and demonstration of product performance benefits. Unlike mass advertising, personal selling allows two-way communication, making it especially suitable for complex industrial products and for building trust and long-term buyer–seller relationships.

Need for the Study

In industrial markets, especially for complex products like water treatment chemicals, the buying process is highly technical and involves multiple decision-makers. Companies invest heavily in promotional activities, but not all promotion mix elements are equally effective. There is a need to understand the specific role of personal selling, which enables direct, personalized interaction, technical guidance, and relationship building.

Analyzing personal selling effectiveness helps organizations allocate resources efficiently and improve sales strategies. This study fills the gap by examining how personal selling impacts both purchase decisions and buying behavior of industrial customers.

Scope of the Study

The study focuses on industrial buyers of water treatment chemicals, including engineers, procurement managers, and plant operators. It evaluates the effectiveness of personal selling as a component of the promotion mix and its impact on purchase decisions and buying behavior. The study uses a sample of 350 respondents and employs Chi-Square analysis to statistically validate associations. The scope is limited to industrial markets, emphasizing direct selling strategies for technically complex products rather than mass marketing or retail sales.

Importance of the Study

This study is important for several reasons:

- It provides empirical evidence on the effectiveness of personal selling in industrial marketing.
- It helps companies optimize their promotion mix, prioritizing strategies that significantly influence purchase decisions.
- It guides management in training sales personnel, improving consultative selling, and building long-term buyer relationships.
- It assists in decision-making and resource allocation, ensuring that marketing efforts generate maximum impact in technical and industrial markets.

Objectives of the Study

- To examine the role of personal selling in the promotion mix of water treatment chemicals.
- To analyse the association between personal selling effectiveness and industrial buyers' purchase decisions.
- To statistically validate whether personal selling significantly influences buying behaviour.



Research Hypotheses

Alternative Hypothesis (H₁)

H1: Personal selling plays a significant role in the promotion mix of water treatment chemicals in industrial markets.

H2: There is a significant association between personal selling effectiveness and the purchase decisions of industrial buyers of water treatment chemicals.

H3: Personal selling significant influence on the buying behaviour of industrial customers in the water treatment chemicals market.

- Time constraints may not capture seasonal or long-term buying trends.

Theoretical Framework of the Study

Introduction

In industrial marketing, particularly for complex products like water treatment chemicals, the buying process involves multiple decision-makers. Among the promotion mix elements, personal selling is the most effective as it provides personalized interaction, technical guidance, and relationship-building, which are essential for influencing industrial purchase decisions.

Industrial Marketing Theory

Industrial buyers depend on expert advice and detailed product information before making decisions. Personal selling facilitates direct communication, allowing sales personnel to address technical requirements and operational challenges, making it critical for complex industrial purchases.

Relationship Marketing Theory

This theory emphasizes long-term relationships, trust, and repeat interactions. Personal selling supports continuous engagement, problem-solving, and after-sales support, enhancing customer loyalty and long-term purchase behaviour.

Sales Management Theory

Sales management theory highlights the strategic role of sales personnel in achieving marketing objectives. Personal selling involves consultative selling, understanding buyer needs, and delivering tailored solutions. Proper training, motivation, and performance evaluation maximize its impact on purchase decisions.

II. RESEARCH METHODOLOGY

Research Design

Descriptive and analytical research design

Sample Size

- Total respondents: 350
- Industrial buyers including plant managers, engineers, and procurement executives

Data Collection Tool

- Structured questionnaire
- Five-point Likert scale grouped into categories

Statistical Tool

Chi-Square Test of Independence.

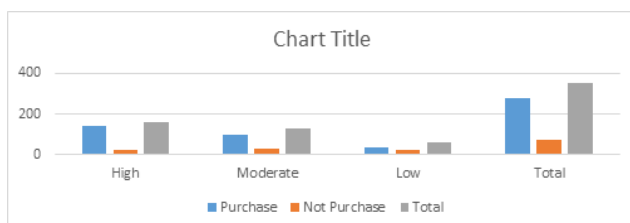
Limitations of the Study

- The study is based on a sample of 350 industrial buyers, which may not represent all customers in the water treatment chemicals market.
- Geographical focus limits generalizability to other regions or international markets.
- Response bias may occur as data were collected through structured questionnaires.

Analysis

Table-1: Personal Selling Effectiveness Observed Frequency

Personal Selling Effectiveness	Purchase	Not Purchase	Total
High	140	20	160
Moderate	100	30	130
Low	35	25	60
Total	275	75	350





Graph-1: Personal Selling Effectiveness Observed Frequency

Chi-Square Test Calculation

Chi-Square formula: $\chi^2 = \sum (O_i - E_i)^2 / E_i$

Table-2: Expected Frequency Table

Personal Selling Effectiveness	Purchase (Expected)	Not Purchase (Expected)
High	$(160 \times 275) / 350 = 125.7$	$(160 \times 75) / 350 = 34.3$
Moderate	$(130 \times 275) / 350 = 102.1$	$(130 \times 75) / 350 = 27.9$
Low	$(60 \times 275) / 350 = 47.1$	$(60 \times 75) / 350 = 12.9$

Table-4.3: Chi-Square Calculation Table

Category	Observed	Expected	$(O-E)^2/E$
High–Purchase	140	125.7	1.63
High–Not Purchase	20	34.3	5.96
Moderate–Purchase	100	102.1	0.04
Moderate–Not Purchase	30	27.9	0.16
Low–Purchase	35	47.1	3.11
Low–Not Purchase	25	12.9	11.36
χ^2 Calculated Value			22.26

Decision Rule

- Degrees of Freedom (df)=2
- Chi-Square Table Value at 5% level (df = 2) = 5.991
- Chi-Square Cal Value=22.26 > Chi-Square Tab Value@5%=5.991
- Decision
- Since χ^2 calculated (22.26) > χ^2 table value @5% (5.991), the null hypothesis is rejected

Findings

- A higher number of buyers purchased when personal selling effectiveness is high (140 out of 160). The purchase rate declines as personal selling effectiveness decreases: Moderate: $100/130 = 76.9\%$ purchase, Low: $35/60 = 58.3\%$ purchase.
- The expected frequencies show the values if there were no association between personal selling effectiveness and purchase decisions.
- Buyers exposed to highly effective personal selling were far more likely to purchase (87.5% purchase rate), Moderate effectiveness still resulted in a good purchase rate (76.9%), but less than high, Low effectiveness had the lowest purchase rate (58.3%).

Suggestions

- Highly effective personal selling drives purchase decisions, so training can increase the proportion of buyers influenced by personal selling.
- Since buyers exposed to high personal selling effectiveness (87.5% purchase rate) are more likely to purchase, companies should design sales strategies that emphasize personalized interaction, problem-solving, and technical guidance.
- Industrial buyers differ in technical understanding and operational requirements.
- Personal selling not only increases immediate purchases but also fosters long-term trust and repeat business.
- Companies should regularly assess the effectiveness of their personal selling activities

III. CONCLUSION

The study confirms that personal selling strongly influences industrial buyers' purchase decisions in the water treatment chemicals market. Buyers exposed to highly effective personal selling had the highest purchase rates (87.5%), compared to moderate (76.9%) and low (58.3%) effectiveness. Personal selling not only drives immediate sales but also builds long-term trust and repeat



business. Companies can enhance its impact by investing in technically trained sales engineers, adopting customer-focused problem-solving strategies, and regularly monitoring sales effectiveness. Overall, personal selling is a key driver of purchase decisions and a vital part of the promotion mix in industrial markets.

Managerial Implications

Companies in the industrial water treatment chemicals market should invest in technically trained sales engineers and adopt a consultative selling approach that focuses on customer-specific solutions. Personal selling should be aligned with problem-solving and technical support, while advertising should serve only as a supplementary tool. These strategies can enhance purchase rates, build long-term buyer relationships, and improve the overall effectiveness of the promotion mix.

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