

A STUDY OF INDUSTRIAL BUYING BEHAVIOR TOWARDS LOW VOLTAGE ENERGY EFFICIENT MOTORS WITH SPECIAL REFERENCE TO CEMENT INDUSTRIES IN INDIA

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ABSTRACT

Sustainability and energy conservation are one of the most important goals of modern-day organizations. Typically, the cement industry is capital intensive and consumes a lot of energy for its operations. To achieve energy conservation at the plant level, energy-efficient motors are an essential tool. The research tries to understand Low Voltage Energy Efficient Electric Motors' industrial buying behavior by a survey of 300 purchase executives and managers of cement plants all over India. The findings suggest that pre-purchase buying behavior is significantly different for standard and energy-efficient LV motors. Moreover, the impact of sales promotion of energy-efficient motors is significant. Further, post-purchase behavior has significant unique features. And lastly, the patterns, practices, and strategies of industrial buying in the cement industry are significantly indifferent. Hence, the importance of energy efficiency as a sales promotion factor remains intact.

Keywords: Industrial buying behavior, Cement industry, Energy efficient motors.

1. Introduction

1.1 Background

Widjaya (2016) has cited five reasons that make sense in selling energy-efficient products and services. Selling low voltage energy efficient motors makes more sense because electric motors are a primary energy consumption point across the business, industry, and society.

"A study of industrial buying behavior towards low voltage energy-efficient motors with special reference to cement industries in India" is a specialized research understanding, evaluating, and analyzing the "energy-efficient" appeal as an influencer of industrial buying behavior in the cement manufacturing industry in India. By no means is this research on electric motors. It is a systematic study of industrial buying behavior (a marketing subject) with the motors used by cement manufacturing companies with energy efficiency as a Unique Selling Proposition (USP).

An industrial product like the electric motor has a significant role in the industrial buyer's cost structures. Such products have straight repercussions in manufacturing and cost efficiency, which ultimately impacts the bottom line of the business. Given this

situation, the energy efficiency factors come into the limelight to sell industrial products like a motor. It is at this point where this research takes off.

1.2 Research Objectives

Following were the objectives set for the research:

1. To study the cement industry buyers purchase behavior towards LV energy efficient motors,
2. To investigate impact of sales promotion of energy efficient motors due to energy savings appeal on buyers in cement industry,
3. To study and analyze the cement industry buyers post purchase behavior towards LV energy efficient motors,
4. To study the existing pattern, practices and strategies of industrial buying in cement industry in relation to different buying situations, and,
5. To provide insight to marketers that use energy savings appeals, which will enable them to know buying behavior and potential of cement industries and to reach their target customer more effectively

1.3 Need and Significance of study

Sustainability and energy conservation are one of the most important goals of modern-day

organizations. Given the infrastructure and housing push in the Indian economy, the Cement industry assumes great importance. Typically, the cement industry is capital intensive and consumes a lot of energy for its operations. To achieve energy conservation at the plant level, energy-efficient motors are an essential tool.

There are several articles on industrial buying behavior, industrial buying behavior in the cement industry, energy efficiency in the context of electric motors, and using energy efficiency as a sales promotion tool.

A comprehensive study with special impetus on energy-efficient motors in the Indian context is not so easily seen. Therefore, this study investigates industrial buying behavior towards low voltage energy-efficient motors with particular reference to India's cement industries.

The study is expected to make the following significant contributions to the existing knowledge:

1. Assessment of industrial buying behavior towards low voltage energy-efficient motors and,
2. Using energy savings as a sales promotion tool.

Moreover, the study endeavors to provide marketers with strategic insights on using energy savings appeal and reach their target more effectively.

These contributions are expected to benefit both academicians and marketing professionals.

1.4 Scope of the study

In terms of concept, the critical area of study was industrial buying behavior, emphasizing energy efficiency. The context is Low Voltage Energy Efficient motors in Cement Plants in India.

The conceptual model adopted for the study is as under:

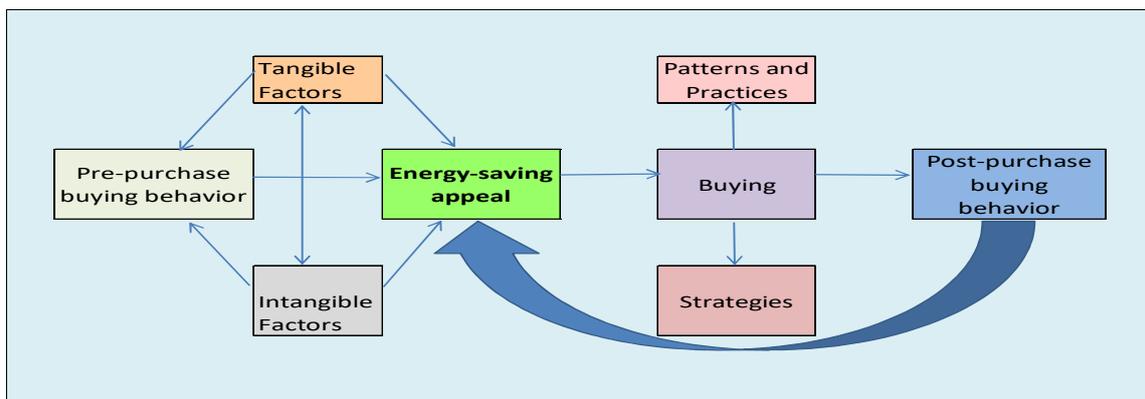


Figure 1: Conceptual model for research

Primary data was gathered from 300 Purchase Executives/Managers from cement industry from all over India. Additionally, primary data was collected from 10 experts.

2. Literature Review

Ellram & Murfield (2019) found that industrial marketing management's focal study topics have changed substantially since IMM was first printed in 1971. Part of this evolution has been the presence of study in supply chain management, which is the focus of this study. The purpose of this study is to evaluate themes across the classic information in supply chain management (SCM) printed in IMM and explore how the field of SCM has changed

since its publication. A systematic review was applied to evaluate SCM study in IMM, recognize themes and publication designs, and apply them to evaluate gaps in the existing study and future review opportunities. Results of the review exhibit that more than 58% of the SCM study printed in IMM has aimed at purchaser-supplier associations and other buying and supply management practices. These will endure being key topics in IMM. Moreover, the study recommends more SCM reviews in IMM regarding sustainability, logistics, and manufacturing novelty. These areas within the SCM umbrella are under-study yet provide significant opportunities for future

studies in a time of constant variation within companies' distribution structures.

Bachkirov (2019) found that the study aims to assess, through the viewpoint of the purchasing center notion, a hypothesized bond among organizational buying behavior (OBB) and a nationwide ethos of communism, huge power distance, particularism, and other practices.

The study established a structure of the purchasing center for the developing marketplaces administered by socio-political institutions.

Merminod et al. (2019) found that supply management scholars have established a broad interest in relationships between sellers and purchasers of logistics facilities for three decades. As there will be an enhancement of outsourcing policies by manufacturers and large sellers, this interest can be explicated, which has given rise to powerful logistics service providers. Preceding study favors a holistic idea, based on supply chain interfaces between organizations, without addressing the buyers of logistics facilities' viewpoint. This study aims to better comprehend people's purpose in buying logistics facilities based on features associated with attitudes, norms, and behavioral control. For this resolution, the study depends on the philosophy of reasoned action and the philosophy of strategic behavior, both employed in social psychology to analyze human behaviors and offer a basic coherent action structure for logistics services buying.

Mishra (2019) found that the study is aimed to understand the promotional policies acknowledged by cement industries and sellers. The study is led at MadhyapurThimi Municipality among various customers viz house landlord, seller, worker/mason, and advisor/engineer. Out of 871 allowed under-construction building of the economic year 2016/17, 89 end customers and 30 suppliers were selected for survey form with two different questionnaires. A primary informant interview was conducted for in-depth data, while focus group discussion was done to comprehend influencing strategies.

Credit period and bonus coupon were observed to be brand publicity tool among 36.67% and 23.33% of the sellers, while 50% of the end customers were fascinated by the credit period. The credit period is the most powerful

marketing tactic, while the advertisement is the brand awareness instrument to set their brand in 'Top of Mind' state.

Ekinci et al. (2020) found that the cement sector can be started as one of the leading causes of anthropogenetic air pollution. It uses a noteworthy quantity of energy while making a considerable amount of possibly health-threatening sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), and dust atoms. Thus, the cement sector can be started as the primary sector for study in green manufacturing growth. In this study, an urban cement plant is assessed. The study's chief influence is the growth of a general tactic to classify the variables affecting cement production and ecological features making the air pollution in the zone; a system dynamics structure has been established integrating flowing information. To comprehend the impact of a cement plant on a city area, some calculated level decisions are also analyzed with the study to reveal their impact on the environment. The impact of cement assessed on air contamination cannot be assessed distinctly from other air quality features; hence, each feature's input must be recognized to comprehend the explicit issues affecting an area. With the model's use, future insinuations of numerous air quality influences on environmental sustainability can be measured. As per the conclusions, PM₁₀ value, which is present above the World Health Organization (WHO) air pollution is on a severe level of 50 µg/m³ for 30% of the days in a year, will hike to more than 50% in 2023. Governments can also identify the severe place influences assortment for the cement sector, unintended and unnecessary building licensing, and unrestrained immigration on a city living environment. So, the study results are highly beneficial in controlling governmental choices to safeguard air quality sustainability.

Trianni et al. (2019) found that electric motor systems (EMS) cover a notable share of industrial power consumption. Despite the comprehensive set of seemingly cost-effective opportunities to enhance energy efficiency in this cross-cutting technology, decision-makers frequently do not take them. The detail for a decision can be too high, resulting in an application rate relatively low. In specific, less

information about the aspects that should be measured when determining to lead an action in this area indicates a serious hurdle. In several cases, data regarding the characteristics of such energy efficiency measures (EEMs) is quite unclear. For this reason, in the current study, a detailed summary of EEMs for EMS, grounding on an extensive review of the scientific and manufacturing study. By emphasizing their characteristics and productivity profits, most of which impact the acceptance decision-making process, the study re-categorizes EEMs for EMS, offering exact detail over solo EEMs and thus aid to industrial decision-makers. EEMs are presented into four main groups, hardware, motor system drives, administration of motors in the factory, and power quality. The novel arrangement supports studying for the growth of a novel outline to signify the main features that affect the acceptance of EEMs for EMS. Later, it may aid the recognition and quantification of yield profits for those EEMs. Lastly, it could result in a valuable tool offering different perspectives in industrial executives and technology suppliers' decision-making and industrial shareholders.

Weber et al. (2019) found that actual information from dynamometric theses of electric and internal burning engines motorcycles specified three times improved energy performance of electrically driven vehicles (47.06% efficacy) equated to the average value for liquid-fuelled engines (15.32%). That inference inspired a more inclusive evaluation, grounded on a bottom-up practice and the Primary Energy Factor PEF, to increase the energy chain by applying the Brazilian energetic matrix. The ecological effect is measured through the assessment of greenhouse gases. PEF is calculated for five motorcycles based on 2010 to 2016 production information, trailed by a forecast for 2021, 2025, and 2026. PDF regular values for electric and liquid-fuelled motorcycles are 3.5 and 7.1 correspondingly. The new tank-to-wheel competence ratio of 3 to 1 from dynamometric theses turns to a well-to-wheel 2 to 1 ratio when the distended energy chain is measured. PDF technique used in dynamometric outcomes demonstrates that electric driven motorcycles are still more energy effective than

liquid-fuelled vehicles for the Brazilian matrix. Releases from the electric conversion are still less injurious, yet battery influence must be better studied.

Nižetić et al. (2019) found that smart machinery's role can become very significant and beneficial to resolve the chief populace problems currently and offer a base for a sustainable future. A smart method is a chance for information incorporation, essential to resolve critical difficulties of modern cultures. Nowadays, the chief task is to lessen the impacts of global warming and safeguard society's balanced monetary advancement. The close association of engineering jobs is compulsory to attain interdisciplinary interactions and can link challenging engineering responsibilities. Serious study struggles should be focused on stable resource application, adequate energy conversion machinery, incorporation of renewable energy systems, effective methods to allow circular economy context, effective procedure incorporation, and other problems significant to the populace. This review study is chiefly focused on the aids offered at the third Global Conference on Smart and Sustainable Technologies held in Split, Croatia, in 2018 (SpliTech2018). The SpliTech2018 conference was a multidisciplinary occasion with study subjects associated with the foremost conference paths, i.e., Smart City/Atmosphere, Energy, Engineering Modelling, and e-Health. The conference's planned focus was to aid in solving critical problems of current times, primarily associated with the sustainability and smart usage of restricted and valuable resources. This contribution brings novel philosophies and deliberates current problems and challenges that should lead to a sustainable future based on smart machinery. The here addressed study brings together the latest studied development into four major topic segments: (i) Green Buildings, Energy Usage, and Consumption, (ii) Smart Cities (iii) Efficacy and Waste Removal, (iv) Solar Energy Usage and Internet. The significant outcomes of this review study comprise a discussion of diverse ideas and machinery that bring further growth on an extensive range of subjects focused on efficacy enhancement, cleaner production ideas, smart and sustainable

resource administration, and on the explanation of the several actions which would lead towards a sustainable future.

Charalambides et al. (2019) found that this study examines the impact of Energy Performance Certificates (EPCs) on the revamp of buildings. Therefore, through the European project ENERFUND, two online web-based evaluations were led in 12 European Union nations. It was shown that the results varied meaningfully both between nations and age groups and, that on average, EPCs did play a role both in revamping decisions and whether to rent/buy a particular flat. This study also offers major key drivers and constraints related to energy renovation investment mobilization and recommends actions that can subsidize the raise of funds for profound energy revamp of buildings. Also, it emphasizes latent profits and efficiency of applying retrofitting online instruments, such as the ENERFUND tool, identifies market failures in the building segment, and offers recommendations on upsurging the profound energy renovation marketplace in Europe.

Research Gap

Sustainability and energy conservation are one of the most important goals of modern-day organizations. Given the infrastructure and housing push in the Indian economy, the Cement industry assumes great importance. Typically, the cement industry is capital intensive and consumes a lot of energy for its operations. To achieve energy conservation at the plant level, energy-efficient motors are an essential tool.

There are several articles on industrial buying behavior, industrial buying behavior in the cement industry, energy efficiency in the context of electric motors, and using energy efficiency as a sales promotion tool. These are, however, on a more or less stand-alone basis. A comprehensive study with special impetus on energy-efficient motors in the Indian context is not so easily seen. Such a study with an added dimension of comparing the buying behavior of standard vis-à-vis energy-efficient motors can be of great value. Therefore, this study investigates industrial buying behavior towards low voltage energy-efficient motors

with particular reference to India's cement industries.

The study is expected to make the following significant contributions to the existing knowledge:

1. Assessment of industrial buying behavior towards low voltage energy-efficient motors and,
2. Using energy savings as a sales promotion tool.

Moreover, the study endeavors to provide marketers with strategic insights on using energy savings appeal and effectively reach their target.

3. Research Methodology

3.1 Resource identification

Data for the demographic factors was collected through responses to the profile section of the questionnaire for Purchase Executives/Managers. For the variable Pre-purchase buying behavior responses were collected through Section I of the questionnaire. Data on the variable Impact of sales promotion was fetched through Section II of the questionnaire. For the variable Post-purchase buying behavior responses were collected through Section III of the questionnaire. Responses for patterns, practices, and strategies of industrial buying were collected through Section IV of the questionnaire.

3.2 Research Purpose and formulation of hypotheses

The research seeks to study industrial buying behaviour in case of LV energy efficient motors in the context of cement industry.

The hypotheses formulation is presented below:

Ho1: Pre-purchase behavior in the case of LV energy-efficient motors is the same as other standard LV motors

Ha1: Pre-purchase behavior in the case of LV energy-efficient motors is significantly different from the other standard LV motors

Ho2: There is no significant impact of sales promotion of energy-efficient motors due to energy savings appeal on buyers in the cement industry

Ha2: There is a significant impact of sales promotion of energy-efficient motors with

energy savings appeal on buyers in the cement industry

Ho3: Post-purchase behavior in the case of LV energy-efficient motors has no significant unique features

Ha3: Post-purchase behavior in the case of LV energy-efficient motors has significant unique features

Ho4: The patterns, practices, and strategies of industrial buying in the cement industry are significantly different in different buying situations

Ha4: The patterns, practices, and strategies of industrial buying in the cement industry are significantly indifferent in different buying situations

3.3 Population and sample size

Population

According to the Cement Manufacturers Association, there are 45 Cement Companies ("Cmaindia.org", 2021). Assuming 25 executives/managers each in the equipment and consumable section, the target population becomes 1125.

Sample Size

The sample size for a population of 1125, at a 95% Confidence Level with a 5% Confidence Interval, is 287 (Survey Systems, 2019). It was rounded off to 300.

In the case of qualitative methods like interviews with experts, a sample size of 10 was fixed. These sample sizes were based on the opinion of expert researcher Dworkin (2012), who has said, "While some experts in qualitative research avoid the topic of "how many" interviews are "enough," there is indeed variability in what is suggested as a minimum. A substantially large number of articles, book chapters, and books recommend guidance and suggest anywhere from 5 to 50 participants as adequate (p.1319)."

3.4 Data collection method

Primary data collection scheme

The primary data collected from 300 Purchase Executives/Managers from Cement companies all over India. Moreover, to suggest strategic measures to marketers, ten expert interviews were conducted.

3.5 Data analysis Methodology

Descriptive analysis was done to provide information about the profile characteristics of the sample of Purchase Executives/Managers like gender, experience, etc. Qualitative analysis was done based on primary data collected from experts. Inferential analysis was done to test the hypotheses. Additionally, finer data analysis was done to find out unique relationships between the variables.

4. Data analysis and interpretation

4.1 Data analysis and interpretation scheme explained

The scheme formulated was as under:

In case of Pre-purchase buying behavior the expected outcome were:

- Significance of the given ten Likert items as per Section I of the questionnaire in relation to pre-purchase buying behavior for standard and EE motors.
- The difference in the significance of the given ten Likert items in relation to pre-purchase buying behavior for standard and EE motors.

Interpretations were planned as under:

- If the average ratings for the ten Likert items is significantly more than the mid-point of MS (Moderately Significant), the ten Likert items will be reckoned as significant in relation to the pre-purchasing buying behavior of the two motors
- If the difference is significant then reject the 1st null hypothesis that pre-purchase behavior in the case of LV energy-efficient motors is the same as other standard LV motors

In case of Impact of SalesPromotion the expected outcome were the average impact ratings for the set of ten Likert items from section II of the questionnaire. Interpretation was planned as : If the average significant impact ratings of the sample are well above the hypothesized population mean of 50% (a possibility by chance) reject the null, that there is no significant impact of sales promotion of energy-efficient motors due to energy savings appeal on buyers in the cement industry.

In case of Post-purchase behavior the expected outcome were average agreement ratings to the ten Likert items from section III of the questionnaire. Interpretation was planned as: If the average agreement ratings of the sample are well above the hypothesized population mean of 50% (a possibility by chance) reject the null, that post-purchase behavior in the case of LV energy-efficient motors has no significant unique features.

In case of Patterns, practices, and strategies of industrial buying the expected outcome were average difference ratings to the ten Likert items from section IV of the questionnaire. Interpretation was planned as: If the average difference ratings of the sample are well above the hypothesized population mean of 50% (a possibility by chance) reject the null, that the patterns, practices, and strategies of industrial buying in the cement industry are significantly different in different buying situations.

4.2 Summary of data analyses of responses & overall interpretation

In case of Pre-purchase buying behavior the actual outcome were:

- a. Mean for Likert scale of section I (Pre-purchase buying behavior) for standard motors 1.03 with p-value of 0.23, and 1.23 for EE motor with p-value < 0.0001.
- b. Difference in the two mean values found to be statistically significant with p-value <0.0001.

Interpretation:

- a. The pre-purchase buying behavior in case of standard motors cannot be reckoned as highly distinct whereas the one for EE motors can be reckoned as distinct.
- b. As the difference is significant rejected the 1st null hypothesis that pre-purchase behavior in the case of LV energy-efficient motors is the same as other standard LV motors

In case of Impact of Sales Promotion the actual outcome average impact ratings for the set of ten Likert items from section II of the questionnaire 89% with p-value <0.0001.

Interpretation: As the average significant impact ratings of the sample is well above the hypothesized population mean of 50% (a possibility by chance) rejected the null (Ho2),

that there is no significant impact of sales promotion of energy-efficient motors due to energy savings appeal on buyers in the cement industry.

In case of Post-purchase behavior the actual outcome was average agreement ratings to the ten Likert items from section III of the questionnaire 85% with p-value <0.0001. Interpretation: As the average agreement ratings of the sample are well above the hypothesized population mean of 50% (a possibility by chance) rejected the null (Ho3) that post-purchase behavior in the case of LV energy-efficient motors has no significant unique features.

In case of Patterns, practices, and strategies of industrial buying the actual outcome was average indifference ratings to the ten Likert items from section IV of the questionnaire 77% with p-value <0.0001.

Interpretation: As the average indifference ratings of the sample are well above the hypothesized population mean of 50% (a possibility by chance) reject the null (Ho4), that the patterns, practices, and strategies of industrial buying.

5. Findings. Conclusion and Suggestions

5.1 Research Findings

Profile information of the cement company buying department respondents

- i) The distribution of respondents Gender was 267 of Male group; and 33 for Female group.
- ii) The division of Age was 95 of <30 years group; 107 for 30-40 years group; and 98 for >40 years group.
- iii) The distribution of Experience was 95 of <5 years group; 42 for 5-10 years group; and 163 for >10 years.
- iv) The distribution of the role of respondents was: 32 Manager (Purchase), 34 Manager (Maintenance), 28 Manager (Design), 67 Executive (Purchase), 73 Executive (Maintenance), and 66 Executive (Design)
- v) The distribution of Region was 75 of East group; 82 for West group; 62 for North group; and 81 for South group.
- vi) The division of respondents Location was 152 of HO group; and 148 for Plant group.

- vii) The spread of plant capacity was 87 of < 1 MTPA group; 115 for 1-3 MTPA group; and 98 for > 3 MTPA group.
- viii) The distribution of Age of plant was 11 of <5 years group; 137 for 5-10 years group; 152 for >10 years group; and 300 for Total group.

Inferential findings

- i) On a scale of 2, the weighted average buying behavior was measured with a score of 1.033 rating which is quite close to the scale rating of 1, indicating significance moderately.
- ii) On a scale of 2, the weighted average buying behavior was measured with a score of 1.229 ratings above the scale rating of 1, indicating significance moderately.
- iii) As stated in i) and ii) above, the difference between the two means was found to be statistically significant at 95% CL.
- iv) Average impact ratings for the set of ten Likert items from section II of the questionnaire 89%, with p-value <0.0001.
- v) Average agreement ratings to the ten Likert items from section III of the questionnaire 85% with p-value <0.0001.
- vi) Average indifference ratings to the ten Likert items from section IV of the questionnaire 77% with p-value <0.0001.
- vii) None of the three demographic variables, namely, Location, Capacity of Plant, and Age of Plant, show any significant association with the impact of energy efficiency appeal in sales promotion and Analysis of post-purchase buying behavior.

5.2 Conclusion

1. There is a significant difference in the industrial buying behavior at the Cement manufacturing units in the case of standard and energy-efficient motors. This difference is seen quite well based on the ratings assigned to the ten factors, namely, Initial Purchase price, Efficiency levels (for example Standard, High, Premium), Maintenance and warranties, Environmental variables like Technological, economic, environmental, etc., Sources of supplier information, Organizational goals like cost control,

- efficiency, etc., Purchasing policies and procedures, Intangibles like company reputation, quality, etc., Buying center variables like inter-personal relations and Personal variables of the buyer like education, experience, values, related with pre-purchase buying behavior.
2. There is a significant impact of energy efficiency appeal in sales promotion. This conclusion has been made based on an overwhelming agreement to statements like Reduced energy consumption, Reduced costs of energy facilities, Release of extra capacity, Reduced emissions, Improved work life, and work conditions, Decreased dependence on energy suppliers, Reduced add-ons like electricity duty, Positive impact on environmental concerns, Reduction in total per-unit manufacturing cost and Improved productivity per rupee of energy cost, by the respondents.
 3. The analysis of post-purchase buying behavior shows highly distinct features. Statements related to post-purchase buying behavior like Expected performance is quantified at the time of purchase, The performance post-purchase is measured, The measurement methods factors both efficiency and effectiveness, The measurement methods are objective, Tools like energy audit are used for measuring post-purchase performance, Results, positive, neutral or negative are duly communicated in the organization, Results, positive, neutral or negative are communicated to the seller, For negative results (dissonance) sellers are given a chance to explain, For negative results (dissonance) sellers are given a chance to rectify and Results, positive, neutral or negative are communicated to peers, were widely agreed to by the respondents.
 4. Differences in industrial buying in the cement industry in different buying situations are not seen. Related statements like Standard purchase policies and procedures, Price considerations, Energy efficiency, Quality considerations, Buying center joint decisions, Contacting multiple sources of supplies, Considerations for the number of purchases, Maintenance, and warranties, Intangibles like company

reputation, quality, etc. and Personal variables of the buyer like education, experience, values were largely rated for indifference in different buying situations by the respondents. The expert opinion corroborates the finding. The indifference has a significant implication. The difference in the buying situation will not come in the way of selling EE motors. In other words, the cement manufacturing units are largely indifferent to the changes in the buying situations, and such changes will not affect the significance of the energy efficiency appeal.

Overall, it can be concluded that energy efficient motors' role has certainly increased significantly, especially after the implementation of the IE measures in India since 2016. In cement manufacturing, cement production's cost structure has a significant share of the cost of power. Motors that are used have a significant bearing on the cost of power. Thus, if the energy consumption is efficient, it directly saves the cost of production to the cement manufacturers. Therefore, the motor manufacturing companies should make all-out efforts to promote the energy efficiency appeal aggressively for their own as well as the benefit of their customers, that is, the cement manufacturing units.

It is expected that the intensified marketing push will lead to higher buying of EE motors from the cement manufacturing units. The propelled demand for the existing series of IE2 motors will, in turn, motivate the motor manufacturing units to launch in India the IE3 series that will further increase the energy efficiency. Progressive circular development is quite likely with demand pushing supply and supply improving technically, leading to further demand.

5.3 Suggestions

Ten experts from the industry were interviewed, and a gist of their interviews has already been given in chapter 4. Based on their inputs following suggestions are offered:

1. The motor companies' marketing team requires an all-out and concerted effort to tap the cement manufacturing industry segment given the strong buying appeal the energy-efficient motors carry.
2. The effort has to be professional and tactical deployments of sales promotions, and other such activities must fit into an overall marketing strategy framework.
3. Agencies like the Indian Electrical & Electronics Manufacturers' Association (IEEMA) should take the lead in creating a conducive environment to motivate the motor manufacturers to improve their marketing impetus on the energy efficiency appeal factor.
4. The motor manufacturing companies HR department should arrange for special training programs to train the marketers in this special aspect of industrial selling.

5.4 Limitations

1. Limitations due to a niche industry
The study was confined to a highly specialized industrial customer, the cement manufacturing units.
2. Limitations due to sampling
Problems of the accuracy of data, Inadequacy of the samples, Difficulty of getting the representative sample, Chances of committing errors in sampling, Chances for bias, and Absence of the informants are limitations samplings that apply to this study.

However, due care has been exercised to minimize the impact of these limitations on the present study. Further, wherever appropriate, statistical tests and methods have been used to ensure reasonably objective calculations and conclusions.

5.5 Suggestions for further research

1. Similar studies can be carried concerning other niche markets.
2. Comparative studies with other nations can be carried to understand their marketing strategies to push for higher IE motors in the markets.

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