

An Exploratory Study of Consumer Buying Behavior in a Green Supply Chain Practice Context with Reference to Selected Companies in the Decorative Paint Industry of Vadodara City

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Consumers' increasing interest in environment friendly products and pressure on industries to offer green products to compete, the decorative paint industry needs to understand consumer perceptions and behaviors toward this emergent phenomenon. The purpose of this study is to gain insight into environment friendly decorative paints purchase intentions and purchase by investigating consumers' perspectives on the effect of purchasing sustainable products on the environment and influence of individual consumer attitude and motivation to purchase and ease of purchase of the same. To study these relationships, Theory of Reasoned Action was used taking Green Supply Chain Practices into consideration. Simple linear regression, variance analysis, Pearson t-test and chi-square analysis were performed to analyze primary data.

Keywords: Theory of Reasoned Action, Decorative eco-paints (DEP), eco-friendly, Green Supply Chain Practice (GSCP), attitude, motivation, purchase intention, and purchase behavior.

Introduction

Sustainability is defined in different ways throughout industries (Jones, Hiller, Comfort, & Eastwood, 2005). Marshal and Brown (2003) gave the most acceptable definition of sustainability as "the ability of current generations to meet their needs without compromising the ability of future generations to meet theirs." Environmental problems on earth are now well-known to almost all individuals. This planet is facing problems like global warming, toxic substance usage and diminution of conventional resources. This shows "the way to customer demand for sustainable products in which companies will need to make an effort to reduce consumption and waste as to help protect the environment and boost profitability and growth" (Tello & Yoon, 2009). "This demand for implementing new strategies has been restricted not only to the final

products but also to the way they are produced and consumed. Thus, the firms are being introduced to the new challenge of environmental demands parallel to the competition. Every successful introduction of green product may provide new ways to add value to core business programs (Hansmann and Cloudia, 2001)." Therefore, market leaders in various industries have taken a step ahead to green their internal operation through ISO 14000 certification, which provides framework to guide firms to implement Environment Management System (EMS). EMS helps firms to improve environment performance only within the firm's operation boundaries instead of through the supply chain (Handfield et al. 2005). More and more Indian companies are adopting 'green practices'. It helps the environment, of course. It also helps the business. Indian Companies are feeling the pressure to go green, as

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many of their Western counterparts are building environmental sustainability into their business practices. Likewise, Chan & Lau (2000, p. 339) suggest that in order to better understand the environmental movement of a particular country, a good starting point is the examination of how the consumers in a country view ecological issues and how these views are reflected in consumer behavior on green issues. With prioritized aim of sustainability in paint industry, attractive shares of production, knowledgeable consumers, and dramatic growth of industries in Gujarat in last some decades, an effort is made to analyze consumer buying behavior in Decorative Paints segment with respect to green supply chain practices in Vadodara City.

Literature Review

Green supply Chain Management

The new logic on competition is based on supply chains (Scavarda & Hamacher, 2003), and new trends in the market can help to implement green supply chains. There is also the governance issue on the supply chain that could facilitate enhancing environmental performance through a supply chain. In 1994, the Confederation of British Industries (CBI) identified the factors driving the competitive advantage through environmental performance as market expectations, risk management, regulatory compliance and business efficiency. Green supply chain management (GSCM) has a key role in ensuring that all of these factors are addressed (Hutchison, 1998). Environment is affected at every stage of the product's life cycle. Therefore, GSCM has emerged as an important new archetype for enterprises to achieve profit and market share objectives by lowering their environmental risks and impacts and while raising their ecological efficiency (van Hoek and Erasmus, 2000). "Academic and corporate interest in sustainable supply chain management has risen considerably in recent years" (Müller & Seurling, 2008: 1699). "Perusal of the literature shows that a broad frame of reference for

green supply chain management is not adequately developed" (Srivastava 2007: 53). Therefore, "researchers continue to struggle with identifying a clear, unified framework for green supply chain practices" (Klassen & Vachon, 2006: 797). "This lack of consensus in practice and definition of GSCM is not surprising, since it lies at the confluence of elements of corporate environmental management and supply chain management which are both relatively new areas of study and practice" (Sarkis & Zhu, 2004: 267).

India is one of the fastest growing countries where the subjects related to GSCM have become even more serious (Rao, P. (2002)). Recent studies have shown that a majority of world's manufacturing will be carried out in Asia in the next couple of decades (US-AEP, 1999). As a major manufacturing country, India has many opportunities, but they also face substantial environmental burdens with this opportunity (Rao, 2002). Moreover, developing countries such as India, China etc. are becoming increasingly industrialized. As part of supply chains, India has been used as a point of disposal of end-of-life products for multinational organizations and developed countries. For example, the end-of-life products have been shipped to developing countries, such as India, where these developing countries do not have the infrastructure or tools available to care for the end-of-life products (Puckett and Smith, 2002), causing greater environmental burden on these nations. The appropriate development of GSCM concepts and practices may indeed aid these countries by lessening the environmental burden of both manufacture and disposal of products, while even potentially improving their economic positioning (Zhu Q., Sarkis J., Geng Y., 2005). With the relative scarcity of resources and the potential pressure of "green barriers" to trade, both the Indian government and enterprises have had increased reasons to initiate corporate and industrial environmental management measures. Some of the measures which are being promoted are

environmental impact assessment, ISO 14001 certification and recently GSCM (Delmas, M. & Montiel, I. 2009). With the advancement of environmental technologies and in combination with harder regulations, many companies began to make corporate commitment to sustainable innovation. Environmental awareness across the globe has increased rapidly in recent years in both developing and emerging nations (Pankaew P., Tobé M., 2010).

"GSCM is indeed costly, especially now that the economy is in the downward tailspin. The manner in which a company responds strategically to this shift of demand is dedicated towards its types of market" (Pankaew P., Tobé M., 2010). Contrasting reactions from companies in the same industry are common. Choice of strategy relies mainly on each company's choice of customer and market orientation, in which the effectiveness is responsive to the reaction of the consumers (Srivastava, 2007). Yet, many consumers seem skeptical due to false claims about being green made and that companies do not have a clear understanding on who the "green consumer" is and what they exactly perceive as green (Beamon et. al, 1999). The most common perceived enemy to environmental protection is manufacturing and production operations, in the forms of waste generation, ecosystem disruption, and depletion of natural resources (Fiksel, 1996). Many manufacturers are among the first that start the taking back and recovering of their products, the attempts relating to their logistics networks towards the reverse channel functions, i.e. collection, remanufacturing and redistribution activities (Pankaew P., Tobé M., 2010).

Consumer Buying Behavior

"People make many buying decisions every day. This fact brings the companies to investigate what people buy, where they buy, how much they buy, when they buy, and why they buy. Such an investigation deals with a research of understanding consumer behaviors"

(Sudiyanti, S., 2009). Consumer behavior is defined as "the behavior that consumers show in searching for, purchasing, using, evaluating, and disposing of products and services that they expect will satisfy their needs" (Schiffman & Kanuk, 2007, p. 2). Likewise, another source also describes that "consumer behavior is the study of individuals, groups, or organizations and the processes they use to select, secure, use, and dispose of products, services, experiences, or ideas to satisfy needs and the impacts that these processes have on the consumer and society" (Hawkins et al., 2007, p. 6). Consumer behavior also can be described as,

1. The dynamic interaction of affect and cognition, behavior, and the environment by which human beings conduct the exchange aspects of their lives.
2. The overt actions of consumers.
3. (Consumer behavior definition) The behavior of the consumer or decision maker in the market place of products and services. It often is used to describe the interdisciplinary field of scientific study that attempts to understand and describe behavior (AMA, 2009).

According to Hawkins et al. (2007), the conceptual model of consumer behavior indicates people beliefs in term of general nature of consumer behavior. It is mentioned that there are three components constitute consumer behavior.

They are...

1. Cultural factors. According to Hofstede (2001), culture is "the collective programming of the mind that distinguishes the members of one group or category of people from another" (p. 9). Each culture comprises subcultures, which include nationalities, languages, religions, racial groups, and geographical regions. Culture and subcultures determine individual's needs wants and behavior.
2. Social factors, which deal with reference groups, family, roles and status. (Blumer & Herbert, 1956)
3. Personal factors, including age and stage in the

life cycle, occupation and economic circumstances, personality and self-concept, lifestyle and values (Kotler & Keller, 2009).

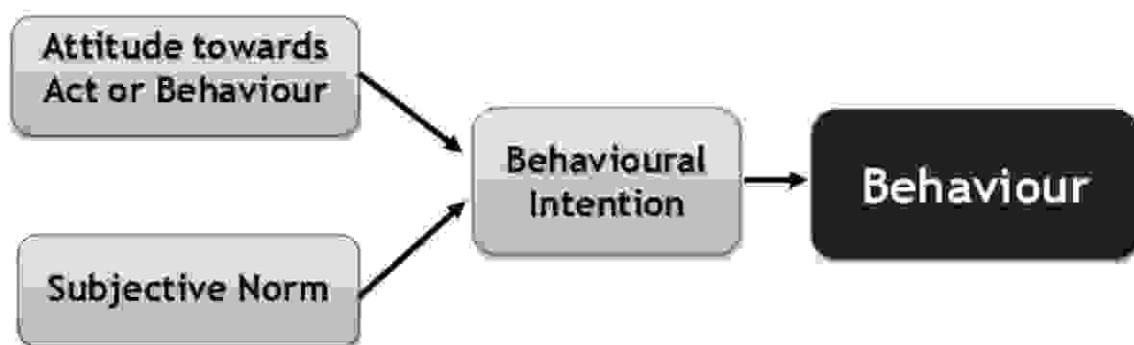
According to Schiffman & Kanuk (2007), a simple model of consumer decision making depicts step by step process on how consumer ends up with purchase decision. In the process of decision-making, psychological factors, for instance, individual's motivation, perception, learning, personality, attitude and his or her previous experience play an important role in persuading and evaluating alternatives.

The review of literature offers an explanation of the framework used to structure the research and considers the current literature available in both industry and academia. Specifically, the literature review includes a presentation of the guiding theoretical framework presented by the Theory of Reasoned Action (TRA) and the consumer literature that examines the relevant components of TRA within the context of general consumer behavior and environmental consumer behavior (Sampson, L. K., 2009). The Theory of

Reasoned Action (TRA) was initially developed as an expansion of the expectancy-value model and is used to predict and understand individuals behavior. The theory is based on the assumption that human beings are usually quite rational and make systematic use of the information available to them (Ajzen and Fishbein, 1980). Ajzen and Fishbein argue that people consider the implications of their actions before they decide to engage or not engage in a given behavior. Thus, the concept became known as "a theory of reasoned action" (Ajzen and Fishbein, 1980). The TRA, often referred to as the behavioral intentions model, was constructed to explain the relationships between attitude and behavior. The variables depicted in the theory of Reasoned Action are shown in the following figure. (Fishbein and Ajzen, 1975).

The theory of Reasoned Action

Source: Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention and Behavior: An Introduction to Theory Research*. Philippines: Addison-Wesley Publishing Company, Inc.



Conceptual Definitions

Attitude: An enduring set of beliefs about an object that predispose people to behave in particular ways toward an object (Wiegl 1983, p. 257).

Subjective Norm: "A person's perception of the social pressures put on him/her to perform or not to perform

the behavior in question" (Fishbein & Ajzen, 1980, p. 57).

Socially Responsible Consumption: "Defined as extending beyond self-interest and the satisfaction of personal needs to incorporate decisions reflecting concern for the environment and society" (Dickson & Eckman, 2006, p. 188).

Motivation: "Motivation is the driving force within individuals that impels them to action" (Schiffman & Kanuk, 2007, p. 103).

Perception: "Perception is defined as the process by which an individual selects, organizes, and interprets stimuli into a meaningful and coherent picture of the world" (Schiffman & Kanuk, 2007, p. 172).

Eco-Friendly: Does not induce harm on the environment (Sampson, L. K., 2009).

Environment Friendly Paint and Eco-Paint: Terms that are used interchangeably in describing paint that is assembled from materials and processes with little or no harm to the environment (Green Living, 2008, p. 35).

Green Products: The use of recycled materials, the absence or reduction of harmful chemicals and solvents, the use of organic/pesticide-free farming methods, the use of reduced energy and water, the use of forestry products from sustainable woods and products that create less water/pollution (Green Living, 2008, p. 37).

Paint Industry

"The Indian paint industry has evolved a lot in recent times, both in terms of industry structure and product portfolio. Not long ago, paints were largely considered to be a luxury item. Such a mind set has changed significantly of late due to the growing awareness on preventing corrosion through paints, by providing a massive fillip to the paint industry. China and India are the major growth drivers in the region with paint demand in these two countries likely to continue growing at more than 10% p.a. in the coming years. Indian paints industry is Rs. 15,000 crore market" (Ghalla Bhansali Stock Brokers Pvt. Ltd. 14th October, 2010. www.ghallabhansali.com). The Indian paint industry has been growing at 1.5-2 times the GDP growth with compound annual growth rate (CAGR) of 13.5% over the last five years. Owing to the economic downturn, the growth slowed down the last 2 years (India Chem, (2010)). As per the Gujarat paints raw materials

suppliers association (GUJPRAMSA), paint industry of Gujarat is having Large, Medium and about 250 small scale industry units contributing a massive 18% to the total paint production of India. In contrast to global trends, wherein industrial paints with a share of nearly 60 per cent take prime importance, the domestic industry is dominated by decorative paints with an imposing share of nearly 70 per cent of the paints market (Singhi, R., Kawale, D., Chaudhari, Y. 2009). A major portion of demand for decorative paints is from fresh coats on existing wall finishes. Thus, the fortune of this segment is closely linked to the construction activity in the country. The leader in the high volume medium and mass segments of decorative paints, Asian Paints has been consolidating its market leadership over the last six years and now has the biggest slice of 37 per cent of the market for decorative paints in the organized sector. Trailing behind are Goodlass Nerolac and Berger Paints with market shares of 13 per cent and 11 per cent respectively. Other major players from the organized sector include Jenson & Nicholson with a low 6 per cent and ICI with 8 per cent (INFORMATION RESEARCH LIMITED - 2003).

Green Supply Chain Practices in Paint Industry

The product category of paints shall focus on pollutants during the whole life cycle (ENVIRONMENTAL REGULATION): Volatile Organic Compounds (VOCs), Exclusion of heavy metals in paints such as Antimony, Arsenic, Cadmium, Hexavalent Chromium, Lead, Mercury, Aromatic Hydrocarbons, Halogenated hydrocarbons, Use of Biocides in Paints and Packaging material.

VOCs are solvents that help determine the viscosity, flow and drying time of paints. VOCs readily evaporate into the atmosphere, potentially causing air pollution as well as contributing to global warming. White spirit and ethanol are two main VOC carriers in solvent-based

paints. While VOC limits also apply to water-based products, they only carry small amounts of VOCs. For this reason, traditional solvent-based products, such as interior and exterior trim paints, varnishes and wood stains are the products that companies are seriously looking at dropping the VOC levels.

"Switching from a conventional paint to eco-friendly paint can do more than just help the planet; it can also prevent people from inhaling cancer causing chemicals that are formed when paint is mixed with phenol and formaldehyde. Ideally, eco-friendly paints are natural and contain low or zero-VOC" (Quick Bytes, (11th September, 2011), Times Property). According to Mr. Singh (GM, Marketing and Sales, Kansai Nerolac) "There are many benefits of using these eco-friendly paints and stains such as: coating flexibility, better gloss retention, better face resistance, and reduced health risks such as headaches, nausea, respiratory disorders, dizziness, chest congestion, lung irritation, burning sensations in the eyes, nose and throat and the like. Since these paints come with new generation green additives and hence help maintain good indoor air quality which is safer and help make your home a happier and healthier place". (Quick Bytes, (11th September, 2011), Times Property).

With prioritized aim of sustainability in paint industry, attractive shares of production, knowledgeable consumers, and dramatic growth of industries in Gujarat in last some decades, an effort is made to analyze consumer buying behavior in Decorative Paints segment with respect to green supply chain practices. As reported by Marshal Cohen, Chief Analyst of the NPD Group, only six percent of consumers were interested in eco-friendly products, excluding food and auto, in 2006. Today, the number has grown to 21 percent (Sopelsa, 2008). With consumers becoming more interested in environment friendly products and companies feeling pressured to offer green products

to compete, the decorative paint industry needs to understand consumer perceptions and behaviors toward this emerging phenomenon. Despite recent company efforts to target the eco-paint (decorative) consumers, academicians and practioners know very little about motivations, attitudes and behavior surrounding this new market phenomenon (Sampson, L. K., 2009). The purpose of this study is to gain insight into environment friendly decorative paints purchase intentions by investigating consumers' perspectives on the effect of purchasing sustainable products on the environment, individual consumer attitudes toward environment friendly purchases, social pressure to purchase environment friendly decorative paints, cost of the merchandise, and ease of purchase. The terms environment-friendly, eco-friendly, sustainable and green will be used interchangeably.

Research Objectives

The objective of this research was to examine the relationship between consumer motivations and attitudes on purchase intention and behavior for environment friendly decorative paints. Specifically, the study would evaluate the impact of the motivation to purchase eco-paints and consumer attitudes towards green products on the intention to purchase eco-paint products and actual purchase behavior. To summarize, the following topics were taken into consideration during this study:

- To determine consumers' level of motivation to purchase DEP.
- To decide attitude of consumers towards green products.
- To study the intention of consumers to purchase DEP.
- To study purchase behavior of consumers regarding DEP.
- To determine the relationships between motivation and attitudes on intention and purchase behavior for DEP.

Research Methodology

- A sample size of 200 respondents was selected for the purpose of this research study from Vadodara city. For this, stratified sampling method was used in selecting the sample units.
- Primary data was collected in the form of structured questionnaire through survey and personal interviews to test the hypothesis.
- Within the sample size, the sample unit comprised professionals, businessmen, and salaried class.
- Sample units comprised respondents belonging to different age groups and also different gender.
- Primary data collected was analysed using statistical software for the purpose of studying the findings.

The purpose of this study was to advance the understanding of the environmental movement in the decorative paint industry by determining consumers' motivation and attitude towards eco-friendly paint purchase, intention to purchase environment friendly decorative paints, and environment friendly purchase behavior. A descriptive research design was followed to study consumer buying behavior for decorative paints in green supply chain practice context. Data was collected in the form of structured questionnaire from Vadodara city. Sample units comprised respondents belonging to service (40%), businessmen (30%) and professionals (30%). The questionnaire given to consumers in Vadodara city measured the following variables: consumers' green purchase motivations, attitudes and their influence on intention and purchase behavior of environment friendly paints. Items to measure these variables were adapted from existing items used in literature. The exploratory research data collected for the study was accomplished in April, 2012.

The questionnaire contains two sections:

- Part one contains demographic information of consumers, i.e., gender, age, occupation, income,

education, marital status, number of children, family type and size and for further communication their address and contact information.

- Part two of the questionnaire was comprised of 25 statements to check consumers' level of motivation (5), attitude towards green initiatives (5), intent to purchase (10) and purchase of eco-friendly paints (5). Statements regarding the respective areas were framed on a scale of 1 to 5. "1" was taken as "strongly disagree", while "5" was taken as "strongly agree". Based on the data obtained, mean values and significance were calculated to test the reliability.

The raw data was entered into Statistical Package for the Social Sciences (SPSS). The alpha level was set at 0.05 to determine the significance level. Descriptive analysis including means and frequencies were used to evaluate the characteristics of the sample. Frequencies were used to examine nominally measured variables and means were used for continuously measured variables.

The following variables were captured to evaluate the sample and its overall appropriateness for the research: gender, age, education, occupation, income, marital status, children, family type and family size. Linear regression was used to address the research objectives as presented in the hypotheses. The continuously measured interval data for all independent and dependent variables allows use of the general linear modeling approach. Statistics associated with each model were interpreted within the context of the research and the Theory of Reasoned Action.

The research design for this study is depicted in the operational model presented in the figure below.



Hypothesis

H1: As positive attitude towards environment friendly decorative paint increase, intention to purchase environment friendly decorative paint increases.

H2: As motivation to purchase environment friendly decorative paint increase, intention to purchase environment friendly decorative paint increases.

H3: As intention to purchase environment friendly decorative paint increases, purchase behavior increases.

H4: There are demographic differences (gender, age, education, occupation, income, marital status, number of children, family size and family type) between consumers who indicate they intend to purchase environment friendly decorative paints and those who indicate they do not.

Data Analysis

This part details the analyses conducted on the survey data. The purpose of this research was to evaluate consumer motivations and attitudes on purchase intention and purchase behavior for eco-friendly decorative paints. This is provided to present the sampling in the main survey, the results of collected main survey data and the explanations of the empirical analysis. This part is started with descriptive statistics, frequency and descriptive analyses, and followed by simple linear regression analysis of the collected main survey data.

Demographics:

Table 1: Respondents' demographic characteristics

Marital Status	Married	186	93.0
	Unmarried	14	7.0
	Total	200	100.0
Children	0	30	15.0
	1	41	20.5
	2	126	63.0
	3	3	1.5
	Total	200	100.0
Family Type	Nuclear	145	72.5
	Joint	55	27.5
	Total	200	100.0
Family Size	1-2	27	13.5
	3-4	148	74.0
	5-6	21	10.5
	7-8	4	2.0
	> 8	0	.0
	Total	200	100.0

Variables	Particulars	N	%
Gender	Male	144	72.0
	Female	56	28.0
	Total	200	100.0
Age	21-30	30	15.0
	31-40	68	34.0
	41-50	46	23.0
	51-60	47	23.5
	Above 60	9	4.5
	Total	200	100.0
Education	Under Graduate	3	1.5
	Graduate	74	37.0
	Post Graduate	63	31.5
	Professional	60	30.0
	Total	200	100.0
Occupation	Service	80	40.0
	Business	60	30.0
	Profession	60	30.0
	Total	200	100.0
Income	<= 1 lakh	0	.0
	1.011-2.001	2	1.0
	2.011 - 3.001	53	26.5
	3.011 - 4.001	87	43.5
	4.011 - 5.001	27	13.5
	5.011 - 6.001	10	5.0
	> 6.001	21	10.5
	Total	200	100.0

Above table indicates the distribution of background characteristics of the respondents. The background characteristics include gender, age, education, occupation, income, marital status, number of children, family size and family type. The demographic characteristics of survey respondents are summarized in the table given above. Evaluations of the demographics of 200 respondents indicate, within gender, a total of 144 (72%) males completed the survey, while 56 (28%) female respondents were found in the survey. Within the five slots of age factor percentage vary from 34% into range of 31 to 40 years to 4.5% into 60 years and above. In case of educational qualification of respondents, 74 responses were graduates (37%). While, only 3 (1.5%) respondents were undergraduates. Professionals like doctors, lawyers, consultants, chartered accountants etc. contributed 30% (60) responses and postgraduates were

63 (31.5%). As samples were collected on the bases of occupation, 40% respondents were from service class while 30% respondents were professionals and 30% from business class. Within seven different income classes, responses range from 87(43.5%), having income between Rs. 3.01 lakhs and 4.00 lakhs, to none below one lakh annual income. Married respondents contributed in this survey with 93% responses and remaining respondents were unmarried. Respondents having 3 or more numbers of children were 1.5%. 63% respondents were having 2 children. Survey results showed that 72.5% (145) respondents followed nuclear family pattern and remaining 27.5% (55) followed joint family structure. Demographic results revealed that no family was having more than 8 members while 74% respondents were having 3 to 4 members in their respective families.

Table 2: Computed Cronbach's Alpha and Mean values of test variables

Variables	Attitude	Motivation	Purchase Intention	Purchase Behavior
Computed α for the present study	0.730	0.704	0.797	0.681
Mean Score	4.333	4.326	4.271	4.111

Reliability Test: Table 2 indicates the results of all Cronbach's Alpha and mean scores for all above mentioned scale items, attitude, motivation, purchase intention and purchase behavior. Cronbach's Alpha had been performed to evaluate the internal consistency of variables. Generally, Cronbach's Alpha increases as correlation between items increase. In conducting research, a Cronbach's Alpha score of 0.50 or higher is considered adequate when determining reliability (George, 2004).

- Attitude: Attitudinal items received a Cronbach's

Alpha score of 0.730 (Table 2). Attitude received the highest mean score, M=4.333 (Table 2), suggesting that respondents' had favorable thoughts of the green initiatives and environment friendly decorative paints.

- Motivation: Motivation to purchase was measured using five items identifying respondents' willingness to search and pay more for environment friendly decorative paints. All five items used to evaluate motivation were retained and scored a Cronbach's Alpha of 0.704 (Table 2). The mean score for

motivation was 4.326 (Table 2). The high score is likely contributed to consumers wanting to pay more or search for environment friendly alternatives.

- **Purchase Intention:** Purchase intention received a Cronbach's Alpha of 0.797, the highest of all the scales used in testing. The mean score for purchase intention was 4.271. The mean score was relatively high suggesting that respondents' were likely to seek out and purchase environment friendly products in future purchases.
- **Purchase Behavior:** The purchase behavior items scored a Cronbach's Alpha of 0.681. The mean score for purchase was high at 4.111. The high mean score suggests that respondents' are purchasing environment friendly brands and products.

The next phase is to examine the linearity. Linearity test expresses that the regression model is a linear model and can be used to predict values that fall in a straight line by having a constant unit change of the dependent variable for a constant unit change in the independent variable. For this reason, null hypotheses for the model of Theory of Reasoned Action are stated below.

Null Hypothesis:

H01: Intention to purchase environment friendly decorative paints has no influence of positive attitudes toward DEP.

H02: Intention to purchase environment friendly decorative paints has no influence of motivation to search research and purchase DEP.

H03: Purchase behavior towards eco-friendly decorative paints has no influence of intention to purchase DEP.

Table 3: Relationship of Attitude and Intent to Purchase						
3.1: Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.234	.055	.050	1.99941		
a. Dependent Variable: Intent to purchase environment friendly decorative paints						
b. Predictors: (Constant), Attitude towards environment friendly decorative paints purchase (kaq)						
3.2: ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
2	Regression	45.967	1	45.967	11.499	.001
	Residual	791.533	198	3.998		
	Total	837.500	199			
3.3: Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
3	(Constant)	35.378	2.179		16.240	.000
	Attitude	.339	.100	.234	3.391	.001

As shown in the Table 3, it provides correlation coefficients information for the regression models. The model entered all variables based on Theory of Reasoned Action e.g., Attitude, Motivation, Intent to Purchase and Purchase Behavior.

The first hypothesis of this model explained relationship between Attitude and Intent to Purchase eco-friendly paints. The model's coefficient of determination or R square ($R^2 = 0.055$) obtained indicates that 5.5% regression model of Purchase Intention function can be explained by Attitude towards Green Paints, while the remaining 94.5% are explained by other variables out of this model. For this association adjusted R^2 was 0.050 with estimated standard error 1.999.

From the Table 3 (part 2) ANOVA, we can find that F value for the linear model is 11.499 ($.05 > \text{Sig.} = .001$), which can lead us to reject Null Hypothesis (H_0). This result exerts that the first regression model with Attitude towards Green Decorative Paints as the independent variables ($df = 1$) can be sufficiently used to predict Purchase Intention.

Furthermore, the constants values " " and " " regression coefficients for this linear function are presented in the Table 3. Two approaches can be used to test the significance level: either by comparing t-value and t-table, or by comparing Sig. and . In this analysis, both approaches were employed. Rules of thumb for this comparison pointed out that if $\text{Sig.} < = 0.05$, we can reject H_0 , and conversely, if $\text{Sig.} > = 0.05$, we cannot reject H_0 . Part 3.3 shows that as positive attitudes toward green products increase, intention to purchase green decorative paints increases, indicated a significant estimate ($t=3.391$, $p=0.001$). The corresponding beta coefficient indicated a positive effect ($\beta = 0.234$). Therefore, the test supports the proposed hypothesis that as positive attitudes toward green products increases the intention to purchase green paints increases. Thus, for attitude toward green initiatives and eco paints coefficients are statistically significant or we can conclude that H_0 can be rejected.

H02: Intention to purchase environment friendly decorative paints has no influence of motivation to search research and purchase DEP.

Table 4: Relationship of Motivation to purchase and Intent to Purchase

4.1: Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.250 ^a	.063	.058	1.99116		
a. Dependent Variable: Intent to purchase environment friendly decorative paints						
b. Predictors: (Constant), Motivation to purchase (kmq)						
4.2: ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
2	Regression	52.482	1	52.482	13.237	.000 ^a
	Residual	785.018	198	3.965		
	Total	837.500	199			

4.3: Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
3	(Constant)	34.508	2.270		15.204	.000
	Motivation	.379	.104	.250	3.638	.000

The second hypothesis of this model explained relationship between Motivation to Purchase eco-friendly paints and Intent to Purchase eco-friendly paints. The model's coefficient of determination or R square ($R^2 = 0.063$) (Table 4: Part 1) obtained indicates that 6.3% regression model of Purchase Intention function can be explained by Motivation towards Green Paints, while the remaining 93.7% are explained by other variables out of this model. For this association adjusted R^2 was 0.058 with estimated standard error 1.991.

Looking at the Table 4 (part 2) ANOVA, we can find that F value for the linear model is 13.237 ($.05 > \text{Sig.} = .000$), which can lead us to reject Null Hypothesis (H_0). This result exerts that the first regression model with Motivation towards Green Decorative Paints as the independent variables ($df = 1$) can be sufficiently

used to predict Purchase Intention.

In part 3 of Table 4, it can be seen that as motivation to purchase green products increase, intention to purchase green decorative paints increases, indicated a significant estimate ($t=3.638$, $p=0.000$). The corresponding beta coefficient indicated a positive effect ($\beta = 0.250$). Therefore, the test supports the proposed hypothesis that as motivation to purchase environment friendly paints increases the intention to purchase green paints increases. Thus, for motivation to purchase environment friendly paints coefficients are statistically significant or we can conclude that H_0 can be rejected.

H_0 3: Purchase behavior towards eco-friendly decorative paints has no influence of intention to purchase DEP.

Table 5: Relationship between Purchase Intention and Purchase Behavior

5.1: Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.371 ^a	.137	.133	1.01371
a. Predictors: (Constant), Intent to purchase environment friendly decorative paints (kpiq) b. Dependent Variable: Purchase of Environment Friendly Products and Brands				

5.2: ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	32.409	1	32.409	31.538	.000
	Residual	203.466	198	1.028		
	Total	235.875	199			
5.3: Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	12.265	1.499		8.181	.000
	Purchase Intention	.197	.035	.371	5.616	.000

The last hypothesis of this model explained relationship between Intention to Purchase eco-friendly paints and Purchase Behavior towards eco-friendly paints. The model's coefficient of determination or R square ($R^2 = 0.137$) (Table 5: Part 1) obtained indicates that 13.7% regression model of Purchase Behavior towards eco-friendly paints function can be explained by intention to Purchase eco-friendly paints, while the remaining 86.3% are explained by other variables out of this model. For this association adjusted R^2 was 0.133 with estimated standard error 1.0137.

Looking at the Table 5 (part 2) ANOVA, we can find that F value for the linear model is 31.538 ($.05 > \text{Sig.} = .000$), which can lead us to reject Null Hypothesis (H_0). This result exerts that the first regression model with Intention to Purchase eco-friendly paints as the independent variables ($df = 1$) can be sufficiently used to predict Purchase Behavior.

In part 3 of Table 5, it can be seen that as intention to purchase eco-friendly paints, purchase behavior towards green decorative paints increases, indicated a significant estimate ($t=5.616$, $p=0.000$). The corresponding beta coefficient indicated a positive effect ($=0.371$). Therefore, the test supports the proposed hypothesis that as motivation to purchase environment friendly paints increases the intention to purchase green paints increases. Thus, for intention to purchase environment friendly paints coefficients are statistically significant or we can conclude that H_0 can be rejected.

Compared to coefficient of determination or R^2 , Adjusted R^2 is more reliable in measuring a regression model's goodness of fit. The main disadvantage of using coefficient of determination or R^2 is more to do with bias of number of independent variables included into the model, which implies that the more independent variable added into the model, the more R^2 increasing.

Worst of all, this condition does not take into consideration whether independent variable included is significant or insignificant influencing dependent variable. Meanwhile, that situation will not apply in the case of using Adjusted R2. Based on the generated data, it has been demonstrated that Adjusted R2 of the regression model tends to be very low.

H04: There are no demographic differences (gender, age, education, occupation, income, marital status, number of children, family size and family type) between consumers who indicate they intend to purchase environment friendly decorative paints and those who indicate they do not.

Table 6: Purchase intention and its relation with Demographics of respondents (Pearson Chi-Square Test)

	Gender	Age	Education	Occupation	Income	Marital Status	Children	Family Type	Family Size
Chi-square	0.696	15.114	19.049	16.948	14.265	2.501	4.756	0.697	5.894
Df	2	8	6	4	10	2	6	2	6
Sig.	0.706	0.057	0.004*	0.002*	0.161	0.286	0.576	0.706	0.435
Hypothesis Outcome	Do not reject	Do not reject	Reject	Reject	Do not reject	Do not reject	Do not reject	Do not reject	Do not reject

As given in table 6, Pearson Chi-Square values examined association of all demographic variables with all ten items of intention to purchase eco-friendly paints. Analysis shows very less association of demographic factors with respondent's intent to purchase. Only Educational Qualification ($p = 0.004 < 0.05$) and Occupation ($p = 0.002 < 0.05$) of the respondents have significant differences between consumers who indicate they intent to purchase environment friendly decorative paints and those who indicate they do not. For other demographic factors, Gender ($p=0.706>0.05$), Age ($p=0.057>0.05$), Income ($p=0.161>0.05$), Marital Status ($p=0.286>0.05$), Number of Children ($p=0.576>0.05$), Family Type ($p=0.706>0.05$) and Family Size ($p=0.435>0.05$), had no significant association between consumers who indicate they intend to purchase environment friendly decorative paints and those who indicate they do not. We can say that we do not reject null hypothesis (H03) for Gender, Age, Income, Marital

Status, Number of Children, Family Type and Family Size while we reject null hypothesis for Educational Qualification and Occupation of respondents. We can conclude that there was a significant main effect of the Educational Qualification and Occupation of respondents who indicate they intend to purchase environment friendly decorative paints and those who indicate they do not. We know that generally there was an effect, but without further tests (e.g. post hoc comparisons) we can't say exactly which factor of above two variables doses have the most effect. So, we might do some post hoc tests as well. The outputs shown in the tables (6-A & 6-B) from SPSS that contains these tests.

We read down the column labeled significance and look for values less than 0.05. By looking at the significance values we can see that the differences between condition means are between graduates and

Table 6A: Post hoc analysis for Educational Qualification

(I) Education	(J) Education	Mean Difference	Significance(p)
Graduate	Under Graduate	-0.68018	0.953
	Post Graduate	-0.21986	0.937
	Professional	1.05315	0.028
Post Graduate	Under Graduate	-0.46032	0.985
	Professional	1.27302	0.007
Professional	Under Graduate	-1.73333	0.54

professionals ($p = 0.028$) as well as post graduates and professionals ($p = 0.007$). No other comparisons were significant enough (all $p > 0.05$). However, there is a rather anomalous result in that there is no significant difference between the agreement given by professionals and undergraduate respondents even though the mean difference between them is higher (-

1.73333) than the mean difference of pairs, professional-postgraduates (1.27302) and professional-graduate (1.05315). The reason for this result is sphericity in the data (Andy Field, 2009). Higher mean difference of professional-postgraduate pair indicates that this pair has higher participation in overall impact of educational differences.

Table 6B: Post hoc analysis for Occupation

(I) Occupation	(J) Occupation	Mean Difference	Significance(p)
Service	Business	0.000	1.000
	Profession	1.16667	0.003
Business	Profession	1.16667	0.007

This output (table 6B) shows some post hoc tests for the main effect of occupation of consumers. Results showed that purchase intentions of professional consumers had significant differences with purchase intention of service class ($p=0.003$) and business class ($p=0.007$) consumers. While there is no significant difference found between service class and business class consumers' purchasing intention.

Discussion and Findings

This study empirically investigated the relationships

between the attitude, and motivation and purchase intention of consumers of Vadodara city. Furthermore, how this intention to purchase eco-friendly paints converted into actual purchase behavior was also measured. In this study, buying behavior of consumers of Vadodara city was measured with reference to theory of Reasoned Action. The following findings were drawn, based on the analysis done with the help of analysis of variance between these variables, simple linear regression, correlation, Pearson chi-square test and simple mean scores.

Findings

- As shown in table 2, the mean score was relatively high for all variables (attitude, motivation, purchase intention and purchase behavior) suggesting that respondents were having favorable thoughts for green initiatives taken by companies with having high intention to purchase DEP by paying high prices.
- Analysis of hypothesis one shows that there is positive relation between attitude of consumers towards green initiatives and their intent to purchase DEP.
- This clarifies, as attitude towards green initiatives increase positively intention to purchase DEP increases as well.
- Moreover, figures of analysis of hypothesis two support the following statement: "As motivation towards purchase of DEP rises, intention to purchase DEP also rises".
- Among two influencing factors, motivation and attitude, of purchase intention, motivation came out as prime factor for this study.
- Furthermore, following inference was drawn from the results of third hypothesis test: "As intention to purchase DEP increases the conversion rate of that intention into actual purchase also increases".
- Among all background characteristics of respondents, occupation and education factors have significant differences between consumers who indicated they intend to purchase DEP and those who indicated they do not.
- Moreover, results proved that there are significant occupational variations in purchase intention because of major disagreement of professional consumers with service class and business class consumers. Intention to purchase DEP for service class is at one and the same altitude of business class consumers.
- While, upshots of analysis established concrete platform for educational impinge on purchase

intention between consumers, indicated they intend to purchase DEP and those who indicated they do not, by noteworthy comparison of professionally educated consumers with graduates and postgraduates. Higher mean difference of professional-postgraduate pair indicates that this pair has higher participation in overall impact of educational differences than all other pairs.

Discussion

- Looking at the objective, the result provided considerable support in terms of strength of the Theory of Reasoned Action in predicting and explaining consumers' intention to purchase green decorative paints in Vadodara city. The overall regression results have showed that the model presented good measure of fit.
- The aim of this study was to examine which determinant brings the highest impact on environment friendly paints purchase intention, the present study demonstrated that among the immediate predictors of purchase intention, Motivation to purchase eco-friendly paints is the most significant and found to be the primarily predictor ($\beta = 0.250$, Sig. = $.000 < .05$). This finding, however, differed from Theory of Reasoned Action in sense that the theory relied primarily on attitude as the main predictor of behavioral intention, which in this study of Vadodara city is Motivation. Furthermore, Attitude ($\beta = 0.234$, Sig. = $.001 < .05$) towards Eco paints is also a good predictor of Purchase Intention.
- Analysis of first hypothesis indicates that positive attitudes toward green products increase, intention to purchase environment friendly decorative paints increases. According to this result and construct means of all five items used to measure Attitude of consumers, it is proved that consumers prefer DEP (4.265) compare to traditional paints in Vadodara. Consumers in Vadodara city believed

that green products were good for themselves (4.375) as well as their community (4.37). They also believed that recycling of the paint is also a good idea which could help to protect environment (Refer annexure 1).

- Consumers in Vadodara were found highly motivated towards purchase of Eco-paints. Results showed that consumers were willing to pay more for environment friendly paints and they were also ready to switch to the brand providing eco-friendly paints. The influence of motivation to research, search and buy environment friendly paints on intention to purchase green paints was measured. Intention to purchase items included plans to seek out environmental products, plans to purchase environmental paints, and plans to spend time searching company websites to find out about environment friendly options and taking more time to substitute environmental product alternatives (Refer annexure 2).
- The reasons behind high purchase intention towards eco-friendly paints were harmful substances like VOCs (4.31) and Lead (4.37), Health issues (4.23), harmful fumes (4.18) in traditional paints. Consumers would take more time to search environment friendly alternative (4.13) and for that search they might use concerned companies' websites (4.26). They would try to learn more about environment friendly options for other products also (Refer annexure 3).
- High purchase intention towards environment friendly paints could convert consumers into frequent purchaser (4.055). Consumers in Vadodara often look to tags and labels on the product to check whether it is an environment friendly or not (4.090). Responses of consumers provided an generous support to believe that paints claiming to be environment friendly are actually environment friendly and they are good for environment (4.215) (Refer annexure 4).

- Respondents' behavior was different between consumers who indicate they intend to purchase environment friendly decorative paints and those who indicate they do not when it comes to educational qualification and occupation of the respondents. This means that higher education and higher occupation level have more environment consciousness and they are more likely to purchase eco paints in their near future. While there is no difference in purchase intention of different age groups, gender, marital status and family size and type.

Conclusion

Based upon research findings, following implications were drawn for decorative paint industry.

- An exploratory study sought to increase understanding of consumer perceptions of environment friendly paints. This study provides an empirical first step into understanding consumer attitudes and behaviors in relation to green products in the decorative paint industry. The research showed that consumer motivation and attitude towards environment friendly paints has a major effect on intention to purchase and purchase behavior.
- Companies should focus marketing efforts on educating consumers about the social responsibility practices of the organization. Businesses should also strive to provide consistent sustainability messages on product labels and hangtags, as well as on company websites.
- Companies should also take into account how consumers are learning about the environmental movement. Respondents stated that they received the majority of information about environment friendly products through the internet and print/media.
- These findings continued to show the importance of consistent advertising on products and company

websites. Research also suggests that respondents are interested in green paints and the environmental movement.

- The majority of respondents held strong attitudes towards environment friendly paints and other green products. Intention to purchase environment friendly products was also rated highly.
- Manufacturers and retailers should continue to incorporate environmental responsibility into their core values and expand environment friendly product lines to capture the growing number of consumers looking for green options.
- This research study was a preliminary step to understanding consumer adoption of the environment movement in Vadodara city. This emergent phenomenon is likely to expand and become a major strategy for businesses and corporations worldwide.
- This work is one of the few efforts to investigate consumer buying behavior in GSCM practices context in Vadodara city with reference to selected companies of decorative paint industry. Thus, investigation and its findings are still relatively exploratory.
- Future research in India can also include investigation of linear relationships identified in this work and can help identify long-term patterns in one of the world's fastest growing countries and one that will truly have a global impact on the environmental and economic direction of society over the next few decades.
- In addition, future research should try to tease out various relationships, including mediating and moderating relationships, that may exist between various items and factors we have identified.
- A more broadly-based and random sample study across India would also provide a better picture of Indian consumers' behavior towards these practices and what is occurring throughout India, not only in Vadodara city.

Annexure 1: Items taken into consideration to compute attitude level			
Sr. No.	Statements	Outcome	Mean
1	Compared to other traditional paints, I prefer green paints.	Retained	4.265
2	I think that buying green products is good for me.	Retained	4.375
3	I think that buying green products is good for the community.	Retained	4.37
4	I think recyclable paint is a good idea.	Retained	4.345
5	I think that there is too much hype on environmental products. ^{*(Negative Ranking)}	Retained	4.31
Mean Score			4.333

Annexure 2: Items taken into consideration to compute motivation level			
Sr. No.	Statements	Outcome	Mean
6	I would be willing to pay higher prices for environment friendly paints.	Retained	4.07
7	I often search for paint brands that are environment friendly.	Retained	4.39
8	I am never motivated to buy environmental products. *(Negative Ranking)	Retained	4.57
9	I would be willing to switch brands for one that is more environment friendly.	Retained	4.345
10	If a paint brand does not offer an environmental product, I will not buy that brand.	Retained	4.255
Mean Score			4.326

Annexure 3: Items taken into consideration to compute intent to purchase eco-friendly paints			
Sr. No.	Statements	Outcome	Mean
11	For future purchases, I plan to seek out environmental products.	Retained	4.31
12	It is important to me that paints contain no Volatile Organic Compounds	Retained	4.31
13	It is important to me that paints contain no Lead material.	Retained	4.37
14	I avoid paints containing substances which are harmful to human kind.	Retained	4.23
15	When making purchases, I pay attention to whether the paints contain unhealthy substances.	Retained	4.25
16	Health issues play an important role for me when I make up my purchase decisions.	Retained	4.23
17	When making purchases, I would primarily buy paints which do not emit harmful fumes.	Retained	4.18
18	For future purchases, I plan to buy environmental friendly paints for myself.	Retained	4.45
19	I plan to spend time searching company websites to learn more about environment friendly options.	Retained	4.26
20	For future purchases, I will take more time to search for environment friendly alternatives to products that I typically buy.	Retained	4.13
Mean Score			4.271

Annexure 4: Items taken into consideration to compute Purchase Behavior			
Sr. No.	Statements	Outcome	Mean
21	I frequently purchase environmental brands.	Retained	4.055
22	I frequently search for brands that are known to offer environmental products.	Retained	4.085
23	When shopping for environment friendly paints, I often read the labels or tags.	Retained	4.09
24	I normally put a lot of effort into purchasing paint that is environment friendly.	Retained	4.11
25	I always believe that paints claiming to be environment friendly are actually environment friendly and good for the environment.	Retained	4.215
Mean Score			4.111

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