Original Article

Classifying customers on the basis of their attitudes towards telemarketing

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Ankit Mehrotra

is a full-time faculty member at Jaipuria Institute of Management, Lucknow in the area of Information Technology. With a PhD from the University of Lucknow in the area of Supply Chain Management and Information Technology, his teaching career spans over 8 years. His areas of interest include Data Mining, MIS and Spreadsheet Application in Business and Logistics and Supply Chain Management. He has authored articles on Logistics, Supply Chain Management and Information Technology. He has been part of various MDPs, and has covered usage and penetration of Information Technology under various topics.

Reeti Agarwal

is a full-time faculty member in the area of Marketing at Jaipuria Institute of Management, Lucknow. With a PhD from the University of Lucknow in the area of Consumer Behaviour, her teaching career spans over 9 years. Her areas of interest include CRM, Services Marketing, Retailing and Effective Communication Skills. Extensively involved in research, she has authored articles on CRM, Retailing and Household Buying Decision Making. She regularly conducts MDPs in the area of Interpersonal Communication Skills, Building Customer Relationship and so on.

ABSTRACT Telemarketing belongs to a new breed of potent technology-driven business tools that have evolved in direct response to the changes in today's business environment. Being rooted in a technological foundation, telemarketing offers flexibility, and simultaneously lowers the costs of reaching customers and meeting their needs. Compared to traditional marketing approaches, the telemarketing approach has been designed and developed for the contemporary business environment. Despite its advantages, focussing too much on this technology-driven approach without understanding customers' attitudes and preferences for such an approach can lead to disastrous results for an organization. The article argues that telemarketing practices ought to be managed in accordance with customers' attitudes towards such practices. The objective of the article is to use intelligent techniques such as Feature Selection and Classification and Regression Techniques (C&RT) to classify customers according to their positive or negative attitudes towards telemarketing. The model thus arrived at may be used to better understand customer attitudes and accordingly target telemarketing efforts more successfully. Significant determining variables that can help capture acceptance or non-acceptance of telemarketing channels by customers were identified from the literature and focused group discussion. Likert scale responses were collected from a sample of 400 respondents using a structured questionnaire. The application of Feature Selection and C&RT resulted in the identification of two segments of customers: Acceptors and Rejecters. The findings also show that customers view telemarketing as an approach used by companies to sell their products 'any which way', with lack of concern for customers' choices and comfort. This study, by building a model to classify customers according to their positive or negative attitudes towards telemarketing, helps in reducing this disconnect between customers and the telemarketing approach being adopted by organizations.

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Correspondence: Ankit Mehrotra
Jaipuria Institute of Management, Vineet Khand,
Gomti Nagar, Lucknow 226010, India
E-mail: ankitmeh@hotmail.com

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INTRODUCTION

Telemarketing is an interactive process between a company and its customers that uses a comprehensive system of media and methods to elicit a response.¹ It is the art and science of getting the right offer, to the right people, at the right time, and recording and fulfilling their request for products or services. Telemarketing is used in a variety of industries, including Telecommunications, Banking/Financial Services, Insurance, Mail Order/Catalogues, Travel and Tourism, Charity/Non-Profits and Publishing.² Telemarketing is a more dominant method of direct marketing being used by companies to reach out to customers in which contact between customers and salespersons is established via the medium of telephone. There are two main types of telemarketing – inbound and outbound. Inbound telemarketing is when the customer gets in contact with the company through telephone for the purpose of making complaints, obtaining information, placing orders and so on. In contrast, outbound telemarketing is when the company initiates contact with the customer to sell a product, to conduct market research and so on.³ The telephone as a medium is ideal for building and maintaining close relationships with customers.^{4,5} Technological advances in this area provide an opportunity for more personalized, even distinctively new, forms of customer relationships.^{6,7} Yet, in-depth analyses of telephone interaction from a customer's perspective manner are exceptionally rare. In fact, it is hard to find empirical analyses of telephone interaction from a customer's perspective even in terms of basic marketing concepts such as perceived value, quality and satisfaction. There have been virtually no attempts to investigate how consumers define and evaluate telephone interaction in terms of these concepts and their corresponding dimensions. Telephone interaction with customers managed through call centres is still much too internally focused and cost/production-oriented, and hence does not respond to growing privacy concerns and cynicism towards direct marketing practices and declining co-operation of respondents in telephone surveys.^{8,9}

Effective telemarketing requires high quality customer data, clustering capabilities and explainable outcomes that provide action items for strategy and testing. Technology, particularly in the form of intelligent techniques such as data mining, is increasingly being used by companies to understand their customers better and consequently to serve them better. Data mining is the process of sorting through large amounts of data and picking out relevant information. It is usually used by business intelligence organizations, and financial analysts, but is increasingly being used in areas of marketing to better serve customers and also to find ways to increase profits for the company. Data mining techniques contribute significantly to building better customer relationship by better understanding customers and their likes and dislikes. For example, data mining helps a company in finding prospects having a high likelihood of responding to an offer and accordingly optimizing campaign management to reduce the expenses for such a process incurred by the organization. Thus, data mining techniques are increasingly being used by companies to predict response rates, to estimate market size, customer life-time value and return on investment (ROI), and to classify customers into segments.¹⁰

This article makes use of two intelligent techniques – Feature selection and Classification and Regression Techniques (C&RT) – to identify the important attitudinal factors affecting customers' responses to telemarketing offers and to classify customers according to their positive or negative attitudes towards telemarketing as a channel of marketing. The resultant model helps in classifying customers, and an understanding of the resultant classes would make it easier for companies to deduce which class should be targeted or avoided in their marketing efforts.

This article begins with a discussion of the theoretical background of the study. The following sections present, successively, the objectives of the study, research design, sample of the study, analysis of research findings, and conclusion and implications, and the article ends with the limitations of the study.

THEORETICAL BACKGROUND

As consumers become increasingly pressed for time and overburdened with choices, convincing them to purchase a marketer's products or services is subsequently becoming more difficult. Thus, one of the most valuable avenues for marketers today is direct marketing, especially telemarketing, which provides easy access and communication with consumers, allowing companies to reach customers whenever they want and wherever they want.¹¹

Comparative studies on direct marketing

Most studies on consumers' attitudes towards direct marketing have sampled US consumers.^{12–15} These studies have generally focused on direct marketing techniques and general attitudes towards marketing, privacy and direct marketing. There are only a few researches on attitudes towards direct marketing among consumers outside the United States. Maynard and Taylor¹⁶ conducted a study that compared American and Japanese consumers' attitudes towards direct marketing. The results showed that Japanese and American respondents have similar levels of ambivalence towards direct marketing. However, attitudes towards telemarketing were more negative in Japan than they were in the United States. Milne *et al*¹⁷ investigated the acceptability of target marketing, defined as gathering background and purchase information on consumers in order to better serve them. In contrast to the United States, where 67 per cent found this behaviour acceptable, only 16 per cent of the Argentine sample found this acceptable. Their results also showed that the amount of experience with direct marketing did not affect the attitudes towards target marketing.

Maynard and Taylor¹⁶ found that the Japanese participants in their study were more concerned about privacy issues than their American counterparts. The Japanese were less tolerant of the practice of marketers sharing information about their age and purchasing habits. Milne *et al*¹⁷ investigated how consumers from different countries and cultures (Argentina versus United States) feel about consumer privacy issues and

direct marketing. Overall, the level of concern for privacy was not high based on the Argentine sample (11 per cent), compared to 46 per cent of the US respondents in the Equifax Consumer Privacy Survey.^{14,15} However, there are statistically significant differences in the overall concern for privacy based on demographic factors: age was a significant predictor of attitudes towards privacy, indicating that young people are the least concerned; following age was the level of education: respondents with the least and the most education are most concerned about the protection of privacy; last was the level of income: higher-income earning participants are slightly more concerned about privacy than those at lower-income levels.

In their 1997 study, the Japan Direct Marketing Association¹⁸ found that 62.5 per cent of the total respondents answered yes to the statement 'I feel my privacy is invaded if I receive direct mail from unknown marketers'. However, only 11.8 per cent of the respondents felt that their privacy was invaded by receiving catalogues from direct marketers from whom they had previously purchased. In addition, 11.2 per cent of the total respondents conceded that they had prior experience with privacy invasion in direct marketing.¹⁸

Trust and privacy issues pose a significant barrier to e-commerce in the Greater China region. Cheskin Research (US) and Chinadotcom Corporation¹⁹ conducted an online survey in 2000 to gain an understanding of Chinese Internet population in Greater China (including Mainland China, Hong Kong and Taiwan.). This study also received data from North American Chinese respondents, which formed the basis for a comparison with their Greater Chinese counterparts. The survey was divided into the following categories: (1) attitudinal profile, including perceived barriers, advantages of online use, trust and privacy issues; (2) behavioural profile, including online activities, services and purchase activity; and (3) demographic profile. They found that the respondents worry about identity risk and how their personal information might be handled by a website. They are reluctant to use a credit card to purchase online,

fearing credit card fraud. Across the board, respondents in Greater China and North America score relatively low on the Trust Scale when compared to similar attitudes of general market respondents in the United States and Latin America. The mainland Chinese are the most trusting among all groups, followed closely by the North American Chinese. Chinese in Taiwan are the least trusting.¹⁹

Rawwas *et al.*²⁰ conducted a study on ethics and trustworthiness. This study found that Australians were more sensitive to ethical standards, valuing trustworthiness substantially more than Americans. The Australian consumers expect firms to honour their promises and address their complaints without asking questions. This study indicated to the direct marketers that informative, straightforward and functional consumer policies, such as guaranteed refunds, would prove successful in targeting the Australian consumer.

Factors influencing consumer attitudes towards direct marketing channels

A review of previous studies highlighted a number of factors that can affect customer attitudes towards companies' direct marketing practices. In the context of this study, the following factors were found to be relevant.

Perceived ad intrusiveness

One construct that could influence consumer attitude towards telemarketing calls is perceived ad intrusiveness. Previous studies have indicated that perceived ad intrusiveness consists of the following dimensions: interference with one's privacy,^{21,22} cognitive process and/or task performance,²³ and/or media content.²⁴ Based on these dimensions, perceived ad intrusiveness can be defined as the degree to which an unwanted marketing communication interferes with an individual's cognitive process and tasks, as well as interference from media contents, including offensive materials. From the perspective of consumer privacy, intrusion can be defined as invading an individual's solitude, including intrusion on one's private affairs.^{21,22} Sturges²⁵

defines solitude as a space around an individual that is 'to be left alone'. While these definitions suggest a more legal aspect of consumer privacy, they are applicable to advertising, as ads may intrude upon one's personal space (the mailbox, computer hard drives) and may disturb the customer in respect of the time that it takes to answer phone calls from telemarketers. Milne and Rohm²⁶ extended this view about consumer privacy to promotion activities by emphasizing that intrusiveness is caused by unwanted marketer-initiated communications such as telemarketing, unwanted direct mail and spam. Another aspect of ad intrusiveness is represented by the disturbance of one's task performance, including one's cognitive processing, such as thinking. Based on the definition by Ha²⁴ and Li *et al.*,²³ ad intrusiveness is regarded as an individual's cognitive process whereby he/she may perceive ads to be disruptive of their thought process or activity. More specifically, such disturbance on the Internet can be an interruption not only of editorial content, but also of task performance.²³ For example, individuals use the Internet for specific tasks, such as researching various issues or topics and e-mail corresponding. The above finding can be extended to telemarketing calls, as receiving promotional calls on the telephone, especially mobile phones, can be considered an interruption of task performance, as the phone is used by customers for specific purposes such as receiving or making business-related important calls. The ringing of the phone when the customer is engrossed in work could cause a great deal of disturbance. As a result, individuals may have negative feelings towards such calls in general, perceive the advertised brands through such calls more negatively, and thus build unfavourable attitudes towards purchasing the advertised brands.^{27,28} In terms of direct marketing communication channels, findings from focus groups conducted by Chang and Morimoto²⁹ suggest that participants generally found spam more intrusive than direct postal mail because spam can occupy a considerable amount of limited space in their electronic mailbox. This causes e-mail users to spend additional time in

locating messages that actually matter, as spam creates the need to screen all messages (including spam) to decide which messages are safe. Pew Research Center³⁰ indicated that approximately 10 per cent of respondents reported that they spend more than 30 min dealing with spam, and more than 50 per cent of the participants say that they found it extremely difficult to get legitimate messages in their work-related mailbox because of spam. Extending this theory, the telemarketing smses an individual receives on his/her mobile phone can be construed by the customer as intrusive leading to a lot of wastage of time, as the customers have to scroll through useless unsolicited messages to locate and read the relevant messages. Another aspect arising out of perceived ad intrusiveness is irritation caused by direct marketing communication. In promotional situations, consumers have either low or no control over receiving unwanted commercial information,²⁶ which may result in irritation. Irritation as defined by Aaker and Bruzzone³¹ as the negative, impatient and displeasing feeling of individual consumers caused by various forms of advertising stimuli. Previous studies have identified several potential factors that may trigger perceived ad irritation, such as advertised products, ad intrusiveness and perceived loss of control in one's behaviour.^{23,24,31–37} Formats of direct marketing such as over-dramatized and contrived content and executions, as well as frequent ad placements and frequent telemarketing calls, can also be perceived as intrusive, and may deprive consumers of their sense of control and freedom to pursue their intended tasks. Characteristics of ad stimuli that could cause irritation are represented by several notable criticisms on advertising such as targeting the wrong audience, manipulative messages, misplacements (placing ads in inappropriate slots), excessive repetition within a short amount of time and forced exposures.^{23,38} These traits are certainly applicable to telemarketing calls. For example, messages that are clearly intended for one target customer are often sent to another, the promise made by marketers is 'too good to be true', and/or calls often continue to be made to customers even after requests by the recipient

to cease such commercial messages. On the basis of the above issue, this study proposes that the higher the customers' perceived sense of being intruded on and irritation related to telemarketing calls, the less likely he/she is to respond favourably to such calls.

Psychological reactance

As direct marketing and direct response advertising have no retail presence, many consumers are reluctant to buy through these sources. Negative attitudes about these marketing activities are fostered by concerns over privacy, intrusive selling practices and consumer complaints about unscrupulous direct marketers, particularly in telemarketing.³⁹

Misuse of direct marketing communication channels could trigger consumers' annoyance and concerns, which may lead them to take action to eliminate the causes. Unwanted direct marketing communication messages may enhance the sense of loss of control in the minds of consumers. Brehm's⁴⁰ Psychological Reactance theory suggests that it is helpful to understand the relationship between ad intrusiveness and perceived loss of control. The theory suggests that when individuals frequently act counter to restrictions or pressures put upon them by external sources, they are likely to react against threats or loss of freedom and/or control by acting in the opposite way intended by the source.^{40–42} It is important to note that freedom and control are often interrelated. Brehm and Brehm⁴¹ defined freedom as a 'belief that one can engage in a particular behaviour'. As freedom can be defined as the means to what, when and how one engages in a particular activity, it may influence one's decision of attaining a pleasant outcome, or avoiding an unpleasant one. Thus, this type of freedom can be considered 'expectancy with a particular degree of strength'.⁴¹ Therefore, an individual's strength for obtaining the freedom can be defined as 'control', and the concept can be applied in the framework of psychological reactance. A freedom or control is threatened or lost when an event increases the perceived level of difficulty of exercising that freedom.⁴¹ The level of reactance depends on the

importance of the freedom/control. Where an individual's freedom and control of moderate or high importance are threatened, the level of reactance of the individual could be greater; thus, considerable resistance to compliance may occur.⁴¹ In the case of direct marketing communication channels, consumers may feel that marketers control his/her time, space, information and security. In the context of consumer evaluations of advertising/telemarketing calls, if individuals find such calls intrusive, then they may also feel that these calls pose an obstacle in their receiving important calls (by making their phone busy), cause disturbance in their ability to process information cognitively, and/or in the performance of certain tasks. As a result, users may feel that they have lost the freedom to be engaged in particular behaviours and/or may feel that they have lost control of their own behaviours. This threat brought upon by marketers through these types of communications may result in actions to preserve or regain the control. In addition, the lack of choice that one faces could force consumers to feel that they have lost the ability to control whether or not he/she receives these advertising messages from marketers. In turn, this triggers a negative reaction and action from the recipient. In the context of telemarketing, this negative reaction could take the form of getting oneself registered in the 'Do Not Call' list of companies. In other words, the negative psychological reactance would adversely affect a customer's attitude towards telemarketing. This study extends the findings of previous studies to the Indian scenario to find out the effect of negative psychological reactance on customer's intention to respond favourably to telemarketing calls.

Information orientation and perceived usefulness

The information exchange between consumers and marketers remains one of the fundamental aspects of successful relationships. The focal point of this exchange is what the customer gives and what he or she receives. To increase the value of the customer offering, marketing communication should affect the consumer's value perception.

An increasing number of organizations have added direct marketing to their communications mix in an attempt to increase dialogue (information exchange) with the customer.⁴³ The value of consumer information in today's business environment is undeniable. This is probably why direct marketing, the industry from which database marketing evolved, focuses on the collection, storage and use of consumer information. Direct marketers use consumer preference information to form groups of consumers with similar interests and tastes. In principle, such information used for data mining or direct marketing can be seen as not only beneficial for organizations, but also for the consumer: relevant communication messages are delivered to consumers based on their preferences.⁴⁴ From a marketing perspective, consumer privacy revolves around the buyer's ability to limit the accumulation and dissemination of personal information relating to a specific direct marketing transaction.⁴⁵ Privacy concerns often feature most strongly when consumers perceive that they are targeted with irrelevant direct marketing communications.⁸ Individuals perceive information disclosure as less privacy-invasive when, among other things, they believe that they will be able to control future use of the information and that the information will be used to draw accurate inferences about them.⁴⁶ When control is not allowed or when the future use of information is not known, individuals resist disclosure. Page and Luding⁴⁷ have suggested that general negativity towards direct marketing can be overcome by targeting very fine market segments offering the optimal match between the product the company offers and the consumption needs of the consumer. Ideally, if the promotion is well targeted, the individual will not be annoyed or consider it an invasion of privacy.

The collection of customer information involves certain expectancy on the part of the customers regarding what benefits they can expect from the use of their personal information. In the context of telemarketing as a form of direct marketing, the perceived usefulness of calls will be defined as the degree to which

a customer perceives that the company has made proper and efficient use of their personal information to target the right customer with the right product or service, making purchasing easier and more convenient for them. The Wallis Report⁴⁸ stated that 'consumers will seek out those products and suppliers which offer the best value for money and they are educated about it'. Hence, for positive reaction to telemarketing calls, it is necessary that the companies making such calls make consumers aware of the value they are providing to them in terms of giving them personalized information about products and in making available only those products and services that will definitely be of use. Companies can also emphasize the importance of such calls and the information they collect about customers in building a better relationship between the company and the customer. There is extensive evidence proving the significance of the effect of perceived usefulness on adaptation intention.^{49–56} Tan and Teo⁵⁷ suggested that perceived usefulness is an important factor in determining adaptation of innovations. As a consequence, the greater the perceived usefulness of receiving telemarketing calls from companies, the more positive will be the response of customers towards such calls. This study addresses the trade-offs consumers are willing to make when they exchange personal information for shopping benefits. Based on the above assumptions, this study hypothesizes that perceived usefulness or positive information orientation will have a positive effect on customer's intention to respond favourably to such calls.

Customer privacy concerns

Privacy has been a topic of interest to researchers in a number of disciplines, including psychology⁵⁸ and sociology.⁵⁹ However, in recent years, the explosive growth of information technology has fuelled debate about threats to privacy and, in particular, attracted the attention of information systems researchers. Prominent examples include the work of Mason,⁶⁰ Smith,⁶¹ Culnan,^{62,63} Milberg *et al*,⁶⁴ Smith *et al*,⁶⁵ Culnan and Armstrong⁴⁶ and Stewart and Segars.⁶⁶ Another strand of research focuses on the exchange of

information between consumers and corporations. Indeed, in recent years, the primary threat to privacy has been attributed to large corporations (for example, banks, lending institutions, credit card, marketing and insurance companies) that use information technologies to improve efficiencies and extend market scope. These issues have been addressed in theoretical and empirical research.^{46,60,62,67–73} Phelps *et al*⁷³ examined privacy concerns and consumer willingness to provide personal information. Two factors account for the amount of privacy concerns users develop when determining whether to disclose personal information. They are related to a 'privacy calculus', that is, the assessment that individuals make 'that their personal information will subsequently be used fairly and they will not suffer negative consequences'.⁴⁶ Vulnerability emerges as an important notion from the complex definition of privacy. It describes the perceived potential risk when personal information is revealed,⁷⁴ and has been considered in literature as a factor that determines the perceived state of privacy and individual experiences.^{75–77} Because others may seek to use information to advance their own goals in ways that may have negative consequences for an individual, one's ability to maintain one's privacy implies an antagonism between the individual and others.⁵⁸ Expressing this antagonism, vulnerability is the perceived possible negative consequence of disclosure. One type of vulnerability involves the surreptitious collection of consumer information and consumer profiling.^{78,79} Privacy has sometimes been defined as the right to disclose information about oneself.⁸⁰ Thus, the ability to withhold information from being disclosed is a condition of that right. Technology and procedures that disallow the ability to control how or when information is disclosed can be viewed as an impediment to the execution of that right. The definition offered by Margulis,⁸¹ mentioned above, states that privacy involves the 'control of transactions', which would include information exchange. Control allows individuals to determine the impressions others form about them.⁸² Control is possible through limiting self-disclosure⁸³ or by determining

how information disclosed will be used.⁸⁴

Culnan and Armstrong⁴⁶ have argued that when procedural fairness⁸⁵ is applied to privacy practices in consumer marketing, individuals are more likely to assess that there will not be negative consequences in disclosing information. Thus, the result of the 'privacy calculus' is in favour of information disclosure. Procedural fairness refers to 'the perception by the individual that a particular activity in which they are participating is conducted fairly'.⁴⁶ The authors operationalized fairness in terms of procedures that provided individuals with control over disclosure and subsequent use of personal information. They found that when individuals were not informed about fair procedures, they were less willing to have personal information used. They also found that when individuals were informed about fair procedures, privacy concerns did not distinguish individuals who were willing from those who were unwilling to have information used. In other words, privacy concerns washed out. Other researchers reported similar findings. Consumers find it unacceptable that the information about them is being collected without their consent,⁸⁶ and that marketers sell information about them.^{87,88} Cespedes and Smith⁸⁹ found that use of consumer data without permission was viewed as an invasion of consumer privacy and that secondary usage of personal information potentially causes strenuous consumer objection.⁹⁰ One survey indicated that 81 per cent of the respondents 'believe that consumers have lost all control on how personal information about them is circulated and used'.⁷⁸ For this reason, many (as much as 50 per cent) consumers provide false information when asked to register at a website or fill in survey questionnaires.^{91,92}

Han and Maclaurin⁹³ found that 39 per cent of consumers mentioned lack of control over who has access to their information as a major concern. The definition of right to privacy can then be stated as the right to control access to his/her personal information.^{94,95} As consumers prefer to control the use of personal information by marketers, the messages they receive and the amount of advertising they receive,⁹⁶ they may feel anxiety and annoyance towards direct

marketing methods when this privilege is denied them. As consumers are often not aware that their personal information is being collected, they only become conscious of the conduct when they receive some type of direct marketing communication, including unsolicited e-mail and direct mail.⁹⁷

Consumers' concerns about privacy are likely to increase as they become aware that marketers have obtained their information without their awareness or permission.^{89,97} Cespedes and Smith⁸⁹ suggested that while individuals believe that the ownership of personal information should be in their own hands, marketers tend to believe that they have a right to utilize the information that they have collected. This explains yet another definition of privacy stated by Charters⁹⁵: 'the right to withhold certain facts from public knowledge'. Just as consumers believe that they own their personal information, they also tend to believe that they should have control of what should and should not be available to the public. Thus, when consumers lose control of the information flow regarding their personal matters, they may build hostile attitudes towards direct marketing practices in general.

The results of a study by Culnan⁶² show that consumers who believe they do not have control over their personal information are more concerned about privacy. The findings of a study by Nowak and Phelps⁸⁷ indicate that privacy is an important concern and that it is affected by the type of marketing practice and the specificity of information. Findings from several studies indicate that consumers believe that some personal information is more private than others.^{88,98} It seems that consumers would be less upset if their purchasing-behaviour habits were distributed than if their telephone numbers were distributed. Findings from a study by Earp and Baumer⁹⁹ add to this by indicating that consumers are more willing to reveal information about their gender and age than their identification numbers. A recent study revealed that respondents are more willing to provide contact information as opposed to biographical information, and likewise are more willing to provide biographical information than financial information.¹⁰⁰

This suggests that consumers concerned about disclosing biographical information may opt to forgo providing any information, including providing the contact information they may have initially been willing to disclose before their bibliographical information was requested. In short, consumers are willing to trade their personal information in return for specific forms of information, provided there are appropriate benefits and controls in place. Sheehan and Hoy¹⁰¹ find that as privacy concerns increase, consumers become less likely to reveal personal information to organizations. A study investigating direct marketing media used by banks found that the intention to purchase is positively influenced by respondents' favourable attitudes towards the direct marketing media used.⁴⁷ Evans *et al*⁸ conclude that individuals who feel strongly about privacy attempt to minimize the information held on them, and rarely, if ever, provide direct marketers with personal details or request communications from them. The frequency of engaging in protective behaviour increases with increasing levels of privacy concerns.^{101,102} More specific behaviour aimed at protecting privacy was reported in an online study suggesting that users will cease website access if too much personal information is requested when registering on the site.¹⁰³ A recent study suggests that consumers concerned about disclosing personal information may opt to forgo contact with the service provider, instead of providing personal information.¹⁰⁰

Several researchers have proposed ways to decrease high levels of consumer privacy concern. Nowak and Phelps¹⁰⁴ suggest strategies and tactics for alleviating consumer privacy concerns, such as informing consumers of when information is collected, how it will be used and who will have access to the data, and by offering them opt-out opportunities. Milne and Boza¹⁰⁵ have established that organizations can improve consumer trust by managing their personal information better, which reduces concern about privacy. Phelps *et al*⁷³ suggest that privacy concerns can be reduced by providing consumers with more control over the initial gathering and subsequent dissemination of personal information. As consumers will

be less likely to deal with direct marketers whose ethical practices go against their beliefs, comprehensible segments will enable direct marketers to implement better-focused direct marketing communications.⁴⁷ This study proposes an extension of this argument: It is not the product match that should be central to segmentation-based responsible direct marketing; instead, consumers' concerns about privacy issues and their behaviours related to information privacy could be used to define target groups that deliberately should or should not be approached using direct marketing messages offering products of interest to them. Based on the issues regarding privacy described above, this study proposes that customer privacy concerns will have a negative relationship with customer intention to purchase in response to telemarketing calls.

The review of studies undertaken in this area clearly brings forth the lack of studies undertaken in this area in the Indian scenario. This study has therefore been undertaken to classify Indian customers on the basis of their positive or negative attitudes towards telemarketing, which would enable companies to more effectively target customers with their marketing efforts.

OBJECTIVES OF THIS STUDY

This study has been undertaken to build a model to differentiate customers on the basis of their positive or negative attitudes towards telemarketing. This would enable companies to target segments of potential customers having a more positive attitude towards telemarketing. In particular, the research focuses on the following factors:

1. Understanding the attitudes of Indian customers towards telemarketing.
2. Preparing a profile of customers on the basis of their attitude towards telemarketing.
3. Analysis of the effect of these attitudes on purchase intention in response to telemarketing offer.

METHODOLOGY OF RESEARCH

In order to understand customer attitude towards telemarketing and privacy concerns of Indian customers, the study was conducted using the

personal survey method on a sample of 400 respondents. As it was not possible to cover the entire population of India because of deficiency of time and money resources, the study was confined to respondents from only two cities (Lucknow and Kanpur) of the state of Uttar Pradesh in India. Two hundred respondents were chosen from each of these two cities. The sample was chosen according to the Quota Sampling Procedure. Demographic variables were used to fix quota of the sample, as a review of previous studies clearly brings forth the effect of demographic factors on customers' attitudes towards direct marketing and privacy.^{5,6} Thus, this study used multi-stage quota sampling based on demographic data such as age and gender in order to get a proper representation of different age groups and gender from the population. Age was found to be a significant predictor of attitudes in previous studies; therefore, age was decided as the main factor on which to fix the quota in the first stage. Five age groups were taken – below 20 years, between 20 and 29 years, between 30 and 39 years, between 40 and 49 years and between 50 and 64 years. Forty respondents were chosen from the two cities from each of the five age groups. In the second stage, within each age group, quota was fixed on the basis of gender with 50 per cent of the respondents being male and 50 per cent female. Thus, for example, in the age group below 20 years, 20 men and 20 women were chosen from each of the two cities.

Item selection

Customer attitude towards telemarketing and privacy was measured using a number of statements. The statements were framed in such a manner so as to effectively bring out the attitudes of customers. The statements were framed in both positive as well as negative terms so as to elicit the overall attitudes of customers towards telemarketing. The attributes were identified from previous studies carried out in this area and also from focused group discussion with different people in various age groups. The subsequent list of statements was presented to 30 people used in the preliminary exploration,

and they were asked to suggest any changes to the list. On the basis of responses thus gathered, the original list was modified slightly, which was then used in the final survey. Some of the statements in the original list, such as telemarketing leads to billing of incoming calls to customers, telemarketing is good for getting discounts and telemarketing is in fashion, were found to be irrelevant/inappropriate by the respondents, and were therefore dropped. For each statement, the respondent had to indicate his/her level of agreement/disagreement with the statement on a 4-point modified Likert scale, with highly disagree = 1; disagree = 2; agree = 3; and highly agree = 4.

Pre-testing of the questionnaire

Pre-testing of questionnaire was carried out for 30 respondents selected randomly. They were requested to give comments regarding the language, diction and comprehensibility of the questionnaire. On the basis of their suggestions, the language of a few items in the questionnaire was further simplified to increase the simplicity and specificity of the items.

Reliability of the survey instrument

The data collection instrument was also subjected to reliability analysis. In this research, the internal consistency method was adopted for estimating reliabilities. It has the advantage of being a single test administration. Cronbach's α was used to assess internal consistency.

Table 1 shows Cronbach's α values for the 32 statements used to measure customer attitudes towards telemarketing. As can be seen from the table, the value 0.940 is substantially higher than 0.6, which shows that data have satisfactory internal consistency reliability. The result thus shows that the items are reliable in measuring the corresponding concepts.

RESEARCH FINDINGS AND ANALYSIS

Data reduction through factor analysis

In order to analyse attitudes of customers towards telemarketing, the first step involved reducing the

Table 1: Reliability analysis results for the 32 attitudinal statements

<i>Cronbach's α</i>	<i>Number of items</i>
0.940	32

number of statements to a smaller number of variables that could then be used for further analysis. Factor analysis was used for this purpose. In order to find out the appropriateness of factor analysis for the set of statements (variables), Kaiser-Meyer-Olkin (KMO) and Bartlett's Test was used. The results are shown in Table 2.

KMO measures the magnitude of observed correlations coefficient to the magnitude of partial correlation coefficients. A value greater than 0.5 is desirable.

Bartlett's test measures the correlation of variables. A probability less than 0.05 is acceptable. The hypothesis are formulated as follows:

Hypothesis 0 (Null Hypothesis): There is insignificant correlation between the variables.

Hypothesis 1 (Alternate Hypothesis): There is significant correlation between the variables.

As can be seen from Table 2, the KMO value is greater than 0.5 and the significance level also came out to be 0.000, which shows that the KMO value is significant at 5 per cent level of significance. Hence, the alternate hypothesis was accepted denoting that factor analysis is appropriate.

Computing the number of factors and identifying the variables under each factor

Factor analysis was run on 32 statements used to measure the attitudes of Indian customers towards telemarketing. For factor extraction, principal component method of factor extraction was used under the restriction that the eigen value of each generated factor was more than 1.25. Five factors were generated, which explained 65 per cent of the variability of the data. The extracted factors

Table 2: Appropriateness of factor analysis

Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy.	0.848
Bartlett's Test of Sphericity	
Approx. Chi-Square	10034.790
Df	496
Sig.	0.000

were then rotated using a variance maximizing method (Varimax).

These five rotated factors with their variable constituents and factor loadings are given in Table 3. Variables in the factor were selected on the basis of highest loadings for the particular factor.

The majority of statements under factor 1 indicate the perceptions of customers in respect of information that they pass on to companies or that companies pass on to them via the telemarketing calls. Thus, the factor was named 'information orientation'. Similarly, as most of the statements under factor 2 denoted an inclination on the part of customers towards telemarketing calls, the factor was named 'positive attitude towards telemarketing'. Factor 3 was named 'privacy concerns', as the statements under this factor highlighted the risks and concerns customers perceive while sharing their personal information with companies. Statements under factor 4 underlined the disturbance customers associate with telemarketing calls. Consequently the factor was named 'perceived intrusiveness'. Finally, factor 5 is comprised of statements that indicate how customers handle or respond to such calls in a negative manner. Thus, the factor was named 'do not call me attitude'. The variable composition of each factor is given in Table 3.

These factors were subjected to intra-factor reliability (Table 4), and were found to be reliable.

Using feature selection for extracting important factors

Feature selection is a must for any data mining product because when a data mining model is built, the data set frequently contains more information than is needed to build the model. For example, a data set may contain 500 columns

Table 3: Factors and their variable constituents with rotated component value

<i>Factor 1: Information orientation</i>	
Telemarketing is helpful to get good deals (X1).	0.856
Telemarketing provides useful information about new products (X2).	0.655
Unsolicited calls and messages by companies are often disturbing and useless (X7).	0.680
I am willing to provide information to companies (X8).	0.581
I am more protective of financial information and am less comfortable sharing more sensitive information (X17).	0.522
Cellular mobile service providers send useful messages to customers about promotional offers, value-added services or premium rate services such as ring tones (X18).	0.566
Companies' help desks have made it easier for other companies to obtain personal information about customers (X20).	0.582
Customers want highly visible privacy policies telling them precisely how a company will use their personal information (X21).	0.579
<i>Factor 2: Positive attitude towards telemarketing</i>	
I respond positively towards telemarketing (X3).	0.710
I have purchased goods through telemarketing (X4).	0.622
The company responded favourably to the complaints made by me regarding telemarketing (X15).	0.703
Telemarketing people take into consideration the time they make the calls as well as the needs of the customers (X16).	0.817
Relationships with customers are managed more effectively through obtaining information about their preferences from customers (X24).	0.608
Telemarketing is the medium to enhance customer relationship (X25).	0.656
<i>Factor 3: Privacy concerns</i>	
I will cease responding to telemarketing calls if too much personal information is requested by sales people (X22).	0.690
The willingness to provide information to sales people increases as the level of privacy guaranteed by the company increases and the experience is positive (X23).	0.515
I feel my contact information is being passed by the service providers to telemarketing agencies (X27).	0.577
My privacy is being invaded through unwarranted calls (X28).	0.721
I am often hesitant in giving personal information to the service provider (X29).	0.700
<i>Factor 4: Perceived intrusiveness</i>	
I do not care about such unwanted calls, sms and mails (X5).	0.525
Telemarketing is irritating and disturbing (X6).	0.522
Unwanted cell phone calls are serious money and time loss issues for customers (X11).	0.689
I often make complaints against the unwanted sms and calls from telemarketers to the respective companies (X12).	0.764
Companies misuse the information they get through telemarketing (X13).	0.562
The messages cause unnecessary disturbance to me during work and at odd hours in the day and night (X19).	0.637
I feel that telemarketing companies are only interested in selling their goods and do not take the needs and wants of customers into consideration (X30).	0.774
I am often forced to read and scroll through unsolicited promotional messages to locate important messages that results in unnecessary wastage of time and effort (X31).	0.536
The unwanted messages also consume the storage memory in the handset leading to non-receipt of wanted and important messages (X32).	0.655
<i>Factor 5: Do not call me attitude</i>	
I cancel the call as soon as I see an unknown number on my mobile (X9).	0.797
I have registered with the do not call service to bar the unwanted cell phone calls (X10).	0.793
Companies often pass on the data bank of customer's information to other companies (X14).	0.728
I often receive calls from unknown companies for goods that I do not like or want (X26).	0.637

that describe characteristics of customers, but perhaps only 50 of those columns are used to build a particular model. Feature selection helps solve the problem of having too much data that is of little value, or of having too little data that is of high value. In general, feature selection

works by calculating a score for each attribute, and then selecting only the attributes that have the best scores. Feature selection is always performed before the model is trained to automatically choose the attributes in a data set that are most likely to be used in the model.

Table 4: Intra-factor reliability

	Cronbach's α	Number of items
Factor 1: Information orientation	0.909	8
Factor 2: Positive attitude towards telemarketing	0.774	6
Factor 3: Privacy concerns	0.750	5
Factor 4: Perceived intrusiveness	0.847	9
Factor 5: Do not call me attitude	0.840	4

Feature selection is applied to inputs, predictable attributes or to states in a column. Only the attributes and states that the algorithm selects are included in the model-building process and can be used for prediction. Thus, the Feature Selection technique was applied to identify the factors, out of the five factors derived, that were important in predicting the outcome. Feature Selection technique was applied with the five factors as input variables and customer intention to purchase in response to telemarketing offers as the output variable. The variables were automatically ranked internally by the applied technique based on Pearson's P -value for categorical predictors. As can be seen from Table 5, all the five factors came out to be important predictors for the subsequent model. Therefore, all of them were taken into consideration for building the model.

Appropriateness of C&RT for classification and model/rule generation

The model and method used to collect and analyse customer data can influence the marketers' ability to appropriately segment customers. Once customers are segmented, targeted marketing efforts yield better response rates and contribute to growth of customer relationship. The marketing efforts themselves generate data on customers that need to be appropriately managed and transformed into business intelligence for use in future marketing

campaigns. It is an iterative, self-enhancing, highly measurable process if properly designed and executed. One can never be certain that any one customer absolutely belongs to a certain segment or will stick to that segment and for how long; therefore, the need for being accurate for that period of time/season is even more crucial. Defining appropriate customer segments is an important part of a telemarketing programme, as these segments form the basis for predicting response, and also helps in ROI calculations.

From the perspective of the marketer (user), explain ability needs to be high. At varying levels within the organization, the system needs to provide an explanation for why customers were assigned to certain segments. This information drives strategic and tactical marketing efforts – including sales forecasts, messaging, and testing lists and offers.

The system needs to be scaleable, flexible and tolerant of complexity and sparse data. As one adds more customers, more information and potentially more variables, the system needs to accommodate that. It needs to evolve with the marketing process and the changing needs of consumers and the marketers who match them with offers. Thus, flexibility is important. Often, being able to collect all the data one wants is not possible or feasible. Direct marketers would not want to stop marketing or to drop names from a solicitation simply because a few variables are missing. The ability to infer the data and then place the customer into the most likely customer segment is an important systems feature.

Interestingly, it has been seen that clinical decision rules that make sense to marketers are more likely to be followed in real practice than rules in which the reasoning is not apparent, and this is where C&RT appropriately fits in as the analytical tool used for the study. The C&RT algorithm was introduced in 1984 by Breiman *et al.*¹⁰⁶ It is a staple of machine-learning experiments and is one of the most popular methods for building decision trees. It provides a robust decision tree tool that can easily sift through large databases searching for patterns and relationships.

Table 5: Extracting important factors through Feature Selection

Rank	Field	Type	Importance	Value
1	Perceived_Intrusiveness	Range	Important	1.0
2	Privacy_Risk	Range	Important	1.0
3	Postive_Attitude	Range	Important	1.0
4	Information_Richness	Range	Important	1.0
5	Do_Not_Call	Range	Important	1.0

The C&RT algorithm is a process of binary recursive partitioning that splits parent nodes into exactly two child nodes and recursively continues splitting until no further splits can be made. The term 'binary' implies that each group of patients, represented by a 'node' in a decision tree, can only be split into two groups. Thus, each node can be split into two child nodes, in which case the original node is called a parent node. The term 'recursive' refers to the fact that the binary partitioning process can be applied over and over again. Thus, each parent node can give rise to two child nodes, and, in turn, each of these child nodes may themselves be split, forming additional children. The term 'partitioning' refers to the fact that the data set is split into sections or partitioned.¹⁰⁷ Splits are determined by asking a question with a 'yes' or 'no' answer. C&RT examines all possible splits for all the variables of the analysis and then makes a split. To illustrate: a data set of 300 customers with 15 variables each will result in 4500 (300×15) possible splits. The best split is considered to be the one that isolates the largest class in the data from all the other classes in the node. This splitting process is repeated to grow a 'maximal' tree that cannot grow any further. C&RT then prunes some of the branches and examines these smaller trees by drilling down several more levels in hopes of revealing more important information. The C&RT algorithm starts by growing an overly complex full tree and then pruning the full tree, using a method specified by the user, to obtain a less complex sub-tree. C&RT grows a binary tree by identifying the best explanatory variable and value for splitting each parent node into two child nodes. Indices of node homogeneity, such as the Gini index, deviance, entropy or the sum of the squared residuals from a regression

tree, guide the splitting process. The resulting child nodes are more homogeneous in the response variable than are their respective parent nodes.¹⁰⁶

After this, C&RT begins testing error rates to find the best tree. The testing process is quite thorough and entails the use of cross validation in case of insufficient data. Cross validation allows the user to know how well the tree will perform with fresh data, even if an independent test sample is not available.

The inherent 'logic' in the tree is easily apparent, and it makes clinical sense and is much simpler to interpret by the marketers. Apart from this, C&RT has lot of merits over other classification methods, including multivariate logistic regression. First, it is inherently non-parametric. In other words, no assumptions are made regarding the underlying distribution of values of the predictor variables. Thus, C&RT can handle numerical data that are highly skewed or multi-modal, as well as categorical predictors with either ordinal or non-ordinal structure. This is an important feature, as it eliminates analyst time, which would otherwise be spent determining whether variables are normally distributed, and making transformation if they are not.

Another advantage is that C&RT identifies 'splitting' variables based on an exhaustive search of all possibilities. As efficient algorithms are used, C&RT is able to search all possible variables as splitters, even in problems with many hundreds of possible predictors.

C&RT also has sophisticated methods for dealing with missing variables. Thus, useful C&RT trees can be generated even when important predictor variables are not known for all respondents. Respondents with missing predictor variables are not dropped from the

analysis, but, instead, ‘surrogate’ variables containing information similar to that contained in the primary splitter are used. When predictions are made using a C&RT tree, predictions for cases with missing predictor variables are based on the values of surrogate variables as well.¹⁰⁷

Another advantage of C&RT analysis is that it is a relatively automatic ‘machine learning’ method. In other words, compared to the complexity of the analysis, relatively little input is required from the analyst. This is in marked contrast to other multivariate modelling methods, in which extensive input from the analyst, analysis of interim results, and subsequent modification of the method are required.¹⁰⁷

Finally, C&RT trees are relatively simple for non-statisticians to interpret. As mentioned above, clinical decision rules based on trees are more likely to be feasible and practical, as the structure of the rule and its inherent logic are apparent to the user.¹⁰⁸

Although the technique has many advantages, it is not devoid of disadvantages. There is some resistance to accepting C&RT analysis by traditional statisticians, as there is some well-founded scepticism regarding tree methodologies in general, based on the unrealistic claims and poor performance of earlier techniques. Thus, some statisticians have a generalized distrust of this approach. An important weakness of C&RT is that it is not based on a probabilistic model. There is no probability level or confidence interval associated with predictions derived from using a C&RT tree to classify a new set of data. The confidence that an analyst can have in the accuracy of the results produced by a given model (that is, a tree) is

based purely on its historical accuracy – how well it has predicted the desired response in other, similar circumstances.¹⁰⁹

Classifying customers using C&RT

In order to classify customers and to build a model to predict the profiles of customers preferring telemarketing and having a high degree of likeliness to purchase a product/service in response to telemarketing and prepare rules for the same, C&RT was applied with the 5 factor scores as input variables and customer intention to purchase in response to telemarketing as the output variable. The preprocessed data set was split into training and test sets. The training set was used to train the predictive model – C&RT – and the effectiveness was tested using the test data.

Table 6 or the Misclassification Matrix gives the correct classification rate for the model built by C&RT with a higher rate denoting a higher success percentage of the prediction of the model. The rows of the matrix represent the predicted value of the model, whereas the columns represent the actual values. The Misclassification Matrix is created by sorting all cases into one of the following categories: whether the predicted value matched the actual value or was correct or incorrect. All the cases in each category are then counted and the totals are displayed in the matrix. According to the Misclassification Matrix, as given in Table 6, the overall classification accuracy of the model came out to be 80 per cent (obtained by dividing the correct number of classification (24 + 45 + 132 + 119) by the total number of

Table 6: Misclassification Matrix

	Predicted				Total	Percent correct (%)
	Highly unlikely	Unlikely	Likely	Highly likely		
<i>Actual</i>						
Highly unlikely	24	1	0	0	25	96
Unlikely	7	45	3	11	66	68
Likely	0	1	132	37	170	78
Highly likely	0	4	16	119	139	86
Total	31	51	151	167	400	—
					Average	80

cases, that is 400). Thus, the accuracy of prediction of model built is 80 per cent.

The following section provides a model to classify customers on the basis of their positive or negative attitudes towards telemarketing. The model helps in delineating customers with a high degree of likeliness to respond to a telemarketing offer from customers who are least likely to respond to such offers. This can act as a lot of cost saving for companies, as it can help them in targeting the right kind of customers at the right time and in avoiding the ineffective customer segments.

Application of the C&RT technique with the five factors as input variables and likeliness to respond as the output variable generated a decision tree, which is shown in Figure 1.

Eight rules were derived from the decision tree, which is enumerated in Table 7.

As shown in Table 7, out of the eight rules derived, five rules profiled customers as Acceptors – with a positive attitude towards telemarketing – with an intention to purchase in response to a telemarketing offer, and the rest profiled customers as Rejecters – having a negative attitude towards telemarketing – who are less likely to respond positively to a telemarketing offer. It can be seen from Table 7 that rule 1 for highly likely is the most simple and profitable for companies in terms of targeting customers, saving costs and converting potential customers into buyers. Two out of the five input variables, that is, perceived intrusiveness and ‘do not call me’ attitude, were found to be relevant for this rule. Customers under this rule have a high level of agreement with perceived intrusiveness of telemarketing calls, that is, they agree that telemarketing calls are disturbing and irritating and consider them to be wastage of time. On the other hand, these customers do not show agreement with the ‘do not call me’ attitude denoting that until now they have not taken steps to prevent such calls from companies. As this is the only rule showing 100 per cent hit ratio (as seen from node 5 of decision tree in Figure 1), companies should target customers matching the profile of respondents corresponding to this rule. However, companies should be

cognizant of the aspects that make telemarketing calls an intrusion for customers, so that steps can be taken by companies to reduce customers’ perception of intrusiveness. Companies need to understand that failure on their part to reduce this perception might negatively impact the customers’ ‘do not call me’ attitude, which in turn will adversely effect their overall attitude towards telemarketing calls. Another rule out of the eight rules that is of importance to companies is rule 3 for ‘likely to respond to telemarketing offer’, which has a hit rate of 89 per cent (as seen from node 14 of decision tree in Figure 1), and consists of three of the five input variables, that is, perceived intrusiveness, positive attitude towards telemarketing and privacy risk. The rule indicates that 89 per cent of respondents falling in this category are likely to respond positively to offers made through telemarketing calls. Customers falling under this rule do not perceive telemarketing calls to be highly intrusive, and have a high level of agreement with the positive elements associated with such calls. Although these customers have a high level of agreement with privacy risk associated with such calls, this attitude might not be as dominant as their positive attitude towards telemarketing calls. This could be possible if customers find such calls to be useful, but as a result of the high frequency and wrong timing of such calls, they find them disturbing. At the same time, awareness regarding misuse of information by companies could increase their perception of privacy risk and act as a deterrent to their responding favourably to such calls. The combination of these conditions makes the acceptance of telemarketing offers on their part likely, although it might not be highly likely. Companies, thus, need to take steps towards reducing the level of disturbance and privacy risk associated with telemarketing calls by this class of customers to increase their acceptance level.

Table 8 shows the Gains table for the tree. The Gains table displays statistics for all terminal nodes in the tree. Gains provide a measure of how far the mean or proportion at a given node differs from the overall mean. The greater this difference, the more useful the tree is as a tool

Figure 1: Decision tree generated out of C&RT.

Table 7: Rules derived from C&RT

	<i>Rule(s) Framed</i>	<i>Result</i>
<i>Rules for 4 (highly likely to respond to telemarketing offer) – contains 2 rule(s)</i>		
Rule 1 for 4.0	If Perceived_Intrusiveness >3.500 and Do_Not_Call ≤2.500 then 4 (Highly likely to accept telemarketing offers)	Accepters of telemarketing offer
Rule 2 for 4.0	If Perceived_Intrusiveness >3.500 and Do_Not_Call >2.500 then 4 (Highly likely to accept telemarketing offers)	Accepters of telemarketing offer
<i>Rules for 3 (likely to respond to telemarketing offer) – contains 3 rule(s)</i>		
Rule 1 for 3.0	If Perceived_Intrusiveness ≤3.500 and Postive_Attitude >2.500 and Postive_Attitude ≤3.500 and Privacy_Risk ≤3.500 and Do_Not_Call ≤3.500 then 3 (Likely to accept telemarketing offers)	Accepters of telemarketing offer
Rule 2 for 3.0	If Perceived_Intrusiveness ≤3.500 and Postive_Attitude >2.500 and Postive_Attitude ≤3.500 and Privacy_Risk ≤3.500 and Do_Not_Call >3.500 then 3 (Likely to accept telemarketing offers)	Accepters of telemarketing offer
Rule 3 for 3.0	If Perceived_Intrusiveness ≤3.500 and Postive_Attitude >2.500 and Postive_Attitude ≤3.500 and Privacy_Risk >3.500 then 3 (Likely to accept telemarketing offers)	Accepters of telemarketing offer
<i>Rules for 2 (unlikely to respond to telemarketing offer) – contains 3 rule(s)</i>		
Rule 1 for 2.0	If Perceived_Intrusiveness ≤3.500 and Postive_Attitude ≤2.500 and Information_Richness ≤2.500 then 2 (Unlikely to accept telemarketing offers)	Rejecters of telemarketing offer
Rule 2 for 2.0	If Perceived_Intrusiveness ≤3.500 and Postive_Attitude >2.500 and Postive_Attitude >3.500 and Privacy_Risk ≤3.500 then 2 (Unlikely to accept telemarketing offers)	Rejecters of telemarketing offer
Rule 3 for 2.0	If Perceived_Intrusiveness ≤3.500 and Postive_Attitude >2.500 and Postive_Attitude >3.500 and Privacy_Risk >3.500 then 2 (Unlikely to accept telemarketing offers)	Rejecters of telemarketing offer
<i>Rules for 1 (highly unlikely to respond to telemarketing offer)- contains 1 rule(s)</i>		
Rule 1 for 1.0	If Perceived_Intrusiveness ≤3.500 and Postive_Attitude ≤2.500 and Information_Richness >2.500 then 1 (Highly unlikely to accept telemarketing offers)	Rejecters of telemarketing offer

Note: Rating scale for factors (input variable)

4→Highly Agree; 3→Agree; 2→Disagree; 1→Highly Disagree.

Rating scale for likeliness to respond (output variable)

4→Highly Likely; 3→Likely; 2→Unlikely; 1→Highly Unlikely.

for making decisions. The first column of the table mentions the different nodes of the tree generated by C&RT. The second columns gives the total number of respondents corresponding to the node given in column one, while the third column specifies the percentage of respondents

out of the total number of respondents falling in that node. As the Gains table related to the 'highly likely' category of the output variable, the fourth column gives the number of respondents falling under this category in each node. Gain (%) and Response (%) specify gain as a percentage of

Table 8: Gains table for 'highly likely' category of output variable

	<i>Nodes</i>	<i>Node: n</i>	<i>Node (%)</i>	<i>Gain: n</i>	<i>Gain (%)</i>	<i>Response (%)</i>	<i>Index (%)</i>
1	5	14.00	3.50	14.00	10.07	100.00	287.77
2	6	119.00	29.75	86.00	61.87	72.27	207.97
3	18	39.00	9.75	15.00	10.79	38.46	110.68
4	16	13.00	3.25	4.00	2.88	30.77	88.54
5	17	80.00	20.00	13.00	9.35	16.25	46.76
6	14	66.00	16.50	7.00	5.04	10.61	30.52
7	7	27.00	6.75	0.00	0.00	0.00	0.00
8	8	24.00	6.00	0.00	0.00	0.00	0.00
9	15	18.00	4.50	0.00	0.00	0.00	0.00

Figure 2: Lift chart for 'highly likely' category of output variable.

total number of respondents falling under 'highly likely' category of output variable from the overall respondents and from respondents in that node, respectively. The last column in Table 8, that is, the Gain index percentage indicates how much greater the proportion of the given target category at each node differs from the overall proportion. Nodes with index value greater than 100 per cent indicate that there is a better chance of getting respondents who will respond favourably to the offering by selecting records from these nodes instead of randomly selecting from the entire sample. Thus, looking at the index values in the last column it can be deduced that nodes 5 and 6 have the highest possible success rate for the entire sample, with a value of 287.77 per cent and 207.97 per cent, respectively.

This indicates that there are almost 2–2.5 times better chances of getting a hit with these records. Thus, it is advisable for the company to target customers matching/replicating the profile of respondents depicted in node 5 and 6.

Figure 2 or the lift/index chart shows that the company can target their telemarketing offer to cases/records up to the top 35th percentile after which the response rate falls steeply. The lift chart plots the values in the Index (%) column in the Gains table. The lift chart compares the percentage of records in each increment that are hits with the overall percentage of hits in the training data.

INTERPRETATION AND CONCLUSION

This study classifies customers on the basis of their attitudes towards telemarketing and their willingness to respond to telemarketing offers. Some implications for marketers follow from the results of this study. The predictive model obtained through C&RT shows the profiles of customers having a positive attitude towards telemarketing vis-à-vis customers having a negative attitude. Out of the obtained two segments in the population, telemarketing companies should target the first segment, that is, customers having a positive attitude towards telemarketing, because this group consists of those people who are interested in the information provided by these companies and their offers. The model developed using C&RT can be used to effectively pick out and gauge customer segments that are more open to and willing to accept telemarketing offers.

Customers who have a positive attitude towards telemarketing need to be targeted by

the companies, and should be retained for a long period of time so that these satisfied customers can spread positive word of mouth to propagate this mode of advertising, and at the same time act as agents to making telemarketing acceptable among customers with negative attitudes.

The decision tree generated using the C&RT technique provides an interesting way for the manager to work out rules to determine potential risk areas and fields of improvement. Analysis of the rules related to customers who are not likely to respond to a telemarketing offer clearly shows that there seems to be a deep-seated fear in their minds that the information they are giving out to companies can be misused and can be passed on to other companies. The spate of scams that have come to light in this area in the recent past have not improved the situation in any way and tends to instil still more fear. It was also seen that customers do not believe that the offers being made by telemarketers and the information being given to them is of much use. Somewhere the feeling is rampant that the companies are more concerned in selling their products any which way and not in fulfilling the needs of their customers. Therefore, customers believe that when marketers call them at odd times – during work hours, early in the morning or late at night – it shows lack of concern on the part of marketers towards their customers, and these calls end up being disturbing and an irritant rather than something they would respond favourably to. Customers also have a feeling that companies really do not respond to their requests to not call them in the future, as it is generally felt by customers that complaints made by them have not been taken into consideration by the companies and that no steps have been taken in response to these complaints.

The model depicted in this study clearly shows that if marketers are able to convince customers that they are careful in handling the information given by customers and can assure them of maintaining the privacy of the same, it would go a long way in improving the attitude of customers towards telemarketing. The marketers also need to understand that taking the likes and dislikes of customers into consideration in respect

of timing of calls, frequency and regularity of calls, and respecting customers' decisions in case they do not want to be called is important. Communicating to customers and instilling in them the belief that they are providing them some useful information or good deals can also go a long way in making the attitudes of customers more positive. Thus, marketers must prepare to address important issues such as privacy, trust and attitudes of customers before undertaking telemarketing as a full-fledged exercise.

LIMITATIONS OF THE STUDY AND DIRECTIONS FOR FUTURE RESEARCH

The sample for this research was based on the respondents of a specific geographical area. As it was not possible to cover the entire population of India because of deficiency of time and money resources, the study was confined to respondents from only two cities (Lucknow and Kanpur) of the state of Uttar Pradesh in India. Two hundred respondents were chosen from each of these two cities. The small sample of the study and restriction of the survey to two Indian cities poses a major limitation to the extent that this sample can be projected to the entire state, country or foreign countries. There is no denying the fact that because of socio-economic and cultural differences there is a variation in perceptions of people. Thus, the study could be extended to other parts of the country, so that the findings may be more useful. Subsequent researches are needed to assess the generalizability of these findings to Indian customers at large.

The ever-changing nature of marketing environment advocates a constant need for updating knowledge regarding customer attitude. Therefore, a longitudinal study at some point in future examining whether the attitudes found in this study remain constant over time would be useful.

This study focused on general situations and purchase of general products or services in response to telemarketing offers. Thus, although the results of this study provide insight into the general willingness and attitudes of customers

towards telemarketing, such willingness and attitudes will vary as a function of product and situational characteristics. Therefore, a study taking specific products and situational characteristics into consideration can be undertaken.

Despite these limitations, the findings illustrate the value of a comprehensive approach to examining Indian customers' attitudes towards telemarketing and issues related to it. The fast pace of change in the technological environment and the rapid growth of Internet and e-commerce make it imperative that further research should focus not only on the general marketing environment, but also on the electronic, computer-based marketing environment. Given the importance of privacy concerns in influencing customer's attitude towards such marketing practices, research involving privacy and information issues related to telemarketing and other methods of direct marketing still remains primarily in a nascent stage. The increased proliferation and advances in database, Internet and information-processing technology will further heighten customers' privacy and personal information use concerns rather than diminishing them. In order to successfully respond to and dilute customer privacy concerns while taking care of their interests appropriately and effectively, policymakers, legislators and marketing practitioners will require a proper and a more in-depth understanding of what exactly customers expect and want. Thus, more researches need to be undertaken in this area as extensive research findings will be needed to influence information policies and practices successfully.

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