

Role of Radio Advertisements as Behavioral Driver among Urban Consumers

[**Keywords:** Radio advertisement, sales promotion, retailing, cognitive factors, consumer behavior, information dissemination, urban marketplace, media effect, store choice, competitive strategies]

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Abstract

Radio is an ideal media for marketing fast moving consumer goods because it can reach wide targeted listener demographics in urban habitat. A large number of people listen to radio while commuting in urban areas and respond to the broadcast of various commercial messages. This study aims at analyzing the impact of radio advertisements on urban commuters towards buying behavior in retail stores and attempts to determine the role of radio advertising on dissemination of information on the sales promotions. The impact of radio advertisements on the store choice and buying preferences are analyzed based on empirical investigation. The study reveals that shopping behavior of urban consumer at retail stores in response to radio advertisements is highly influenced by the physical, cognitive and economic variables.

Impact of Radio Advertisements on Buying Behavior of Urban Commuters

Introduction

Store promotions are competitive for retailers as more than the brands the retail store compete in the marketplace in Latin American countries. Hence, retailers are engaged in extensive promotional activity by advertising through all media. Radio advertisements are largely targeted to the urban commuters. Besides media, retailers also outsource sales promoters to deliver gifts and price lists to people at strategic traffic points. Such promotion campaigns allow the store to increase its turnover by achieving a higher volume of sale in the market area, an increase in the frequency of visits, and stimulate spending by consumers in the store. Store-level promotions through radio advertisements help urban commuters to acquire information and take decision on buying or induce family and friends to help in visiting stores to witness promotions and buy. The radio advertisements reinforce a low-price positioning, a key to attract customers of price sensitive segment using an 'everyday low price' or 'everyday new promotion' strategy. However, such a strategy leads to an increase in sales at the expense of a substantial loss in profit in long run (Hoch *et al*, 1994).

Radio commercials hold a marginal share among the main media categories, for example newspaper and television. However, it is still regarded as an important and useful medium in marketing and advertising in large cities and metropolitans. The broadcast of commercials on radio needs real feel orientation and voice is the single major determinant that draws the attention of listeners. Programs on sales and market news are the principal preferences of urban commuters for large metro radio stations (Parker, 1993). The majority of short and informative advertisements for consumer products in an urban setting use radio advertising with communication appeal related to the efficacy of products and psychosocial enhancement of consumers at retail outlets. Promotional efforts by manufacturing and retailing companies appear to focus on positive emotional appeal to influence consumers through radio advertisements (Yusuff and Yusuf, 2009).

Though the print and television media has taken the major share of revenue from commercials, advertisements on radio still hold audience of large cities. However, little research has been published on the impact of commercial broadcast by AM or FM radio on urban consumers. Most studies did not consider radio and outdoor advertising as principal research agenda, despite their importance in business communication, consumer behavior and towards sale stimulation for retailers (Mulhern, 1997; Volle, 2001). This paper aims at analyzing the impact of radio advertisements on urban commuters towards buying behavior in retail stores. The study attempts to determine the role of radio advertising supported by outdoor advertising by retailing firms on situational variables on re-dissemination of information, the store choice and buying preferences based on empirical investigation in Mexico City. The moderating role of individual variables such as past buying behavior and psychodynamics also been discussed in the study in the context of the radio commercials and outdoor advertising. Accordingly, this paper contributes to the existing literature on the subject.

Review of Previous Studies and Hypotheses

Influence of Radio Broadcast

The differential effects of advertising campaign of leading and challenger retail firms on expected sales of products reveal that radio advertisements produce substantial arousal among consumers and enhance volume of sales in various outlets of retail stores. Thus retailing firms replicate this advertising strategy in large cities and metropolitan areas during different leisure sales seasons (Panagopoulos and Green, 2008). Commuters in metropolitan areas enjoy higher quality commercial broadcasts differentiated by music, traffic information and news headlines. Audience in confined place like automobiles in large cities and competitive markets benefit from higher quality radio communication services than household audience listening radio programs at leisure time. However, it is argued that lack of format variety causes low listenership and consequently the competitive markets are underserved by commercial radio stations (Halcoussis and Lowenberg, 2003). The creative strategies used in radio commercials are different and

advertising firms adjust their communication strategies in response to the specific needs of different consumers. The Central Place theory advocates that products with higher price and lower buying frequency influence positively the perception of consumer on the promotional communication of stores delivered through the radio programs and outdoor advertising (Hubbard, 1978; Yadav, 1994). The perception of radio as an intimate medium of communication during the non-availability of visual media profoundly affects the way people consider listening to radio programs including commercials, perform information analysis, and make applied decisions. Since urban commuters have easier access to radio communication, they develop higher perceived intimacy to the broadcasts (e.g. Kuffert, 2009). Hence, the hypothesis is framed as:

H1: Broadcast of advertisements on radio has positive impact on urban commuters towards conceiving and sharing information.

Supermarkets, departmental stores and large shopping malls spend about twelve percent of their operating budget on promotional activities. With regard to specific advertising options like developing appropriate communication-mix and creating messages, the most widely used promotional elements were found to be radio advertising. As retailing firms face a more intensely competitive environment, the need for effective marketing and promotion is increasingly felt to stimulate consumers of all segments (Warnaby et al, 2005). However, some studies had indicated that radio advertisements are fewer stimulants for specific services like travel and tourism than those of visual media though both advertising media and the relative quality of the advertisements presented in the various media drive the effectiveness of the advertisements (Nysveen and Breivik, 2005). The effects of localism in radio broadcasting have attributed to the consumers view that usage of radio in metropolitans is beyond just seeking the traffic information on streets and weather updates. The localized commercials on radio keep consumers also aware about the market movements (Sauls and Greer, 2007). Radio is considered to be popular as an advertising medium among urban commuters. Retailing firms are increasingly integrating direct marketing in radio based communication strategies. Radio advertisements influence listeners on all days of the week and at the time of work. The positioning of advertisements on radio is precise and well targeted to consumer segments

which drive higher response among listeners (Verhoef et al, 2000). Advertisements on radio target audiences along age, gender and ethnic lines and mobilize excitement and gender sensitivity as persuasive techniques to promote products and services during working hours with the view that access to commercial information is a “new cool-tier” of the entertainment industry (Van Guijel *et al*, 2008). Therefore, it is hypothesized that:

H2: Radio advertisements are motivating and capable of driving arousal among listeners.

Emotions and Buying Behavior

Populist style of radio advertisements on sales promotions at retail stores is largely created with humor to add emotional value. Listeners perceive humor and develop attitude towards communication and the brand. The purchase intentions are higher for humorous advertisements containing moderate incongruity than those conveying message directly (Pornpitakpan and Tan, 2000). Different levels of emotions such as warmth, love, longing and desire, happiness and amusement were elicited by different commercials of retail stores. The most memorable advertisements among radio listeners have been those that evoked the most positive feelings and were the best understood. However, need to acquire product significantly affect a person's interpretation and emotional experience of a commercial (Mai and Schoeller, 2009). Radio advertisements drive consumers to remember messages differently in reference to the favorite jingle, program or music. Such beliefs of listeners help advertisement to stay atop of the mind and consumers unconsciously associate with it as a personally relevant information and have an enduring impact on their emotions. Short cycle radio advertising is developed to have an enduring emotional impact on an audience by facilitating their creation of personally relevant understandings of an advertisement (Braun-Latour and Zaltman, 2006). Advertisements develop variety of emotional dimensions ranging from pleasure and activation that include need activation, me too feeling and loyalty to the brand. Such advertisements have a positive influence on consumers. However, some advertisements which do not allow enough time to consumers to analyze the contents and make a buying

decision but dominate over emotions, develop anger, irritation, and stress (Kim, 2000). Therefore the hypothesis is suggested as:

H3 (a): Radio advertisements create appealing messages which generate emotions among listeners and drive consumer needs.

The design of effective communications depends upon an adequate model of the communication process. In traditional model speech conveys semantic information and gesture conveys information about emotion and interpersonal attitudes. Radio advertisements which have more than one voice induce higher emotions as message is split between voice and language which drives significant differences in communicative effectiveness (Beattie and Shovelton, 2005). The emotional content of a retail promotion advertisement is a stronger predictor of buying behavior reflected in message recall rate among audience. In addition, advertisements with high emotional intensity achieve increase in message recall ability among audience. Emotionally arousing advertisements require fewer broadcasts to achieve the same level of recall, and hence are likely to be less expensive to a campaign (Biener et al, 2008). Recall and recognition are significantly affected by the language presented in the advertisement. An advertisement presenting a brand name in the foreign language (English) with the message in the local language is an effective strategy to enhance recall and recognition of the brand name and the contents of advertisement (Ahn and La Ferle, 2008). The use of anchors in radio advertisements determine the attractiveness of the advertisements which in turn affect the recall of brand attributes among listeners. Voice modulation of anchor (s) of an advertisement also affects the brand attribute recall from the message conveyed (Garretson and Burton, 2005). Hence, the hypothesis is delineated as:

H3 (b): Attractive and emotional radio advertisements drive faster recall and recognition of the message and brand.

Advertisements as Decision Drivers

Listening to radio while travelling either by public or personal transport in metropolitans has become a way of life which is not only used as a relaxing tool but also as a source to seek current information and track events. Certain advertising attributes of radio commercials trigger emotional responses and advertisements stimulate audiences in a pleasurable way. Most radio commercials address retailing campaigns that elicit an emotional response, especially happiness among consumers (Chaudhury and Watt, 1995). Consumer products companies use radio for campaigns more than television, as precision and effectiveness of message is possible by more meticulously targeted radio advertisements than broadcast over the visual media (Overby and Barth, 2006). In developing countries the radio advertisements enhance the pleasure of entertainment as well as serve as source of current market information. It is observed that short-term effect of radio advertisement towards store-level promotions and store choice is significant, though choice is mainly driven by loyalty. Broadcast of advertisements on radio are generally loud, compressed and often music suppresses the contents of the message. Thus, radio advertisements sometime fail to generate shopping arousal among listeners (Volle, 2001).

The retail industry largely dominates commercial radio stations who bought advertising time in a variety of forms and were broadcast to generate awareness among consumers. As the radio commercials contain more sales information, could drive consumer decisions based on competitive dynamics and organizational fitness (Lippmann, 2007). On these commercial FM programs, a commercial is viewed as a key sign of emotional directness, authenticity, and intimacy. Radio stations broadcast the combinations of local and commercial content to consumers with preferences over those combinations (Richardson, 2006). Broadcasts on store based promotion increase the intention to purchase and its effect is felt stronger when the advertisement is accompanied with a special-price or volume offers. Radio advertisements are of short duration with compressed contents and are frequently inserted in a program which drives intimacy of listeners (Inman et al, 1990; Walter and Mckenzie, 1988). Accordingly, the hypothesis is proposed as:

H4: Radio advertisements penetrate fast and drive positive effect on listeners towards determining store choice and buying probabilities.

Broadcast of commercials on radio has undergone a variety of shifts from short announcements to jingles and now interactive commercials are becoming more attractive to the radio listeners. Interactive radio commercials are based on consumer experiences of buying in real-market conditions that build confidence of consumers. The interactive commercials are participatory and developed on the triadic focus of product, company and retailer. Such interactive commercials have stronger effects on listeners as they drive both aura and arousal (Potter and Naidoo, 2009). Entertainment oriented formats of commercial broadcast such as radio talk shows related to new products, promotions and customer services offered by competing firms continue to gain audience interest. Such commercial programs on radio have shown higher retention and recall of information, personal involvement, attention and perceived credibility of information presented in the radio programs by audience and prospective consumers (Lowrey et al, 2008). Many radio commercials use background music to accompany a message. In high-cognition advertisements brand congruent music results in a more positive attitude towards advertisements. Music congruence in radio commercials drives listeners towards the embodied meaning of advertisement with the varied degree of stimulation (Zhu and Meyers, 2005). However, the Internet has attracted audience towards web advertising as it is accessible to large number of people in the workplace. Some companies administer restrictions on internet usage which increases higher dependency on radio broadcasting channels for on-work entertainment.

H5: Radio advertisements are more appealing because they add value to entertainment programs by disseminating the information on store based sales promotions

Theories of interactional behavior are influenced by extrinsic sources such as viewing, listening and reading, and they attribute to the buying behavior considering a combination of situational store-level promotions including media communications and

individual factors in determining buying decisions. The store-level promotions guide consumers on the store choice, distance, and loyalty variables (Punj and Stewart, 1983). In reference to grocery shopping it is postulated that store-level advertisements on radio appear as unexpected information and listeners are driven by these messages to make quick shopping agenda. Specific store based radio advertisements on sales promotions that announce list price stimulate mood and congregate shoppers' crowd. Price promotions on radio attract larger number of consumers in retail stores and lay positive effect on the likelihood of consumers making purchase. The effect of price promotion on consumers' spending in a store is significant, but varies with the type of promotion employed (Lam et al, 2001). Consumers' response to the price sensitive radio advertisements is seasonal which varies according to festive days in a region. The retail price equilibrium and the advertising level equilibrium are characterized in centralized retail chain stores in urban settlements. It is observed that low retail prices and optimal frequency of advertisements in audio-visual media attract large consumer traffic in the retail stores during the stipulated days of sales promotion (Xiong and Nie, 2009). Accordingly, the following hypothesis is proposed:

- H6:** The effect of price based radio advertisements highly stimulate store choice probabilities and build favorable consumer attitude toward the purchase of products on promotion.

The conceptual model and hypotheses framework is exhibited in Figure 1 which argues that this study is laid on the foundation of two fundamental premises AIDA and ACCA. The variable of Attention, Interest, Desire and Action constitutes the AIDA concept while Awareness, Comprehension, Conviction and Action are integrated in the ACCA paradigm of consumer behavior. The main AIDA influence is the ability of advertisement to hold attention and drive the subject into action. Factors of AIDA also help retailing firms and brands stand in from the competition, and make advertisements more memorable, as well as enhancing brand awareness, particularly for desired products (Premeaux, 2006).

//Figure 1 about here//

ACCA paradigm of consumer behavior argues that awareness on the sales promotions in convergence with the contents of advertisements generates conviction among the consumers which leans towards action resulting into the store choice and buying decision (Rajagopal, 2008). It is observed that consumers will stand by their convictions of store choice when the advertisement on sales promotions appear ethical and the stores employ the policies on guarantee of return or exchange of goods purchased. It is believed by the consumers that a strong conviction towards buying decision can be effectively brought into action provided it is based on the accurate and acceptable information (Callen-Marchione and Ownbey, 2008).

Study Design

Sampling

This study has been conducted in 4 corporate offices of multinational companies in Mexico City with a total strength of 3492 employees, of which 1422 employees (40.72) were covered under this study. Among the selected subjects for the study 43.67 percent employees commute on their own transport (car), 54.18 percent used public transport, and 2.15 percent employees were able to either walk down or used bicycles to reach their workplace. Employees using public transport had travelled either in public road transport, which is very convenient, or used metro train for fixed destinations. Commuters were categorized into 3 principal road transport routes and associated feeder routes of 9 metro rail lines in Mexico City. The attributes of the respondents commuting every day from residence to respective workplaces are exhibited in Table 1.

//Table 1 about here//

The sample respondents selected for the study frequently commute to their workplaces from the residential areas located in the southern, northern and suburban habitats in

Mexico City. These respondents commuting by public and personal modes of transport had shown homogeneity in travel behavior and acquiring information through media in reference to leisure shopping, store promotions, store choice, point of sales promotions, buying decision process, and shopping arousal during travel time. Data was collected administering pre-coded structured questionnaires to 1550 commuters who were selected following a purposive sampling and snowballing technique. Information collected through the questionnaires were reviewed for each respondent to ascertain quality and fit for analysis.

Data Collection Tools

The study was conducted during 2007-09 in different festival seasons broadly categorized as three seasons: April-June (Spring sales following the occasions of Easter vacations, mother's day and father's day), July-August (Summer sales) and November-January (Winter sales following prolonged Christmas celebrations), when retailing firms including supermarkets, departmental stores and shopping malls advertise sales promotions frequently on radio. February, September and October months are observed to be lean seasons for shopping by the retailing firms and the frequency of advertisements broadcast on radio is minimal. The data collection process was initiated in April 2007 and terminated in January 2009 covering 6 shopping seasons during the study. A focus group session was organized with potential respondents during January –March 2007 to identify most appropriate variables for the data collection. Accordingly, 38 variables closely related towards influencing the shopping arousal and customer satisfaction on point of sales promotions were selected and incorporated in the questionnaires. The questionnaires were pilot tested to 192 respondents (13.50 percent of total sample size) randomly selected, and finalized after refining them based on the responses during the pilot study. The variables selected for the study have been broadly classified into economic and behavioral variables as exhibited in Table 2.

//Table 2 about here//

A decision intercept survey was conducted, and visitors to retail stores were asked how they got the information on sales promotion in the store and whether this visit to the store was predetermined. More attractive sales promotions at stores are expected to attract customers for impulsive buying. Radio and outdoor advertising indicate that perceived crowding and employee friendliness jointly influence impulse buying, hence these two factors need to be considered together in store promotions (Mattila and Writz, 2008).

A questionnaire was developed to investigate the extent to which buying behavior of urban commuters is influenced by radio advertisements resulting into derived post-buying satisfaction and augmented volume of sales of the retail stores. Pre-test of the preliminary questionnaire on measuring the influence of radio advertisements on store sales promotions indicated that broadcast of information on promotional offers introduced by the retailers acted as strong stimulus for the urban commuters who got personally involved in shopping or guided family and friends towards buying. Based on responses from the pre-test, the final questionnaire necessitated no significant changes. The questionnaires were translated in Spanish. All care was taken about the terminology and language being employed in each version of the questionnaire. The variables used in the questionnaire for data collection include various perspectives of customer perceptions and promotional practices offered by the retailers to gain competitive advantage, optimal market share and higher aggregate sales. The descriptive statistics of the data sets for the variable segments used in the analysis of the study is exhibited in Table 3.

//Table 3 about here//

Data was collected by means of personal interviews by undergraduate students of international commerce and marketing who hand-delivered the questionnaires to the key respondents of the selected corporate offices who had agreed to be the subjects of the research investigation. In most cases, the respondents completed and returned the questionnaires on the predetermined date.

Response Trend

Questionnaires were administered to 1550 respondents selected for the study. However, during the process of data analysis, questionnaires of 128 respondents were omitted due to paucity of information. In all 1422 respondents were covered under the study and the usable response rate was 91.74 percent. The non-response bias has been measured applying two analytical techniques. Firstly, telephonic conversations were made with 32 randomly selected non-respondents (25.0 percent of total non-respondents) responding to some general questions about radio listening practices, lifestyle, attraction towards sales promotions and shopping behavior (Gounaris et al, 2007). Paucity in data leads to some assumptions that are random and untenable; thus it becomes necessary to measure the impact of missing data indicators, which carry information about the parameters of the complete data set. Within a given application, however, it was believed that some aspects of missing data are ignorable (*e.g.* Harel and Schafer, 2009). Secondly, T-tests were used to ascertain emerging differences between respondents and non-respondents concerning the issues pertaining to radio advertisements and stimulation on buying behavior. No statistically significant differences in pre-coded responses ($\alpha = 0.127$) were found. A second test for non-response bias examined the differences between early and late respondents on the same set of factors (Armstrong and Overton, 1977) and this assessment also yielded no significant differences between early and late respondents.

Construct of Measures

Logistics and accessibility to information during commuting from residence to workplace and intermittent travels during the working hours is measured with 16-variables (logistics related - VS1-7 and information attributes (VS2-9) self-appraisal perceptual scale derived originally on the basis of focus group analysis as referred in the pretext. All variables selected for the study are exhibited in Table 2. Motivation about this construct has been derived from the research study by Volle (2001) on effects of store level promotions on store choice and buying behavior that conceptualized multinomial logit (MNL) models of store choice on panel data, using promotional variables, loyalty, and moderating variables for estimation of effects of store promotions. The estimations were derived by fitting the data into multivariate construct comprising effects of radio advertisement,

information analysis patterns, and inter-decision coordination as principal behavioral components. This scale also comprised triadic decision process coordination among three factors - sales promotions advertisements, store choice and buying behavior (Rajagopal, 2009). Cognitive variables (VS₃₋₈) related to the impact of radio advertisements on arousal and merriment among urban commuters have been appraised in reference to message contents, creative communication, need stimulation and various sensory appeals. The variables concerning economic advantages driving buying behavior through the radio advertisements include comparative advantages (VS₄₋₆) in shopping and store promotions (VS₅₋₈) which affect the store choice and consumer satisfaction.

Variables of all the segments discussed above have been measured using five point Likert scale through self-appraisal perceptual technique. Perceptions are important in determining cognitive appraisal which is predominately based on the rationale of judging its overall determinants affecting the situation of the subject. Such cognitive appraisal technique relies heavily on self-report questionnaire responses and can be employed for measuring attitudinal and behavioral outcomes (Wright, 2004). This scale was employed to measure the efficiency of customer services delivered by the automobile dealers in the study region. Respondents were asked, on a five-point Likert scale (anchored by strongly agree=1/strongly disagree=5), the extent to which quality management practices were implemented. The Likert scale was used also in other studies based on the analysis of general shopping and travel-related attitudes to measure price and time consciousness and impulse buying (Mokhtarian et al, 2009). The chi-square and comparative-fit index for the factor loadings were also analyzed for the model. Measures were validated and performance construct for the point of sales promotion was developed for the scores that emerged out the data analysis. Regression analysis was performed in order to ensure that the results on these constructs become non-correlated with the mutual interaction terms (Jaccard *et.al.*, 1990).

Structural Equation Model (SEM)

Structural equation models are also known as simultaneous equation model. In order to analyze the effects of different variables identified in the study on the customer value of buying in the shopping malls, structural equations model is derived. Multivariate regression technique has been used to estimate equations of the model. These structural equations are meant to represent causal relationships among the variables in the model (Fox, 2002; Rajagopal 2009). Methodology of synthesizing findings in the context of Structural equation modeling (SEM) is known as meta-analytic SEM. Although correlation matrices are usually preferred in this process, there are cases in which synthesizing covariance matrices is useful, especially when the scales of the measurement are comparable. Thus, SEM is widely used as a statistical framework to test complex models in behavioral and social sciences (Cheung and Chan, 2009). Let us assume that the attractiveness of radio advertisements at time t is (A_{rad}^t) and sales promotions in retail stores is $(SP_t^{(i_1+i_2+i_3+...i_n)jh})$ with comparative promotional offers $(i_1, i_2, i_3, ...i_n)$ towards newness of products, price, guarantee, customer services and the like in j^{th} store at a given time t in a marketplace location h . Shoppers perceive value in sales promotion offers brought to their notice through entertaining radio advertisements that prompt shopping arousal (A_{am}) and lean towards buying considering price advantages (B_{sp}) by determining the store choice (R_{bs}) in response to radio advertisement. Hence, the consumer response to a radio advertisement may be measured as:

$$A_{rad}^t = \sum_t^{jh} [SP_t^{(i_1+i_2+i_3+...i_n)jh}] [B_{sp}, A_{am}, R_{bs}] \quad (1)$$

Hence,

$$A_{rad}^t = C_b^{jh} \frac{\partial q}{\partial t} = C_b^{jh} \left(\frac{\partial b'}{\partial k} \right) \left(\frac{\partial k}{\partial x} \right) = C_b^{jh} \frac{\partial q}{\partial k} [B_{sp}, A_{am}, R_{bs}] \quad (2)$$

wherein (C_b^{jh}) denotes buying orientation of shoppers in a store (j) at location (h) , (q) represents response time to radio advertisements on sales promotions in stimulating preferential shopping interests (k) at a determined store. In the equation b' expresses the

volume of buying during the visit to the store. The total quality search performed by the consumer in an opted retail store to make purchases ($\partial_t / \partial_k > 0$), and customer services offered by the stores affecting the level of satisfaction ($\partial_{b'} / \partial_k > 0$) increase simultaneously during the process of buying. In reference to the size of promotional offers in a store (α), preferential shopping interests (k) of consumers create lower values with smaller size of promotional offer to ($\partial_k / \partial_x < 0$) while the choice on buying products in the store enhance the consumer value ($\partial_{b'} / \partial_x > 0$) irrespective of sales promotions and price advantages.

$$\ddagger \int C_b^{jh} + b' = \int A_{am} + B_{sp} + R_{bs} + V_b \quad (3)$$

In the above equation V_b denotes the customer value generated in shopping with competitive advantage over time, distance, price and promotion. In order to measure variations in the shopping arousal and buying decisions influenced by radio advertisements in the three festive seasons as discussed in the pre-text, initial robust weighting matrix and optimal weighting matrix were employed using the equation:

$$V_b = \frac{\mu b'}{\mu k} (C_b^{jh}) \left[\beta (\gamma_1 + \gamma_2 + \gamma_3 + \gamma_4) B_{sp} \right]^{jh} \quad (4)$$

The above equation represents the response of shoppers to radio advertisements in preferred store (j) at location (h), (μ) denotes the consumer preference for the products tagged with promotions in the store, (γ_1) represents the store choice influenced by physical variables, (γ_2) denotes inclination towards buying decision persuaded by cognitive variables stimulating arousal and merriment among consumes, (γ_3) shows the buying behavior derived by the economic variables, (γ_4) indicates attitude towards sharing information disseminated by radio advertisements with family and friends, and (β) refers to the structural parameter relating to the endogenous variables to one another. Ordinary Least Square (OLS) method to measure the customer value for buying in shopping malls (dependent variable) in reference to the above discussed physical,

cognitive and economic variable (independent variables) has been computed using the construct as below:

$$V_b = \alpha + \beta_1(B_{sp}) + \beta_2(A_{am}) + \beta_3(R_{bs}) + \beta_4(S_{b'}) + \beta_5(S_q) + \beta_6(C_m) + \varepsilon \quad (5)$$

In the above equation ($S_{b'}$) denotes volume of buying by the shoppers in chosen retail store, (S_q) represents frequency of radio advertisements that influence shoppers during the festive seasons discussed in the pre-text, and response time for consumer to radio advertisements in making buying decisions is indicated by (C_m). The error term is denoted by ε in the above equation.

The model explains that the value based radio advertisements on sales promotions stimulate buying behavior of consumers in reference to cognitive pleasure, value for money, reliability, safety, and comfort. However, radio advertisements generate price sensitivity and store loyalty.

Results and Discussion

Public Transport and Radio Networks in Mexico

The Metropolitan area of Mexico City is one of the largest and rapidly developing urban areas with increasing traffic problems. Mexico City has approximately 3.2 million vehicles and an atmosphere containing a complex cocktail of pollutants covering an area where more than 20 million people work, live, and commute every day (Gomez-Perales et al, 2004). The distribution paradigm of the transport sector in the city has shifted from medium (buses) and high capacity (Metro, light rail and trolley bus) to low-capacity motor vehicle (minibus, combis, taxis and private cars) since mid 90's. Among the low-capacity vehicles, minibus shows the highest load of carrying 6-8 percent of commuters in the metropolitan area (SETRAVI, 2002).

There are over 100 radio stations operating in Mexico City. The popular radio stations are owned by Instituto Mexicano de la Radio (Mexican Radio Institute), Grupo Radio Centro (Central Radio Group) and Grupo Formula (Formula Group). Instituto Mexicano de la Radio (IMR) was founded in 1983 and it operates 17 regional radio stations in AM/FM bandwidth¹. The popular radio stations in Mexico City are run by Grupo Radio Centro (GRC). Of the 14 stations owned by GRC, it operates 5 AM and 6 FM bandwidth radio stations in Mexico City. Remaining three radio stations are being operated by the third party². RADIO FORMULA SA is a company operating in the Valley of Mexico established in 1968. Currently this company owns 35 radio stations and 48 affiliates spread across the country. The frequencies of broadcast of Radio Formula include XEAI-AM 1470, XEDF-AM 1500, XEDF-FM 104.1, and 103.3-FM XERFR XERFR-AM 970; the latter two are transmitted simultaneously and have national coverage³. Besides radio stations that broadcast entertainment programs and commercials, since the late 1970, the Mexican state has developed an indigenous-language radio network of 24 stations. Now the state has invented a new media formula as 'radio stations with community, indigenous participation'. In 2004, the government commission of indigenous affairs obtained broadcasting permits for three low-power stations (Castells-Talens et al, 2009).

Consumer Advantage Analysis

The frequency of listening to the radio advertisements has significant impact on making buying decisions. Statistical estimations of principal variables of structural equations explained in equation (4) are exhibited in Table 4.

//Table 4 about here//

In the above Table, estimates of major variables are adjusted to the pattern of shopping seasonality induced by sales promotion offerings by the retailers using a fixed 4 weeks time lag of each explanatory variable, and included in the regressions. It is observed

¹ Instituto Mexicano de la Radio <http://www.imer.com.mx>

² Grupo Radio Centro <http://radiocentro.com.mx>

³ Grupo Formula SA <http://www.radioformula.com.mx>

from the results that consumer behavior towards shopping at retail stores in response to radio advertisements are highly influenced by the physical, cognitive and economic variables. Radio advertisements delivering promotional messages on sales of products in exclusive showrooms of high products with high brand equity like Sony (audio-visual) and Dolce & Gabbana on seasonal collections, drive store choice ($\gamma_1 = 0.752, p < 0.01$), induce shopping arousal ($\gamma_2 = 0.851, p < 0.01$), and prompt consumers on buying larger volume of products tagged with promotions ($\mu\hat{b} = 0.712, p < 0.01$). Similarly radio advertisements on sales promotions offered by supermarkets also generate higher shopping arousal and merriment ($\gamma_2 = 0.814, p < 0.01$) and motivate consumers towards buying increased volume of products under various promotional offers ($\mu\hat{b} = 0.724, p < 0.01$). The economic factors (γ_2) driven by radio advertisements that influence consumers include product attractiveness, low price, buying schemes (easy payment schemes on prolonged installments without interest), user friendly technology and easy product servicing policies offered by supermarkets, departmental stores and exclusive showrooms. Advertisements that generate higher level of involvement drive higher levels of arousal among consumers with lower levels of information analysis. On the contrary consumers under low-involvement conditions tend to reach deeper levels of information processing that develop lower levels of buying arousal among consumers. Involvement is a complex construct which encompasses many different dimensions such value for money, competitive advantage, perceived risk and customer services. Each of these dimensions lead to different effects, and comprehension of advertising message also determines the extent of information processing.

The results presented in Table 4 indicate that urban commuters who listen to the radio advertisements concerning sales promotions, not only conceive them for own benefit but also share the information with family and friends. However consumers attempt to acquire information from alternate sources, most effectively through word of mouth for analyzing the message conveyed through radio advertisements. Accordingly, consumers reach deeper levels of information processing under low involvement using their knowledge on sales promotions to determine the level of perceived risk (Van Raaij et al,

2001). The results reveal significant attitude towards sharing information (V_4) on sales promotions offered by different store types. Accordingly, the results have been found consistent with hypotheses **H1**, **H2** and **H3 (a)**.

Impact on Decision Making

Sales during the festive seasons are more stimulating for the consumers as most retail outlets offer attractive promotions. Radio advertisements carry surprises on sales promotions every day during the season which keeps radio listeners and consumers excited. The results of the study on impact of radio advertisements on buying decisions are exhibited in Table 5.

//Table 5 about here//

The radio advertisements have shown sustainable recognition and recall of brands tagged with promotions in different retail outlets. These short radio advertisements (average 12 seconds) with high frequency (6-8 insertions per hour), prompt quick consumer decisions on store choice and shopping of the promotional products. The results exhibited in Table 5 reveal that the frequency of advertisements on sales promotions of supermarkets ($\beta = 0.592, p < 0.01$) on radio is broadcast with higher frequency as compared to department stores ($\beta = 0.516, p < 0.05$) and exclusive stores ($\beta = 0.387, p < 0.10$). The response time of the consumers to make shopping decisions in the super markets ($\beta = 0.630, p < 0.01$) and department stores ($\beta = 0.684, p < 0.01$) in reference to the radio advertisements on sales promotions, is found to be lesser than in exclusive showrooms. The supermarkets covered under study include Wall-Mart, Commercial Mexicana, Soriana and Chadurau, while department stores encompass Liverpool, Sears, Sanborns and Palacio de Hierro located in the Federal District of Mexico. Accordingly, the results discussed above are consistent with hypothesis **H3 (b)**.

Volume of buying and store choice has dyadic relationship based on the consumer experience and intensity of influence of radio advertisements. The results presented in

Table 5 divulge that though store choice of supermarkets vary according to the consumer experience with the store, the volume of buying stands independent of this factor. It is found that consumer lean towards buying large volume of products under promotion in supermarkets ($\beta = 0.653, p < 0.01$) and department stores ($\beta = 0.651, p < 0.01$) despite variations in choosing supermarkets by locations ($\beta = 0.425, p < 0.05$) based on their previous buying experience. Hence, the results conform to the hypothesis **H4**.

It is observed during the study that radio audience (urban commuters) was attracted towards those advertisements which were more entertaining while disseminating the message. Such advertisements were frequently anticipated by them not only for entertainment but also to analyze the message carefully assessing the comparative benefits. The results shown in Table 5 indicate that higher shopping arousal is driven by the advertisements that are also entertaining. Radio advertisements on sales promotions of exclusive showroom like ZARA, SONY, Hugo Boss are more entertaining which result into higher shopping arousal ($\beta = 0.717, p < 0.01$) as compared to the radio advertisements of supermarkets ($\beta = 0.671, p < 0.01$) and department stores ($\beta = 0.629, p < 0.01$). Therefore, it may be stated that the results discussed above support the hypothesis **H5**. Radio advertisements on sales promotions carried variety of information focused on newness, service guarantees, credit availability, and delivery options for products tagged with promotional offers. It was found during the study that most of the radio advertisements had not only driven arousal among consumers but also induced on voluminous buying in supermarkets ($\beta = 0.639, p < 0.01$) and department stores ($\beta = 0.658, p < 0.01$). However, price discounts or indirect incentives on price such as buy three for the price of two, did not seem to be stimulating in the exclusive stores ($\beta = 0.511, p < 0.05$) due to narrow range of product choice. Accordingly, the results discussed above appear to be consistent with the hypothesis **H6**.

//Table 6 about here//

The correlation matrix of principal variables of construct is exhibited in the Table 6 which reveals that the broadcast of entertaining messages on radio had quick consumer

response ($V_2, V_3: r = 0.694, p < 0.01$) towards buying and shopping arousal reflecting as *me too* feeling ($V_2, V_7: r = 0.791, p < 0.01$). Trustworthiness of messages had positive implication on the response time and volume of buying ($V_1, V_3: r = 0.648, p < 0.01$). The advertisements carrying price-led sales promotions were found to be attractive and boosted shopping arousal ($V_6, V_7: r = 0.819, p < 0.01$) of consumers which resulted in higher volume of buying ($V_6, V_5: r = 0.675, p < 0.01$). The overall relationship of variables on price advantage, choice of stores, and volume of buying showed high correlations among them. Accordingly, the results discussed in the above are found consistent with the hypotheses **H3 (b), H4, H5 and H6**.

Managerial Implications

Consumer decision making in a competitive marketplace is complex due to the narrow time availability and broad range of product and store choice. Outdoor advertisements of retailing firms help in fastening the process of making buying decisions among consumers. In the retail marketplace every firm develops push strategy to stimulate consumers to instigate buying behavior. Traditionally, limited awareness of consumers guided the decision to buy through a discount superstore or a pricey boutique. It was a fair assumption of retail stores that certain customer types were held captive by certain channels. The situation is different today and managers should understand that consumers have now become unfettered and have gained better analytical insights to make a sustainable and value led buying decisions. As their channel options have proliferated, they've come to recognize that different channels serve their needs better at different points in the buying process. Hence managers of retail stores should consider *value pilfering* strategy in educating consumers through the advertisements which should be able to generate higher buying arousal among consumers and push increasing volume of sales (e.g. Nunes and Cespedes, 2003). The radio advertisements should be focused on driving consumer mind-set toward volume of sales and not just catering to target consumers. A company should design advertising pathways across channels to help its customers get what they need at each stage of the buying process. In urban habitats, leisure shopping is not as effective as radio advertisements for consumers to know sales

promotions across the stores. Thus, radio commercials have significant role in stimulating the buying decisions of urban consumers. Managers of retail stores should develop media content with more entertaining jingles, punch lines and dialogues, meticulously targeting on consumers attention, interest and desire in order to drive their quick response to relevant commercial messages.

Consumers in the competitive marketplace in urban habitats are being packed with an overwhelming array of product and market information. However, to narrow down the scope of information generated by advertisements and filter them to the top of the mind level, advertisement should address carefully 4Rs - responsiveness, repositioning, rightfulness and reasoning. Advertising managers of retailing firms need to affirm their strategies in reference to 4Rs to motivate consumers (e.g. Locke, 2000). Radio stations in urban areas develop niche of listeners overtime based on the categorical preferences of audience on the programs. Listeners in the niche benefit from higher quality radio services where quality is defined as fewer commercial broadcasts with innovative techniques. It is important for the retailing firms to use new ideas and techniques in designing advertisements for broadcast on radio. Firms may explore suitable anchors of radio program that have personal interest in specific product, store or services and deliver message on air during program. This will give an additional endorsement to boost the impact of the commercial.

The life-cycle of radio advertisements is short unless they deliver top of the mind impact on listeners. Thus old advertisements should be replaced periodically as most jingles of a radio commercials last for 30 seconds are heard few times a day and then they go off the air. Retail advertisers should be aware of the value dimensions that are crucial to the receptivity to radio advertising within specific target markets. Such understanding would enable managers to develop tailored messages to achieve advertising goals more effectively and efficiently (e.g Kim and Kim, 2008). Developing radio commercials and their broadcast are cost effective and influential for urban commuters provided right strategies are adapted for disseminating messages. Attributes of radio advertisement

should be selected with a view to elicit emotional responses and advertisements employ such features in order to stimulate audiences in a pleasurable way.

Conclusions

Radio is an ideal media for marketing fast moving consumer goods because it can reach wide targeted listener demographics in urban habitat. Media preferences have revived radio listening as source of mobile entrainment among urban commuter. Radio advertisements that are anchored using new approaches have emerged as purposeful cross-cultural communication and public hearing (O'Donnell, 2009). This study on impact of radio advertisements on consumer behavior revealed that advantage shopping at retail stores in response to radio advertisements is highly influenced by the physical, cognitive and economic variables. In analyzing the relationship between firms' sales and advertising this study differentiates between the type and content formulation of the advertising message, and the effectiveness of medium used to communicate it. Radio advertisements propagating promotional messages on sales of products have quick response to the supermarkets and department stores. Listeners of radio commercials are attracted towards advertisements which are more entertaining while disseminating the message. Commercial broadcasts on radio on retail prices and variety of sales promotions induce listeners to acquire a better understanding of the end benefits and drive cognitive effects towards making buying decisions. Advertisements on radio are designed around the concept of customer value and focused to deal with widespread retail competition, and knowledgeable and empowered consumers.

Limitations of the Study

Like many other empirical studies this research might also have some limitations in reference to sampling, data collection and generalization of the findings. The samples drawn for the study may not be enough to generalize the study results. However, results of the study may indicate similar pattern of shopping behavior of urban consumers in

response to radio advertisements also in reference to other Latin American markets. The findings are limited to Mexican consumers and convenience sampling. Other limitations include the qualitative variables used in the study which might have reflected on making some causal statements. However, future studies could avoid these limitations by using data from several countries, representative samples, and additional variables.

Future Research Perspectives

The preference for radio advertisements are increasing in urban areas as they are cost effective, precise and easy to listen without interrupting the work on hand like driving, reading, and attending to office work. There are not many studies available on broadcast of commercials on radio. Future studies may be directed towards measuring the impact of these advertisements in specific sectors including fashion goods, sports goods and over the counter pharmaceutical products, in reference to reach and frequency of broadcast. Another interesting area to explore research may be to study the ways in which advertisers can use athlete endorsers to derive higher impact on listeners. Future research may also include a wider range of price advertising strategies on radio and examine impact factor scorecard.

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Table 1: Attributes of Urban Commuters

(n=1422)

Mode of transport	No. of respondents	Commuting Variables			Radio listening	
		Distance travelled	Duration of travel	Frequency per week	Preferred time	Duration
Personal Car ⁺	492 (39.61)	112.2	2.55	5.24	T1-T2	2.18
Chartered Vehicle	132 (9.28)	72.63	1.34	5.00	T1	1.19
Public Road Transport	381 (26.79)	83.75	2.23	5.61	T1-T2	2.20
Metro Rail Network	417 (29.32)	94.6	0.46	5.19	T1*	0.24

⁺Including car pool conveyance

*Radio on personal device like mobile phone

Table 2: Variables Chosen for the Study

Physical variables		Cognitive variables	Economic variable	
Logistics Related	Information Attributes	Arousal and Merriment	Comparative	Sale promotion ba
VS ₁ (7)	VS ₂ (9)	VS ₃ (8)	VS ₄ (6)	VS ₅ (8)
Distance Mode of transport Travel comfort Travel time Entertainment Personal interactions Security standards	Public audio system Radio channels Radio program focus Program attractions News and Music Advertisements Type Frequency Contents Listening Clarity Duration Comprehension Impact factors Take away analysis	Message contents Creativity Voice and anchor Need stimulation Experience sharing Recreation Sensory appeals Newness of products	Value for money Price sensitivity Quality difference Customer service Cross promotions Competitiveness Creative sales events Product demonstration In-store advertising Hands-on experience Customer interaction Free samples and gifts	Promotional attracti Products display In-store ambience Availability Length of promotio Responsiveness Value added benefit Partners of promotio

VS=Variable Segment. Figures in parentheses indicate number of variables

Table3 : Descriptive Statistics for the Selected Variable Groups for the Study

Variable Groups	VS ₁ (9)	VS ₂ (12)	VS ₃ (10)	VS ₄ (6)	VS ₅ (8)
Sample Size	1422	1422	1422	1422	1422
Mean	5.309	7.681	7.443	6.291	4.836
Standard Deviation	0.875	0.629	0.643	0.833	.916
Standard Error	0.082	0.073	0.051	0.066	0.068
Skewness	-0.946	-1.122	-0.639	-0.770	-0.643
Sample Variance	0.655	0.596	0.482	0.794	0.804
Data reliability test- Cronbach (α) scores	0.84	0.76	0.88	0.82	0.74

VS=Variable Segment. Figures in parentheses indicate number of variables

Table 4 Estimations of Structural Equations

Study Area		Parameters									
Shopping Clusters	No of Outlets	N (1422)	(V_b)	(γ_1)	(γ_2)	(γ_3)	(β)	($\mu b'$)	(μk)	SE	Chi-Square
Supermarkets	5	418	0.569**	0.721*	0.814*	0.633*	0.633*	0.724*	0.622*	2.914	84.06
Department Stores	4	388	0.694*	0.749*	0.792*	0.722*	0.722*	0.639*	0.635*	4.618	103.72
Exclusive Showrooms	4	354	0.851*	0.752*	0.851*	0.737*	0.737*	0.712*	0.521**	2..487	76.20
Convenience Stores	3	262	0.392 ⁺	0.531**	0.672*	0.691*	0.691*	0.380 ⁺	0.591*	1.466	97.44

*p < 0.01, ** p <0.05, +p <0.10, SE= Standard Error

Table 5: Impact of Radio Advertisements on Buying Decisions

(n= 1422)

Analytical variables ^a	Shopping clusters			
	Supermarkets	Department stores	Exclusive showroom	Convenience store
Sales promotions induced buying (B_{sp})	0.639*	0.658*	0.611*	0.836*
Advertisement driven shopping arousal (A_{am})	0.671*	0.629*	0.717*	0.813*
Choice of stores (R_{bs})	0.425**	0.542**	0.756*	0.722*
Volume of buying ($S_{b'}$)	0.653*	0.651*	0.845*	0.616*
Frequency of radio advertisements (S_q)	0.415**	0.526**	0.387 ⁺	0.254
Response time in decision making (C_{tm})	0.630*	0.684*	0.561**	0.417*
Constant	0.1439	0.2215	0.3499	0.1079
\bar{R}^2	0.573**	0.586**	0.796*	0.513**

^a=Variables are described in equation (5)

*p < 0.01, ** p < 0.05, +p < 0.10

Table 6: Pearson correlation matrix of principal variables of construct

(n=1422)

Variables	Mean	SD	V ₁	V ₂	V ₃	V ₄	V ₅	V ₆	V ₇
Trustworthiness (V ₁)	4.27	0.836	1.000						
Entertaining Advertisements (V ₂)	3.61	1.084	0.631*	1.000					
Response time (V ₃)	4.52	1.173	0.648*	0.694*	1.000				
Choice of store(V ₄)	1.82	0.714	0.451 ⁺	0.510**	0.735*	1.000			
Volume of buying (V ₅)	1.46	0.492	0.732*	0.384 ⁺	0.806*	0.682*	1.000		
Price advantage (V ₆)	3.74	0.279	0.542**	0.451	0.728*	0.643*	0.675*	1.000	
Shopping Arousal- me too feeling (V ₇)	2.06	0.945	0.573**	0.791*	0.915*	0.396 ⁺	0.622*	0.819*	1.000

*p < 0.01, ** p < 0.05, + p < 0.10, SD= Standard deviation

Figure 1 Conceptual Model and Hypotheses Framework

