

CONSUMER ATTITUDE TOWARD FUMIGATION SERVICES IN ABA, ABIA STATE

Onwubiko N. Dike, Ph.D

College of Management Sciences, Rhema University, PMB.7021, Aba, Abia State.

ABSTRACT: *The study assessed the attitude of consumers toward fumigation services in Aba. Survey method was adopted with a target population of 66,920 landlords of residential buildings in Aba metropolis, as derived from the current National Population Census Enumeration Areas (Field Survey). The population comprised landlords of Aba North (9,560), Aba South (38,240) and Osisioma (19,120) Local Government Areas. Stratified, convenience and judgmental sampling procedures were used. The sample size of 398 was determined using Yamane (1967) formula (Eboh, 2009). Applying Bowley's proportional allocation statistical technique, the sample size for each category was estimated; Aba North (57), Aba South (227) and Osisioma (114). One hypothesis and a research question guided the study. Primary and secondary sources of data were accessed. The primary data were collected through the researcher's self-designed questionnaire titled "Consumer Self-Assessment Questionnaire(CSAQ)". In the questionnaire, the five point Likert Scale was used to measure the direction of attitude (favour or disfavour) of the respondents and the extent of their feeling (intensity of attitude) toward fumigation services, where Very Favourable(VF), Favourable(F), Neutral(N), Unfavourable(U), Very Unfavourable(VU) denote the values; 5,4,3,2,1 respectively. In-depth interviews were held with the respondents. Attitudes of consumers were inferred from what they said and indicated on the questionnaire. Pilot survey was conducted. The instrument was validated by experts' opinions. Using Cronbach's Alpha technique, the reliability coefficient of 0.961 was determined, reflecting high degree of internal consistency of the research instrument (Gliem, et al, 2003). At 0.05 level of significance and 18 degrees of freedom, the hypothesis was tested using one way ANOVA technique and Minitab software package. The study revealed that the extent of consumers' attitude, at zero percent intensity, was non-significant to favour fumigation services in Aba metropolis.*

KEYWORDS. Attitude, Fumigation, Consumer, Services Marketing, Vertebrates and Pest Control.

INTRODUCTION

Background of the study

With the growing significance of the service sector in employment and contribution to the Gross Domestic Product (GDP) of the nation's economy, Services Marketing has emerged as an important sub-discipline of marketing. Services Marketing refers to the marketing of services as against tangible products (Zeithaml, et al, 2000). Service offerings are intangible products ranging from health care, hospitality, financial, insurance, information, mortuary to fumigation services, among others. Like other service offerings, fumigation services are experiences consumed at the point of purchase or production. They cannot be touched, stored, saved or resold after use and are assessed through the experiences they deliver to the

consumers. Fumigation is the use of poisonous gases to destroy pests and rodents (Guillebeau, 2016). It involves the application of varied concentrations of chemicals (pesticides) to generate poisonous gases (fumigants) which penetrate the body of insects or rodents to impair their respiratory systems. The diffusion of the fumigants into the most remote areas of buildings including ceiling compartments and the penetration of the burrows of wood-infesting insects and tightly packed goods accounts for the efficacy of fumigation services. Fumigation is more effective than any other methods of pest control because the fumigant circulates and spreads to all areas of infestation (Fumicon, 2015). The purpose of fumigation is to eliminate insect and rodent infestations. Experiences of people concerning the harmful activities of rodents and insects in homes, offices or warehouses created the need for pest control services. Rodents are warm-blooded mammals (vertebrates) fitted with oversized front and cheek teeth for gnawing and chewing items at their disposal (Guillebeau, 2016). They have high reproductive ability and small populations easily become full-blown infestations within a short time. They are healthy carriers of transmittable diseases (Frishman, 1999). Insects are invertebrates. Studies have shown that the filthiest insects in existence are cockroaches and flies as they are infested with pathogens and bacterial cells (Guillebeau, 2016). Insects transmit deadly diseases to humans and animals. The task of exterminating these pests from our environment is becoming rather difficult, partly because of service consumers' attitudes to pest control procedures. Various methods of rodent control, ranging from blocking their common entrances into the buildings to setting up snap traps and bait systems have been adopted (Daar, et al, 1991). The baits are placed in the crawlspaces, attic and tracks where the rodents frequently visit. To eliminate the insects, substances like "otapiapia", kerosene, magic chalks, mosquito coils/nets and repellents such as mothballs or even essential oils are commonly used. The results of these pest control methods have not been satisfactory, culminating into the application of pesticides through mechanical spraying and fumigation. Besides, most people find it inconveniencing to sleep inside mosquito nets. The Integrated Pest Management (IPM) has recommended nonchemical and chemical methods of pest control to bring to the barest minimum, human and animal exposure to pesticides (Guillebeau, 2016). But the attitudes of the consumers toward the pest control services, particularly fumigation with the aim of achieving relative pest-free environment, provoked this study. Attitude is a psychological tendency expressed by evaluating a particular entity with some degree of favour or disfavour (Eagly and Chaiken, 1993, 1998). It is evaluated belief which predisposes a person to respond in a preferential way (Burns, 1997). Attitudes influence the lives of everyone and affect the ways individuals judge and react towards other people, objects and events (Chisnall, 1975). Like vector quantities in Physical Sciences, attitude has both direction (positive or negative) and magnitude (intensity or strength of feeling). Considering the health implications of both vertebrate and invertebrate pests in our environment and the imperative of pest control, consumers' favour or disfavour toward fumigation services and the extent (strength) of their feeling are what this study sought to investigate, among others.

Statement of the problem

Aba is the commercial nerve centre of Abia State but may not rank among the clean cities in Nigeria. Mountains of abandoned rubbish heaps present common sights all over the city. Gutters are blocked with refuse and stagnant pools of water percolate in every nook and cranny of Aba. These habitats, no doubt, provide comfortable breeding clinics for both vertebrate and invertebrate pests within the environment. History is reminiscence of the problems caused by pest infestations that spilled over into epidemics. The frequent occurrences of pest-borne diseases in most parts of Africa today, particularly Nigeria, confirms the re-emergence of the

problems initiated by insects and rodents. Rodents and insects have been identified as healthy carriers of various diseases transmitted to human beings through bites and droppings, including leptospirosis (vomiting, digestive problems, jaundice), salmonella (food poisoning), tapeworms and tuberculosis (Frishman, 1999). In highly infested homes and suburbs, rats bite or chew human legs at night in course of food hunt(Field Survey).Diseases like rat-bite fever, murine typhus, hantavirus pulmonary syndrome are associated with rodents (Guillebeau, 2016). The faeces and urine of rats have been closely linked with the deadly laser fever epidemics. Presence of rats in the house attracts snakes that feed on them to complement their food chains. Rodents chew electrical wires and insulation materials with their sharp incisors to cause short circuits that spark fires in buildings. The ceiling compartments of most buildings are the habitats of bats. Bats transmit rabies through their bites and it is advisable not to handle a bat, dead or alive, with bare hands (Guillebeau, 2016). Inhalation of dust from bat faeces (guano) causes histoplasmosis, a deadly human disease (Guillebeau, 2016). The weight of the accumulated bat faeces causes damage to the ceiling structures of buildings. The prime carriers of fleas, ticks and mites are rodents which also consume about twenty percent of the world's food supply (Frishman, 1999). Scorpions and centipedes' stings are deadly and cause allergic reactions in people. Fleas create problems for cats and dogs, even for human beings. They feed on blood in warm-blooded body and cause itchy marks (Guillebeau, 2016). Termite infestations of buildings and emergence of anti-hills are common sights in our environment. The "king" of damage-causing insects is termite (Field Survey). The destructive activities of termites in buildings and crops in the soil are rather alarming. The termites attack the rafters and leave the roof structures of buildings at the mercy of the wind. The wooden window and door frames are not spared by termites and the cost of the damage is enormous. Bed bugs are nocturnal insects associated with terrible odour and serious health problems.Ants are innocuous. They carry diseases and contaminate food. Cockroaches carry allergens that trigger severe asthma attacks, contacted through saliva, droppings and decomposing cockroaches (Guillebeau, 2016). Cockroaches are carriers of E.coli and salmonella and easily contaminate food stuff. Mosquitoes bite people, draw blood and transmit malaria parasites to others within the environment. In the crowded hostels, homes and prisons, mosquitoes thrive in the presence of carbon dioxide released by the occupants. Malaria has been classified as the first of the conditions causing most illness and death in Nigeria (FMH, 2008).Available statistics released at the World Malaria Day Conference of 25th April, 2016 at Abuja, with the theme "End Malaria For Good", revealed that 60 percent of the outpatients that visit health facilities are malaria cases. Several deaths ranging from 30 percent of childhood, 25 percent of children under one year to 11 percent of maternal were caused by malaria (FMH, 2016). The nation spends about 132 Billion Naira annually in the treatment and prevention of malaria in addition to loss of man hours (FMH, 2016). Funds that would have been judiciously utilized for developmental projects are diverted to stem the scourge of malaria orchestrated by pests. In spite of the concerted efforts of the Federal Government of Nigeria and the International Organizations on National Health Policy Programmes like Roll Back Malaria Initiatives, Strategic Plans and National Malaria Control, to eradicate pest –borne diseases from Nigeria, the burden of malaria contributing significantly to the poor health status of citizens still persisted(FMH, 2008).The phenomenal increase in resistance of malaria parasites to drugs necessitated the application of pesticides through fumigation to eradicate or reduce to the barest minimum, insect and rodent infestations.In view of these contending issues, this study attempted to assess the direction(favour or disfavour) and the extent (intensity) of consumer attitudes toward fumigation services as pest control measure.

Objective of the study

The broad objective of the study was to assess the attitude of consumers toward fumigation services in Aba. The specific objective was to determine the extent (intensity) of the favourableness of consumer attitudes toward fumigation services in Aba Metropolis.

Research question.

To what extent is the attitude of consumers in favour of fumigation services in Aba?

Delimitations of the study.

The study was limited to the fumigation of residential buildings in Aba metropolis. The focus of the study was on landlords in Aba North, Aba South and Osisioma Local Government Areas. The non-inclusion of tenants of residential buildings in Aba was another limitation.

Hypotheses formulation

At 95% confidence level, the hypotheses were formulated for testing; Ho. Attitude of consumers toward fumigation services is not significantly favourable. H₁. Attitude of consumers toward fumigation services is significantly favourable.

REVIEW OF RELATED LITERATURE

Every pest needs food, water, and a place to stay (Guillebeau, 2016). The focus of Pest Management is on food and health safety. Studies have revealed that many problems created by insects and rodents infestations over the decades culminated into epidemics. Rodents easily adapt to the environment and can be extremely difficult to exterminate (Corrigan, 2001). They slip through available spaces, including coin-sized holes and crevices into the buildings for free food, water and shelter. The pesky presence of pests in homes portends danger as they are carriers of deadly diseases and their activities can be devastating. Pest Management therefore has the responsibility to protect the public against various risks of pest infestations and the attendant damages. Fumigation is an integral programme of Pest Management that completely fills a building or the area under treatment with poisonous gases (fumigants) to suffocate the pests within. It involves fogging which is the most effective means of eradicating pests. Fumigation services are of two types, namely, space and soil fumigation (Guillebeau, 2016). Space fumigation includes structural, vehicle (railroad car, truck or van), empty building (warehouse, restaurant, food processing plant), shipboard (in transit ship), rodent burrow, farm grain storage and beehives, among others. The success of space fumigation depends on how tightly sealed the enclosed space is. Soil fumigation involves field, nursery, greenhouse and seed or transplant bed soils. The soil microorganisms, nematodes and weed seeds are eliminated by soil fumigation (Guillebeau, 2016). The widely used fumigants include 1,3 dichloropropene, dazomet, chloropicrin, formaldehyde, hydrogen cyanide, iodoform, methyl isocyanate, phosphine and sulfuryl fluoride (Guillebeau, 2016). Fumigants act as respiratory poisons, anaesthetics or narcotics and exhibit high acute toxicity, primarily by inhalation (Guillebeau, 2016). They have the capacity to kill all species and life stages of insects and rodents present in the area under fumigation. As gaseous pesticides, fumigants do not litter the fumigated areas with odorous or hazardous residues after operation. Because fumigants do not have protective residues, pest can re-infest the fumigated area after treatment. Fumigation services like other services possess the characteristics of intangibility, heterogeneity, inseparability and perish-ability (Lovelock, et al, 2004). They are consumed simultaneously at

the point of production and can neither be stored nor saved. Every fumigation service rendered is unique and cannot be exactly repeated even by the same fumigator. The marketing of fumigation services derives from the theory of services marketing mix, 7P Model, which extended Jerome McCarthy's four traditional marketing mix by three to address service characteristics (Booms, et al, 1981). The 7Ps of marketing, Product, Price, Place, Promotion, People, Process and Physical evidence provide the framework for service strategy formulation and implementation (Van Vliet, 2011). Service refers to Product + Process (Zeithaml, et al, 2008). This formula implies that service not delivered is incomplete. The totality of fumigation service is therefore the core service offering and its delivery process. Pricing of fumigation services could be based on unit of area (per square meter) to be fumigated or bundle of sub services to be performed plus the cost of pesticides, including value added /withholding taxes. The place of consumption includes location and its accessibility, convenience and timing of the fumigation services. Since branding is indispensable in service industry. Promotion should be tailored toward emphasising tangible cues that communicate the benefits of fumigation services. People constitute the most important element of the service marketing mix. According to Zeithaml, et al, (2008), people are all human actors involved in service delivery and influence the buyers' perceptions, namely, the firm's personnel, customers and other consumers in the service environment. Fumigation services involve people in every aspect of service production and consumption. Process refers to the service delivery and the operating systems. Zeithaml, et al, (2008) defined process as the actual procedures, mechanisms and flow of activities by which the fumigation services are delivered. It is the interface between the service provider and consumer and occurs in stages. The material cues of the services provide physical evidence. Physical evidence of fumigation may entail checking test cages of live target pests placed in various parts of the building or area under fumigation to assess mortality rate. A pest-free environment, carcass of vertebrate and invertebrate pests littered around when an area is fumigated, other observable signs and tangible components that communicate service benefits constitute physical evidence. In view of the enormous benefits of fumigation services to public health, an evaluation of consumers' attitude toward the service became necessary for more enlightenment. Though attitudes may not be observed directly, they can be appropriately measured by indirect means through verbal expressions, actions or what people indicate on the questionnaire (Mackenzie, et al, 2011). The evaluation of qualitative responses of consumers in relation to their predispositions (feelings, likes, dislikes, favour or disfavour) toward fumigation services constitutes the core of this study.

METHODOLOGY

The study adopted survey method with a target population of 66,920 landlords of residential buildings in Aba metropolis, as derived from the National Population Census Enumeration Areas (Field Survey). The population comprised landlords of Aba North (9,560), Aba South (38,240) and Osisioma (19,120) Local Government Areas. Stratified, convenience and judgmental sampling procedures were used. The sample size of 398 was determined using Yamane (1967) formula (Eboh, 2009). Applying Bowley's proportional allocation statistical technique, the sample size for each category was estimated; Aba North (57), Aba South (227) and Osisioma (114). Primary and secondary sources of data were accessed. The primary data were collected through the researcher's self-designed questionnaire titled "Landlord Self-Assessment Questionnaire (LSAQ)". In the questionnaire, the five point Likert Scale was used to measure the extent of favourableness of the Landlords toward fumigation services, where

Very Favourable(VF),Favourable (F),Neutral(N),Unfavourable(U),Very Unfavourable(VU) denote the values;5,4,3,2,1 respectively. The statements on the scale were framed to be either positive or negative. Though none of the statements was neutral, some respondents still felt neutral about them. In-depth interviews were held with the respondents. Pilot survey was conducted. The instrument was validated by experts' opinions. Using Cronbach's Alpha technique, the reliability coefficient of 0.961 was determined, reflecting high degree of internal consistency of the research instrument (Gliem, et al, 2003).One hypothesis and a research question guided the study. Using one way ANOVA technique and Minitab software package, the hypothesis was tested at 0.05 level of significance and 18 degrees of freedom.

4.0 DATA PRESENTATION AND ANALYSIS

The data derived from the study were presented in this section.

TABLE 4. 1: Profile of respondents.

Parameters	Total	Percentage (%)
<u>Category</u>		
Aba North	55	14.0
Aba South	227	57.0
Osisioma	114	29.0
<u>Age</u>		
18-30	27	7.0
31-40	98	24.0
41-50	150	38.0
Above 50	123	31.0
<u>Gender</u>		
Male		76.0
301		24.0
Female		
97		
<u>Marital status</u>		
Married		91.0
361	Single	9.0
37		
<u>Qualification</u>		
Ph.D.	20	5.0
MSc/MBA	47	12.0
BSc/HND	70	17.0
ND/NCE	63	16.0
WASC/GCE	108	27.0
FSLC	90	23.0

Source: Field data, 2016

Table 4.1 showed that 57 percent of the respondents (Landlords) were of Aba South, 29 percent Osisioma and 14 percent Aba North. About 69 percent of the respondents were within the active years of 18 to 50 and only 18 percent were above 50. The study involved 76 and 24 percents of male and female respondents respectively. Married respondents were 91 percent and 9 percent single. Of 398 respondents, 50 percent possessed West African School

Certificates and First School Leaving Certificates, 17 percent Bachelor's Degrees and Higher National Diploma, 16 percent National Diploma and National Certificate in Education, 12 Masters Degrees and 5 percent held Doctorate degrees.

TABLE 4.2 Analysis of the responses on consumer attitudes toward fumigation services

Questions	No.of Respondents. Favourable.F	Scores of Respondents. Favourable.	No. of Respondents. Unfavourable.U	Scores of Respondents. Unfavourable.	Total No. of Respondents F + U
1	182	610	216	291	398
2	65	103	333	1114	398
3	301	1029	97	168	398
4	65	107	333	795	398
5	285	684	113	184	398
6	169	257	229	793	398
7	229	785	169	265	398
8	183	306	215	741	398
9	153	654	245	592	398
10	217	509	181	496	398
Total	1849	5044	2131	5439	3980
Mean	185	504.4	213	543.9	398

Source: Field Survey, 2016

Table 4.2 showed that the number of responses, 5439, representing 52.0 percent, indicated that the attitude of consumers toward fumigation services was unfavourable while 5044 responses, reflecting 48.0 percent, held contrary opinion

Test of hypothesis.

Ho. Attitude of consumers toward fumigation services is not significantly favourable.

H₁. Attitude of consumers toward fumigation services is significantly favourable.

TABLE 4.3 One-way ANOVA: Scores Fav, Scores U-fav.

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Factor	1	7801	7801	0.08	0.780
Error	18	1745513	96973		
Total	19	1753315			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
311.405	0.44%	0.00%	0.00%

Source: Field data, 2016..

In Table 4.3, the result of the hypothesis test showed that F-critical (4.41) was greater than F-computed (0.08) at 18 degrees of freedom and 0.05 level of significance. In applying the decision rule, the null hypothesis, (H_0) was not rejected. The p-value provided additional insight into the decision. The p-value, (0.780), was greater than the significance level of 0.05 (i.e. $p > 0.05$). The alternate hypothesis, (H_1) was rejected. The null hypothesis was upheld, proving that the attitude of consumers toward fumigation services was not significantly favourable. The co-efficient of determination, R-sq (adj) was zero percent, confirming the statistical significance of the unfavourable attitude of consumers toward fumigation services.

DISCUSSION OF RESULTS

Findings of the study showed that the attitude of consumers at zero percent intensity was non-significant to favour fumigation services. The result implied that the attitude of consumers toward fumigation services in Aba metropolis was not favourable, irrespective of the enormous benefits of the services to public health. The revelations of this study reflected consumer apathy. Consumer apathy refers to lack of feeling, emotion or interest for a product or service. It is a state of indifference and absence of interest of the consumer toward a product or service offering. According to Banaji. (2001), if attitudes are predispositions to act favourably or unfavourably, then the attitudes that a consumer has should predict his behaviours. The direction of consumers' attitude in this study obviously lacked a predisposition to engage fumigation services in future. Interviews held with respondents and the responses from the unstructured questions corroborated the revelations of the study. The issues of poor consumer awareness, fear of the harmful effects of fumigants, high service cost and incidence of re-infestation of pests after treatment, among others, may have contributed to the apathetic disposition of consumers toward fumigation services in Aba. Many respondents (landlords) had virtually little or no valuable information about fumigation services. The service consumers were apprehensive of the harmful effects of the fumigants. Respondents who were acquainted with the knowledge of fumigation expressed fear about the toxicity of the fumigants, especially those suffering from respiratory ailments like asthma. However, with the establishment of the exposure limits of fumigants by the Environmental Protection Agencies (EPA), consumers' apprehension can be eliminated through marketing communications of the safety guides. The exposure limits are the fumigant concentration levels safe for both the consumers and fumigators. The amount of pesticides residues (tolerance) that can safely remain in agricultural products and processed foods has also been determined to satisfy protection needs and allay consumers' fears. High cost of fumigation services when compared to the alternative methods of pest control could arouse consumer apathy. Consumers' complaint that pests re-infest fumigated areas few weeks after treatment may have created post-service dissonance. A dissatisfied customer will not only stop buying but badmouths the product or service to others (Kotler, et al, 2009). Fumigation plan involving routine services on bi-monthly or quarterly basis is imperative in dealing with pest re-infestations. To improve understanding and create the desired attitudinal change, service providers should effectively communicate the benefits of the fumigation service package to consumers. The need for consumers to embrace fumigation services in Aba in view of its filthy environment is more compelling now than ever to avert the consequences of epidemics.

Implications of the study

This study initiates paradigm shift in the predisposition of consumers toward achieving pest-free environment through fumigation services. The overwhelming benefits of the services in

safeguarding public health against pest-borne diseases, including malaria induced morbidity and mortality in Nigeria, provide physical evidence for curbing consumer apathy.

CONCLUSION

Pest Management is concerned with the protection from the disease carrying pests and the costly damages to property. It involves every procedure of prevention and control of pest infestations. Pest management control practices enhance food sanitation and health regulations. The best approach is to initiate pests control prior to infestations. Money and time are saved by dealing with pests ahead of time. Fumigation finds applications in virtually every human endeavour including export cargo. It is carried out at the port of loading to ensure that clearance of the container at the discharge port is done without pest infestations. It eliminates exotic pests that infiltrate the goods containers on transit in ship and aircrafts. Fumigation is extended to wooden packing materials prone to pest infestation which are carriers of new pests to other countries. Due to the hazardous nature of fumigation operation, arising from the toxicity of the chemicals, people involved in the job must be legally certified to deliver fumigation services. A crucial aspect of fumigation is the post operation ventilation of the treated area. The space still retains the poisonous gases after the delivery of the fumigation services until it is properly aired. The edibles that were exposed during the fumigation process, dead insects and rodents should be thrown away. Intensive cleaning of the fumigated areas including mopping of floors and surfaces in the bathroom should be carried out to ensure safety. The significant benefits of fumigation services to public health, if properly communicated, should serve as important marketing cues to influence change of attitude of consumers toward fumigation services. Studies have shown that service sector today employs the highest number of semi-skilled and skilled manpower resources all over the world (Zeithaml,2008). Intensive consumer awareness campaigns are therefore indispensable to champion the growth of fumigation services in Aba in particular and Nigeria in general to reduce unemployment, in addition to other benefits.

RECOMMENDATIONS

Based on the revelations of this study, the following recommendations were made;

1. Registration and Licensing of professional fumigators: Abia State Ministry of Environment should register and license professional fumigators. The minimum qualification for the fumigators should be Higher National Diploma Certificate or its equivalent in Basic and Applied Sciences. The job is potentially hazardous and requires sound knowledge of principles of chemical management to cope with the complexity.
2. Association of Licensed fumigators: The licensed fumigators should form powerful Association to organise seminars, workshops and conferences to educate members on the rudimentary processes of fumigation, health and safety, including environmental requirements for disposal of fumigant containers in line with International, National and State Regulatory Standards. Members should be authorised by law to issue certificates of fumigation to consumers after fumigation.
3. Consumer awareness and enlightenment campaign: Fumigators Association should embark on intensive marketing communication programmes to educate consumers on the benefits

of fumigation services. Channels like Social Media can be deployed to disseminate the information. This media has the capacity to actually connect fumigation services with prospective consumers. The exposure limits of the fumigants should be emphasized to allay the fears of consumers on the toxicity of the pesticides. Repeated exposure of the consumers to the message stimulus would enhance favourable attitude toward fumigation services.

4. Cost of fumigation services: The Professional Fumigators Association should establish and insist on guidelines for the pricing of fumigation services by members and use it as marketing weapon against consumer apathy.
5. Routine fumigation services: To maintain pest –free environment, fumigation services should be continuous and delivered either bi-monthly or quarterly since the fumigants do not possess protective residues which may linger several months after treatment.
6. Total fumigation service: A combination of core service and efficient delivery process leads to customer satisfaction. The fumigators must be prepared to meet consumer expectations with unparalleled service delivery. Satisfied customers will advertise the services to their close trustees and friends. They may even become fans on Facebook.
7. Abia State Ministry of Environment should ensure strict public compliance to the Legislative Act on fumigation of premises, including homes, offices, schools, etc. If properly regulated, the Act would enhance favourable consumer attitudes toward fumigation services.

REFERENCES.

- Banaji, M. R. (2001). Implicit attitudes can be measured. In H. L. Roediger, I. N. Nairne, & A. M. Suprenant (Eds.), *The nature of remembering: Essays in honor of Robert G. Crowder* (pp. 117 – 149). Washington, DC: APA.
- Booms, B. & Bitner, M. J. (1981). *Marketing Strategies and Organizational Structures for Service Firms*. Marketing of Services, James H. Donnelly and William R. George, eds. Chicago: American Marketing Association, 47-51.
- Burns, R. (1997). *Introduction to research methods* (3rd ed.). Melbourne, Vic Addison Wesley Longman.
- Chisnall, P.M. (1975). *Marketing: A behavioral Analysis*. London, McGraw-Hill Book Company (UK), Limited
- Corrigan, R. M.(2001). *Rodent Control: A Practical Guide for Pest Management Professionals*. Cleveland, Ohio: GIE Media.
- Daar, S., Olkowski, H., and Olkowski, W. (1991). *Common-sense Pest Control*. Newtown, Connecticut: Olkowski, Daar, Olkowski,
- Eagly, A. H., & Chaiken, S. (1998). Attitude structure and function. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (pp. 269 – 322). New York: McGraw - Hill
- Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes* . Orlando, FL: Harcourt Brace Jovanovich College Publishers.
- Eboh, E. C. (2009). *Social and Economic Research: Principles and Methods*. Enugu, African Institute for Applied Economics.
- Federal Ministry of Health, (2016). World Malaria Day. Theme: “End Malaria For Good”, National Malaria Control Programme, 25/4/2016.

- Federal Ministry of Health, (2008). National Malaria Control Programme, Strategic Plan 2009-2013. A Road Map for Malaria Control in Nigeria.
- Frishman, A. M.(1999). *Vertebrate Pest Handbook*. Second Edition, Cleveland, Ohio: Advanstar Communications.
- Fumicon, (2015). BPCA Fumigation Conference. The Orwell Hotel, Felixstowe - Thursday 21 May 2015.
- Gliem, A.J.and Gliem,R.R. (2003). “Calculating, Interpreting and Reporting Cronbach’s Alpha Reliability Coefficient for Likert type Scales” In 2003 Midwest Research to Practice, Conference in Adult, Continuing and Community Education.
- Guillebeau, P., (2016). *Georgia Pest Management Handbook*. The University of Georgia College of Agricultural & Environmental Sciences. Entomology: Online Publications. www.ent.uga.edu/ipm/homeowner_ipm.htm
- Kotler, P., and Keller, K, L., (2009). *Marketing Management*. New Jersey: Pearson Prentice Hall.
- Lovelock, C., Gummesson, E.,(2004). Whither Services Marketing? In Search of a New Paradigm and Fresh Perspectives. *Journal of Service Research*.7(1), 20-41.
- Mackenzie, N. M., Hemmings, B.and Kay,R.,(2011). How does teaching experience affect attitudes towards Literacy learning in the early years? Charles Sturt University. In Issues in *Educational Research*. 21(3), 281.
- Van Vliet, V. (2011). *Service Marketing mix – 7 P’s*. Retrieved [June 17,2016] from Tools Hero: <http://www.toolshero.com/marketing/service-marketing-mix-7ps>
- Zeithaml, V. A., (2008) “Service Quality, Profitability, and the Economic Worth of Customers: What We Know and What We Need to Learn”. *Journal of Academy of Marketing Science*, Volume 28(1), P.67-85
- Zeithaml, V.A and Bitner M. J, (2000). *Services Marketing: Integrating Customer Focus across the firm*, McGraw-Hill, New York