

**THE EFFECT OF ADVERTISING ON SALES  
A CASE STUDY OF MOBILE TELEPHONY IN SUDAN**

**By**

**Reem Mohammed Salah Eldin Abbas**

**THESIS**

Submitted to

KDI School of Public Policy and Management

In partial fulfillment of the requirements

For the degree of

**MASTER OF BUSINESS ADMINISTRATION**

2012

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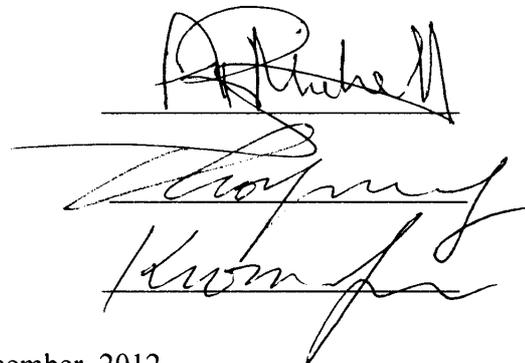
**MASTER OF BUSINESS ADMINISTRATION**

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## **ABSTRACT**

### **THE EFFECT OF ADVERTISING ON SALES**

#### **A case study of mobile telephony in Sudan**

**By**

**Reem Mohamed Salah Eldin Abbas**

Up to the time of this writing, organizations in Sudan have arbitrarily assigned annual advertising budgets independent of their effect on revenue and ROI. Advertising is approached as a brand building and management exercise with no measure of its impact on sales. The aim of the thesis is to quantitatively assess the effect of advertising on sales based on data collected from Zain Telecom in Sudan spanning thirteen years, from 1999 to 2011. It aims to serve as a reference for organizations in determining expected returns from advertising, whether importance should or should not be given to advertising and hence, necessary advertising expenditure to assist in achieving sales targets. The analysis was done with the aid of the statistical package for social sciences (SPSS) using multiple linear regression.

The results portrays that the relationship between advertising and sales is highly significant. The results show 1SDG spent on advertising produces 17SDG in sales. The verification points to the fact that advertising plays an important role and has a positive significant effect on sales. This implies that advertising is a critical element in the marketing mix and hence organizations in Sudan should critically decide on the advertising budget and advertising budgets should not be placed arbitrarily.

Measuring advertising effectiveness is required for the application of methods to foster market effort, particularly in Sudanese conditions, in which advertising industry is growing. Measuring advertising will aid in assessment of advertising for future use, test advertising campaign, and achieve optimal sales etc.

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## **DEDICATION**

**Dedicated to my family to whom I owe all the thanks for making me the person I am today  
my family who inspires me, my inner strength my inner motivation to grow mentally  
academically and professionally**

**First and foremost my father and mother to whom I owe everything; my father for the  
endless support and guidance my very model my light, my mother for the care and  
unwavering commitment striving and sacrificing every moment to ensure we are successful  
happy and protected, my brothers for being the men in my life, my sisters for being my all  
and my beloved nephews and niece who fill my life with immense happiness,  
my family who are my all**

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Nevertheless this thesis would not have been accomplished without kind assistance of my thesis advisor, Professor Anthony Michell, for his precious time, his insightful suggestions and inspiring comments. To my loving parents, to whom I am enormously indebted and who are always a tower of strength and inspiration; I wish to express sincere appreciation to KDI School of Public Policy and Management, outstanding professors for providing me with valuable knowledge and remarkable experience during my stay in Korea. Professors that I look up to, Professors that inspires me on the confidence and the wealth of knowledge they carry. Professors that till this day I am inspired with. Professors that many students around this world are not lucky to meet.

Special thanks are to KDI school academic affairs staff, whose familiarity with the needs and ideas of the community were helpful during the whole study period of this undertaking. KDI school staff that whenever I reached would answer my questions and provide their full support. Who are always prompt in their replies.

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## I. INTRODUCTION

Marketing guru Brian Norris defines marketing as “the ongoing process of moving people closer to making a decision to purchase, use, follow, refer, reject, conform, and become complacent to someone else's products, services or values”. Major marketing theorist Philip Kotler defines marketing as a “human activity directed at satisfying needs and wants through exchange processes” ( Kotler & Armstrong (2009, p. 5). In addition the Chartered Institute of Marketing (CIM) states marketing to be the "management process of anticipating, identifying and satisfying customer requirements profitably". Hence, operative marketing involves “the processes of market research, new product development, product life cycle management, pricing, channel management as well as promotion”(John, Orville & Harper, 2003).

Marketing in essence is composed of several complementary parts each with their related and well established management and stratagems – the key defining parts include the elicitation of consumer requirements, the development of a product/service that realizes these requirements and the communication (promotion) of the product to the consumer.

Accordingly, the operative realization of marketing is achieved through several interrelated functions. These functions are composed of researching the target market, development of a product tailored for this market, strategies involved with the shifting life stages of the product(PLC), management of wholesalers and other channels that will provide the product (Channel management), pricing and promotion of the product(John et al., 2003).

Promotion one of the four aspects of marketing engages in “disseminating information about a product, product line, brand or company” (Marketing Communication, 2012). It is comprised of

“personal selling, non-personal selling, sale promotion, publicity, direct selling and advertising”  
(Boone & Kurts, 2007, p.488).

Advertising is defined as informing, entertaining and ultimately persuading a group to purchase the advertised product (Tyagi & Kumar, 2004). Its ultimate goal is to stimulate sales, retain loyalty to the product, generate enthusiasm and confidence, and project the image of the product and the producer. Consequently, it establishes a clear sponsorship of the communicated product (Tyagi & Kumar, 2004).

Advertising has been identified as the most prominent part in the marketing mix due to its high visibility and pervasiveness (Tyagi & Kumar, 2004). The channels employed to deliver these messages of persuasion usually include but are not limited to television, radio, movies, magazines, newspapers, outdoor displays, the internet, and billboards. Regardless of these channels it is directed towards a mass audience, and not directly at an individual.

Mass audiences are composed of diverse consumer groups that present diverse needs and wants. Hence the effectiveness of advertising is dictated by the identification and comprehensive understanding of a consumer group, this understanding is realized through thorough analysis of the consumer’s background, culture and demographic in order to clearly identify their wants and needs.

The role advertising plays varies with the product life cycle. In the introduction stage, it may be used for the launching of a new product, to make a statement and to make the product stand out. During the growth stage it is used to increase public awareness and cure consumer ignorance about the product. During the maturity stage it is used to fight competition and stay ahead of the rivals. During the saturation stage it is used to remind consumers of product existence and

presence. During the decline stage it is used to rescue the product from the decline in sales by gaining consumers interest.

Growth of businesses has increased in size and number in Sudan which led organizations to operate in a more complex and competitive environment. To confront this challenge, management of business organizations had to increase the levels of resources with attention focused on attracting and retaining customers. Accordingly to differentiate themselves an increase in advertisements has been observed in various medias in Sudan for example on billboards in the streets, advertisements on TV and the radio etc “aiding customers to choose among the variety offered for their selection of products” (Tyagi & Kumar, 2004). As a result an increase in the awareness of the advertisement has been realized.

Despite the hype about advertising in Sudan upon asking the different stakeholders in companies about how they assess advertising it has been found that no quantitative assessment of the effectiveness of advertising has or is made. Paradoxically companies do not measure the effect of advertising. Moreover studies of the effect of advertising have not been looked into in Sudan.

Even though an increase in advertising has been observed in Sudan the question becomes is the right amount of money spent on advertising? With the increase in cost of raw materials, salaries and wages in addition to the higher overheads and taxes several managements argue that advertising does not “ have a significant impact on sales and hence the advertising expenditure is arbitrarily placed”(Magdi, personal communication, 2012).

Advertising has to prove its contribution to the total marketing else advertising expenditure will run the risk of being set arbitrarily or even cut significantly. Thus, an important economic question is yet to be resolved: is there a significant relationship between advertising and sales?

Much as advertising is considered necessary for the growth and survival of a business, its influence on a firm's budget however cannot be overlooked. Advertising expense therefore can no longer be regarded as just a current expense but rather an investment. If it is, then managers must ensure that the returns on such investments bear positively on their sales performance and the business entirely.

Measuring advertising effectiveness is required for the application of methods to foster market effort, particularly in Sudanese conditions, in which the advertising industry is growing. Measuring advertising will aid in assessment of advertising for future use, test advertising campaign, and achieve optimal sales etc. This leads to the purpose of the research does advertising has a positive effect towards sales?

The general objective of this research is to analyze the effectiveness of advertising on sales in Sudan on an empirical study based on data collected from Zain Telecom for a period of thirteen years from 1999 to 2011. Hence the writer's conjecture here is to explore the effectiveness of advertising on sales that will shed light to organizations in Sudan of the importance of advertising, to critically think while deciding on the advertising budget and the aforementioned reasons.

The rest of the paper is divided into five parts. Section 2 consists of an Overview of Sudan Mobile Telephony in addition to a synopsis of Zain Telecom.

Section 3 provides a synthesis of the findings from the literature review of the empirical studies for advertising effectiveness.

Section 4 presents the nature of the data and methodology of the research. A period of thirteen years was adopted for this study ranging from 1999-2011. A primary empirical study that

quantitatively assesses the relationship of advertising to sales. The analysis was done with the aid of the statistical package for social sciences (SPSS) using multiple regression.

Section 5 presents the empirical results and interpretation (covering the marketing mix) and section 6 draws conclusions.

## **II. MARKET OVERVIEW**

Sudan has known telecommunication services as early as 1897. All forms of entities established were governmental owned. Later plans adopted by the Government of Sudan involved the liberalization and privatization of the telecommunication sector which resulted in a capital attracting, pro-competitive policy environment that have fostered the build-up of a modern, fully digital infrastructure in the country and furnished a climate suited to enhance the information and communications technology (ICT) development nationwide (Telecommunications in Sudan,2012).

The remarkable transformation and achievements witnessed in the Sudanese Telecommunication sector coupled with the growing and diversifying use of the ICT services including those of the internet and its applications have been a success story that made Sudan to be widely held among the most developed in Africa, if not in the Middle East. (Source: National Telecom Corp. NTC, the ICT regulator).

Mobile telephony in Sudan has gone through a period of significant development and change. At present, there are three licensed operators Kuwait-based Zain Group, South Africa's MTN Group and incumbent operator Sudatel who are facilitating large advances in population coverage, penetration and service offering (Deloitte, 2009).

Even though Sudan was the last African country to introduce mobile telephony, the growth rate in market penetration since 2005 has been at 500% (one of the fastest in Africa) with 28% penetration by the end of 2008(Economic Impact of Mobile Telecommunication in Sudan,2008) which represented just over 10 million customers (Deloitte ,2009). However, these figures represented the number of sim cards and therefore did not equate directly to numbers of people

as there is some evidence of multiple sim card ownership. Sudan had 21.382 million mobile telephony customers at the end of March 2011; this gave the country a mobile penetration of 48.5% and reflected quarterly growth of 5.1% in 2011 (Sudan Telecommunication Report, 2011). In the first quarter of 2012 the penetration rate was 62 % ( IR presentation, 2012).

Sudan's mobile market experienced an 18.5% increase in users in 2011, followed by growth of 12.8% in 2012. In the three years to 2015, an average annual growth rate of 11.2% is anticipated. The mobile market is predicted to have a penetration rate of 91 %.( BMI Report, 2011).

Increased competition has led to persistent reductions in the retail prices charged by mobile network operators (MNO) for mobile calls. Average prices blended across pre and post-paid services in 2008 were half 2006 levels (Dolomite, 2009). This price fall has led to improved affordability of mobile services and is believed to have contributed to the steep increase in both penetration and usage (Ericsson, 2011).

## A. ZAIN

“We began life in 1983 in Kuwait as the region’s first mobile operator, and since the initiation of our expansion strategy in 2003, we have expanded rapidly” (Zain CEO, 2012).

Zain is a leading mobile telecommunications company founded in 1983 in Kuwait as Mobile Telecommunications Company (MTC), and was later rebranded to Zain on September 8, 2007 (Zain milestones, 2012). As the first mobile operator in the Middle East Zain have grown from a modest, single operator in Kuwait to a conglomerate with a commercial presence in 7 countries across the Middle East and Africa, with a 6,000 dedicated workforce serving over 41.4 million active customers (Nabeel Bin Salamah, 2012).

The 7 countries namely are Kuwait, Iraq, Sudan, Jordan, Bahrain, Saudi Arabia and Lebanon. Zain provides mobile voice and data services to over 41.4 million active customers (IR presentation, 2012). The company is the leading mobile telecom operator in 6 of its markets.

Table 1 illustrates the key company figures of Zain.

**Table 1: Key Company Figures - Zain**

Revenues	\$ 4.79 billion
Revenues and Earnings before Interest, Taxes, Depreciation and Amortization (EBITDA)	\$ 2.18 billion
Net Income	\$ 1.03 billion

Source: *IR presentation, 2012*

## Zain Sudan

Mobitel, Sudan's first mobile operator, started operations in 1997. In 2005 Zain entered Sudan through its acquisition of Celtel which had a minority 31% stake in Mobitel. In February 2006, the remaining 61% was fully acquired by Zain for US\$ 1.332 billion resulting in 100% ownership (Financial results, 2012). With this acquisition Zain consolidated its position in both the Middle East and Africa (Zain, 2012).

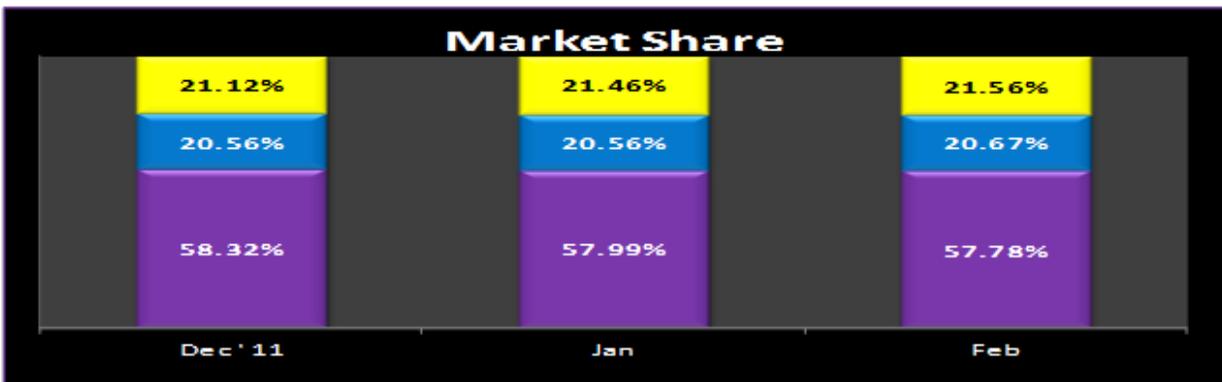


Figure 1: Market Share of Zain, Sudani & MTN

At the end of 2011, and despite strict registration requirements implemented by the National Telecommunications Corporation (NTC) as well as aggressive competitive campaigns and price cuts, as illustrated on figure 1 Zain continued to be the largest mobile operator in Sudan, accounting for 58% (purple) of the country's mobile customer base (Zain Monthly Performance, 2011). MTN having a market share of 22 % (yellow) and Sudani a market share of 21% (blue) (Zain Monthly Performance, 2011).

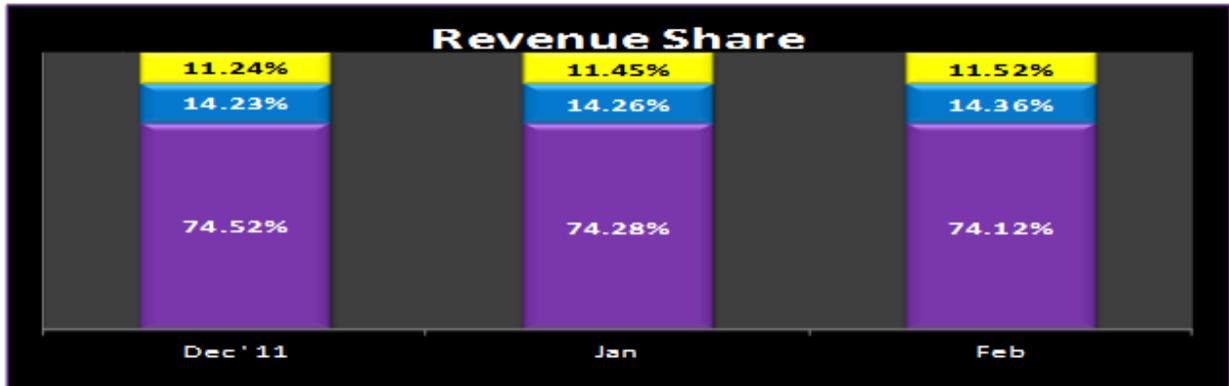


Figure 2: Revenue share of Zain, Sudani & MTN

Figure 2 illustrates Zain capturing 74.28% (purple) from the revenue share with MTN (yellow) having 11.45% and Sudani 14.26% (blue).



Figure 3: Customer base of Zain

Source: *Zain Annual Report, 2012*

The operator contributed 32% of Zain Group’s total customer base and 23% of its revenues, making Sudan one of the most significant strategic players in the Group with the highest customer acquisition share of 13,060 million active customers as figure 3 demonstrates.

Additionally Zain boasts the lowest churn rates in comparison to the other operators. Churn rate defined as "The percentage of subscribers to a service that discontinue their subscription to that service in a given time period" (Churn rate, 2012).

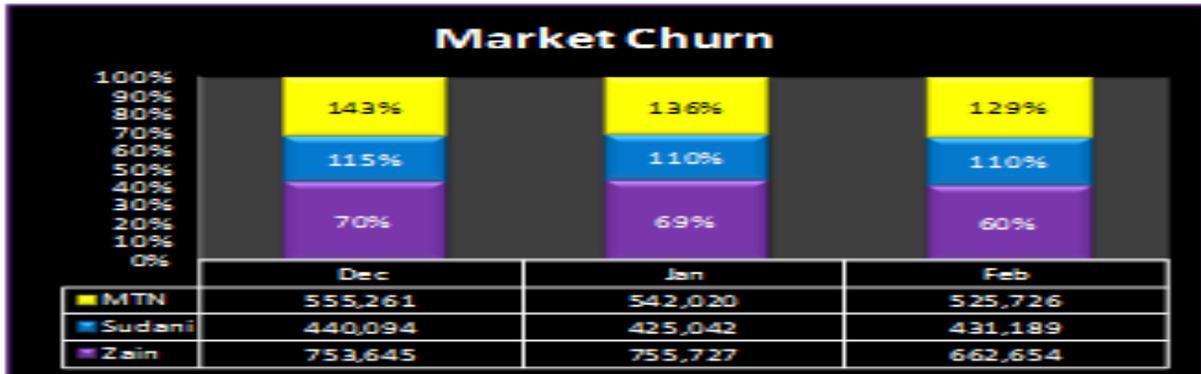


Figure 4: Market Churn of Zain, Sudani & MTN

As figure 4 illustrates Zain churn rate for 2012 is 69% with MTN 143% and Sudani 115% (A. Samer, personal communication, 2012). The operator's customer base continues to grow, with the number of customers growing by 25% year-on-year in 2011(Deloitte (2009).

Zain Sudan reported an increase of 14% and 18% in EBITDA respectively. The operation currently has a total number of 1,680 sites, and a population coverage of 86.

Data and Value added Service [VAS] technology will continue to be a priority for Zain's strategy in Sudan. Driving customer acquisition will also play an integral part of the operator's strategy, through partner relationships, and a focus on retention.

## SWOT Analysis for Zain

**Table 2: SWOT Analysis**

<b>Strength</b>	<b>Weakness</b>
<ul style="list-style-type: none"> <li>• Coverage</li> <li>• Corporate market share</li> <li>• First Telecom Company</li> <li>• Zain brand</li> <li>• Mobile Shop</li> <li>• Reputation – International plus local</li> <li>• Quality</li> <li>• Customer service</li> <li>• Product Innovation</li> <li>• Quality strategy</li> <li>• Mature dealers’ relationship - loyalty</li> <li>• Heavy advertising &amp; media pioneer</li> <li>• Effective sales promotion</li> </ul>	<ul style="list-style-type: none"> <li>• Price competition</li> <li>• Registration</li> <li>• Network &amp; 3G coverage stability</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• Cost optimization</li> <li>• SIM management tool</li> <li>• Engagement of organizations’ decision makers</li> <li>• Addressing consumer/customers needs</li> </ul>	<ul style="list-style-type: none"> <li>• Government regulation and taxes</li> <li>• Governmental support to competitor– Sudani being a governmental owned entity</li> <li>• Embargo</li> <li>• World economical crisis</li> </ul>

Zain is considered the pioneer telecom company and this is due to its strong infrastructure of network which covers almost 90% of the population at high quality of service. One of the main reasons for Zain success is the fact that it is the first telecom company established in Sudan (hence utilizing Sudanese culture of loyalty), resulting it to have the highest market share in the market; and what helped strengthen its status in the market is the rebranding from a local brand (Mobitel), to Zain which is a multinational brand. Zain also stands out on its customer service as it owns the largest call centers in Sudan (and even largest compared to other Zain operators) which consists of 500 agents available 24 hours per day.

Zain always strives for improvement by constantly exploring solutions. This is done by surveying customer needs and using best tools to build up reliable solutions. Moreover, one of Zain's objectives is to increase its revenue, and one way to do that is optimizing costs through utilizing existing resources (mainly people) to the fullest.

Zain's main weakness in the market place is its prices which are considerably higher than the rest of the operators, and this is due to the large costs of high quality services. Another weakness which is considerably shared between all telecom companies include network instability and even though this is a common problem, Zain as a pioneer always strives for achieving best quality and hence considers this as a weakness. Zain also faces a problem of acquisition of registration information for all its customers. Since only recently the NTC has enforced the rule that it is obligatory that customers should register their information.

What Zain considers as a threat is Governmental regulations since these are never planned for nor expected. This results in disruption of the smoothness of the operation while trying to meet the new regulations. In addition to the sanctions imposed in Sudan that without importation of necessary tools for operational tasks would have been easier.

### **III. LITERATURE REVIEW**

Advertising can be traced to the very beginnings of recorded history. Archaeologists working in the countries around the Mediterranean Sea have dug up signs announcing various events and offers (Kotler & Armstrong, 2008). The Romans painted walls to announce gladiator fights, and the Phoenicians painted pictures promoting their wares on large rocks along parade routes. During the golden age in Greece, town criers announced the sale of cattle, crafted items, and even cosmetics (Kotler & Armstrong, 2008). An early “singing commercial” went as follows: “for eyes that are shining, for cheeks like dawn, for beauty that lasts after girlhood is gone, for prices in reason, the woman who know will buy her cosmetics from Aesclyptos (Kotler & Armstrong,2008).

As noted by Wanoff,1997 “Advertising is a tool of marketing for communicating ideas and information about goods and services to an identified group...the core role of advertising is to let a targeted group of people be familiar with the presence of a product or the service and ultimately the reason behind that is to persuade people to buy” (Frank ,2005) that product or use that service.

## A. Advertising objective

**Table 3: Possible Advertising Objectives**

<b>Informative Advertising</b>
Communicating customer value
Building a brand and company image
Telling the market about a new product
Explaining how the product works
Suggesting new uses for a product
Informing the market of a price change
Describing available services and support
Correcting false impressions
<b>Persuasive Advertising</b>
Building brand preference
Encouraging to switching your brand
Changing customer's perception of product value
Persuading customers to purchase now
Persuading customers to receive sales call
Convincing customers to tell others about the brand
<b>Reminder Advertising</b>
Maintaining customer relationships
Reminding consumers that the product may be needed in the near future
Reminding consumers where to buy the product
Keeping the brand in customer's mind during off – season

Source: *Advertising and Public Relations*

An advertising objective “is a specific communication task to be accomplished with a specific target audience during a specific period of time” (Kotler & Armstrong, 2008). Advertising objective can be classified by primary purpose whether the aim is to inform, persuade, or remind.

Table 3 shows examples of each of these specific objectives.

*Informative advertising* is used heavily when introducing a new producer's category. In this case, the objective is to build primary demand. For example, early producers of DVD players first had to inform consumers of the image quality and convenience benefits of the new product.

In Sudan the most traditional way of advertising is word of mouth .People in Sudan are influenced greatly with what others recommend. Also, an example of informative advertising

observed in the local markets is, sellers would be calling out in different phrases that rhyme what they have. In rural areas donkey men selling vegetables would also be calling out in rhythms what they have. This is traditional advertising that is observed till today.

*Persuasive advertising* becomes more important as competition increases. Here, the company's objective is to build selective demand. For instance, once DVD players became established, Sony began trying to persuade consumers that its brand offered the best quality for their money.

Some persuasive advertising has become comparative advertising, in which a company directly or indirectly compares its brands with one or more other brands. Comparative advertising has been used for products ranging from soft drinks, beer, and plain relives to computers, batteries, car rentals, and credit cards. For example, in its comparative campaign, the auto-rental company Avis positioned itself against market leading Hertz (sic) by claiming, "we try harder." And apple's familiar "I'm a Mac; I'm a pc" advertising takes jabs at rival windows based computers.

Example of comparative advertising can be seen almost in every product category. For instance, Gatorade recently ran advertising comparing the 25 calories in it's propel fitness (sic) found in Glaceau's Vitamin water, asking "How Fits Is Your Water?" And Pizza Hut has reignited its long-running rivalry with Papa John's and Domino's with a comparative advertisement in which delivery drivers from the three chains gather around a table to dig into a Pizza Hut pizza. 'Now this is real pizza,' one driver tells the others. 'Sure tastes better than Domino's', adds another. 'And Papa John's', adds a third. The announcer confirms that "Americans preferred Pizza Hut's pizza almost two to one in a national taste test". Nevertheless advertisers should use comparative advertising with caution. All too often, such advertising invite competitor responses, resulting in an advertising war that neither competitor can win.

*Reminder advertising* is important for mature products; it helps to maintain customer relationships and keep consumers thinking about the product. For instance expensive Coca-Cola television advertisements primarily build and maintain the Coca cola brand relationship rather than inform or persuade customers to buy in the short run.

Advertising's goal is to help move consumers through the buying process. Some advertising is designed to move people to immediate action. For example a , a direct response television ad by The Sharper Image for its Ionic Breeze air purifier urges consumers to pick up the phone and order right away, and a retailer Sears newspaper ad for a weekend sale encourages immediate store visits. However, many of the other advertising focus on building or strengthening long term customer relationships. For example, a Nike television ad in which well-know athletes working through extreme challenges in their Nike gear never directly asks for a sale. Instead, the goal is to somehow change the customers think or feel about the brand.

## **B. The correlation between Sales and Advertising**

The relationship between advertising and sales has been the issue of a series of research studies and discussions in the developed world “empirical studies intended to evaluate the effect of advertising on sales at both the firm and industry level date back at least to the 1930s” (Taylor and Weiserbs, 1972), but although recently developing countries have also been conducting researches, none has been done in Sudan.

Some examples include a case study that has been conducted on Indian companies concluded that there “is a significant relationship between advertisement expenditure and sales wherein advertisement expenditure positively impacts the sales revenue of the business” (Sharma, Mahendru & Singh, 2011).

Another case study has been done on a Nigerian bottling company to show the association between advertising and sales volume. “Secondary data were collected from the company’s annual financial records and account for eleven years covering 1999 - 2009. The major result showed that there is a significant relationship between advertising and the sales of the company. The study also showed that there is a significant improvement in the sales of the company as a result of advertising” (Akanbi, Paul, Adeyeye, Tolulope, 2011).

Lewis and Reily (2010) illustrated a study of a randomized experiment measuring the effects of online advertising on customer purchases at a retailer, on a population of over a million customers matched between the retailer and Yahoo. The study showed that Weekly panel data yield statistically and economically significant impacts of the advertising on purchases. Furthermore the treatment effect persists for weeks after the end of the advertising campaign,

with an estimated total revenue increase more than seven times the retailer's expenditure on advertising during the study. Interestingly 93% of the effect occurs in offline stores, and 78% of the effect comes from viewers who never clicked the online advertising.

### C. Empirical studies results and methodology

Some of the empirical studies with the different tools to analyze the data are summarized in the table below:

**Table 4: Empirical studies results and methodology**

<b>Study</b>	<b>Methodology</b>	<b>Result</b>
Taylor and Weiserbs (1972), (USA)	The Houtakker-Taylor model	Conclude that advertising affects aggregate consumption and the relationship between advertising and consumption is not found to be unidirectional but simultaneous.
Guo (2003), (USA)	Co integration Analysis	Reveal the presence of long-term equilibrium relationship between advertising and consumption.
Philip(2007), (India)	Dickey-Fuller test, Philips-Peron Test	Finds that radio advertising was relatively ineffective in stimulating sales of the joint outputs (number of savings and checking accounts).
Pagan, Sethi, & Soydemir, (2001), (USA)	Bivariate vector autoregressive model	Reveals that a one-time increase in advertising expenditure leads to increase in the sales in orange sales with a one-month lag. Nevertheless, the impact of advertising on grapefruit sales is more immediate and relatively large.
Leach and Reekie (1996) (South Africa)	The variants of the Koyack Distributed Lag model and Granger's Causality model	Conclude that advertising expenditure causes sales but sales do not simultaneously cause advertising.

Kaiser and Wright (2006) (Germany)	Seemingly unrelated regressions model & Gaussian Mixture Model	Finds that advertisements increased reader utility of magazines.
Elliot (2001) (UK)	Co integration Analysis	Finds a relationship between advertising expenditure and sales appears to be stable.
Metwally (1997) (Australia)	Correlation test	Reveals that growth in advertising expenditure is strongly correlated with growth in sales ;that movements in market shares exerts a significant effect on the growth in advertising expenditure, and that the weight of advertising in the marketing- promotional-mix is a strong determinant of growth of advertising expenditure.
Yiannaka, Giannakas and Tran (2002) (Greece)	Unbalanced panel data set	Examines the effectiveness of advertising in the Greek processed meats sector and their results indicate a significant variation across the mediums.
S.Sharma,J.Sharma (2009) (India)	Fixed Effect approach	Revealed that advertising has influenced sales, though its relative effectiveness was not the same for all the categories of firms.
Gilbody, Wilson, and Watt (2005) (USA)	Randomized controlled trials, controlled clinical trials, and interrupted time series analyses	Conclude that direct-to-consumer advertising leads to increased prescription of the advertised product. Patients are led to believe the effectiveness of certain drug through professional advertising skills.

#### **IV. METHODOLOGY & DATA**

To quantitatively assess the relationship of advertising to sales a primary empirical study was conducted.

Nevertheless in this study, a single independent variable in the model would have provided an inadequate description, since a number of independent variables affect the response variables, where sales being the dependant variable is affected by several variables. Therefore to study the effect of advertising on sales, other variables were taken into consideration.

Since the predictions of the response variable based on a model containing only a single independent variable is too imprecise to be useful. A more complex model containing additional independent variables typically is more helpful in providing sufficiently precise predictions of the response variable. Thus multiple linear regression was applied. "A method used to model the linear relationship between a dependent variable and one or more independent variables". Multiple regression is a popular technique for predicting product sales with the help of other variables that are likely to have a bearing on sales.

##### **Multiple Linear Regression**

The general purpose of multiple linear regression (the term was first used by Pearson, 1908) is to learn more about the relationship between several independent or predictor variables and a dependent or criterion variable (Multiple Regression, 2012). MLR is based on least squares: "the model is fit such that the sum of squares of differences of observed and predicted values is minimized".

Furthermore “a multiple linear regression analysis is carried out to predict the values of a dependent variable, Y, given a set of p explanatory variables (x1,x2,...,xp)” (Elliot & Mark Tranmer,2010).

### **Assumptions**

The MLR model is based on several assumptions. Provided the assumptions are satisfied, the regression estimators are optimal in the sense that they are unbiased, efficient, and consistent.

Ostrom (1990, p. 14) lists six basic assumptions for the regression model:

1. Linearity: the relationship between the predict and and the predictors is linear. The MLR model applies to linear relationships.
2. Nonstochastic X:  $E(e_i X_{i,k}) = 0$  The errors are uncorrelated with the individual predictors.
3. Zero mean:  $E[e_i] = 0$  The expected value of the residuals is zero. This is not a problem because the least squares method of estimating regression equations guarantees that the mean is zero.
4. Constant variance:  $E[e_i^2] = \sigma^2$  The variance of the residuals is constant.
5. Nonautoregression:  $E[e_i e_{i-m}] = 0, m \neq 0$  The residuals are random, or uncorrelated in time.
6. Normality: the error term is normally distributed. This assumption must be satisfied for conventional tests of significance of coefficients and other statistics of the regression equation to be valid. It is also possible to make no explicit assumption about the form of the distribution and to appeal instead to the Central Limit Theorem to justify the use of such tests.

## Data Collection

The study collected data from the company's reports. This is in terms of sales, advertising budget, brand value, point of sales (POS) and per capita GDP.

The Multiple linear regression was used to test for the hypothesis since it will shed light on whether there is any relationship between advertising and sales.

**Table 5: Data Presentation**

	<b>Year</b>	<b>Advertisement Budget – SDG</b>	<b>Per Capita GDP SDG</b>	<b>Brand Value Score out of 10</b>	<b>Point of Sale POS</b>	<b>Sales SDG</b>
1	<b>1999</b>	2,954,187	3,948	10	21,873	20,320,000
2	<b>2000</b>	3,499,859	4,200	10	25,980	24,834,000
3	<b>2001</b>	3,983,540	5,712	10	31,871	30,333,000
4	<b>2002</b>	4,523,901	5,964	10	38,018	37,032,000
5	<b>2003</b>	5,220,017	7,980	10	47,501	46,550,000
6	<b>2004</b>	6,367,003	7,980	9.5	60,947	60,980,000
7	<b>2005</b>	7,083,247	8,820	8.7	68,881	68,412,000
8	<b>2006</b>	8,834,001	10,080	7.8	88,948	88,687,000
9	<b>2007</b>	9,300,852	7,980	7.5	92,287	95,354,000
10	<b>2008</b>	10,487,325	9,401	8.1	100,159	100,912,000
11	<b>2009</b>	11,920,000	9,240	8.1	115,387	130,923,000
12	<b>2010</b>	13,543,728	10,114	8.3	121,125	156,955,000
13	<b>2011</b>	15,720,395	9,660	8.4	130,794	190,354,000

Table 5 illustrates the data collected for this study, in terms of sales, advertising budget, brand value, point of sales (POS) and per capita GDP. A period of thirteen years was adopted for this

study ranging from 1999-2011. The analysis was done with the aid of the statistical package for social sciences (SPSS).

### **Testing of Hypothesis**

Two hypotheses were tested in the course of this study.

Hypothesis 1 – Null hypothesis (H0)

- There is no significant improvement in sales of the company as a result of advertising. (H0) is that the coefficient relating the explanatory (x) variable (advertising) to the dependent (y) variable (sales) is 0. In other words there is no relationship between the explanatory variable and the dependent variable.

Hypothesis 2 – Alternative hypothesis (H1)

- There is a significant relationship between advertising and sales of the company. (H1) is that the coefficient relating the explanatory (x) variable (advertising) to the (y) variable (sales) is not equal to zero. In other words there is some kind of relationship between the explanatory variable and the dependent variable.

In summary the null and alternative hypotheses is written as:

- H0:  $\beta_1 = 0$
- H1:  $\beta_1 \neq 0$

## **V. RESULTS AND DISCUSSION**

As mentioned in the methodology a single independent variable in the model would have provided an inadequate description, since a number of independent variables affect the response variable. Thus multiple regression is used to predict the relationship of advertising on sales taking in consideration other variables that are likely to have a bearing on sales.

There are several factors which influence sales; however this study has focused on advertising budget, per capita gross domestic product (per capita GDP), brand value and point of sales (POS).

### **Five variables were considered:**

1. Sales (dependant variable) - Sales refer to the revenues generated by a firm in a given period, typically a year.
2. Advertised budget – Money set aside by the company to accomplish its marketing objectives (Advertising budget, 2012).
4. Per capita GDP “ A measure of the total output of a country that takes the gross domestic product (GDP) and divides it by the number of people in the country” (GDP, 2012).
5. Brand value “the amount that a brand is worth in terms of income, potential income, reputation, prestige, and market value” (Brand equity, 2012). The brand value is reflected as a score.10 being the highest.
6. Point of Sales (POS) “the physical location at which goods are sold to customers” (InvestorWords, 2012).

**Considerations taken were:**

1. Whether this model makes sense substantively.
2. Whether the usual assumptions of multiple linear regression analysis mentioned above are met with these data.
3. How much variation in sales the four explanatory variables explain? The essence of the thesis is to assess the effect of advertising on sales. Nevertheless, the analysis portrayed results for the other explanatory variables included.
4. Which explanatory variables are most 'important' in this model?
5. What is the nature of the relationship between sales and the explanatory variables?

The statistics were computed to analyze the impact of advertisement on sales using the model of regression. Through the regression analysis, tables 6, 7, 8 and 9 presenting the variables entered/removed, the model summary, anova and coefficients respectively were prepared.

**Table 6 :Variables Entered/Removed<sup>b</sup>**

Model	Variables Entered	Variables Removed	Method
1	Point of Sale POS, Advertising Budget, Brand value, Per capita GDP	.	Enter

a. All requested variables entered.

b. Dependent Variable: sales

The table above confirms that the dependent variable is sales and the explanatory/independent variables are POS, brand value, advertising budget and per capita GDP.

**Table 7:Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	1.000 <sup>a</sup>	1.000	.867	1.326E6	1.000	4900.040	4	8	.000

a. Predictors: (Constant), point of sale POS, advertising budget, brand value, per capita GDP

This multiple linear regression model, with four explanatory variables (POS, brand value, advertising budget and per capita GDP.), has an R squared value of 0.867.

87 % of the variation in sales can be explained by this model.

The Model Summary table 7 illustrates:

R = The correlation value between the dependant and independent variables, were

R=1 which indicates that the relationship between the dependant and independent variables is positive. That is the variables have an impact on sales since it is positive.

To sum up a high square implies a good fit. The R square value is 87% which indicates a good fit.

**Table 8 : ANOVA<sup>b</sup>**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3.444E16	4	8.611E15	4900.040	.000 <sup>a</sup>
	Residual	1.406E13	8	1.757E12		
	Total	3.446E16	12			

a. Predictors: (Constant), point of sale POS, advertising budget, brand value, per capita GDP

b. Dependent Variable: sales

In brief the ANOVA table analyzes the variance between the variables and the impact of the variances on the dependant variable.

Table 8 shows the anova table inclusive the sum of squares, mean square, f statistic and level of significance for regression equation as also for the residuals. The first important value is the level of significance the value of which is found to be 0.000. This is highly statistically significant ( $p \ll 0.05$ ) the usual 5% significance Level, which implies that the regression relation is

significant. That is the independent variables have an impact on the dependant variable. Looking at the sum of squares, the regression equation accounts for a major proportion of the values of the dependent variable (sales).

To sum up the ANOVA table above indicates that the model, as a whole, is a significant fit to the data.

**Table 9 : Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-3.393E7	1.200E7		-2.828	.022
AdvBudg	17.152	1.002	1.305	17.112	.000
Per capita Per capita GDP	-54.154	479.404	-.002	-.113	.913
BrandV	1068004.433	1212396.060	.019	.881	.404
POS	-413.556	142.770	-.294	-2.897	.020

a. Dependent Variable: sales

The coefficients table 9 above shows that for:

### **Advertising Budget**

- The constant, or intercept term for the line of best fit, when  $x = 0$ , is -3.393 (%).
- The slope, or coefficient for advertising budget, is positive: that is an increase in advertising budget will result in an increase in sales. For instance, we see that having controlled for per

capita GDP, brand value and POS (i.e. holding these variables constant), for every 1% increase in the advertising budget, there is an increase of 17.152% in the predicted value of sales.

- The slope coefficient is 17.152 with a standard error of 1.002.
- The t value = slope coefficient / standard error = 17.112.
- This is highly statistically significant ( $p \ll 0.05$ ) the usual 5% significance level.
- The standardized regression coefficient provides a useful way of seeing what the impact of changing the explanatory variable by one standard deviation.
- The standardized coefficient is 1.305. That is to say a one standard deviation change in the explanatory variable results in a 1.305 standard deviation change in the dependent variable sales.
- The level of significance is 0.000, which implies that the regression relation is significant.

### **Per Capita GDP**

- The slope, or coefficient for per capita GDP, is negative.
- The slope coefficient is -54.154 with a standard error of 479.404.
- The t value = slope coefficient / standard error = -.113.
- The standardized coefficient is -0.002.
- The level of significance is .913.

### **Brand Value**

- The slope, or coefficient for brand value, is negative.
- The slope coefficient is 1068004.433 with a standard error of 1212396.060.
- The t value = slope coefficient / standard error = .881.
- The standardized coefficient is 0.19.
- The level of significance is .404.

### **POS**

- The slope coefficient is -413.556 with a standard error of 142.770.
- The t value = slope coefficient / standard error = -2.897.
- The standardized coefficient is -2.94.
- The level of significance is .020.

## **A. Interpretation**

### **Advertising:**

The results portrays that the relationship between advertising and sales is highly significant. The level of significance is 0.000, this is highly statistically significant ( $p \ll 0.05$ ) comfortably rejecting the null hypothesis (H0) hypothesis 1 of zero variance at the 1 percent significance level, and is in favor to hypothesis 2 (H1) that there is a significant relationship between advertising and sales. The effect of advertising on sales for each year is illustrated in the appendix. In addition to the effect of advertisement on sales before other variables were included.

Reasoning behind the relationship can be, since without advertising customers will not know about the new offers and services provided. "Target groups needs to be made aware of the existence and availability of the product" (Marketing Theory, 2012) through advertising. By providing the new offers and services, in the right advertising medium (ensuring the maximum exposure of the advertisement to the customers), with the right message, creativity, right time, right place it increases the chance of the customer to approach the product.

Zain uses a variety of advertising methods to reach their customers as well as potential customers as illustrated in table 10. Among them are television and radio commercials, newspaper advertising, social media, and billboards in various strategic locations.

**Table 10: Zain Advertising**

Advertisements	Images																		
<p>Outdoor Billboards</p> <p>Network of street billboards are located across Khartoum.</p>																			
<p>Press Advertising</p> <p>Frequent advertisements are published in the local newspapers in English &amp; in local language.</p>	 <table border="1" data-bbox="678 1234 1198 1318"> <thead> <tr> <th>الخدمة</th> <th>زين</th> <th>مكة</th> <th>مكة</th> <th>مكة</th> <th>مكة</th> </tr> </thead> <tbody> <tr> <td>التكلم</td> <td>0.0014</td> <td>0.0020</td> <td>0.0147</td> <td>0.0044</td> <td>0.0047</td> </tr> <tr> <td>رسالة نصية</td> <td>0.04</td> <td>0.04</td> <td>0.25</td> <td>0.25</td> <td>0.25</td> </tr> </tbody> </table>	الخدمة	زين	مكة	مكة	مكة	مكة	التكلم	0.0014	0.0020	0.0147	0.0044	0.0047	رسالة نصية	0.04	0.04	0.25	0.25	0.25
الخدمة	زين	مكة	مكة	مكة	مكة														
التكلم	0.0014	0.0020	0.0147	0.0044	0.0047														
رسالة نصية	0.04	0.04	0.25	0.25	0.25														

<p><b>Banners and Roller-up</b></p> <p>Are distributed in the most strategic places like banks , hotels restaurants , service places... etc</p>	
<p><b>Branding at the airports</b></p> <p>Set of signage's &amp; banners are seen at the airport</p>	
<p><b>Bulk SMS</b></p> <p>Regular bulk SMS are sent from time to time in English &amp; Arabic</p>	<p>For example:</p> <p><i>-You can receive Twitter SMS's on your mobile for free and without internet. To activate ...</i></p> <p><i>-Now you can copy any ring back tone you like when calling a person by pressing ..</i></p>

**Others include:**

Brochures & Newsletters: handed in streets & traffics. In addition brochures stands are circulated around banks, hotels, restaurants, service places... etc.

- Social Media/Websites.
- In store advertising.
- Radio Advertising.

Advertising plays an important role in identifying the product and service and differentiating it. Furthermore it communicates information about the product/service, inducing consumers to try the product. Moreover it builds brand preference and loyalty. Thus advertising is essential to aid customers to learn about the offers provided leading them to purchase it.

It is worth noting that advertising is far more difficult than thought due to the fact that there are a variety of factors that contribute to the advertising setting and to the increase of sales.

For example, a company cannot say that the reason for the increase of sales during a certain period of time was exclusively due to the advertising campaign that was launched at that particular time. Yes, the advert could have played a role but yet there are other factors that would play a role to the increase in sales.

To give an example would be the time of the year. If a beverage company launched a campaign during the summer would the increase in sales be due to the campaign solely or due to the summer weather?

Others can be, an increase in income for the targeted customers, a lessening of the competitor's activities, reduction on the products price, change in the packaging, season and so forth. Nevertheless, it is essential to take into consideration the other factors that may play a role in the increase in sales.

## **Point of Sales (POS) – Place**

The results show that the relationship between the point of sales and sales is highly significant. The level of significance is 0.02. This is highly statistically significant ( $p \ll 0.05$ ). The effect of the point of sales on sales for each year is illustrated in the appendix.

As the saying goes “ you cannot do marketing without sales and you cannot do sales without marketing”. Thus, “target groups needs to be made aware of the existence and availability of the product” (Marketing Theory, 2012) through advertising. In addition those goods must be available in the right place and at the right time. A sound marketing mix of the right product, sold at the right price, in the right place, using the most suitable promotion will ultimately generate sales.

POS affects sales revenue because customers are more likely to purchase a product if it is available and within their reach. As stated in the report for Mobile communication conducted by Zain group and Ericsson (2009) coverage extended to 85% of the population, as compared to 43% in 2006, with around 2000 telecommunication sites, of which 1,680 are operated by Zain, covering 790 cities and towns.

According to Keegan and Green (1999), channels of distribution are defined as “an organized network of agencies and institutions, which in combination, perform all the activities required to link procedures with users to accomplish the marketing task.” (p.461). Marketing channels can create place, time, form, and information utility for buyers.

Zain has a wide and extensive presence in Sudan. During 2012 point of sales for Zain reached 130,794 (Marketing Research department, 2012). Point of sales where Zain products are distributed includes supermarkets, shops of different sizes & Zain shops.

To ensure active distribution of the products and their availability in the outlets, profitable partners, sustainable relationships, and revenue and subscriber growth Zain Sudan controls the distribution channels through a capable route to market model comprised of a sales force, dealer, dealer subagent (DSA) under the supervision of a dealer territory manager from Zain.

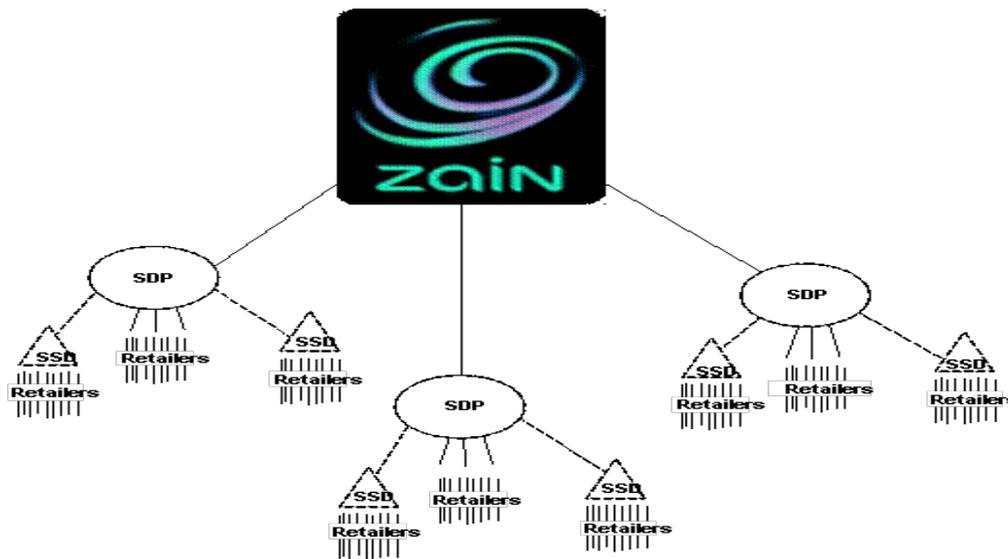


Figure 5: *Route to Market Model*

Figure 5 illustrates the route to market model consisting of exclusive agreement between Zain Sudan and Partners. Dealers each with one main premise – and each Dealer operating their own Satellites within the territory, named Strategic Sales Depots (SSD's).

- SSD's are NOT owned by another party - Dealer owned
- SSD's opened at strategic points in territory to ensure reach

- Dealer (and SSD's) manage the retailers within their territories through a team of DSA's, and drives execution according to Zain Sudan standards
- Zain Sudan assists Dealer with training, development and supervision
- Clear Roles & Responsibilities for each role player
- Proper performance management routines in place

As a result consistent service delivery, outlet penetration by ensuring increased availability is achieved ultimately resulting in profitability.

To conclude it is vital for the marketers and managers to understand all the aspect of the distributions channels because it contribute to the success of the company and without this understanding the firm can't be in a leader position (Keegan & Green, 1999).

## **Brand Value**

The results illustrates the level of significance of brand value is 0.404.

From 1999 till 2003 Zain score was 10, due to the fact that Zain was the only operator in Sudan. The score changed in the following years due to entrance of other operators; MTN started operations in 2004 & Sudani in 2006.

Even though there has been minor changes in the score given to Zain the sales was increasing. For example in 2006 Zain score was 7.8 and in 2007 it was 7.5 while the sales in 2006 were SDG88, 687,000 and increased to SDG 95,354,000 in 2007.

Nevertheless Zain already has strong brand awareness in Sudan, furthermore it has the first mover advantage.” The benefits of pioneering may result in market dominance and higher than average profitability over time ” (Deborah Etiington, 2012). Thus minor changes on its brand value will not have an effect on sales as illustrated in the results.

For instance table 5 shows that even though when Zain brand value score in 2005 decreased from 8.7 to 7.8 in 2006 its sales increased from SDG 68,412,000to SDG 88,687,000.

This can also be attributed to the fact that most people would prefer not to change their phone numbers by switching to other mobile phone providers, especially those first customers of Zain who have a loyalty to the brand.

As defined by Qfinance “brand value is the amount that a brand is worth in terms of income, potential income, reputation, prestige and market value” (2012).

Zain is maintaining its reputation by providing offers with reasonable prices. In addition they offer after sales services and have well trained call center unit.

Furthermore it spends in the social responsibility ‘‘We believe organizations should focus as much on social responsibility as on pure business performance – it is important to Zain that its social and cultural projects have a positive impact on the people ..We are a business, but one that recognizes that we do not live in a cozy bubble, cut off from the rest of the world.’’ (Zain, 2012).Its activities range from high profile corporate sponsorship to lower profile charity grants. For example it sponsors Olympic players, sponsors the national football team, sponsors cultural forums, funds, orphanage centers.

The largest number of customer base are within Zain 58% with MTN 22% and Sudani 21%.A strategy that they use is that all the services and offers that they provide are within the network. For example for post paid users they provide different bundles offering a lesser price but should be within the network. For example a bundle offering a 1000 minutes with a reduced price, but the 1000 minutes have to be within the network, calls made outside the network will incur extra costs).Whereas competitors for example MTN offers bundles outside their network (example 125 minutes to all network) .Since Zain has the highest customer base this strategy obliges consumers to use Zain.

Mobile, voice and data services that Zain provides:

- a. Voice development.
- b. Management of the voice product/service.
  - i. Pre-paid
  - ii. Post-paid
- c. 3G coverage for internet speed.
- d. Customized services specifically for corporate customers.
- e. Value added service (VAS) examples include:
  - i. Instant Balance Enquiry
  - ii. 24Hr recharge Facility
  - iii. Caller line identification
  - iv. Call divert
  - v. Call waiting ,call conference, voicemail, who called
  - vi. Call Hold Multimedia messaging service (MMS)
  - vii. Zain Live Portal SMS based Information Service
  - viii. Hello Tunes & Ring Tones
  - ix. Voice Mail Service
  - x. Easy Post-paid bill collection
  - xi. Gifting of Ring Tones & Hello Tunes
  - xii. GPRS
  - xiii. Business Solutions

Having a wide range of products has many advantages as it ensures that customers will not need to resort to the services of competitors. If sales of one product (good or service) decline, the difference can be covered by revenues from another product. However the costs of introducing a new product are usually high and the company has to decide whether potential return will exceed product development costs.

Also Zain is perceived as a premium brand, thus many Sudanese tend to be carrying Zain in essence to its prestige. Due to it being premium and due to its after sales services, customer & data services the largest conglomerates in Sudan are its clients. These include Greater Nile Petroleum Operational Company (GNPOC), White Nile Petroleum Operational Company (WNPOC), Petrodar Operational Company (PDOOC, DAL Group etc.

## Per Capita GDP

The results show the level of significance of per capita GDP is 0.913.

The per capita GDP in Sudan in the last years has dropped and this can be explained by different reasons; essentially low productivity in Sudan economy due to economic and political factors.

Even though the per capita GDP has been declining in the recent years table 5 shows that the sales are increasing. The following reasons might be behind this:

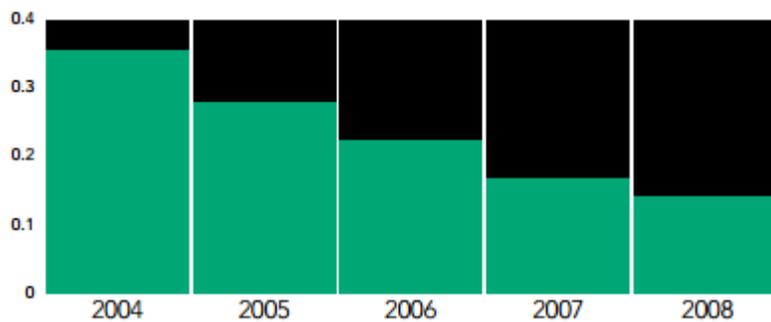


Figure 6: Average price of ongoing mobile call per minute in Sudan (SDG)

Source: *Deloitte estimates based on call revenue and outgoing minutes in Sudan.*

Increased competition has led to persistent reductions in the retail prices charged by Mobile Network Operators (MNOs) for mobile calls. As figure 6 illustrates the average prices blended across pre and post-paid services in 2008 were less than half of 2005 level (Deloitte, 2009).

Furthermore another reason can be explained by the social nature of Sudanese people who regard social interaction as an essential component in their lives regardless of change in their incomes.

One important aspect of Sudanese culture is that people like to meet and converse on their common interest, their lives and to greet each other, and family members. The availability of having cell phones makes it easier for them to satisfy such desires.

In addition to the social nature of the Sudanese people compared to other needs of communication it is less expensive to do work through cell phones rather than other means of interaction. For instance if you want to ask about a certain item or good or to meet with somebody to do business it will be far more less expensive to achieve such an objective by calling rather than going to the other party and incurring more expenses and time.

In support to this view as noted in 2009 in the economic impact of mobile communication in Sudan report a recent survey of 800 consumers in Sudan asked the degree to which people agreed with the following statement: "Mobile phone is a business enabler. It allows business to be more efficient and build, keep and maintain customer relations." Of the 744 respondents, 84% stated that they "completely agreed" with the statement.

Mobile phones also have encouraged the growth of small business and increased their efficiency. For instance by being reachable by phone many women in Sudan have their own business by providing beauty and hairstyle service at the customers house, without the need to incur the initial cost of setting up a beauty salon. Also for henna painter women mobile phones is an essential income generating tool since all the women customers can reach the henna lady by phone. Many business people testified that the mobile phone offers new possibilities to fix up business appointments, arrange for wares to be delivered and develop clear time schedules. In short, they conclude that the organization of small enterprise in Sudan has been greatly enhanced by the mobile phone (De Bruijn & Brinkman, 2008).

However it is worth noting that one of the difficulties that might affect the progress of this sector is the shortage of hard currency for Sudan because of the deterioration in the general economic situation. Zain and MTN have foreign partners and they will find difficulties to transfer the foreign currency. As a result of the loss of the oil income, due to the separation of Southern Sudan which lead to stopping oil exportation that is mainly produced in the South and transported through a pipeline via Northern Sudan (M.Salaheldin, personal communication,2012).

## **VI. CONCLUSION**

In the past decade business markets in Sudan have experienced significant growth in terms of size and number of providers. This has led organizations to operate in a more complex and competitive environment. Accordingly, to differentiate themselves an increase in advertising has been observed in various media in Sudan.

Despite the hype about advertising, upon asking the different stakeholders in companies about how they assess advertising it has been found that no quantitative assessment of the effectiveness of advertising is made. Paradoxically companies do not measure the effect of advertising. In addition in Sudan no empirical study has been made to assess the relationships between advertising and sales.

This study sheds light on the correlation between advertising and sales in Sudan. It aims to serve as a starting point for further research and a reference for Sudanese organizations to analyze the impact of their advertising expenditure and accordingly allocate their advertising budget. Measuring advertising will aid in assessment of advertising for future use, test advertising campaign, and achieve optimal sales.

Unfortunately only advertising budget and sales data were available to support this analysis. It would have been interesting to also test advertising budget's relationship to number of subscribers, and sales per subscriber, to try to test whether the main impact of advertising was to attract new subscribers, or to encourage them to make more calls. The inner workings of the strong relationship between advertising and sales could not therefore be probed.

The data used was collected from the telecom company Zain, spanning 13 years, from 1999 to 2012. The data was computed on SPSS using multiple linear regression. After controlling for other variables, the results showed that advertising has a significant and highly positive impact on sales.

The results show 1SDG spent on advertising produces 17SDG in sales. The verification points to the fact that advertising plays an important role and has a positive significant effect on sales. This implies that advertising is a critical element in an organization as it enhances the sales. In addition in this era of intense competition, especially within the telecommunication sector, the criterion for measuring success would much depend, on creating awareness, persuasion and informing customers of the existence of offerings. Also, Advertising facilitates the emergence and spread of new consumer standards, as it affects the perception held by consumers of the utility, quality and advantages of a product.

In today's economy, where companies are engaged in competition and a search for increasing returns, advertising investment becomes essential to win or defend market shares. The better the chances its efforts will be crowned with success.

It is a matter of regret that more detailed information was not available from Zain which would have allowed deeper analysis of the relationship between sales and advertising. Nevertheless given that no studies at all have been conducted in Sudan in this area, I believe that the research results are still significant.

## **Implications for further research**

According to this study advertising has an effect on sales.

However, to know if the findings are aligned with all international companies, further research has to be done:

- Compare the results of the other operators within the Telecom sector. In the study only Zain operator was studied in depth due to the difficulty of obtaining data from the other operators.
- Compare the impact of advertising of other companies to the designated companies advertising.
- Compare the results with companies in different sectors.
- Compare the results of companies in a different sector in the developing world and the developed world. The results show that in the Telecom industry a great impact on sales is realized. However as Sundarsan (2007) revealed in his study that advertising has influenced sales, though its relative effectiveness was not the same for all the categories of firms. Accordingly it is recommended that further studies should be made for the different industries.

**"Because the purpose of business is to create and keep a customer, the business enterprise has two-and only two—basic functions: marketing and innovation.**

**Marketing and innovation produce results; all the rest are costs. Marketing is the distinguishing, unique function of the business.** " Peter Drucker which his concepts and philosophies he developed have shaped modern management thinking.

**“How do I justify spending millions on creating an image. That’s millions my customers have to spend when they buy from us.”** Tom Parker, CEO of Clark’s shoes

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## APPENDIX

**Table 11: Variables/Entered Removed – Year 1999**

Model	Variables Entered	Variables Removed	Method
1	Point of Sale POS, Advertisement Budget – SDG <sup>a</sup>		Enter

a. All requested variables entered.

b. Year = 1999

**Table 12: Model Summary – Year 1999**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.980 <sup>a</sup>	.960	.951	21,449.346

a. Predictors: (Constant), Point of Sale POS, Advertisement Budget – SDG

b. Year = 1999

**Table 13: Annova – Year 1999**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.861E+10	2	4.931E+10	107.170	.000 <sup>a</sup>
	Residual	4.141E+09	9	4.601E+08		
	Total	1.028E+11	11			

a. Predictors: (Constant), Point of Sale POS, Advertisement Budget – SDG

b. Year = 1999

c. Dependent Variable: Sales SDG

**Table 14: Coefficient – Year 1999**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-9454912.921	1842041.614		-5.133	.001
	Advertisement Budget – SDG	47.513	9.203	1.268	5.163	.001
	Point of Sale POS	-27.587	22.341	-.303	-1.235	.248

a. Year = 1999

b. Dependent Variable: Sales SDG

**Table 15: Variables/Entered Removed – Year 2000**

Model	Variables Entered	Variables Removed	Method
1	Point of Sale POS, Advertisement Budget – SDG <sup>a</sup>		Enter

a. All requested variables entered.

b. Year = 2000

**Table 16: Model Summary – Year 2000**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.934 <sup>a</sup>	.872	.844	23,684.181

a. Predictors: (Constant), Point of Sale POS, Advertisement Budget – SDG

b. Year = 2000

**Table 17: Annova – Year 2000**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.453E+10	2	1.727E+10	30.782	.000 <sup>a</sup>
	Residual	5.048E+09	9	5.609E+08		
	Total	3.958E+10	11			

a. Predictors: (Constant), Point of Sale POS, Advertisement Budget – SDG

b. Year = 2000

c. Dependent Variable: Sales SDG

**Table 18: Coefficient – Year 2000**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	976811.251	182928.843		5.340	.000
	Advertisement Budget – SDG	.314	1.912	.065	.164	.873
	Point of Sale POS	41.698	19.048	.872	2.189	.056

a. Year = 2000

b. Dependent Variable: Sales SDG

**Table 19: Variables/Entered Removed – Year 2001**

Model	Variables Entered	Variables Removed	Method
1	Point of Sale POS, Advertisement Budget – SDG <sup>a</sup>		Enter

a. All requested variables entered.

b. Year = 2001

**Table 20: Model Summary – Year 2001**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.978 <sup>a</sup>	.957	.947	18,514.933

a. Predictors: (Constant), Point of Sale POS, Advertisement Budget – SDG

b. Year = 2001

**Table 21: Annova – Year 2001**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.800E+10	2	3.400E+10	99.181	.000 <sup>a</sup>
	Residual	3.085E+09	9	3.428E+08		
	Total	7.108E+10	11			

a. Predictors: (Constant), Point of Sale POS, Advertisement Budget – SDG

b. Year = 2001

c. Dependent Variable: Sales SDG

**Table 22: Coefficient – Year 2001**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-30544.674	1709222.755		-.018	.986
	Advertisement Budget – SDG	3.806	6.428	.165	.592	.568
	Point of Sale POS	44.009	15.021	.817	2.930	.017

a. Year = 2001

b. Dependent Variable: Sales SDG

**Table 23: Variables/Entered Removed – Year 2002**

Model	Variables Entered	Variables Removed	Method
1	Point of Sale POS, Advertisement Budget – SDG <sup>a</sup>		Enter

a. All requested variables entered.

b. Year = 2002

**Table 24: Model Summary – Year 2002**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.987 <sup>a</sup>	.973	.967	14,394.132

a. Predictors: (Constant), Point of Sale POS, Advertisement Budget – SDG

b. Year = 2002

**Table 25: Annova – Year 2002**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.797E+10	2	3.398E+10	164.016	.000 <sup>a</sup>
	Residual	1.865E+09	9	2.072E+08		
	Total	6.983E+10	11			

a. Predictors: (Constant), Point of Sale POS, Advertisement Budget – SDG

b. Year = 2002

c. Dependent Variable: Sales SDG

**Table 26: Coefficient – Year 2002**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	568159.669	294393.760		1.930	.086
	Advertisement Budget – SDG	5.937	1.358	.784	4.371	.002
	Point of Sale POS	7.787	6.623	.211	1.176	.270

a. Year = 2002

b. Dependent Variable: Sales SDG

**Table 27: Variables/Entered Removed – Year 2003**

Model	Variables Entered	Variables Removed	Method
1	Point of Sale POS, Advertisement Budget – SDG <sup>a</sup>		. Enter

a. All requested variables entered.

b. Year = 2003

**Table 28: Model Summary – Year 2003**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.985 <sup>a</sup>	.971	.964	39,514.336

a. Predictors: (Constant), Point of Sale POS, Advertisement Budget – SDG

b. Year = 2003

**Table 29: Anova – Year 2003**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.628E+11	2	2.314E+11	148.193	.000 <sup>a</sup>
	Residual	1.405E+10	9	1.561E+09		
	Total	4.768E+11	11			

a. Predictors: (Constant), Point of Sale POS, Advertisement Budget – SDG

b. Year = 2003

c. Dependent Variable: Sales SDG

**Table 30: Coefficient – Year 2003**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-334290.763	1346979.196		-.248	.810
	Advertisement Budget – SDG	5.482	4.200	.264	1.305	.224
	Point of Sale POS	42.874	11.922	.729	3.596	.006

a. Year = 2003

b. Dependent Variable: Sales SDG

**Table 31: Variables/Entered Removed – Year 2004**

Model	Variables Entered	Variables Removed	Method
1	Point of Sale POS, Advertisement Budget – SDG <sup>a</sup>		Enter

a. All requested variables entered.

b. Year = 2004

**Table 32: Model Summary – Year 2004**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.987 <sup>a</sup>	.974	.968	42,099.308

a. Predictors: (Constant), Point of Sale POS, Advertisement Budget – SDG

b. Year = 2004

**Table 33: Anova – Year 2004**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.987E+11	2	2.994E+11	168.909	.000 <sup>a</sup>
	Residual	1.595E+10	9	1.772E+09		
	Total	6.147E+11	11			

a. Predictors: (Constant), Point of Sale POS, Advertisement Budget – SDG

b. Year = 2004

c. Dependent Variable: Sales SDG

**Table 34: Coefficient – Year 2004**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-145971.022	413123.028		-.353	.732
	Advertisement Budget – SDG	6.997	1.445	.596	4.841	.001
	Point of Sale POS	27.507	8.134	.416	3.382	.008

a. Year = 2004

b. Dependent Variable: Sales SDG

**Table 35: Variables/Entered Removed – Year 2005**

Model	Variables Entered	Variables Removed	Method
1	Point of Sale POS, Advertisement Budget – SDG <sup>a</sup>		Enter

a. All requested variables entered.

b. Year = 2005

**Table 36: Model Summary – Year 2005**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.986 <sup>a</sup>	.972	.965	16,708.807

a. Predictors: (Constant), Point of Sale POS, Advertisement Budget – SDG

b. Year = 2005

**Table 37: Annova – Year 2005**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.632E+10	2	4.316E+10	154.597	.000 <sup>a</sup>
	Residual	2.513E+09	9	2.792E+08		
	Total	8.883E+10	11			

a. Predictors: (Constant), Point of Sale POS, Advertisement Budget – SDG

b. Year = 2005

c. Dependent Variable: Sales SDG

**Table 38: Coefficient – Year 2005**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2573825.820	328696.381		7.830	.000
	Advertisement Budget – SDG	3.082	.980	.424	3.146	.012
	Point of Sale POS	20.348	4.698	.584	4.331	.002

a. Year = 2005

b. Dependent Variable: Sales SDG

**Table 39: Variables/Entered Removed – Year 2006**

Model	Variables Entered	Variables Removed	Method
1	Point of Sale POS, Advertisement Budget – SDG <sup>a</sup>		Enter

a. All requested variables entered.

b. Year = 2006

**Table 40: Model Summary – Year 2006**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.971 <sup>a</sup>	.942	.929	111,280.621

a. Predictors: (Constant), Point of Sale POS, Advertisement Budget – SDG

b. Year = 2006

**Table 41: Annova – Year 2006**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.812E+12	2	9.061E+11	73.174	.000 <sup>a</sup>
	Residual	1.115E+11	9	1.238E+10		
	Total	1.924E+12	11			

a. Predictors: (Constant), Point of Sale POS, Advertisement Budget – SDG

b. Year = 2006

c. Dependent Variable: Sales SDG

**Table 42: Coefficient – Year 2006**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1354619.420	770225.085		1.759	.112
	Advertisement Budget – SDG	4.746	3.292	.498	1.441	.183
	Point of Sale POS	32.281	23.268	.479	1.387	.199

a. Year = 2006

b. Dependent Variable: Sales SDG

**Table 43: Variables/Entered Removed – Year 2007**

Model	Variables Entered	Variables Removed	Method
1	Point of Sale POS, Advertisement Budget – SDG <sup>a</sup>		Enter

a. All requested variables entered.

b. Year = 2007

**Table 44: Model Summary – Year 2007**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.970 <sup>a</sup>	.941	.927	13,615.158

a. Predictors: (Constant), Point of Sale POS, Advertisement Budget – SDG

b. Year = 2007

**Table 45: Annova – Year 2007**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.645E+10	2	1.322E+10	71.339	.000 <sup>a</sup>
	Residual	1.668E+09	9	1.854E+08		
	Total	2.812E+10	11			

a. Predictors: (Constant), Point of Sale POS, Advertisement Budget – SDG

b. Year = 2007

c. Dependent Variable: Sales SDG

**Table 46: Coefficient – Year 2007**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2393833.982	582977.883		4.106	.003
	Advertisement Budget – SDG	8.101	2.537	1.131	3.193	.011
	Point of Sale POS	-7.996	16.994	-.167	-.471	.649

a. Year = 2007

b. Dependent Variable: Sales SDG

**Table 47: Variables/Entered Removed – Year 2008**

Model	Variables Entered	Variables Removed	Method
1	Point of Sale POS, Advertisement Budget – SDG <sup>a</sup>		Enter

a. All requested variables entered.

b. Year = 2008

**Table 48: Model Summary – Year 2008**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.959 <sup>a</sup>	.919	.901	37,242.791

a. Predictors: (Constant), Point of Sale POS, Advertisement Budget – SDG

b. Year = 2008

**Table 49: Annova – Year 2008**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.423E+11	2	7.116E+10	51.306	.000 <sup>a</sup>
	Residual	1.248E+10	9	1.387E+09		
	Total	1.548E+11	11			

a. Predictors: (Constant), Point of Sale POS, Advertisement Budget – SDG

b. Year = 2008

c. Dependent Variable: Sales SDG

**Table 50: Coefficient – Year 2008**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3867316.010	449034.898		8.613	.000
	Advertisement Budget – SDG	4.014	2.303	.743	1.743	.115
	Point of Sale POS	10.690	20.747	.220	.515	.619

a. Year = 2008

b. Dependent Variable: Sales SDG

**Table 51: Variables/Entered Removed – Year 2009**

Model	Variables Entered	Variables Removed	Method
1	Point of Sale POS, Advertisement Budget – SDG <sup>a</sup>		Enter

a. All requested variables entered.

b. Year = 2009

**Table 52: Model Summary – Year 2009**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.979 <sup>a</sup>	.958	.949	144,068.052

a. Predictors: (Constant), Point of Sale POS, Advertisement Budget – SDG

b. Year = 2009

**Table 53: Annova – Year 2009**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.259E+12	2	2.129E+12	102.591	.000 <sup>a</sup>
	Residual	1.868E+11	9	2.076E+10		
	Total	4.445E+12	11			

a. Predictors: (Constant), Point of Sale POS, Advertisement Budget – SDG

b. Year = 2009

c. Dependent Variable: Sales SDG

**Table 54: Coefficient – Year 2009**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-6536156.519	2420678.000		-2.700	.024
	Advertisement Budget – SDG	5.009	4.612	.185	1.086	.306
	Point of Sale POS	114.857	24.178	.807	4.751	.001

a. Year = 2009

b. Dependent Variable: Sales SDG

**Table 55: Variables/Entered Removed – Year 2010**

Model	Variables Entered	Variables Removed	Method
1	Point of Sale POS, Advertisement Budget – SDG <sup>a</sup>		Enter

a. All requested variables entered.

b. Year = 2010

**Table 56: Model Summary – Year 2010**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.881 <sup>a</sup>	.776	.726	154,361.249

a. Predictors: (Constant), Point of Sale POS, Advertisement Budget – SDG

b. Year = 2010

**Table 57: Annova – Year 2010**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.420E+11	2	3.710E+11	15.571	.001 <sup>a</sup>
	Residual	2.144E+11	9	2.383E+10		
	Total	9.565E+11	11			

a. Predictors: (Constant), Point of Sale POS, Advertisement Budget – SDG

b. Year = 2010

c. Dependent Variable: Sales SDG

**Table 58: Coefficient – Year 2010**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.147E+07	8318993.949		1.378	.201
	Advertisement Budget – SDG	21.077	12.104	2.075	1.741	.116
	Point of Sale POS	-1.869E+02	182.604	-1.220	-1.024	.333

a. Year = 2010

b. Dependent Variable: Sales SDG

**Table 59: Variables/Entered Removed – Year 2011**

Model	Variables Entered	Variables Removed	Method
1	Point of Sale POS, Advertisement Budget – SDG <sup>a</sup>		Enter

a. All requested variables entered.

b. Year = 2011

**Table 60: Model Summary – Year 2011**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.521 <sup>a</sup>	.272	.110	763,531.478

a. Predictors: (Constant), Point of Sale POS, Advertisement Budget – SDG

b. Year = 2011

**Table 61: Annova – Year 2011**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.956E+12	2	9.779E+11	1.677	.240 <sup>a</sup>
	Residual	5.247E+12	9	5.830E+11		
	Total	7.203E+12	11			

a. Predictors: (Constant), Point of Sale POS, Advertisement Budget – SDG

b. Year = 2011

c. Dependent Variable: Sales SDG

**Table 62: Coefficient – Year 2011**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7025088.537	1.379E+07		.509	.623
	Advertisement Budget – SDG	17.829	25.850	.946	.690	.508
	Point of Sale POS	-114.497	354.813	-4.426E-01	-3.227E-01	.754

a. Year = 2011

b. Dependent Variable: Sales SDG

**Table 63: Sales and Advertisement**

Year	Advertising Budget	Sales	Growth
1999	0%	0%	0%
2000	18%	22%	122%
2001	14%	22%	157%
2002	14%	26%	186%
2003	15%	26%	173%
2004	22%	31%	141%
2005	11%	12%	109%
2006	25%	30%	120%
2007	5%	8%	160%
2008	13%	6%	46%
2009	14%	30%	214%
2010	14%	20%	143%
2011	16%	21%	131%

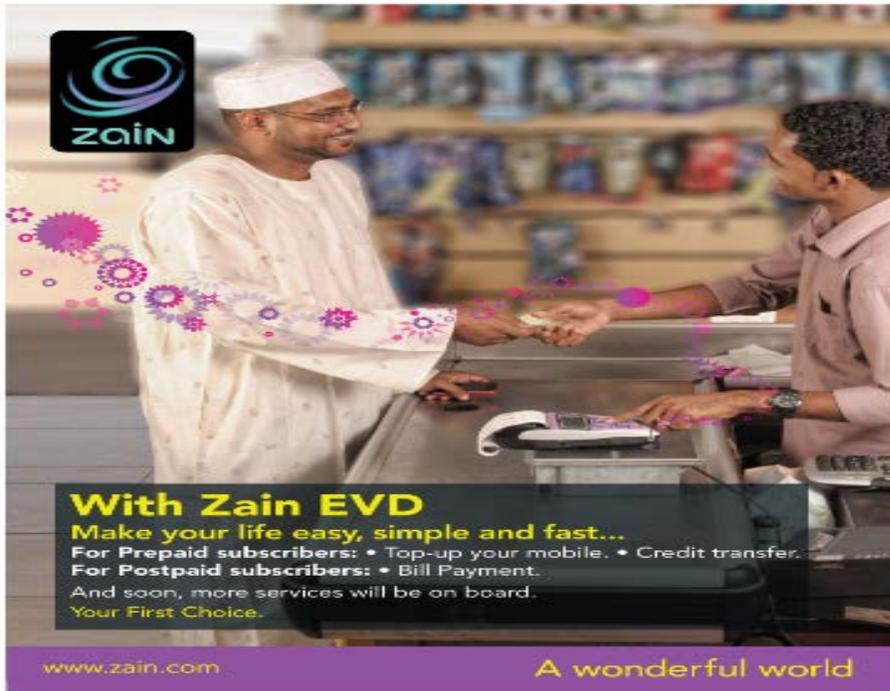


Figure 7: Zain Ad - EVD



## سمحة المهلة... هل تعلم؟ إنو مع زين إستايلي...



- **القرش بكلمك 7 ثواني داخل شبكة زين أو 15 ثانية مع أرقام العائلة والأصدقاء المحيطة وحتتاسب ثانية بثانية.**
- **وبأقل من قرش للثانية حنتكلم مع أرقام العائلة والأصدقاء العالمية وحتتاسب ثانية بثانية.**
- **أقل سعر للرسائل في السودان، مع أرقام العائلة والأصدقاء المحلية بـ 2 قرش وداخل الشبكة بـ 4 قروش.**
- **20% ثواني إضافية لحزم زين إستايلي للمكالمات داخل الشبكة.**
- **عندك 200 ميجابايت شهرياً ومجاناً للإنترنت.**
- **\* إستمتع بأقل تكلفة للمكالمات والرسائل مع العائلة الأكبر في السودان.**



الخدمة	داخل شبكة زين	العائلة والأصدقاء محلي	خارج شبكة زين	مكالمات عالمية	العائلة والأصدقاء عالمي	التجربا والإنمارسات
تعرفة المكالمات بالثانية (جنه سوداني)	0.0014	0.0007	0.0020	0.0167	0.0084	0.0667
تعرفة الرسائل (جنه سوداني)	0.04	0.02	0.04	0.25	0.25	0.25

• التعرفة أعلاه غير شاملة للضريبة. • تطبق تعرفة إنشاء المكالمه.  
 • لمشاركتي حزم زين إستايلي، كلما تختار حزم متنوعه وكبيره حثلاخد قيمة أفضل للحزم.

لمزيد من المعلومات، فريدها الإتصال بـ 123، ارسل رسالة لـ 1230، قم برؤية أقرب مكتب لزين أو ارسلنا على البريد الإلكتروني: info@sd.zain.com

اختيارك الأول.

[www.youtube.com/ZainSudanTV](http://www.youtube.com/ZainSudanTV)
[www.twitter.com/ZainSudan](https://twitter.com/ZainSudan)
[www.facebook.com/ZainSudan](https://www.facebook.com/ZainSudan)

www.zain.com
زين، عالم جميل

Figure 8: Zain Ad – Samha Almahala