

Influence of Digital Signage Usage on Product Sale among Leading Supermarkets in Kenya

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Abstract

In the changing business environment, retailers are always searching new strategies to attract and hold customers. Digital signage is a very attractive medium for advertising and general communication in open spaces. It has been adopted by many business sectors that have benefited from the advantages it offers. This study sought to establish the effect digital signage has on the sale of products among leading supermarkets in Kenya. The objective of this study was to find out the influence of digital signage on product sales among leading supermarkets in Kenya. This study adopted a descriptive research design and respondents were drawn from Tuskys, Uchumi and Nakumatt supermarkets. They included managers, assistant managers, supervisors and merchandisers. A questionnaire was used for data collection. Data collected was analyzed using Statistical Package for Social Scientists (SPSS). The data was presented in Tables and Figures using frequencies and percentages. The findings show that digital signage does influence the sales of products. It was also found out that digital signage was perceived to be helpful by informing the respondents of the products and influencing their purchase decisions. The location of digital signage was found to be critical to the success of the advertisement. However, positioning of the screens and advertisement content for relevance and completeness were the recommended remedies.

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Key words: Digital Signage System, Product Sales, Supermarkets, Nairobi, Kenya

1. Introduction

According to oxford dictionary (2008), a supermarket is a large self-service shop selling food and household goods. Supermarkets are the most frequented retail stores, discount foods stores, and superstore. Supermarkets also have been hit hard by the rapid growth of out-of-home eating thus; most supermarkets are making improvements to attract more customers. In the battle for market share many large supermarkets have moved up scale, providing from scratch bakeries and fresh sea foods departments. Others are cutting effectively with food discounters while a few have added web-based sales (Boakes, 2008). In the changing business environment, retailers are always searching new strategies to attract and hold customers. In the past, retailers attracted customers with unique products, more or better services than their competitions offered, or credit cards (Kotler, 2006, p. 401).

Today, national-brands manufacturers in their drive for volumes have placed their branded goods everywhere. Moreover, customers have become smarter and more price sensitive. They see no reason to pay more for identical brands, especially when service differences are shrinking. For these reasons, many retailers today are rethinking their marketing strategies (Kotler, 2006 pg 402). Digital signage is one of the modern developments in the advertising media. According to Kamel and Campilho (2009, p.2) digital signage “is a very attractive medium for advertising and general communication in open spaces.” Kamel and Campilho record that digital signage has been adopted by many business sectors and have benefited from the advantages it offers. Lash (2004) explains that until recently digital signage wasn’t viable or cost effective and screens were too expensive and too big, and they wore out too quickly. The Light Crystal Display (LCD) plasma revolution as noted by Moore (2009) has changed and screens are now so affordable they can rival the printing costs of static posters over the course of time.

According to Lundstrom (2008), digital signage systems developed as a result of technological advancement of television broadcasting. It consists of all real time, near-real time and non-real time information together with audio and video. Lundstrom describes digital signage as a system based on technology based on various methods

of using television and computer screens as well as other types of display devices. He further explains that, digital signage representing a varying physical quantity such as sound or light waves by means of discrete signals interpreted as numbers, usually in the binary system, as in a digital recording or digital television. Borruso (2007) describes digital signage as any form of business communication where a dynamic messaging device is used to take the place of, or supplement, other forms of messaging.

According to Media 2000 Systems (2007), digital signage was used in the 1970's in stores with Video Cassette Recorder (VCRs) and televisions to attract customers. However, the system which recorded all communications was always on a closed circuit. In the recent past, Schaeffler (2009) records that companies have been able to display high quality content with the aid of Internet connection. This led to the realization of the digital signage potential. Kelsen (2010) explains that digital signage is expected to revolutionize the consumer market in the next few years. Kamel and Camplho (2009, p.1) defines digital signage as "a form of public display used extensively to advertise targeted and impacting content to large audiences in public venues." Schaeffler (2008) explains that from a display point of view, both products and services are driven by the concept of stored data being replayed for viewers. According to Lundstrom (2008), digital signage is done in ways that are most efficient to provide information on advertising and to people on public places. This makes the understanding of information systems critical in achieving higher level of productivity and effectiveness in business. Without this, domestic businesses will lose to international competition. Laudon and Laudon add that, for businesses interested in achieving superior performance, it is important to identify opportunities and threats and how information systems can help the businesses manage change or achieve competitive advantage.

2. Literature Review

Providing an ironclad definition of digital signage proves to be less of a challenge, but we know it when we see it. Semantics can be argued and hairs can be split about what exactly constitutes digital signage, but on the whole, it can be expressed in simple terms that are intuitively understandable: digital signage is any form of business communication where a dynamic messaging device is used to take the place of, or supplement, other forms of messaging (Bickers, 2007). Until recently, digital signage wasn't viable or cost effective. Screens were too expensive and too big and they wore out too quickly. The return wasn't strong enough. But the LCD spell out first time mentioned/plasma revolution has changed and continues to change all of that. Screens are now so affordable they can rival the printing costs of static posters over the course of time. They are thin and can hang on a wall, and they can communicate with computer networks and fetch new content, eliminating the days when employees trotted from screen to screen with armloads of VCR tapes, Bicker, 2007, pg 12-15).

In retail digital signage is used to communicate with customers about in-store specials, directing customers to other parts of the store, managing traffic and hotspots, and conveying brand messages. In banks, Digital Signage is used in displaying interest rates and product information, as well as lifestyle messages and branding. In airports and bus stations, Digital Signage is used for keeping travelers up-to-date on arrival and departure times while also providing an advertising vehicle for shops and restaurants. In casinos and entertainment venues, Digital Signage is used in creating a customer experience that is consistent with an exciting ambience and atmosphere. In doctors' offices and waiting rooms, Digital Signage is used to entertain bored patients while providing a vehicle for ads from pharmaceutical and other companies. In schools and on corporate campuses, Digital Signage is used to facilitate a level of communication between parties that would have been unthinkable just a few years ago. And the list goes on. Virtually any place that has printed signage bus shelters and pay-phone booths, shopping malls, atop gas pumps, Digital Signage has the potential to improve its worth with an upgrade to digital, dynamic messaging, (Bickers, 2007, pg 45-58). For schools, digital signage represents a powerful new tool that can unify communications, improve campus life and generate revenue, all through the same effort. Digital signage can provide a large number of viewers per display with high viewing frequency of a homogenous and attractive demographic, (Bickers, 2007, pg 67).

3. Methodology

The study adopted a descriptive research design to gather data to establish the influence of digital signage on product sales in selected supermarkets in Kenya. This was appropriate as it enables the researcher to get a description of the situation as it is. The data gathered are on questions from 'what is' hence a need for a research design which would provide the required description. Descriptive research designs according to Wood and Ross-Kerr (2010) provide descriptions of situations to answer the research questions. Gravetter and Forzano (2008) explain that the purpose of descriptive designs is to describe the variables as they exist. Therefore, descriptive research design is not concerned in the relationship between variables but the description of individual variables.

3.1 Target Population

Mugenda and Mugenda (2003) define population a population as an entire group of individuals, events or objects having a common observable characteristic. Kercher (2007) describes a population as the universe of events from which the sample is drawn while, target population is made up of the elements or individuals in the population with the desired characteristics which the researcher wants to observe or study (Grove et al., 2009). This study has got two sets of populations; the supermarkets, sales representatives and employees of the selected supermarkets. The target populations of this study were; management and sales representatives/merchandisers who work for Uchumi, Tuskys and Nakumatt supermarkets. This study was conducted in 10 Tuskys branches and 14 Nakumatt branches located in Nairobi. The population of this study consisted of all the employees of the three supermarkets and merchandisers based in Nairobi. The target population of this study was the managers, supervisors, and merchandisers who are 485. The respondents targeted in this study were 38 managers, 48 assistant managers, 308 supervisors and 90 merchandisers.

Table 3.1: Target Population and Sample

Uchumi branches (4)	Target population		Sample 15%
	Per Branch	total per branch	
Managers	1	4	4
Deputy managers	1	4	4
Supervisors	10	40	8
Merchandisers	30	30	5
Big Nakumatt Branches (10)			
Managers	2	20	3
Deputy managers	2	20	3
Supervisors	12	120	18
Average Nakumatt Branches (4)			
Managers	1	4	1
Deputy managers	2	8	2
Supervisors	12	48	8
Merchandisers	30	30	5
Big Tuskys Branches (7)			
Managers	1	7	2
Deputy managers	2	14	3
Supervisors	10	70	11
Average Tuskys Branches (3)			
Managers	1	3	1
Deputy managers	1	3	1
Supervisors	10	30	5
Merchandiser	30	30	5
Total		485	89

Source: Nakumatt, Tuskys and Uchumi Personnel and Operations Departments' Records

3.2 Sampling

To conduct this study, probability sampling was used to select the supermarket to go to. However, since Uchumi supermarket has only four branches with digital signage, all the branches were to be studied and a census of the four branches was to be done. To identify the Nakumatt and Tuskys branches systematic sampling was used whereby a list ranking the branches' sales turnover from the highest to the lowest. The total number of branches was divided by the number of managers in the sample. The resulting number is the interval of selection of a branch from which respondents were drawn. Managers and assistant managers were selected purposively in instances where there was only one manger and one assistant manager. In cases where there were two managers and the sample is one, convenient sampling was used. The selection of supervisors and merchandisers were 15% per branch using convenient sampling. In this study the questionnaire was used as the primary data collection method. The questionnaire included different types of questions; open ended, closed ended and rating scales. Open ended questions according to Jackson (2009), are those where the respondents formulate their own responses while closed ended questions are those questions which the respondents must choose from a limited number of alternatives provided. Likert/rating scales are the questions whose responses are expected to give their rating on a numerical scale (Jackson, 2009).

4. Results

The respondents were asked to rate several statements related to the installation of digital screens had improved product sales in the supermarkets. The findings are presented in Table 4.1 below.

Table 4.1 Rated statements on the usage of digital signage

Statements	Strongly agree	Agree	Neutral	disagree	Strongly disagree	No response	total
Installation of the digital screens have improved product sales in the supermarkets	59.2	32.7	6.1	-	-	4.0	100.0
The adverts in the digital display provides essential information on products available in the store and their characteristics	42.9	44.9	2.0	2.0	6.1	2.0	100.0
The advertisements in the displays influence customer purchase decisions	24.5	53.1	14.3	4.1	-	4.1	100.0
The digital displays are a form of entertainment in the supermarket.	22.4	40.8	20.4	4.1	2.0	10.2	100.0
I believe that when customers come to window shop, images in the digital screens help in identifying the product to buy.	20.4	36.7	20.4	16.3	2.0	4.1	100.0
Digital display adverts do not change or affect what I think or feel about the type of products and the brands that I buy.	14.3	26.5	22.4	26.5	8.2	2.0	100.0
Digital display positions influence my viewership not the content of the adverts.	18.4	22.4	16.3	18.4	16.3	8.1	100.0
Customers often view the digital screen images when they have finished shopping and queuing for clearance/payment.	8.2	26.5	22.4	16.3	22.4	4.1	100.0
Customers view the digital screens once they enter the supermarket.	22.4	26.5	20.4	20.4	6.1	4.1	100.0
I believe that when customers see new products in the digital screens they endeavor to buy it.	24.5	44.9	14.3	12.2	2.0	2.0	100.0
Customer products' purchase is always based on the predetermined decision on the brand.	36.7	34.7	16.3	6.1	2.0	4.1	100.0

The findings presented in Table 4.1 above shows that majority of the respondents representing 59.2% said that they strongly agreed that the installation of the digital screens have improved product sales in the supermarkets followed by 32.7% who agreed with the statement while 6.1% were neutral. This means that the installation of digital screens in the supermarkets have led to sales increase. This finding is supported by Schaefer (2008) who argues that retailers who advertised on digital screens had their sales increase. This is because shoppers are likely to refer to digital screens when shopping. Respondents were also asked to rate whether the adverts in the digital display provide essential information on products available in the store and their characteristics. 42.9% strongly agreed that they did and 44.9% also agreed with the statement. This means that a majority agreed that the digital screens provide essential information. On the statement whether the advertisement in the display influence the customer's purchase decision, majority 53.1% agreed and 24.5% strongly agreed while 14.3% were neutral. Respondents also found the screens as a form of entertainment in the supermarket with majority in agreement 22.4% and 40.8% strongly agreed. Related to this is a statement on whether images in the digital screens aid customers identify products to buy and majority were in agreement 20.4% and 36.7% strongly agreed. This means digital screens aided buyers in their purchase decisions. These findings are supported by Olsen and Zhao (2010) who argues that digital signage influences product purchase decisions. This is because digital screens are part of information source if the customer had viewed the product earlier in the screens or if the people consulted had seen the product.

On the statement whether digital display adverts do not change or affect what respondents think or feel about the type of products and the brands they buy 14.3% strongly agreed and 26.5% agreed, 26.5% disagreed and 8.2% strongly disagreed. However a significant percent 22.4% were neutral while those who disagreed were 26.5%. The reactions to this statement were mixed. The disagreeing response is supported Kamel and Campilho (2009) who explain that compared with traditional static signs, digital signage presents dynamic multimedia digital content. Hence offers the advertisers with more flexibility and scalability to adapt to different contexts and different audiences. For the respondents who agreed to the statement, imply the influence of digital screens advertisements on high involvement purchase decisions. Such products according to Lamb et al. (2009) requires extensive information search therefore, they are least likely to be influenced by digital signage advertisements.

Majority 22.4% of the respondents agreed and 18.4% strongly agreed that digital display positions influence viewership not the content of the adverts while 18.4% disagreed and 16.3% strongly disagreed. On whether customers view the digital screen images when they have finished shopping and queuing for clearance/payment, 8.2% strongly agreed and 26.5% agreed while those who disagreed and strongly disagreed were 16.3% and 22.4% respectively. However on the statement whether customers view the digital screens once they enter the supermarket, 22.4% strongly agree, 26.5% agreed and 20.4% disagreed and 6.1% strongly disagreed. This implies that majority (49%) or agreed that most customers view the digital screen advertisements when they enter the supermarket for shopping.

Further the respondent agreed (26.5%) or and 22.4% strongly agreed that when customers see new products in the digital screens they endeavor to buy it while those who disagreed and strongly disagreed were 20.4% and 6.1% respectively. Overall this means that the digital screens are important in launch of new products. This finding is supported by Olsen and Zhao (2010) argument that digital signage is part of information source thus they are used for product launch. The respondents were also asked whether customer products' purchase was always based on the predetermined decision on the brand, 36.7% strongly agreed and 34.7% agreed that the decision are predetermined. Also 6.1% of the respondents did not agree that the customers always purchase based on predetermined choices. This finding is supported by Lamb et al. (2009) explanation that high involvement purchase decisions are based on predetermined choices and thorough information search hence they are least likely to be affected by digital signage screens advertisements.

4.1 Findings

In order to determine the effect of digital signage on product sales in the supermarkets, the aggregate mean score of product sales measures were regressed against the mean score of measures of digital signage and results presented in table 4.2 bellow. The regression results also shows that at individual level, there was a statistically significant positive linear relationship between product sales in the supermarkets and digital signage usage ($\beta = 0.324$) Table 4.2 in that the p-value is less than 0.05 ($0.002 < 0.05$).

Table 4.2: Regression Results for Digital Signage and Product Sales.

Goodness of fit analysis					
Sample size	R	R Square	Adjusted R Square	Std. Error of the Estimate	
89	0.324	0.286	0.587	0.118	

Overall significance: ANOVA (F-test)					
	Sum of Squares	Degree of Freedom	Mean Square	F	Significance(p-value)
Regression	2.028	2	2.208	36.018	0.002
Residual	1.640	87	0.134		
Total	3.668	89			

Individual significance (T-test)					
	Unstandardized Coefficients		Standardized Coefficients	T	Significance(p-value)
	B	Std. Error	Beta (β)		
(Constant)	1.216	2.380		1.402	0.038
Means of digital signage usage	0.368	0.262	0.624	1.068	0.014

Source: Research data, 2014

The regression results also shows that 28.6 percent of the product sales in the supermarkets can be explained by digital signage usage (R squared = 0.286) and the relationship between the digital signage usage and product sales followed a simple regression model of the nature; $PS = 1.346 + 0.624DS + \epsilon$

Where:

DS is the digital signage usage.

1.216 is a constant intercept term ($\alpha = 1.216$).

0.324 is the beta ($\beta = 0.324$) or the slope coefficient.

PS is the product sales in the supermarkets.

ϵ is the error term

Digital displays provide essential information on products available in the store and their characteristics shown by 42.9% of the respondents who strongly agreed to the statement. They were also found to influence purchase decision with a response of 53.1% in strong agreement while 57.1% indicated that digital screens help customers identify products to buy. However, the statement that digital advertisement does not change or affect what customers think or feel about the type of products and the brands they buy; 14.3% strongly agreed and 26.5% agreed, 26.5% disagreed and 8.2% strongly disagreed. The above findings are supported by Kanagal (2010) explanation that the objective of marketing strategy can be to maximize profit, market share, and sales, enhance brand image, and consequently improve customer satisfaction. These findings concur with Wertime and Fernick (2008) who argue that retail chains brand selection decisions are made at the point of sale therefore the installation of digital has led to sales increase. The increase in sales reflects the implication of Learning Hierarchy theory which posits that learning, attitudes, and behaviour are all influenced by advertising (Jones, 1999). Different theories have been developed to explain these effects. According to this theory, people receive factual information about a brand which results in attitude change towards the brand and hence the development of preference for it (Jones, 1999).

5. Conclusion

Digital signage does influence product sales in retail stores. Further, digital display advertising is an effective medium of advertising and is recommended to all the companies in retail industry. However, there is need to rove visibility and position them strategically incorporating the voice component in the retail stores.

5.1 Recommendations

There is need to locate screens in strategic visible locations and incorporate the voice component since in the supermarket it displays the images without the voice. Some of the customers have a lot of interest in the explanations especially where the product being advertised is technical. Furthermore, consideration for the installation of bigger screens where space is available to increase visibility of the products is recommended. Positioning of the screens and advertisement content for relevance and completeness are recommended remedies.

REFERENCES

- Aggrawal, S. C., & Khurana, S. K. (2009). *Research methodology and statistical analysis*. New Delhi: V. K. India Enterprises.
- Albarran, A. B. (2010). *Management of electronic media* (4th Ed.). Boston, Massachusetts: Wadsworth Cengage Learning.
- Anderson, D. R., Sweeney, D. J., & Williams, T. A. (Eds.).(2009). *Essentials of statistics for business and economics* (5th Ed.). Mason, Ohio: Cengage Learning.
- Aurifeille, J., Svizzero, S., & Trisdell, C. A. (Eds.).(2007). *Globalization and partnerships: Features of business alliances and international cooperation*. New York: Nova Science Publishers, Inc.
- Bachman, Q., & Schutt, R. K. (2010). *The Practice of research in criminology and criminal justice* (4th Ed.). Thousand Oaks, California: Sage Publications.
- Baker, M., Graham, P., Harker, D., & Harker, M. (1998). *Marketing: Managerial foundations*. Australia: McMillan Publicactions Australian PTY Limited.
- Babbie, E. R. (2001). *The practice of social research*. Belmont, California: Wadsworth Cengage Learning.
- Babbie, E. R. (2008). *The basics of social research* (4th Ed.). Belmont, California: Wadsworth Cengage Learning.
- Bartels, G., & Nelissen, W. (EDS).(2002). *Marketing for sustainability: Towards transactional policy-making*. Amsterdam, the Netherlands: IOS Press.
- Blanche, M. T., Durrheim, K., & Painter, D. (Eds.).(2008). *Research in practice: Applied methods for the social sciences* (2nd Ed.). Cape Town: University of Cape Town Press.
- Boakes, B. (2008 April). *Frame of mind in retail*. New Delhi: White Paper.
- Borruso, K. (2008). *Targeting the 21st century consumers*. Retrieved September 12, 2008 from <http://www.corante.com/importance/archives/2009>.
- Brennan, R., Canning, L. E., & McDowell, R. (2011). *Business-to-business marketing* (2nd ED.). London: Sage Publications Ltd.
- Buckingham, A., & Saunders, P. (2004). *The survey methods workbook: From design to analysis*. Cambridge: Wiley Blackwell.
- Burns, N., & Grove, S. (2005). *The practice of nursing research: Conduct, critique and utilization* (5th Ed.). United States of America: Elsevier Health Sciences.
- Business Daily. (2007, September 18). *Kenya: Retail TV that could edge out billboards*. Retrieved August 9, 2010 from <http://www.balancingact-africa.com/news/broadcast/issue-no14/more/kenya-retail-tv-that-could-edge-out-billboards>.
- CIO. (December 2006). Cue the spotlight. *Business Technology Leadership Magazine*, 20(5), 98.
- Conway, M. (Ed.).(2004). *Collecting data with electronic tools: Tips, tools and intelligence for trainers*. United States of America: American Society for Training and Development.
- Cooper, D.R. & Schdler P.S. (2003). *Business research methods*. Boston: McGraw Hill.
- Chandra, P. (2002). *Projects: planning, analysis, financing, implementing and review* (5th Ed.). India: Tata McGraw-Hill.
- Chandran, E. (2004). *Research Methods: a quantitative approach*. Kenya: Star bright Services Ltd.
- Cox, N. C., & Dannehl, K. (2007). *Perceptions of retailing in modern England*. Hampshire, England: Ashgate Publishing Limited.
- Farrante, J. (2008). *Sociology: A global perspective* (7th Ed.). Belmont, California: Cengage Learning.

- Gay, R. (1987). *Education research: competence for analysis and application*. Collubus, Toronto: A. Bell & Howell Company.
- Genr8 digital Media. (n.d.). *Genr8 services*. Retrieved August 14, 2010 from <http://www.genr8digital.tv/?gclid=CO3umcndq6MCFRMsIAodVzPI4Q#>.
- Flick, U. (2009). *An introduction to qualitative research* (4th Ed.). London: Sage Publications.
- Fraenkel, J., & Wallen N. (1993) *How To Design and Evaluate Research in Education*. New York, USA: McGraw-Hill Inc
- Gravetter, F. J., & Forzano, L. B. (2008). *Research methods for the behavioral sciences* 3rd Ed.). Belmont, California: Cengage Learning.
- Grove, R. M. Et al. (2009). *Survey methodology* (2nd Ed.). New Jersey: John Wiley & Sons, Inc.
- Gupta, O. (2005). *Advertising in India: Trends and impact*. India: Kalpaz Publications.
- Lamb, C. W., Hair, J. F., & McDaniel, C. (2009). *Marketing*. Mason, Ohio: Cengage Learning.
- Harper, T. (2008). Span Image Strategic plan Oct. 27, 2009 retrieved from the World Wide Web: www.delloiteconsult.org. Published by NetWorld Alliance.
- Heller, S., & Womack, D. (2007). *Becoming a digital designer: A guide to careers in web, video, broadcast, Game and animation design*. Hoboken, New Jersey: John Wiley and Sons, Inc.
- Hester, E. L. (1996). *Successful marketing research: the complete guide to getting and using essential information about your customers and competitors*. Canada: John Wiley & sons, Inc.
- Hewett, G. (2009). *Advertising and promotions*. Cape Town, South Africa: Pearson Education Limited.
- Jackson, S. L. (2009). *Research methods and statistics: A critical thinking approach* (4th Ed.). Belmont, United States of America: Wadsworth Cengage Learning.
- James, B. (2007). *Digital signage today*. Accessed July 26, 2009 retrieved from the World Wide Web: www.networldalliance.com. Published by NetWorld Alliance.
- Jones, J. P. (Ed.).(1999). *The advertising business: Operations, creativity, media planning, integrated communications*. Thopusand Oaks, California: Sage Publications, Inc.
- Jonker, R., & Pennink, B. (2010). *The essence of research methodology: a concise guide for master and PhD students in management science*. New York: Springer Publishers.
- Kamel, M., & Campilho, A. (Eds). (2009). *Image Analysis and recognition. 6th International Conference ICIAR 2009, July 2009 proceedings*. Halifax, Canada: Springer.
- Kanagal, N. (n.d.). Role of relationship marketing in competitive marketing strategy. *Journal of Management and Marketing Research*, 7. Retrieved August 31, 2010 from <http://www.aabri.com/manuscripts/09204.pdf>.
- Kamau, F. (2008). *The growth of supermarkets in Kenya: Opportunities and limitation for small scale pineapple producers*. Retrieved March 15, 2011 from <http://www.roundTableafrica.net/media/uploads/File/presentations%20DBA%2008/The%20Growth%20of%20Supermarkets%20in%20Kenya%20-%20Opportunities%20and%20Limitation%20for%20small%20scale%20pineapple%20producers.pdf> .
- Katz, H. (2007). *The media Handbook: a complete guide to advertising media selection, planning, research and buying* (3rd Ed.). Mahwah, New Jersey: Lawrence Erlbaum Associates, Inc.
- Krafft, M., & Muntrala, M. K. (2010). *Retailing in the 21st century: Current and future trends*. New York: Springer.
- Kelly, F. C. (2008). *Business profits and human nature*. United States of America: Bibliobazaar LLC.
- Kelsen, K. (2010). *Unleashing the power of digital signage: contents for strategies for the 5th screen*. Oxford, United Kingdom: Elsevier Inc.
- Kothari, C.R. (2004). *Research methodology. Methods and Techniques* (2nd Ed.). New Delhi: Wishwa Prashakan.
- Krishnaswamy, K. N., Sivakumar, A., & Mathirajan, S. M. (2009). *Management Research methodology: Integration of methods and techniques*. Pearson Education, Inc.
- Kotler, P. & Armstrong, G., (2006). *Principles of Marketing, 10th edition*. Prentice Hall of India, New Delhi, India.
- Kroll, M. W., & Ho, J. D. (2009). *Taser conducted electrical weapons: Physiology, pathology and law*. USA: Springer.
- Kurtz, D. L., MacKenzie, H. F., & Snow, K. (2009). *Contemporary marketing* (2nd Ed.). Canada: Cengage Learning.
- Laudon, C. K., & Laudon, J. P. (2007). *Business information systems* (2nd Ed.) New

- York. Harcourt Brace College Publishers.
- Levinson, J. C., Frishman, R., Lublin, J. (2002). *Guerrilla publicity: Hundreds of pure fire tactics to get maximum sales for minimum dollars*. Canada: Adams Media.
- Lundstrom, L. (2008). *Digital signage broadcasting: Content monument and distribution techniques*. Oxford, United kingdom: Elsevier, Inc.
- Makau, J., & Onyango, J. (March 15, 2010). Supermarkets scramble for Nairobi shoppers. *Business Daily*. Retrieved March 14, 2011 from <http://allafrica.com/stories/201003151649.html>.
- Medina, R. G. (1990). *Principles of marketing*. Quezon City: Rex Bookstore, Inc.
- Mills, G. E. (2003). *Action research: A guide for the teacher researcher* (2nd ed.). Upper Saddle River, NJ: Prentice Hall.
- Mugenda, A. G. (2008). *Social science research: Theory and principles*. Nairobi: ARTS Press.
- Mugenda, M. O. & Mugenda, G. A. (2003). *Research methods: Quantitative and qualitative approaches*. Nairobi, Kenya: Laba-Graphic services.
- Mullins, L.J. (2005). *Management & organizational behavior* (7th Ed.). Harlow: Prentice Hall.
- Moore, M. (2009). *Digital signage development*. Retrieved, April 23, 2009 from <http://www.digitalsignagetoday.com/article/>
- O'Guinn, T., Allen, C., & Semenik, R. J. (2009). *Advertising and integrated brand promotion*. Mason, Ohio: Cengage Learning.
- Olsen, M., & Zhao, J. (2010). *Handbook of hospitality strategic management* (2nd ED). Burlington, USA: Elsevier Ltd.
- Patton, M. L. (2001). *Understanding research methods: An overview of the essentials* (2nd Ed). Los Angeles.
- Paxson, P. (2002). *Media literacy: Thinking critically about advertising*. United States of America: Walch Publishing.
- Payne, D. A., & McGee-Brown, M. J. (1994). *Designing educational project and program evaluations: A practical view based on research and experience*. Norwell, Massachusetts: Springer.
- Polit, D. F., & Beck, C. T. (2004). *Nursing research: Principles and methods* (7th Ed.). Philadelphia: Lippincott Williams & Wilkins.
- Pride, W. M., Hughes, R. J., & Kapoor, J. R. (2010). *Business*. Ohio, USA: Cengage Learning.
- Robson, C. (2002). *Real world research* (7th Ed). UK: Blackwell Publishing Ltd.
- Sahaf, M. A. (2008). *Strategic Marketing: Making decisions for strategic advantage*. New Delhi: Prentice Hall.
- Sapsford, R., & Jupp, V. (Eds). (2006). *Data collection and analysis* (2nd Ed.). London: Sage Publications Limited.
- Schaeffler, J. (2008). *Digital signage, software, networks, advertising and displays: A primer to understanding business*. Oxford, United Kingdom: Elsevier, Inc.
- Schaeffler, J. (2009). *Digital video recording: DVRs, changing TV and advertising forever*. Oxford, United Kingdom: Elsevier, Inc.
- Smith, P. R., Berry, C. & Pulford, A. (2002). *Scientific marketing: Communications, new ways to build and integrate communication*. London: Kogan Page Limited.
- Thomas, J. R., Nelson, J. K., & Silverman, S. J. (2005). *Research methods in physical activity* (5th Ed.), Champaign, IL: Human Kinetics.
- Tungate, M. (2007). *Ad land: A global history of advertising*. London: Kogan Page Publishers.
- Tyagi, C. L., & Kumar, A. (2004). *Advertising management*. New Delhi: Atlantic Publishers and Distributors.
- Trehan, M. & Trehan, R. (2009). *Advertising and sales management*. New Delhi: FK Publications.
- VisualCentury. (2004). *Digital signage ROI*. Retrieved August 31, 2010 from <http://www.visualcentury.com/downloads/pdfs/digitalsignageroi.pdf>.
- Walliman, N. (2006). *Social research methods*. London: Sage Publications Limited.
- Waters, S. (2010). *Digital signage in retail*. Retrieved on august 9, 2010 from http://retail.about.com/od/signage/p/digital_signage.htm.
- Wertime, K., & Fenwick, I. (2008). *Digimarketing: The essential guide to new media & digital marketing*. Singapore: John Wiley & Sons, Inc.
- Wood, M. J., & Ross-Kerr, J. C. (2010). *Basic steps in planning nursing research: From questions to proposals* (7th Ed.). Jones & Bartlett Publishers.