

# IMPACT OF PROXIMITY MARKETING DEVICES ON BUYING DECISION-STRATEGICAL APPROACH BY SMALL AND MEDIUM SIZE RETAIL ENTREPRENEURS

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## ABSTRACT

### **Background:**

*This research study unveils about proximity marketing devices and its impact on buying behaviour in context to retail entrepreneurs. With the use of proximity marketing devices it has been observed that retail entrepreneurs can communicate to the customer nearby their geographical epicentre.*

### **Methods:**

*This study reviews the literature about concept of proximity marketing devices used in global edge. Since the proximity marketing concept is into very nascent stage so the in-depth and practical implication could be accessed by hypothetical testing based upon assumed variable that could have possible impact on consumer buying behaviour. The possible variables are derived from similar previous studies on digital marketing. The region of Saudi Arabia is diversified in context to local Arab residents and foreigners working in MNCs. The heterogeneous sample is selected and variables are statically been tested using SPSS 25.0. Critical examination study model and explanatory research design, furbish the research with the statistical conclusion where a quantitative conclusion is withdrawn from data. The focus of the study is what could be the possible variables and how it could have an impact on buying behaviour of the consumer.*

### **Results:**

*Consequently, the research results points that proximity marketing has a significant impact on buying behaviour of the consumer and building brand loyalty.*

### **Conclusion:**

*Since proximity marketing is into very nascent stage but its implementation in in-store promotion will increase sale and build brand loyalty.*

**Keywords:** Proximity Marketing, Beacon, Saudi Arabia, Buying Intention, Digitization, Brand Loyalty, Consumer Behavior, RIFD, Retail Entrepreneurs.

## INTRODUCTION

Deliver contextually-based offers to in-store customers based on their proximity to specific merchandise and areas in your store. Proximity marketing is a new form of marketing which has recently emerged (Levesque et al., 2015). The technology is based on wireless geolocation technology using RFID (Radio Frequency Identification) and Bluetooth to meet people's daily needs. Proximity Marketing enhances real-time interactions as well as social activities for marketing. For instance, in 2004, the Baja Beach Club in Barcelona requested

customers to carry RFID enabled devices to access VIP lounges (Michael & Michael, 2010). Proximity Marketing is being used to generate visibility and enhance customer loyalty by firms (Boeck et al., 2011). It enhances brand into a digital realm as RFID “establishes connection between the physical devices and the virtual merchandise” (Mairinger, 2008). Proximity Marketing is increasingly coming into contact with consumers in their daily life (Levesque et al., 2015).

According to Boston Retail Partners, only 3 percent of retailers today have the ability to identify on-site customers, but a new technology is rapidly changing this phenomenon. Beacons now offer the potential to reshape on-site brand-to-consumer mobile interactions and empower more localized and personalized engagements. Beacons are tiny low-powered radio transmitters that send signals to phones just feet away, and they can be used to send specific signals to phones that come into proximity. As the majority of purchase decisions are still made in-store, it is essential for marketers and merchants to invest in innovative point-of-sale communication solutions and to carefully assess their effectiveness. With the use of technological mouldering methods forecasting of product demand could be made possible this could develop consumer loyalty (Kashchena et al., 2019). Especially in today’s fast-paced changing retail environment, it is increasingly difficult to capture shoppers’ attention and break through the marketing clutter.

Implementing audio-visual technologies such as digital signage (also referred to as narrow casting) can benefit both entrepreneurs operating in retail business and consumers. Furthermore, it can help to reignite the thrill of shopping in-store and improve competitiveness in the changing marketplace. The aim of this research is to help retail entrepreneurs reap the benefits from shifting the ‘analogue’ to ‘digital’, by addressing the role and optimization of digital signage (DS) in-store. The digital advertising medium DS is increasingly being implemented in point-of-sales environments. Pioneering retail entrepreneurs such as Tesco, Asda, or Harrods (UK); Kroger (US); or Carrefour (China) equip their stores with DS networks (Algharabat & Dennis, 2010). Industry experts estimate that DS will grow by 2022 with a compound annual growth rate (CAGR) of 6.7%. The flexibility of the medium and decreasing hardware costs stimulate retail managers to convert advertising messages onto digital screens, allowing them to target shoppers while they are receptive and in the mood to buy (Algharabat & Dennis, 2010). While experiments have been carried out to understand the usage and effectiveness of digital signage (Dennis et al., 2012; Algharabat & Dennis, 2010), further research calls out for a deeper understanding to what extent and under which conditions this communication tool is most effective. In the current knowhow on DS (and by extension, digital marketing), it is acknowledged that customers should be targeted with relevant messages. Two components that are crucial in terms of ‘relevance’ are (1) the personalization of the message content and (2) providing location adapted information (Bauer et al., 2005). Personalization of in-store messages however tends to come at the cost of being perceived as intrusive in relation to consumers’ privacy (Aguirre et al., 2016). Therefore, the present paper focuses on understanding location-based content for in-store proximity marketing and builds on construal level theory (CLT) to examine how message content can be adapted to in-store locations. This paper asserts that psychological distance (referring more specifically to the customer’s purchase decision closeness) plays part in optimizing location-based content.

The primary aim of this research is to illustrate proximity marketing devices in current scenario. The study also accesses factors creating impact on consumer buying intention.

The scope of the study is defined to the parameter of Saudi Arabia. The scope is also limited to the dimension of buying pattern in context to proximity marketing.

Previous research has explored online marketing and digital impact on business and consumerism but none attempted to explore impact of proximity marketing devices and its

impact on consumer behaviour, eventually this also restricts the availability of reviews. Most of the research is based on proximity marketing devices in context to its technical aspects but none explore its impact on consumer buying decision.

## REVIEW LITERATURE

### Theoretical Framework

#### Proximity marketing devices

In this system the first prototype is a proximity sensor which are adapted to detect a user device within a threshold epicentre of the proximity sensor where a receiver is adapted to collect data from the user device; on the other hand, a communication interface is adapted to allow the proximity sensor to send the collected data to some remote devices. The second prototype is an advertising system which includes an advertising medium that are adapted to provide interactive advertising content to the users through a multimedia output. The third prototype is an interactive advertising device which are adapted to detect and communicate with user's devices that passes within the epicentre and display advertising.

Kelley et al. (2011) mentioned location-based service is an umbrella term which is used for all services that use the geographical position of the service in service delivery. Further location based service is defined as proximity marketing. Underhill (2008) stated that earlier this data has been collected by manual traffic count, surveys, photoelectric sensors and videotaping but with the recent technological development including WiFi- and Bluetooth-enabled smart devices which the customers' devices become a part of the service system (Beverungen et al., 2017). BLE beacons are small devices regularly broadcast predefined information to their surroundings. Schulz et al. 2016 in a study explained that beacons spread signal in an area inside the area called geofence hence BLE-enabled smart devices can directly connect customers and retailers for promotional services.

#### Optimizing technology in-store promotion

Proximity Marketing explains application that allows you, using your smartphones, to live a real innovative shopping experience, enabling companies to open a new direct and personal channel of communication with their customers. Shops send promotional messages to the customer in multiple languages; and send and manage barcodes or QR Codes, digitalizing the couponing process. Retail Entrepreneurs also allows identification codes to be sent via television and radio programs. Shop directs communication only to people in a specific area, sending them personalized promotional messages, discount coupons and loyalty points. Unlike other solutions available on the market, HI Shop technology is highly selective, allowing specific areas, defined by variable attributes, to be covered within a sales outlet. This characteristic provides marketing with an extremely effective personalization tool, which can be used to target an individual buyer or refer to a particular product. The location based advertisement has a positive impact on consumer attitude (Mansoor et al., 2019).

Beacons now offer the potential to reshape on-site brand-to-consumer mobile interactions and empower more localized and personalized engagements. Beacons are tiny low-powered radio transmitters that send signals to phones just feet away, and they can be used to send specific signals to phones that come into proximity. Opportunities to the operators, long term success and goal achievement of the business. The occurrence of stores locating near other retail stores is known as 'agglomeration'. Stores of various types irrespective of their product

line commonly co-locate in shopping centres and malls and this is known as ‘inter-type agglomeration’ (Fox et al., 2007).

### **New insight to consumer behaviours**

Previous study has witnessed that number of store visits driven by mobile search ads exceeds to the total number of online purchase. Beacons on the other hand are bringing this functionality to more stores through improvements in place detection. Lewis (2016), in his study mentioned beacons enable consumers to become more attuned to their location; they also give marketers new insight into the real-life behaviour of their consumers. As beacon technology becomes more widespread, it will help marketers see how Search Ads and Local Ads affect in-store visits. T-Cuento 2012 mentioned that it allows customer to provide access to information about favourite products and to special offers and discount vouchers. Proximity marketing with beacons is expected to grow exponentially in the next few years. Proximity Marketing is accelerating its contact with the customer in their daily life. Consumers who are enjoying using it are not preoccupied that its underlying technology transmits marketing cues to the firm. This is the case study at Osheaga Music and Arts Festival (Montreal) (Swedberg, 2014) and at Bonnaroo. Meanwhile, due to perceived management risks, firms do not necessarily know how to maximize their Proximity Marketing. They need to address appropriately to consumers’ reactions by providing adapted commercial offers and consolidating brand image to ensure better overall performance (Lim & Koh 2009). On the other hand, creating satisfaction or disappointment that could results from the comparison of the product or services with the expectations (Syed et al., 2019).

Proximity Marketing is a new form of marketing which takes into account the mobility and real-time geolocation of consumers through wireless and interactive technologies. It is an interactive form of media that contrasts with more traditional forms of media and advertising such as television, radio and print media in the sense that consumers are called upon to actively interact with the message. Such new technologies can be perceived as intrusive. Beaconstac (2016) in a report with the use of beacons, Carrefour has seen an astounding rise in its application’s engagement rate which went up by 400% and the number of app users which grew by 600 percent in seven months. Nisa Retail Store based in United Kingdom piloted iBeacon technology to track their shoppers by attaching Bluetooth Low Energy (BLE) beacons to trolleys and baskets.

Meadowhall Shopping Centre in Sheffield, UK, used iBeacon technology to gamify the Ladies’ Night event with brands offering, discounts, freebies, and prize giveaways etc. Hammerson used beacons technology across their shopping centres to improve personalization of consumers’ shopping experience. Waitrose UK based supermarket started using iBeacon technology to deliver price promotions to consumers when they were near to their store. Tesco UK supermarket giant launched its “biggest trial” of iBeacon technology. The systems work when their app downloaded on consumer device, consumers receives exclusive coupons for discounted Pink and Black Magnums directly to their device when they passed by their installed beacons in 270 Tesco Express stores. Jordanian software user experience dimensions in user and customer satisfaction with development of software smart phone (Badran & Al-Haddad, 2018).

### **Building awareness through digitization**

Somayeh et al. (2013); Arora & Sharma (2013); Vukasovič (2013) and Neti (2011) marketing communication channels, convince customers about their brands, products or

services. Chi et al. (2009); Percy & Rossiter (1992) further advocated that product with higher degree of brand awareness will have a higher market share value additionally consumer focus towards perceived quality and brand awareness. Zailskaite-Jakste & Kuvykaite (2013) stated that social media in current scenario creates brand awareness.

### **Digitization as a tool kit for purchase intention**

Huffaker (2006) mentioned in a study that social media and digital communication encompasses impact on buying intention which was further advocated by Nardi et al. (2004); Pempek et al. (2009) and Syed et al. (2017). Eysenbach (2008); Horrigan (2009); Kaplan (2010) and Ahlqvist et al. (2010) in their research explored recent increasing number of wireless devices such as smartphones, communication scientists anticipated the popularity of social media networking websites to grow worldwide and projected to have influence in buying intention. Chou et al. (2009) and Pempek et al. (2009) explored that use of digitization has a deeper impact on younger generation.

Lefebvre (2007) mentioned that businesses are witnessing digitization and information transmitted through smart devices which was further advocated by Siddique (2011). Robert et al. (1997) expressed that digitization has been observed to have major factor in influencing consumer buying intention. Adeleke et al. (2019) in a study mentioned changing the paradigm in product mix influence youths' buying patterns and decision.

### **Digital impact of on product image**

Chaffey (2016); Hennig-Thoreau et al. (2010) and Palos-Sanchez & Saura (2018) illustrated modern marketing tools have ICT (Information and Communication Technologies) integrated together into the advertising strategies so that companies can compete with new 2.0 markets. Pauwels et al. (2016) mentioned digital marketing is useful in creating product image which was also mentioned by Jarvinen & Karjaluoto (2015) in which he states strategies are being used using different smart devices to advertise product as compared to off-line media are shown. Jayaram et al. (2015) explained use web analytics as a part in digital marketing techniques to analyses consumer behaviour with digitization, digital campaigns and mobile applications using mathematical algorithm proposed to analyse the effectiveness of content marketing in any sector (Zhuofan et al., 2015).

### **Creating consumer loyalty through digitization**

The traditional business is facing challenges by pioneering technology innovations (Scardovi, 2017). Haucke (2017) in a study conducted stated with digital impact people tend to spend more time in purchase. Smart Insights (2015) in a report stated that \$36 billion purchase in 2015 increased to \$43 billion on 2016. Jupiter Research (2017) highlighted that technology influence consumer behaviour and their experience. Whereas Gomes (2016) indicated that digital marketing trends to prevail for the next 3 years. Chris (2015); Halfpenny & Procter (2015) in a study mentioned digitization in marketing will increase awareness and brand loyalty among the customers. A similar study conducted by Blunden (2014) illustrated brand loyalty could be earned by the frequent interaction of the company to its customers.

### **Government intervention and privacy concerns**

Since there are no stipulated guidelines for the proximity marketing as proximity marketing is still in a nascent stage. Due to inappropriate and intentionally secretive campaigns

by third parties it is already observed consumer concern and corrective action by the government entities. Further to enhance the information security protection of the cell phones, governments restricted the sale of spyware in cell phones that collects data from users without their permission in many countries. Hence the sale of apps which transmit location without user's permission are considered crime in some countries. "Apps like *StealthGenie* are expressly designed for stalking and domestic abusers who want to know detail of a victim's personal life without their knowledge. The Crime Division is committed for cracking down those who seek profit from technology."

## RESEARCH METHODOLOGY

### Descriptive Analysis

Research is defined as a systematic and scientific approach which helps in collection of data, its compilation, analysis, interpretation and implication pertaining to any business problems. (Kothari, 2014). The cross-sectional is utilized in the research as it allows the researcher to compare different variables at the same time (Ahmed et al., 2014).

### Sampling

Convenience sampling method is used for selecting the sample as it is assumed to represent a homogenous population in Saudi Arabia, in this method, the subjects with convenient accessibility are usually selected by the researcher (Saunders et al., 2003). Five cities are selected judgmentally based on segregation corresponding to special economic zone. The purpose behind selecting such cities to get a heterogeneous respondent (Saudi national & foreigners) as a sample. In this research all kind of data collection method is used to gather information and data. The main data sources are based on primary and secondary research. The primary data is collected using questionnaire, interviews and observation from consumer purchasing organized retail store. Purposive sampling method is used in the study to identify consumers' techno oriented. Secondary data is collected from internet, books, journal and articles. The research results are taken based on 500 respondents and 20 interviews were taken as the primary data was target was to focus those consumers who have influence of technology in their day to day life.

Results and discussion provides the comprehensive analysis of data gathered. A total of 412 respondents' response are taken for consideration. Statistical package for social science (SPSS 20.0) is used for data analyses.

Data analysis: Chi-Square test is implemented for comparing the collected data with the desired data from the hypothesis. On the other hand regression analysis is used for comparing several variables among when the focus is on the relationship between a dependent variable and one or more independent variables.

### Hypothesis

*H1: There is significant relationship between demographic variables & Proximity Marketing.*

*H2: There is significant association between proximity marketing & amount of money spent.*

*H3: Relationship association between proximity marketing & product awareness.*

*H4: Relationship association between proximity marketing & purchase intention.*

*H5: Relationship between proximity marketing and & brand image.*

*H6: Relationship between proximity marketing and & in store loyalty.*

## RESULTS AND DISCUSSION

The study used reliability analysis for each multi-item scale using Cronbach's alpha. The Table 1 presents the results of the reliability analysis along with the descriptive statistics. Overall, the study reported strong reliability with coefficient alphas ranging from 0.86 to 0.94 which demonstrated that scale demonstrates good reliability. The Cronbach's alpha value score analysis indicates that most values are above the accepted value of 0.7. This indicates that there is a great deal of internal consistency in the developed questionnaire.

<b>Variables</b>	<b>Items</b>	<b>Mean</b>	<b>SD</b>	<b>Cronbach's Alpha</b>
Awareness	3	47.68	12.66	0.940
Purchase Intention	3	52.09	10.99	0.905
Creation of Product Image	4	16.41	5.80	0.947
Creation of loyalty with the store.	3	15.69	3.65	0.861
Overall	13	131.88	27.81	0.961

### Relationship between Demographic Variables and Proximity Marketing

In order to further reveal support for overarching hypothesis, whether retail strategy is positively related to gender, age, education, income, occupation and family size regression analysis were used. In comparison to correlation, regression analysis is more powerful and robust analysis as this will provide the strength of the association while former does only linear relationship. The regression procedure was employed because it provided the most accurate interpretation of the independent variable. The independent variables were expressed in terms of the unstandardized factor scores (beta coefficients) and r square were included. The significant factors that remained in the regression equation were shown in order of importance based on the beta coefficients. The dependent variable, overall level of outcome was measured on a 5-point Likert-type scale.

*Null Hypothesis: There is no significant relationship between proximity marketing and demographic variables.*

*Alternative Hypothesis: There is significant relationship between proximity marketing and demographic variables.*

*Alternative Hypothesis: There is significant relationship between proximity marketing and demographic variables.*

### **Dependent Variable: Proximity Marketing; Independent Variable: Gender, Age, Education, Income, Occupation and Family Size**

The Table 2 presents the regression analysis. It is clear from the above Table 2 of linear regression analysis the beta coefficient of the regression of proximity marketing on

demographic variables is significant gender ( $\beta=0.187$ ,  $t=2.397$ ,  $p<0.01$ ), age ( $\beta=0.150$ ,  $t=4.632$ ,  $p<0.01$ ), education ( $\beta=-0.230$ ,  $t=-5.624$ ,  $p<0.01$ ), income ( $\beta=0.169$ ,  $t=5.855$ ,  $p<0.01$ ) and marital status ( $\beta=0.455$ ,  $t=5.324$ ,  $p<0.01$ ). Since the significance is less than alpha of 0.05 values, the null hypothesis is rejected and hence there is a support of the hypothesis. Thus, there is a significant association between proximity marketing and age, education, income, marital status. Independent variables together accounted for 16% of the variance (R square) which indicates that proximity marketing is less significant predictor of demographic variables.

**TABLE 2**  
**RELATIONSHIP BETWEEN DEMOGRAPHIC VARIABLES AND PROXIMITY MARKETING**

Model	Unstandardized Coefficients		Adjusted R Square	F Change	t	Sig.
	B	Std. Error				
(Constant)	1.790	0.277	0.166	12.67	6.457	0.000
Gender	0.187	0.078			2.397	0.017
Age	0.150	0.032			4.632	0.000
Education	-0.230	0.041			-5.624	0.000
Income	0.169	0.029			5.855	0.000
Marital status	0.455	0.086			5.324	0.000
Occupation	-0.032	0.033			-0.961	0.337
Family size	-0.014	0.035			-0.394	0.694

*Alternative hypothesis: There is association between Proximity Marketing and amount of money spent.*

*Null hypothesis: There is no association between Proximity Marketing and amount of money spent.*

**TABLE 3**  
**ASSOCIATION BETWEEN PROXIMITY MARKETING VS AMOUNT OF MONEY SPENT**

Proximity Marketing		Amount of money spent					Total	
		< 50	50-100	100-200	200-500	More than 500		
Income	Less than 1000	4	3	18	0	0	25	
		5.70%	9.10%	7.80%	0.00%	0.00%	7.00%	
	1000-2000	22	2	36	0	0	60	
		31.40%	6.10%	15.60%	0.00%	0.00%	16.70%	
	2000-3000	38	24	38	21	1	122	
		54.30%	72.70%	16.50%	87.50%	100.00%	34.00%	
	3000-4000	2	4	86	1	0	93	
		2.90%	12.10%	37.20%	4.20%	0.00%	25.90%	
	4000-5000	4	0	53	2	0	59	
		5.70%	0.00%	22.90%	8.30%	0.00%	16.40%	
	Total		70	33	231	24	1	359
			100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Proximity Marketing: Phi value- 0.610,  $p$ -value-0.00 < 0.01;



The Table 3 compares the income and amount of money spent. It is observed that most of the respondent in the income 10000-25000 prefer amount of money spent. From organized retail the observed Phi-value of 0.610 and  $p$  value of 0.00, it is declared that there is association between the income and amount of money spent is observed Phi-value of 0.684 and  $p$  value of 0.00, it is declared that there is no association between the income and amount of money spent.

For all testing procedures, (the independent t-test, ANOVA, Chi-square test, Correlation and Regression) Table 3 has  $p$ -value, if the  $p$ -value is less than 0.05 (95% Confidence interval) we reject the null hypothesis, and if  $p$ -value is greater than 0.05 we accept the null hypothesis.

*Alternative Hypothesis: There is relationship association between proximity marketing & product awareness.*

*Null Hypothesis: There is no relationship between Proximity Marketing between product awareness.*

TABLE 4 ASSOCIATION BETWEEN PROXIMITY MARKETING VS PRODUCT AWARENESS					
Variable	Gender	Mean	SD	t-value	p-value
Awareness	Male	2.45	0.52	-2.72	0.007
	Female	2.66	0.54		

### Enhancement of Awareness

The t-value is -2.72 and the p-value is 0.007 which is less than 0.05, so we reject the null hypothesis, hence there is significant difference in the mean of enhancement of awareness between genders. Awareness in female has a higher mean (2.66) compared to male (Table 4).

TABLE 5 RELATIONSHIP BETWEEN PROXIMITY MARKETING VS PURCHASE INTENTION					
Variable	Gender	Mean	SD	t-value	p-value
Purchase Intention	Male	2.32	0.84	-2.058	0.040
	Female	2.57	0.67		

The t-value is -2.058 and the  $p$ -value is 0.04 which is less than 0.05, so we reject the null hypothesis, hence there is significant difference in the mean of purchase intention between proximity marketing. In purchase intention female has a higher mean 2.57 compare to male with mean 2.32 (Table 5).

TABLE 6 RELATIONSHIP BETWEEN PROXIMITY MARKETING VS PRODUCT IMAGE					
Variable	Gender	Mean	SD	t-value	p-value
Creation of Product image	Male	2.61	0.57	-1.38	0.168
	Female	2.73	0.73		

The t-value is -1.38 and the  $p$ -value is 0.168 which is greater than 0.05, so we accepted the null hypothesis, hence there is no significant difference in the mean of Proximity marketing and creation of product image (Table 6).

Variable	Gender	Mean	SD	t-value	$p$ -value
Creation of Loyalty with the store	Male	2.44	0.51	-4.14	0.00
	Female	2.75	0.56		

The t-value is -4.14 and the  $p$ -value is 0.00 which is less than 0.05, so we reject the null hypothesis, hence there is significant difference in the mean of Proximity Marketing and creation of loyalty with the store. In retail strategy female has a higher mean 2.75 compare to male with mean 2.44 (Table 7).

## CONCLUSION

Overall, we find support from proximity marketing in terms of the effectiveness measures purchase intentions. Recent trends have also shown that consumers prefer those products which are developed in sustainable manner (Syed et al., 2020). Although the study was conducted, but not in terms of self-reported noticing of the screen and the ad, nor in terms of (un)aided ad recall. The previous research showed that digital technology promoted the sales of product in different stores irrespective of the country been taken into account. But last decade witnessed drastic change in the lifestyle and buying pattern among the consumers. With the invention of proximity sensors and its application in in store sales promotion attempted a paradigm shift from conventional marketing to proximity marketing. Consumers are more techno oriented which resulted beacon enabled store to influence buying patter of the consumer. Our study has similar reflection that proximity marketing in current scenario influence more towards buying intention of an individual. Individual are considered more inherent towards proximity marketing as it creates awareness, purchase intention and brand loyalty among the customers. The scope for implementing proximity marketing is widening to the developed countries in terms of technology where conventional marketing is still an important tool to promote sales.

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