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Factors of Digital Content Marketing to Differentiate the Consumer Preferences in Pharmaceutical Sector

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Abstract:

Purpose: *The objective of the paper is to determine the different factors of Digital Content Marketing (DCM) and recognize their impact on customer preferences in pharmaceutical sector.*

Design/Methodology/Approach: *Drug buyers of three different regions (Gulshan, Mirpur and Kamrangirchar) have been surveyed in Dhaka city. A stratified sampling method was used to determine a sample of 168 respondents. A multiple discrimination analysis was undertaken to verify the hypotheses.*

Findings: *The research reflects the theoretical concept, and suggests that website traffic, two-way communication, trust and online medication are the valuable factors to classify the cases into different groups for achieving the preferences of DCM in the pharmaceutical sector.*

Research Implications: *Many customers are focused on DCM in terms of awareness and information though they are less sensitive to DCM. They do not like to consider DCM as a unique method to increase website traffic.*

Originality/Value: *It is valuable for achieving useful trust of customers in pharmaceutical sector through interactive communication and website traffic.*

Keywords: *Awareness, Communication, Trust, Website, Information, Medication.*

Introduction

Customers prefer a more interactive mode of communication than traditional advertising. On the road to gain digital customers, Digital Content Marketing (DCM) is widely used mode of communication which is the commerce of digital products on online, where the distribution systems are electronic (Koiso-Kanttila, 2004). In case of ppharmaceutical companies it can be the more value opportunities like sharing information, creating awareness, building trust and online medication by the two-way communication through DCM. Nevertheless, in reality this sector is unable to implement digital marketing rather than website due to severe restrictions on DCM practices. Even well-known drug brands are dependent on the traditional method of promotion (personal selling, sales promotion, etc.). They need to realize that DCM is ideal because it uses customer-centric concepts and non-push techniques to attract consumers to branded content (Liu and Huang, 2015). Moreover, customers do not have a direct relationship with the pharmaceutical company (in case of prescription drugs); rather they are immensely dependent on the recommendations of doctors and pharmacists. In these circumstances, according to Parekh, Kapupara, and Shah (2016), this study is looking for the necessity to understand the true value of digital content with appropriate tools and proper utilization of widely available social media sites or e-commerce sites as digital marketing platform that can reduce the gap between pharmaceutical company and its customers according to the pharma's DCM strategy.

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To achieve the purposes of this study, it has been considered that there had different level of preferences (high, medium and low) among the customer groups towards DCM in pharmaceutical sector. Similarly, hypotheses are developed to identify factors (independent variables from this study) that will explain the differences in selecting a specific group of preferences. To achieve the following objectives of this research Multiple Discriminant Analysis will be conducted to test the hypotheses after appropriately develop the literature review for developing the hypotheses with conceptual map.

Objectives

1) Identify the factors of DCM which will discriminate various consumer preferences in the pharmaceutical sector.
2) Examine the significant differences exist between low, medium and high level of consumer preferences in terms of explaining factors.
3) Determine the factors mostly contributed of the inter group differences.
4) Classify the cases into the different groups on the basis of the results of different factors.
5) Examine the corrective classification of the groups.

Literature Review

This literature review will help to determine which variables should be examined for the categorical dependent variable (high, medium and low preferences). The following literature provides the necessary information for the operation and measurement of the variables as well as for the construction of investigation design and choosing the right sample.

Digital Content Marketing (DCM): Marketing of content means developing appropriate and reliable content and communicating to target customer with a view to making profit (Steimle, 2014). It depends upon information or knowledge which is a key element when digital content is a product (Rowley, 2002). Koiso-Kantilla (2004) and Rowley (2008) suggested that digital content is an electronic information product (rather than print) and not a service. Rowley (2008) found some effective digital contents like electronic reports, ezines, online-books, online suggestion, data hub, information records, transportable microfilms, sports event, melody downloads and software information as new form of digital contents. In case of marketing this digital information, DCM is a communication strategy in order to generate profitable customer service (Vollero and Palazzo, 2015).

Regulatory Gap for DCM in the Pharmaceutical Sector: It is difficult to prioritize the digital marketplace in the pharmaceutical sector as this sector is governed by systems, laws, regulations, codes and industry practices. A loophole in the law is identified due to international and national regulations with self-regulation issues. In general, countries have different levels of regulation to encourage advertising to customers in this area, for example the US and New Zealand allow mail to consumers (Bhole and Verma, 2018). In Bangladesh, DGDA which is

directing the Drug Administration identified the need for timely reports on requests from health service people in the Codes of Pharmaceutical Marketing Practices (CPMP) in 2013. Therefore, marketing of digital pharmaceutical content will not be the same in all countries in the world, as countries have different codes and practices for promoting medicines. However, there is a slight difference in the thinking by the World Health Organization (WHO). This organization has Ethical Criteria for the Promotion of Drugs (1993), where they are written about ethical imperative that is inherent in ethical criteria. This means that patients and prescribers have the right to real and permanent information about the medicine and to give specific advice on the appropriate use of the medicine and how to monitor treatment (WHO, 1993). Since patients and prescribers alike have a right to drug information, it is evidence-based to determine the competitiveness of DCM in this valuable sector of economy. Therefore, a recent study by pharmaceutical companies concluded that digital marketing strategies must be given priority in order to beat the highly competitive business environment (Parekh et al., 2016).

DCM Practices within the Pharmaceutical Sector and Determination of Customer Preferences: Dahiya (2018) reported that some of the customers prefer to use digital channels throughout their decision-making process because they want to learn through content. It is well known that today's customers are increasingly skeptical about advertisements and other conventional marketing communications (Siegert, et al., 2015). Moreover, most of the customers will tend to prefer DCM because direct and interactive marketing messages are personalized, updated and interactive (Kotler and Keller, 2012). Therefore, pharmaceutical companies are an increasing number of the usage of online promotional equipment considering about possibilities of virtual customers, along with branded drug websites, online videos (e.g., YouTube), and social media (e.g., Facebook, Twitter, online forums, and chat rooms), to offer information about drugs (Liang & Mackey, 2011). However, a combination of digital content, digital tool and digital platform can be used in pharmaceutical's DCM strategy to increase preference of the customers. Though, these preferences towards DCM are not same to all the customers, some of them have more preferences than rest of others (Gupta, 2017).

H_1: Discriminant functions of this study, or linear combinations of the factors or independent variables, will best discriminate among low, medium and high levels of consumer preferences in pharmaceutical sector.

Factors (independent variables) for the Preferences (Low, Medium and High) of DCM in Pharmaceutical Sector: Hollebeek and Macky (2019) stated that people prefer DCM because it is aimed at stimulating consumer perception of the brand as well as sales. They also argued that this is the result of the advancement of consumer engagement, believe and connections through long-term DCM. Most customers enjoy sharing information in order to build knowledge through DCM (Rowley, 2002). Peppers and Rogers (2011) reported that it is a useful communication technique to build trust, share values and develop mutual relationships among stakeholders. Consequently, factors of digital content marketing to differentiate the preferences will not be the

same for all business cases (Bradley, et al., 2012). Table 1 presents a summary of literature review for identifying the independent variables for explaining the factors of digital content marketing to differentiate the consumer preferences in pharmaceutical sector. In this table, the first column indicates the title of the studies along with the names of the respective author(s) and the year of publication. The second and the third columns show the variables used in those studies and the corresponding selected variables for the present study respectively. Overall, the variables selected for this study include two-way communication, sharing information, brand awareness, trust, website traffic and online medication.

Table 1 Literature Review for Identifying Independent Variables

Title, Author(s), Year	Variables Used in the Study/Paper	Selected Variables
Digital marketing: A Road Ahead to Pharmaceutical Selling (Bhole and Verma, 2018)	Two-way communication can build positive impact on the relationship with pharmaceutical customers to boost up sales. It is high time to focus on two-way communication in order to win customer favor.	1.Two-way Communication
Sharing Is Caring—Data Sharing Initiatives in Healthcare (Huslen, 2020).	Sharing Information means client care and is a valuable initiative for this pharmaceutical sector as it is related to health care.	2. Sharing Information
Online Marketing in Indian Pharmaceutical Industry (Ranganathan and Bellani, 2016).	Following research on digital marketing in the Indian pharmaceutical industry, it has been discovered that pharmaceuticals are practicing with digital promotion to develop brand awareness.	3. Brand Awareness
Benchmarking Data Reveals Pharmaceutical Industry Not Connecting Social Media Data with Marketing strategies (Liu and Fraser, 2012).	Pharmaceutical companies may present themselves as trustworthy in the eyes of their clients through digital media.	4. Trust
HCP Engagement: Getting the Right Balance (Pharmaphorum, 2015).	It is required more traffic for websites to increase the number of customers in pharmaceutical sector.	5. Website Traffic

Health Online (Pew Research Center, 2013).	Customers are initially using online-based platforms for consulting about health-care medication.	6. Online Medication

Two-way Communication is a vital determinant of interactivity occurs when 1) the message exchanges in sequence relate to each other, and afterward message take under consideration the relatedness of prior message, and when 2) one communicating party sends a message, he or she ought to be able to get a quick reaction. (Mero, 2018).

Sharing Information may be interesting, useful, informative, problem-solving or simply entertaining, but the consumers must derive a certain benefit from it (Chordras, 2018). Some customers seek content, opinions and advice, while others conduct surveillance and exchange information that creates value for them (Muntinga, et al., 2011). The WHO (1993) has stated in its ethical criteria that patients and prescribers are entitled to drug-related information.

Brand Awareness is related to customers' perception of brands and products that can be created by providing valuable information on brands and offers to prospective and existing customers. Brand awareness can be reinforced by becoming interactive, providing incentive and developing a communication system (Barreda et al., 2015).

Trust is the consumer's expectation that the word or guarantee made by a brand/firm which can be relied upon and improved assurance in the brand/firm's motives (Ganesan and Hess 1997; Morgan and Hunt 1994). The code of practice by IFPMA in 2019 stated that it is required to act with astuteness and trustworthiness to move forward understanding care and construct believe with those it'll serve and to regard the autonomy of healthcare suppliers, patients and other partners.

Website Traffic can be greatly increased as a result of the efficient use of online communications (HubSpot, 2015). Sources of traffic are needed to analyze the actions carried out and the traffic received on a website where digital information may be a useful source. In addition, Wolk and Theysohn (2007) draw consideration to the part of substance within the circulation of web Site.

Online Medication is being very popular for adults in Europe and Asia for accessing branded websites. It is considered as highly trusted sources of health information in many countries. According to the CPMP, the purpose of promotion is to induce for medication.

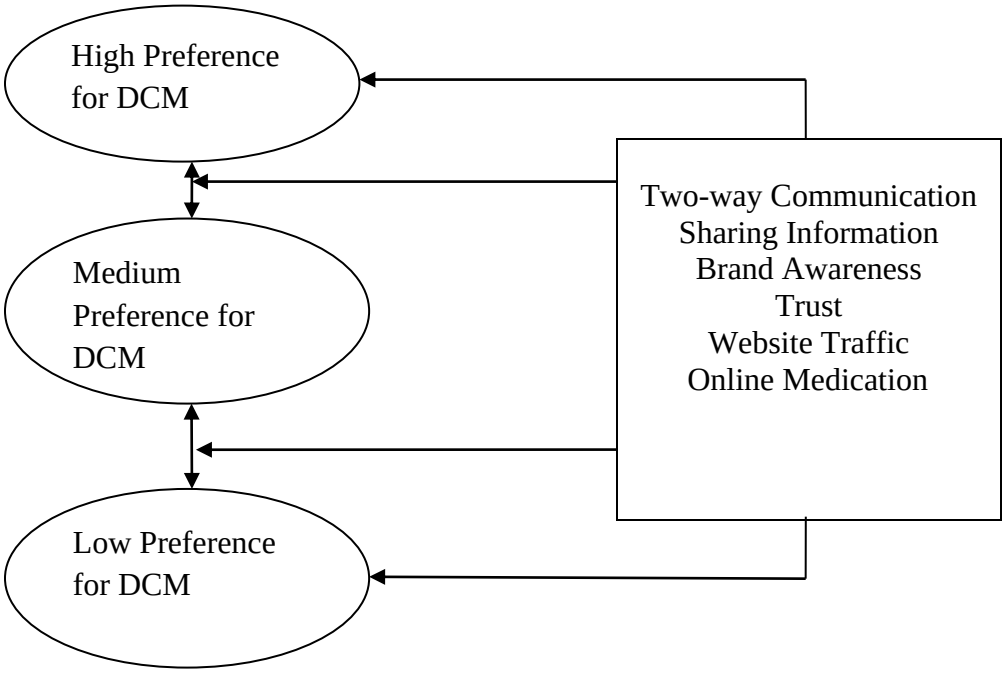
H_2: Significant differences between low, medium and high level of consumer preferences will be identified by examining the factors or independent variables of this study, which are two-way communication, sharing information, brand awareness, trust, website traffic and online medication.

H_3: One of the factors of DCM will be mostly contributed for low, medium and high level of consumer preferences in the pharmaceutical sector.

H_4: Classification of the cases in one of the consumer preference groups based on the values of the factors will be successful.

The purpose of the study is to investigate three research questions: (1) Do low, medium and high levels of preferences of DCM in pharmaceutical sector differ in terms of the factors like two-way communication, sharing information, brand awareness, trust, website traffic and prescribing? (2) If yes, which one of the factors is mostly contributor for this differentiation? (3) Is this a successful classification based on the factors? To investigate these three research questions, a conceptual research model integrating discussions in foregoing paragraphs and proposed hypotheses is formulated. The hypothetical model is illustrated in Figure 1.

Figure 1 Conceptual Model of Discrimination among Low, Medium and High Levels of Preferences of DCM in terms of Two -way Communication, Sharing Information, Brand Awareness, Trust, Website Traffic and Prescribing in Pharmaceutical Sector



Source: Developed by Author (2021)

Research Methodology

Sampling and Data Collection: The study population was made up of all drug buyers who could feel interested in DCM. The survey frame included three separate locations in Dhaka City. Assuming an error of +/- 10%, (e = 0.1), confidence level of 99% (z = 2.58) and the proportion of consumers who could feel the interest towards DCM in the universe to be 50% (i.e. p = 0.5 and q= 0.5), the sample size turned out to be 166 (Cochran, 1963). Data were obtained from a sample of 185 customers. The stratified sampling technique used to determine the elements of the sample size. The data were collected by the restoration of a survey, in particular a questionnaire method. After removing incomplete and erroneous responses, the number of responses for analysis turned into 168, where it contains 56 customers in each of the three categories (high, medium and low preferences).

Measures: The criterion or dependent variable is preference, made up of three mutually exclusive and collectively exhaustive categories: high preference, medium preference and low preference. The dependent variable will be measured on a 9-point Liker scale in which the preference for DCM is categorized as low (1,2,3), medium (4,5,6) or high (7,8,9). The independent variables of this research paper are chosen based on the theoretical model of previous research papers. Data for independent variables were obtained on opportunity of two-way communication (COMMUNICATION, measured on a 9-point scale), level of brand awareness (AWARENESS, measured on a 9-point scale), importance attached to information sharing (INFORMATION, measured on a 9-point scale), necessity to establish a culture of trust (TRUST, measured on a 9-point scale), more website traffic (TRAFFIC, and requirement of online medication (MEDICATION), measured on a 9-point scale).

Statistical Analysis: A multiple regression analysis was mainly planned, but decisions were changed because of categorical preference (dependent variable). Descriptive statistics were only taken into account for a better understanding of the data approach. The issue of multicollinearity did not arise after identifying the outcome of the case. However, a multiple discriminant analysis was performed and two functions were considered in determining the factors (predictors) of the dependent variables. The results of the identified function were important enough to test the null assumptions of this study.

Results and Findings

This part of the study concentrates on descriptive statistics, tests for multicollinearity and discriminant analysis to verify hypotheses.

Descriptive Statistics: Table 2 presents a review of group means indicating that trust appears to separate groups more broadly than any other variable. Some separation occurs based on website traffic and information sharing. The low and medium preference groups are very similar as far as brand awareness is concerned. Results are obtained by reviewing the standard deviation. Online medications have a large standard deviation from the separation between the groups.

Table 2 Factors Differentiate the Levels of Preferences (Low, Medium and High) of DCM in Pharmaceutical Sector

Group Means Preferences of DCM	Factors					
	Communication	Awareness	Information	Trust	Traffic	Medication
High	5.4107	4.9464	5.6786	5.5000	5.6607	4.8571
Medium	4.7143	4.0536	4.5000	5.0357	5.3214	4.0714
Low	3.9821	4.2857	4.1071	4.3393	3.6250	3.6429
Total	4.7024	4.4286	4.7619	4.9583	4.8690	4.1905
Group Standard Deviations						
High	1.59290	1.60022	1.60802	1.50151	1.45573	1.83331
Medium	1.42337	1.53053	1.70561	1.68377	1.28073	1.81766
Low	1.87317	1.87534	1.49762	1.60993	1.56742	2.13566
Total	1.73226	1.70793	1.73115	1.66094	1.68672	1.98784

Source: Survey Data

Tests for Multicollinearity: The pooled within group correlation matrix in Table 3 indicates some correlation between website traffic and trust. Website traffic is also in negative correlation to information sharing. However, these correlations are on the lower side, showing that in spite of the fact that multicollinearity may be a concern; this is unlikely to be a serious issue. The significance of univariable F ratios indicates that all predictors are significant in distinguishing the three groups when considered individually.

Table 3 Pooled Within-Groups Correlation Matrix

	Communication	Awareness	Information	Trust	Traffic	Medication
COMMUNICATION	1.000					
AWARENESS	0.001	1.000				
INFORMATION	0.045	0.074	1.000			
TRUST	0.089	0.07	-0.035	1.000		
TRAFFIC	-0.032	0.083	-0.115	0.279	1.000	
MEDICATION	0.073	-0.041	-0.098	-0.059	0.034	1.000
Wilks' lambda (*U*-statistic) and univariate *F* ratio with 2 and 165 degrees of freedom						
	Wilks' Lambda	F	Significance			
COMMUNICATION	.886	10.621	.000*			
AWARENESS	.951	4.282	.015*			
INFORMATION	.850	14.521	.000*			
TRUST	.917	7.465	.001*			
TRAFFIC	.720	32.148	.004*			
MEDICATION	.936	5.676	.000*			

Source: Survey Data

Discriminant Analysis for Hypotheses Testing: In order to discriminate between low, medium and high levels of preferences for DCM in pharmaceutical sector (H_1) by the discriminant functions, it must be considered both the functions simultaneously. The means of the functions may be tested successively by a first test of all the means simultaneously. Next, a function is excluded at once, and the means of the remaining functions are tested at each stage. The

following discriminant equation is used to estimate the impacts of factors on high, medium and low preferences in this multiple discriminant analysis.

$$D = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6$$

Where,

D = Discriminant score

b_0= Constant, and $b_1, _2, _3 \ldots\ldots, _6$ = Coefficients associated with independent variables

x_1 = Communication, x_2 = Awareness, x_3= Information, x_4= Trust, x_5 = Traffic, and x_6= Medication.

With canonical discriminant analysis, needless repetition of data can be decreased while discriminating power is maintained in the first several canonical discriminant functions (McLachlan, 1992). There are three groups in this analysis and a maximum of two functions can be extracted since the number of predictors is greater than this quantity. Here, all the functions may not be statistically significant. In Table 4, the eigenvalue associated with the first function is 0.786, and this function often explains the 89.8% variance. Since the eigenvalue is large, the first function is probably larger. The second function has an eigenvalue of 0.089 and represents only 10.2 percent of the explained variance. The 0 below "After Fcn (after functions removed)" indicates that none of the functions were deleted. Wilk's λ value is 0.514. This turns into a chi-square of 108.083, with 12 degrees of freedom, which is significant at the 0.01 level. Therefore, the two functions together lead to significant discrimination between the three groups. However, when the first function is removed, the Wilk's λ associated with the second function is 0.918, which is significant at the 0.05 level. Thus, the second function also contributes significantly to group differences, but the first more strongly rejects the null hypothesis for H_1.

Table 4 Canonical Discriminant Functions

Fcn	Eigenvalue	% of Variance	CUM Pct	Canonical Corr	After Fcn	Wilks' lambda	Chi-square	df	Sig.
					0	.514	108.083	12	.000
1*	.786	89.8	89.8	.663	1	.918	13.826	5	.017
2*	.089	10.2	100.0	.286					

*Marks the two canonical discriminant functions remaining in the analysis.

Source: Survey Data

In H_2 and H_3, it was predicted that significant differences among low, medium and high level of preferences will be identified by examining the factors or independent variables of this study, which are two-way communication, sharing information, brand awareness, trust, website traffic and online medication where one of the factors or independent variables will be mostly contributed for low, medium and high level of preferences of DCM in pharmaceutical sector. The interpretation of the results is facilitated by examining standardized discriminant function coefficients, structure correlations and certain plot. In Table 5, standardized discriminant function coefficients where coefficients with large absolute values correspond to factors with

greater discriminating ability. The standardized coefficients show a high coefficient for website traffic and two-way communication on Function 1, while Function 2 has relatively higher coefficients for brand awareness.

Table 5 Standardized Canonical Discriminant Function Coefficients

	Discriminant Functions	
	1	2
COMMUNICATION	.367	.010
AWARENESS	.072	.605
INFORMATION	.534	.422
TRUST	.145	.137
TRAFFIC	.693	-.634
MEDICATION	.300	.316

Source: Survey Data

A similar conclusion for H_2 and H_3 is achieved through an examination of the structural matrix which shows the relationship of the factors in Table 6. To facilitate the interpretation of functions, variables with significant coefficients for a specific function are grouped. Clusters are marked with asterisks. Therefore, website traffic, two-way communication, trust, and online drugs have asterisks for function 1 because these variables have higher coefficients for function 1 than for function 2. These variables are mainly related to function 1. Conversely, brand awareness and information sharing is mainly related to function 2, as indicated by the asterisks. As a result, functions 1 and 2 reject null hypotheses for H_2. Likewise, the highest value of website traffic of function 1 and brand awareness of function 2 reject null hypotheses for H_3.

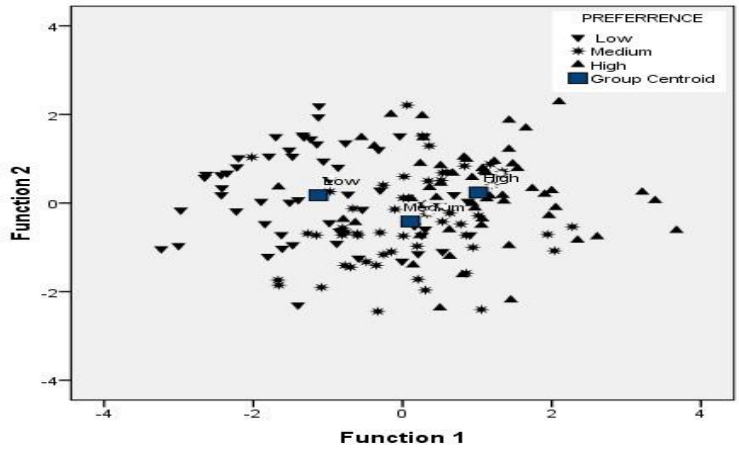
Table 6 Structure Matrix

	Discriminant Functions	
	1	2
TRAFFIC	.676*	-.584
COMMUNICATION	.404*	.085
TRUST	.339*	-.030
MEDICATION	.286*	.221
AWARENESS	.167	.580*
INFORMATION	.442	.504*

Source: Survey Data

Figure 2 is a scattergram plot of all the groups on function 1 and function 2. It can be seen that the high preference group has the highest value on function 1 and the low preference group has the lowest value. Since function 1 is primarily combined with website traffic, two-way communication, trust, and online medication, three groups of these four variables are expected to be ordered.

Figure 2 All-Groups Scattergram



Source: Survey Data

Figure 2 further shows that function 2 tends to separate the group with high preference (highest value) from the group with medium preference (lowest value). This function is mainly related to brand awareness and information sharing.

In H_4, it was assumed that the factors would be successful in classifying the cases into one of the preference groups. To test the hypotheses, the results of the classification of the cases selected for analysis are given in Table 7. The analysis of the 168 responses shows that (41 + 29 + 39) / 168 = 64.9 percent of the cases are correctly classified. The classifications for low preferences are 23 percent medium preference and 7 percent high preference. Medium preferences contain 18 percent classification errors for low preferences and 30 percent for high preferences. In the case of high preferences, 9 percent of the classification errors are attributable to low preferences and 18 percent to medium preferences. The results showed that the discriminant functions are specific enough to predict group membership.

Table 7 Classification Results for Cases Selected for Use in the Analysis

Actual Group	Number of Cases	Predicted Group Membership		
		High Preference	Medium Preference	Low Preference
High Preference	56	41	10	5
		73%	18%	9%
Medium Preference	56	17	29	10
		30%	52%	18%
Low Preference	56	4	13	39
		7%	23%	70%

Source: Survey Data

Discussion

The factors or independent variables are the best discriminators among low, medium and high levels of consumer preferences in pharmaceutical sector. There have significant differences

among low, medium and high level of preferences in terms of two-way communication, sharing information, brand awareness, trust, website traffic and online medication where website traffic is the most useful contributor for one preference group and brand awareness is for another one. Customers who are very concerned about website traffic, two-way communication, trust, and online drugs are likely to prefer DCM. Conversely, those less interested in website traffic, two-way communication, trust, and online medication are less likely to prefer DCM. This also applies to the evaluation of the group mean values for these variables. It is to be expected that a high preference group with regard to awareness and information is higher than a medium preference group. Indeed, this is true of brand awareness and information sharing, as shown by the group means of these variables. All the results showed that the classification of the cases in one of the consumer preference groups based on the values of the factors is successful.

Conclusions and Implications

In the minds of customers there are different preferences for DCM in the pharmaceutical industry, which can be clearly seen in the different consideration given to the interaction with communication and when visiting the website. This branding method can also be used to build trust as it helps capture customer preferences with online medication. The concept of building trust through digital content marketing is similar with previous studies. On the other hand, it is uniquely identified in this study that a number of customers are more focused on DCM in terms of awareness and information though they are less sensitive to DCM. It is happened because a number of people can prefer DCM, but they do not like to consider DCM as a unique method to increase website traffic. In fine, the discriminant analysis of this study rejects all null hypotheses and does well to develop the marketing preferences for digital content in the pharmaceutical industry.

Limitations and Future Scope

One limitation of this study, according to the researcher, is that both functions were significant if this suggests that some of the clients have fewer preferences, although they know their importance, possibly due to the lack of permanent preference distinguishers by DCM. These differences were not accurately measured and / or respondents may not have recognized the value of DCM in the pharmaceutical industry. Respondents can also feel disinterested as the practice of DCM is opaque from the perspective of a country where respondents are from. In any case, these are the real causes of research opportunities.

The results of this paper recommend that researchers, pharmaceutical entrepreneurs, and digital marketers have great opportunities to focus on large-scale research to develop a realistic DCM strategy to generate more website traffic, interactive relationships through communication and a valuable one Achieving trust could touch the breath of many, especially the next generation DCM is looking to unlock in the pharmaceutical industry.

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