Modeling the Antecedents of Customer Engagement With Health Related Content

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Abstract

This paper seeks to study the interrelationship between different variables impacting customer engagement with health-related content. For this ISM approach has been employed. Variables impacting customer engagement are identified from the existing literature and subsequently modeled in the form of a diagraph (ISM Model). Finally, the variables are classified into different categories based on their dependence and driving power using MICMAC Analysis. Seven variables identified from the literature are readable content, usefulness of content, socialization needs, trustworthiness, complete information, subjectivity, and content novelty. These variables are then modeled into a diagraph (ISM model) showing interrelationship among the variables. Three levels of hierarchy are formed. Where the first level is occupied by three variables namely, usefulness of content, socialization needs, and content novelty. The second level is occupied by three more variables, namely, readable content, trustworthiness, and subjectivity. The third level is occupied by one variable, that is, complete information. Using MICMAC analysis content novelty is classified as autonomous variable, usefulness of content and socialization needs were classified as dependent variables, trustworthiness, and subjectivity are classified as linkage variables, readable content, and complete information being classified as independent variables.

Keywords : **Customer Engagement, Health-Related Content, ISM, MICMAC Analysis**

I. INTRODUCTION

The evolution of internet media has led to the presence of plethora of information where the customers are attracted towards quality content. So, it becomes important for the provider of content that only quality information is shared in order to gain more customer engagement. Brodie, Ilic, Juric, and Hollebeek [1] defined consumer engagement as a virtual brand community that involves specific interactive experiences between consumers and the brand, and/or other members of the community. A more enagaged customer is likely to be loyal towards the brand and is likely to advocate its offerings. This led to the need that before sharing the content, it must be properly scrutinized. With the emergence of COVID-19 pandemic and also for general wellbeing, the internet media is flooded with abundance of information related to health. Internet had made it possible to administer health online even using mobile applications [18]. This type of information is the most vital for survival and wellbeing of human beings. So, the provider of such content, be it brand or the users must keep in view certain factors before sharing the information on the digital platform so that engagement rate can be substantially increased. Keeping this in view our study seeks to identify the crucial variables that influence customer engagement with health related content and the relationship among these variables. ISM methodology has been employed for this. In section II of the paper, the variables are defined, in section III ISM approach has been illuminated with it application in our context, section IV comprises of MICMAC analysis and its application, and section V is the conclusion.

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II. VARIABLES OF CUSTOMER ENGAGEMENT WITH HEALTH RELATED CONTENT

(a) Readable Content

Readable content is the content that is published in an easy and understandable language, so that the receiver of the content does not face any difficulties in interpreting the content. The content that is easily understandable attracts more engagement of people as they get more indulged in the act of liking, commenting, and sharing such content. It becomes imperative for the health content provider to provide content that can be easily read as this information is more crucial for the survival and well being of people.

(b) Usefulness of Content

Usefulness can be defined as the extent to which any information which helps the receivers solves their problems [2]. Usefulness of content plays a very crucial role in the case of healthcare content as this information tends to be very vital. Usefulness of information can help the recipient in comparing products, services, getting information related to price, quantity, quality, address etc. The content which is perceived as useful by the recipients tends to increase their engagement with such content. Recipient gets indulged in the act of engagement by liking, sharing, and commenting on such content.

(c) Socialization Needs

Needs for socializing emerges from the urge to get connected with friend's community, family members and others connected on internet media [3]. Such needs depict a person's interest in meeting and connecting with others and feeling as a part of a community [4]. These socializing needs urge individuals to engage more with the content, particularly with health related content. People tend to engage more with health-related content by liking, commenting, and sharing it with others.

(d) Trustworthiness

Moorman, Deshpande, and Zaltm [5] defined trust as a willingness to rely on an exchange partner in whom one has confidence. When a person trusts another person or organization, one believes that every act done by them will be deemed ethical and socially acceptable [6]. Presence of trust seeks to reduce the risk of uncertainty. Trust becomes an issue when there is asymmetry of information provided by the provider for itself and its offerings [7]. Thus, trust is vital in shaping attitude and behavior towards the provider and its product [7]. When people trust someone, they will engage themselves in the act of promoting the trust. Trust towards the provider of health related content is utmost vital. When people trust the providers of health information, they are more attracted towards the content shared by them.

(e) Complete Information

Incomplete and inappropriate message decreases consumers' attention and interest towards a particular organization. In this digital era social networking sites are flooded with information posted by firms as well as users. In such a situation, absence of complete and accurate information will serve as a hindrance to prompting consumers to engage with the content. Also, when the information related to health is shared, it must be complete and accurate so as to engage more people with it.

(f) Subjectivity

Subjectivity refers to inner self of individuals, the way the individual feels, experiences and responds [8]. Subjectivity being a psychological dimension is shaped by social and cultural factors [8]. It measures the extent to which the message is interpreted independently from a provider's perspective [9]. Different persons may perceive the same message differently. Lack of standard perception of message may result in subjectivity which may arise due to differences in opinions [10]. Thus, subjectivity of information perception may impact engagement of every individual in a different manner. Subjectivity is seen to be present for health information which impacts the level of engagement from person to person.

(g) Content Novelty

In the context of content, novelty means the extent to which new information is perceived by the audience [11] that is posted for the first time on digital media. Such an

TABLE I.

VARIABLES AND THEIR SOURCES

S. No.	Variables	Sources
1	Readable content	Yang, Ren, and Adomavicius (2019) [14]
2	Usefulness of content	Owusu, Mutshinda, Antai, Dadzie, and Winston (2016) [2]
3	Socialization needs	Vander Shee, Peltier, and Dahl (2020) [3]
4	Trustworthiness	Sharma, Gupta, and Joshi (2020) [15]
5	Complete information	Neiger, Thackeray, Burton, Thackeray, and Reese (2013) [16]
6	Subjectivity	Heinonen (2018) [10]
7	Content novelty	Tokunaga (2013) [12]

object or a person who was not expected by people to appear at a specified place [11]. Inclusion of novelty in communication captures greater audience attention [11]. Large number of unique messages cues and stimuli are evoked by novel content [12]. The memorability of consumer experience is said to be enhanced with the inclusion of novel content [13]. Novel or new content generates urge for view and engagement. Thus, the health related content shared is more likely to capture the interest of people and it urges them to engage with such content.

III. ISM APPROACH

ISM (Interpretive Structural Modeling) : originally proposed by Warfield [17] seeks to establish unambigous various disciplines to develop a simple and unambigous model depicting relationships. There are a number of steps to be followed to develop an ISM model. These are as follows:

Step 1. Determination of Variables : In the first step variables are identified from existing literature [19]. We have identified seven variables namely, readable content, usefulness of content, socialization needs, trustworthiness, complete information, subjectivity, and content novelty.

Step 2. Formation of VAXO Table : In this steep a VAXO table (Table II) is obtained by doing a pairwise comparison among the variables with the help of expert opinion. Where,

- V is used if variable I has an influence over variable j
- A is used if variable j has an influence over variable i
- X is used if variable i and j have an influence over each other
- O is used if neither variable i influences j, nor j influence i

Step 3. Formation of Initial Reachable Matrix : In this step intial reachable matrix (Table III) is formed with the aid of inputs provided in the previous step. The VAXO table is now converted into 0s and 1s.

- If (i,j) input in VAXO table is V, then it is coverted into 1, and if (j,i) input in VAXO table is V, then it is converted into 0.
- If (j,i) input in VAXO table is A, then it is converted into 0, and if (j,i) input in VAXO table is A, then it is converted into 1.

TABLE II.

VAXO TABLE

	Content Novelty	Subjectivity	Complete Information	Trustworthiness	Socialization Needs	Usefulness of Content	Readable Content
Readable Content	O	A	O	V	V	V	X
Usefulness of Content	O	A	A	O	O	X	
Socialization Needs	O	A	O	A	X		
Trustworthiness	O	X	A	X			
Complete Information	O	O	X				
Subjectivity	O	X					
Content Novelty	X						

TABLE III.

INITIAL REACHABLE MATRIX

i/j	Readable Content	Usefulness of Content	Socialization Needs	Trustworthiness	Complete Information	Subjectivity	Content Novelty
Readable Content	1	1	1	1	0	0	0
Usefulness of Content	0	1	0	0	0	0	0
Socialization Needs	0	0	1	0	0	0	0
Trustworthiness	0	0	1	1	0	1	0
Complete Information	0	1	0	1	1	0	0
Subjectivity	1	1	1	1	0	1	0
Content Novelty	0	0	0	0	0	0	1

TABLE IV.

FINAL REACHABLE MATRIX

i/j	Readable Content	Usefulness of Content	Socialization Needs	Trustworthiness	Complete Information	Subjectivity	Content Novelty	Driving Power
Readable Content	1	1	1	1	0	1*	0	**5**
Usefulness of Content	0	1	0	0	0	0	0	**1**
Socialization Needs	0	0	1	0	0	0	0	**1**
Trustworthiness	1*	1*	1	1	0	1	0	**5**
Complete Information	0	1	1*	1	1	1*	0	**5**
Subjectivity	1	1	1	1	0	1	0	**5**
Content Novelty	0	0	0	0	0	0	1	1
Depending Power	**3**	**5**	**5**	**4**	**1**	**4**	**1**	

↳ If (j,i) input in VAXO table is X, then it is converted into 1, and if (j,i) input in VAXO table is X, then also it is converted into 1.

↳ If (j,i) input in VAXO table is O, then it is converted into 0, and if (j,i) input in VAXO table is O, then also it is converted into 0.

Step 4. Formation of Final Reachable Matrix : A final reachable matrix Table IV is prepared out of initial reachability matrix by performing transitivity check and incorporating 1* if any error is detected. Transitivity means if variable 1 impacts variable 2, then it means that variable 1 will also impact variable 3.

Step 5. Formation of levels : In this step the final reachable matrix is partitioned to form various levels. Three sets are formed, namely, reachability set, antecedent set, and intersection sect. Reachability set includes all the variables present in the row of that particular variable, antecedent set includes all the variables present in the column of that particular variable, and intersection set is the set which comprises of coinciding components of reachability and antecedent set. The levels are formed where reachability set and intersection set are same. Then these variables are

TABLE V.

ITERATION 1

Variables	Reachability Set	Antecedent Set	Intersection Set	Level
1	12346	146	146	
2	2	12456	2	I
3	3	13456	3	I
4	12346	1456	146	
5	23456	5	5	
6	12346	1456	146	
7	7	7	7	

TABLE VI.

ITERATION 2

Variables	Reachability Set	Antecedent Set	Intersection Set	Level
1	146	146	146	
4	146	1456	146	II
5	456	5	5	
6	146	1456	146	II

TABLE VII.

ITERATION 3

Variables	Reachability Set	Antecedent Set	Intersection Set	Level
5	5	5	5	III

removed for formation of subsequent levels. In the present study, three levels are formed and are shown as iteration 1 (Table V), iteration 2 (Table VI), and iteration 3 (Table VII). In the first level, there are three variables, namely, usefulness of information, socialization needs, and content novelty, and they are now removed to form subsequent levels. In the second level, there are three variables, namely, readable content, trustworthiness, and subjectivity. They are now removed and finally one variable is left for the third level, that is, complete information.

Step 6. Formation of Conical Matrix : In this step the conical matrix (Table VIII) is prepared out of final reachability matrix by clubbing together the variables of the same level.

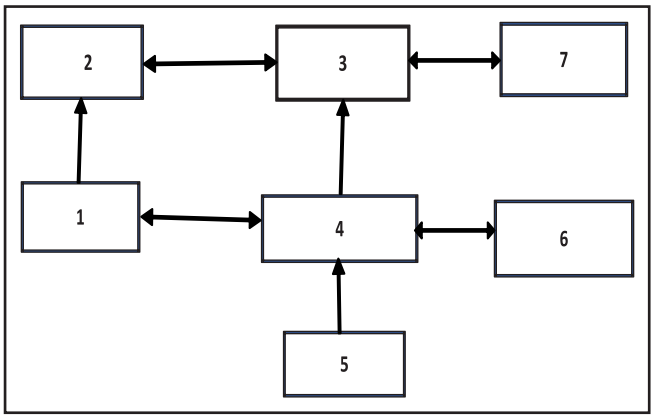

Fig. 1. ISM Diagraph

Step 7. Development of Diagraph : Now an ISM model (diagraph) is prepared from the partitioned levels and linkage is obtained by the relationship shown in the initial reachability matrix. In our diagraph there are three levels where there are three variables in the first level , three in the second, and one in the third level.

IV. MICMAC ANALYSIS

MICMAC Analysis is a technique used to group variables into different categories based on their depending and driving power. The different categories are as follows :

(1) Autonomous Variables : The variables with less depending and less driving power are categorized as

TABLE VIII.

CONICAL MATRIX

i/j	Usefulness of Content	Socialization Needs	Content Novelty	Readable Content	Trustworthiness	Subjectivity	Complete Information
Usefulness of Content	1	0	0	0	0	0	0
Socialization Needs	0	1	0	0	0	0	0
Content Novelty	0	0	1	0	0	0	0
Readable Content	1	1	0	1	1	1	0
Trustworthiness	1	1	0	1	1	1	0
Subjectivity	1	1	0	1	1	1	0
Complete Information	1	1	0	0	1	1	1

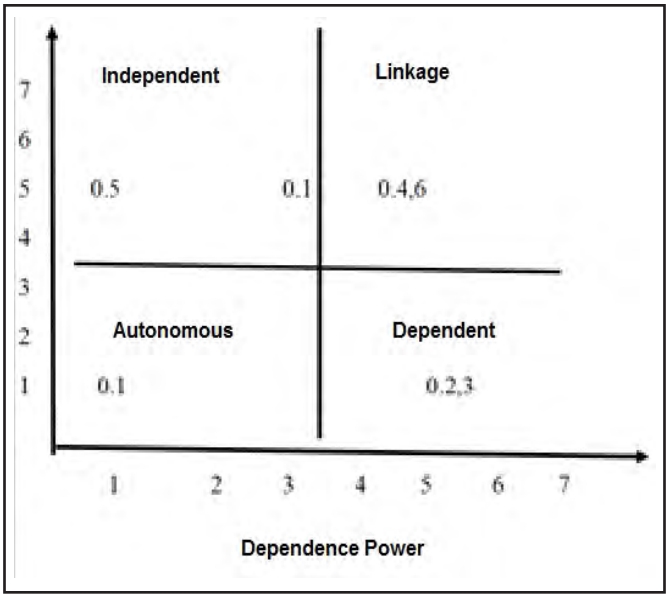

Fig. 2. MICMAC Analysis

autonomous. In our study there is one such variable, that is, content novelty.

(2) Dependent Variables : The variables with more dependence and less driving power are categorized as dependent. There are two such variables, usefulness of content, and socializing needs.

(3) Linkage Variables : The variables with more depending and more driving power are categorized as linkage. There are two such variables, trustworthiness, and subjectivity.

(4) Independent Variables : The variables with less depending and more driving power are categorized as independent. There are two such variables, readable content, and complete information.

V. CONCLUSION

In this unprecedented era people are constantly searching for information for their survival and wellbeing. Internet media has taken the opportunity to solve this problem of a large number of people. Brands are taking advantage of the internet media to promote their products and services, and on the other hand, users themselves are engaged in the act of providing their opinions about the brand offerings as well as sharing their knowledge about health and well being. So, the study was designed to understand which variables impact individuals to engage with such health related content and how these variables are related to each other. The main objectives of this study were to identify and model the variables impacting customer engagement with health related content. For this, seven variables identified from the literature are readable content, usefulness of content, socialization needs, trustworthiness, complete information, subjectivity, and content novelty. These variables are then modeled into a diagraph (ISM model) showing interrelationship among the variables. Three levels of hierarchy are formed. Where the first level is occupied by three variables, namely, usefulness of content, socialization needs, and content novelty. The second level is occupied by the other three variables, namely, readable content, trustworthiness, and subjectivity. The third level is occupied by one variable, that is, complete information. Using MICMAC Analysis, content novelty was classified as autonomous variable, usefulness of content, and socialization needs were classified as dependent variables, trustworthiness and subjectivity are classified as linkage variable, readable content, and complete information being classified as independent variables.

AUTHORS' CONTRIBUTION

Both the authors collectively conceived to undertake the topic and started the research. The factors for model were found out by T. Chauhan from review of literature under the guidance of Dr. Sindhu, which were further validated by experts and Vaxo table was prepared with the help of experts from industry and academia. Further steps were perfomed by T. Chauhan under the guidance of Dr. Sindhu who guided her throughout the research process from start to end.

CONFLICT OF INTEREST

The authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest, or non-financial interest in the subject matter, or materials discussed in the manuscript.

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