On-Page Search Engine Optimization: Study of Factors Affecting Online Purchase Decisions of Consumers

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Abstract

Background/Objectives: The paper attempts to develop Search-Engine-Optimization strategy by investigating the factors affecting online purchase decision of consumers and to understand customer expectations about home page of an e-commerce website. **Methods/Statistical Analysis:** For this study, data was collected by means of a questionnaire from 200 respondents. Out of these, 152 valid responses were examined which included students and working professionals. Factor analysis was used for analyzing the data with the help of SPSS tool. The paper hence proposes the major psychological factors, under Consumer decision making process model, an individual undergoes to make online purchase. **Findings:** Through various secondary analyses it was found that none of the research concentrated completely on the psychological behaviour of customers making online purchase. This makes the research unique since a complete analysis of psychological process with various basic attributes have been considered in this paper to please the customers and creating a value to the customers. The findings of the study suggest that consumer decision making process for online purchase depends on five basic factors namely motivation, perception, attitude, integration and learning. Secondly, clothing, jewellery, mobile accessories are the priority sections that are expected on the home page of an e commerce website. **Applications/ Improvements:** The research will help managers understand factors affecting online purchase and to increase the website traffic thus the ranking of the website on search tools will increase, helping in Search-Engine-Optimization.

Keywords: Consumer Decision Making Process, E-Commerce, Online Purchase Decision of Consumer, Search Engine Optimization (SEO)

1. Introduction

1.1 Search Engine Optimization: Definition and Importance

Search Engine Optimization (SEO) as defined by Wikipedia is the process of improving the visibility of a website or a web page in the search engines by "natural" or unpaid ("organic" or "algorithmic") search results (http://en.wikipedia.org/wiki/Search engine optimization).

SEO is a powerful web marketing technique which aids search engines locate and rank your site higher than the millions of other sites in retort to a search query[1]. SEO thus helps you get traffic from search engines. It is a process of improving the visibility of your site. It is a technique for:

- Scheming and evolving your site to rank well in search engine results[2].
- Promoting by understanding how search algorithms work and what the customers search online[3].

1.2 Consumer Purchase and SEO

Internet growth in India has been on a phenomenal rise. In the 3-year period from 2010-2013, the number of Internet users grew to 200 million, and by December 2013 the figure crossed 300 million. The numbers are predicted to grow to 500 million by 2018-19[4]. The internet has also affected the consumer behavior. Customers are increasingly using the internet for online purchases. Hence it has become an imperative for organizations to invest in online marketing, in order to increase their branding and boost their online presence.

The importance of SEO within a business is obvious, as companies that have implemented SEO are overtaking their competitors. An organic click of consumer may result in increasing the ranking of the website. In case of sponsored links the results may be irrelevant to the actual result to be searched. Hence in order to gain ranking managers should concentrate on organic SEO models which could get more profits and optimal bids in less revenue[5].

From the above discussion it is clear that consumers are increasingly seeking information through internet. It is also clear that there is a need for optimizing the search for this information and that the consumer behavior and motivations for online purchase may be different than the offline customers.

1.3 Theoretical Background

Various studies have been conducted in this area in recent years[6]. In his study examined the factors related to technology, consumer behavior[7], and psychology which affected online consumer behavior. In his study focussed on the relationship between factors such as perceived ease of use, trust, risk, perceived usefulness and e commerce acceptability of consumers[8]. Examined the reasons for online shopping as efficient use of time, avoiding crowds, and benefit of availability for shopping for all 24 hours. A research conducted by[9] shows the perception towards online shopping under different age groups of people using e-commerce websites for online purchase[10]. Shows the factors that affect the attitude of consumer while making an online purchase[11]. Speak about the motivating factors consumers go through while making online purchase.

Hence it can be seen that there have been a number of researches in the past 3-4 years that have been conducted showcasing the individual psychological processes that may affect a consumer's decision in online purchase. However none of the researches have yet been conducted in the area showcasing the factors that affect at all the stages of a consumer decision making process. Also there has been no research conducted till date identifying the expectations of products, consumers wish to see on the home page of an e-commerce website.

Hence the objective of this paper is:

1. To understand the factors that affect the online purchase decision of a consumer and
2. To understand what information the consumer expects on the master page (home page) of an e-commerce website.

2. Literature Review

2.1 Consumer Decision Making Process

In order to understand the factors that affect online purchase decision it is essential to first understand the consumer decision process and the key psychological processes connected with the consumer decision making process.

The Consumer Decision Process (CDP) is a roadmap of consumers' minds. It captures the activities that occur when decisions are made by the consumer. In addition, there appears to be an impact on user satisfaction. Figure 1 describes the Stages of Consumer Decision Making process as specified by As described[12] shows that the consumer decision process depends on five stages namely need recognition, Information search, evaluation of alternatives, purchase decision and post purchase decision. Figure 2 describes the relevant internal psychological
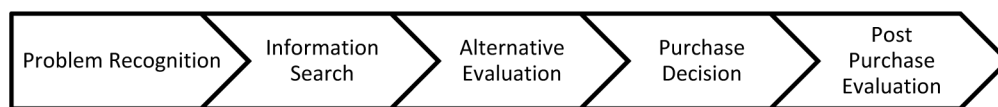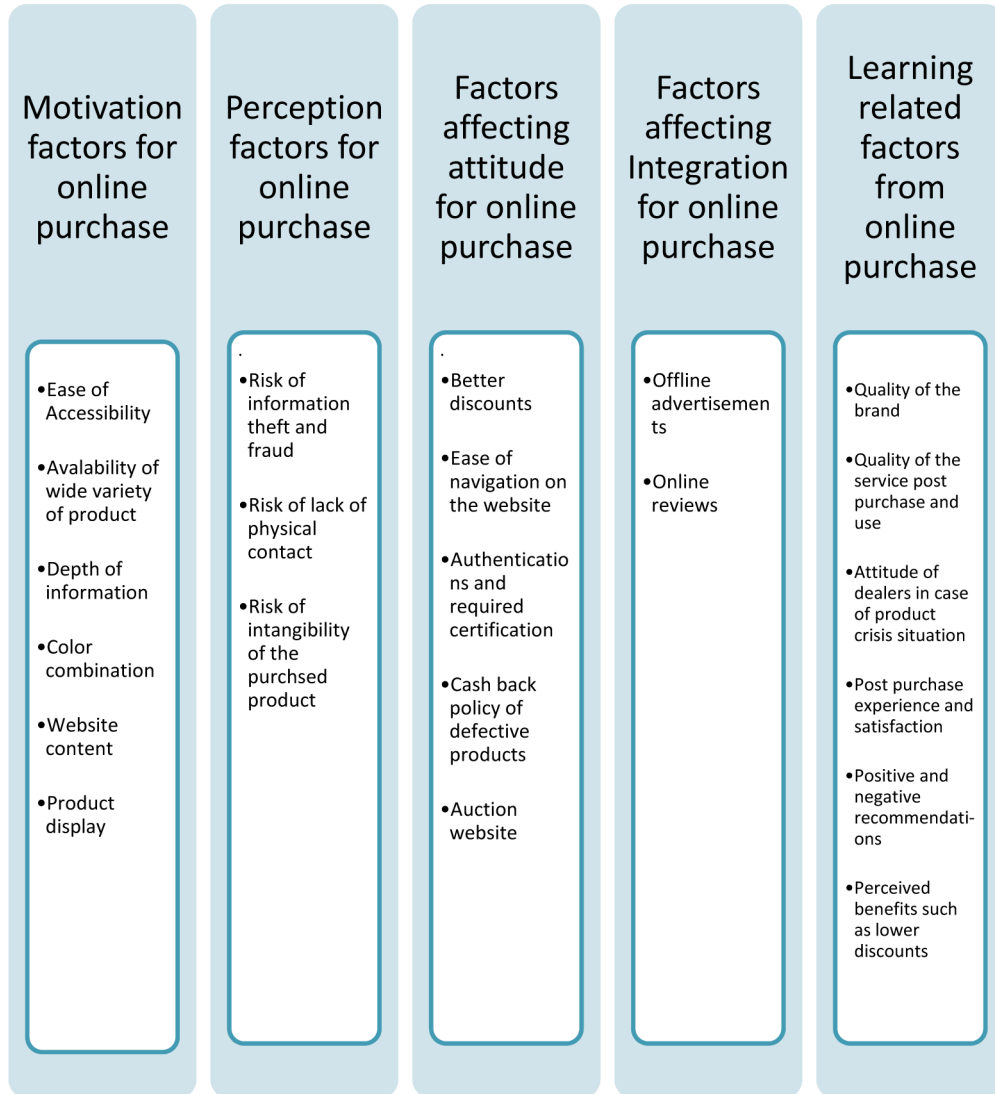

Figure 1. Stages of Consumer Decision Making process (Kotler et al. 2008 p. 265-271)20

Figure 2. Relevant (Stages of Consumer Decision Making Process) Internal Psychological Process.

processesateach stage of consumer decision making which includes motivation, perception, attitude formation, Integration and learning respectively. These are the main factors that are taken into consideration in this paper.

2.2 Factors Affecting Online Purchase Decision of a Consumer

Authors[13] in their paper talk about positive surprise, auction website and commitment to goal being the motivating factors for consumers to purchase products online. According to the study conducted[14] by accessibility, product variety, information depth, are some factors affecting the motivation of a person to purchase products online.

A study conducted by[15] shows that financial risk, social risk, time risk and security risks are the perception of risks as perceived by customers in online shopping. Perceived risk due to intangibility of product is explained in the study conducted by[16]. Another study conducted by[17] states that security and other policies, cash back policy, pre and post sales services, ease of navigation of websites, necessary certifications, color combinations and website content and product display are all the factors affecting the perception of consumers while shopping online.

In a research conducted by the author[18] comes up with various factors affecting the attitude which includes promotions and recommendations. Another research

conducted shows that factors like perceived benefits of online shopping[19], online advertisement[20], Offline advertisement[21] and many more factors affect the attitude of a person towards buying a product online. In another paper written by[22] shows that demographic profile including gender, age, educational level and income are the important factors affecting the attitude of an individual towards online shopping.

A set of factors that are taken into consideration from various studies conducted includes, refined consideration set of results[23], knowledge sharing by the website[24], capabilities of a website to screen alternatives[25] and website with multi agent collaborators[26]. Another research conducted by[27] that factors such as available comparison tools and customized websites for individuals also affect the integration of results while online shopping.

A paper written by[28] shows that according to the research conducted learning which affects post purchase behavior of consumer basically depends on store brand quality[29], service quality &usage[30], product crisis situation[31], satisfaction and enjoyment[32,33,]. Discussed how performance of search engines can be improved by letting the users decide the content of the website so that they can access relevant content at a faster rate.

2.3 Conceptual Framework

The five factors considered for the study of Consumer purchase decision model include motivation, perception, attitude, integration and learning. Various factors under these, taken into consideration are shown in Figure 2. Apart from the following attributes online advertisements, other types of promotions, unwanted sociality were also taken into consideration but after factor analysis were removed due to low factor score.

Based on the review of literature as stated above, and the key psychological processes involved in consumer decision making at each stage, the following conceptual model was proposed. As described in Figure 3, the conceptual model proposes that basically 5 factors namely Motivation, Perception, Attitude, Integration and Learning affecting online purchase decisions of consumers. The following research questions were proposed for study and the conceptual framework proposed:

- What motivation factors affect the CDM for online purchase
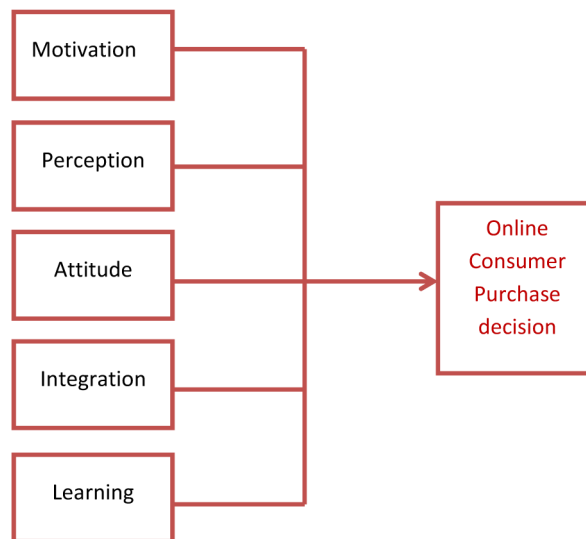- What perception factors affect CDM for online purchase

Figure 3. Proposed framework.

- What attitude related factors affect CDM for online purchase
- What integration factors affect CDM for online purchase
- What learning related factors affect CDM for online purchase

2.4 Hypothesis Formulation

The review of literature has given more in-depth understanding of the factors affecting the consumer decision making for online purchase at each of the 5 stages and also helped develop hypotheses for the study. Following hypothesizes were proposed for the study:

Hypothesis 1 The consumer decision making process for online purchase depends on five basic factors namely motivation, perception, attitude, integration and learning.

Hypothesis 2 Clothing, jewelry, mobile accessories are the priority sections that are expected on the home page of an e commerce website.

3. Research Methodology

A sample size of 200 was taken to collect the responses. The responders were mainly youth and working professionals in the age group 22 to 27. Cronbach's analysis test was used to understand the reliability of the responses collected for the research. Further the grouping of different independent variables for the Consumer Purchase Decision (CPD) was done through factor analysis. Apart

from this the graphical excel tools were used to analyze the expectations of customer.

4. Data Analysis Results

The responses collected for the 22 factors were grouped into various statistical groups using factor analysis using Varimax method of rotation. To check the reliability of the factors Chronback's alpha analysis had been conducted over the collected responses. The results of each of the statistical analysis are shown in the section below.

4.1 Chronback's Analysis

For the reliability test we have chosen Cronbach's alpha test which is an internal consistency model. The results for the research performed are reliable enough if the test value is above 0.70. Table 1 describes the Case processing summary which shows 152 number of customers/cases have responded to the questionnaire and were examined for this study and none of the values in the examined cases were missing. Based on the above analy-

Table 1. Case Processing Summary

		N	%
Cases	Valid	152	100.0
	Excluded[a]	0	.0
	Total	152	100.0

a. List wise deletion based on all variables in the procedure.

Table 2. Reliability Statistics

Cronbach's Alpha	N of Items
.871	22

sis as shown in Table 2 it is proved that the responses collected are 87.1% reliable for further tests to be conducted.

4.2 Hypotheses Testing: Factor Analysis

Table 3 shows the total variance explained by each of the five groupings of the independent variables. Factors under Group 1 (Learning) has a total explained variance of 17.706% which comes out as the most serious factor in the CDP model. This is followed by factors under Group 2 (Attitude) with 12.661% of the total explained variance. Factors under Group 3 (Motivation) have 12.407% of total explained variables while factors under Group 4 (Integration) and Group 5 (Perception) have a total explained variance of 8.220% and 6.94% respectively. While all of the factors combined together show 57.93% of total explained variance.

Based on the factor analysis results as shown in the Table 3 and the factor analysis explanation stated above, the Hypothesis 1 which states that the consumer decision making process for online purchase depends on five basic factors namely motivation, perception, attitude, integration and learning is accepted.

Table 4 below shows results of the Rotated component matrix. The initial extracted factors went through an orthogonal rotation (varimax rotation). After the varimax rotation, the factors were identified with their attributes. The 22 attributes in the questionnaire grouped into 5 factors. The rotated component matrix shows factor loadings (correlation between the factors and the attributes). In other words, the factor loadings describe the strength of relationship between the factors and the attributes grouped together under that factor. Any factor loading more than 0.5 is supposed to be a high correlation, and considered for grouping purpose. Moreover, the attribute

Table 3. Total Variance Explained

Component	Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.535	30.140	30.140	4.427	17.706	17.706
2	2.135	8.541	38.681	3.165	12.661	30.367
3	1.924	7.698	46.378	3.102	12.407	42.774
4	1.487	5.946	52.325	2.055	8.220	50.994
5	1.403	5.611	57.935	1.735412	6.94165	57.93522

Table 4. Rotated Component Matrix[a]

	Component				
	1	2	3	4	5
Factor_1	.240	.616	.276	-.123	-.013
Factor_2	.143	.706	.348	-.033	.006
Factor_3	.011	.563	-.018	.265	-.043
Factor_4	-.368	.210	-.098	.398	-.053
Factor_5	.351	.213	.642	.007	.040
Factor_6	-.066	.076	.540	.268	.195
Factor_7	-.112	.181	.073	.050	.736
Factor_8	.258	-.157	.293	-.134	.663
Factor_9	.126	.051	-.299	.132	.689
Factor_10	.187	.666	-.042	.206	.141
Factor_11	.159	.654	.271	-.022	.070
Factor_12	.284	.642	.391	-.049	.096
Factor_13	.321	.322	.595	.081	.048
Factor_14	.152	.179	.694	.028	-.148
Factor_15	.413	.207	.689	-.094	-.063
Factor_16	.463	.249	.331	.415	.105
Factor_17	.561	.176	.182	.264	.257
Factor_18	.162	.128	.077	.817	.060
Factor_19	.026	-.092	.081	.832	.022
Factor_20	.495	.118	.298	.017	.189
Factor_21	.582	.047	.419	.128	.223
Factor_22	.775	.327	.084	-.121	-.015
Factor_23	.776	.298	.121	-.009	-.021
Factor_24	.740	.056	.111	.067	.007
Factor_25	.814	.148	.134	.032	-.066

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Table 5. Attributes for Motivation factor

Ease of accessibility/ convenience	0.616
Availability of wide variety of products	0.706
Depth of information	0.563
Color combination	0.666
Website content	0.654
Product display	0.642

Table 6. Attributes for Perception factor

Risk of information theft and fraud	0.736
Lack of physical contact/ human side	0.663
Intangibility of purchase	0.689

Table 7. Attributes for Attitude factor

Better discounts	0.642
Auction website	0.54
Ease of navigations	0.595
Authentications & required certifications	0.694
Cash back policy against defective products	0.689

Table 8. Attributes for Integration factor

Online advertisements	0.817
Offline advertisements	0.832

Table 9. Attributes for Learning factor

Positive/ negative recommendations	0.561
Perceived online benefits	0.582
Quality of brand	0.775
Quality of service	0.776
Attitude of dealers in case of product crisis situation	0.74
Post purchase experience and satisfaction	0.814

having highest correlation with the factor, is grouped under that factor.

Table 5 shows the attributes along with the corresponding factor score which is 12.407% of all the factors contributing to motivation factor (as obtained in Table 3 column 3).

Table 6 shows the attributes along with the corresponding factor score which is 6.94% of the total factors contributing to perception factor (as obtained in table 3 column 5).

Table 7 shows the attributes along with the corresponding factor score which is12.661% of the factors contributing to attitude factor (as obtained in Table 3 column 2).

Table 8 shows the attributes along with the corresponding factor score which is 8.220% of the factors contributing to integration factor (as obtained in table 3 column 4).

Table 9 shows the attributes along with the corresponding factor score which is 17.706% of the factors contributing to learning factor (as obtained in Table 3 column 1) and is also the most important factor.

4.3 Hypotheses Testing: Graphical Analysis

The above graph shows that a majority of e-commerce users wish to see variety of Jewelry products as the top-most display on the master page. However it can also be seen that clothing was not the topmost priority on the master page but it did get more responders expecting to see clothing on the home page as compared to the price deals and discounts and coupons. It can be seen that very few responders wish to see price deals and discounts on the home page. Much similar is the case with the coupons and offers which is not expected by many e-commerce users on the home page.

Through the graphical analysis it is clear that the sections expected on the home page of an ecommerce website are mostly jewelry, clothing and mobile accessories, while deals and discounts and coupons are not the ones mostly expected on the home page

Thus based on the above analysis, of Figure 4 the Hypothesis 2 which says that clothing, jewelry, mobile accessories are the priority sections that are expected on the home page of an e commerce website is accepted.

5. Conclusion

The Customer Purchase Decision (CPD) talks about the psychological process an e-commerce user goes through while taking up the decision to purchase a product from an e-commerce website. The main stages for the process involves need recognition leading to information search which leads to evaluation of alternatives, finally making the user to take a decision to purchase.

For the very first stage i.e. Motivation it was found from the analysis that color combination of the website and the availability of wide variety of products were a motivating factor that leads an e commerce user for recognition of need. However other factors which leads to motivation includes website content, product display, ease of accessibility and convenience of website all ranking in the same order with wide variety of products getting the highest rank.

Once the user is motivated and has identified the need to buy a product he/she starts to search for information related to the particular product and hence creates a perception about the website from where he/she intends to buy the product. Through the analysis conducted it was found that risk of information theft and fraud plays an important role in creating a positive perception. Other factors include risk due to intangibility of purchase followed by risk due to lack of physical contact/human side, all the factors ranked in the same order from highest to lowest. A positive perception leads to the next stage of CPD process which is the formation of attitude.

Through the analysis results it is found that authentication and required certification play a huge role in creation of positive attitude in the user. Apart from this cash back policy against defective products, discounts offered which are better than those available on the other sites, ease of navigation and auction websites offering better discounts are the factors which affect the attitude of a person ranking in the same order from highest to lowest. This encourages user to move to the next stage of CPD i.e. Integration.
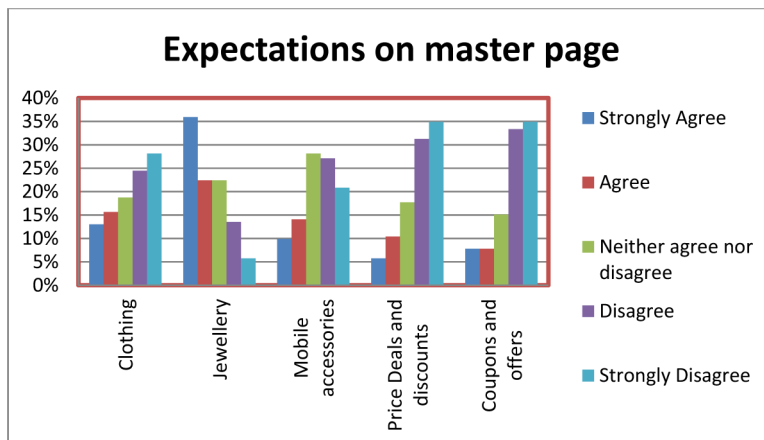

Figure 4. Bar chart showing the expectations of customer on the master page.

Before taking the decision to purchase a product through an e-commerce website the customers evaluate the products by offline and online advertisements. Once the customer is satisfied with the product seen on the advertisements he/she takes the decision to buy the product through the e-commerce website. It is seen that offline advertisements have a larger impact than online advertisements.

Finally, the post purchase decision is mostly affected by the customer experience and satisfaction from the service, quality of service and quality of brand; post the purchase and the usage. Other affecting factor includes the response received by customer in case of product crisis situation by the dealer and also perceived online benefits and positive and negative recommendations, all of these ranking in the same order from highest to lowest.

6. Managerial Implications of the Study:

Through the consumer purchase decision model and the various factors affecting the CDP, following are the recommendations for the managers to optimize the structure of the website which is a part of search engine optimization technique.

Following the analysis focus should be made on the different products with variety of brands displayed on the home (master) page of the website. Also from the Figure 4 it is recommended to show jewelry section as the topmost section, followed by the clothing section and then mobile accessory section. Deals and discounts could be on the home page but are still not recommended by the consumers. Hence it is recommended to show the deals and discount coupons with the product directly.

Out of the analysis it can be noticed that learning which correspond to post purchase decision plays a very important role in customer purchase decision. Hence to provide good learning experience mangers should concentrate on customer experience and satisfaction. This can be achieved through good quality brand and quality service. Mangers should also focus on highlighting the benefits customer can achieve while shopping online. The other focus areas for managers include training of employees to deal with customer in case of product crisis. Also a separate page could be created for customers to provide their recommendations for the website. This increases the number of in-pages to the website hence increasing the ranking of the website.

From the analysis it can be seen that motivation plays an important role after learning. Motivation corresponds to problem recognition. Managers can help in identification of problem for the customers by providing them a wide variety of products with complete information of the website and products on the same website so that customer do not find the necessity to move to other websites to get details. Also the focus should be given to the best and attractive color combinations of the website so that customer finds it charming and attractive to browse through the website.

Alternative evaluation corresponds to attitude formation of customer in consumer decision purchase model. Managers should concentrate on providing better cash back policy against defective products and also show the authentications and required certifications on the website. Managers should also focus on providing better discounts as compared to other websites which helps in creation of positive attitude and hence helps the customer in alternative evaluation of the product.

The final purchase decision is taken by online and offline advertisements with the help of which customer integrate his/her knowledge and decision about buying a product online. Hence it is very important for the managers to give importance to offline and online advertisements with more focus on offline advertisements as proved in the analysis. The focus in this area will increase the number of customers visiting the website and thus the ranking of the website on search tools will increase, helping in SEO.

With respect to creation of perception which corresponds to information search through the most appropriate website which evaluates the risks of information theft and fraud, lack of physical contact/human side and risk due to intangibility of purchase. Managers should take active participation in taking the most appropriate steps and displaying the steps taken under these circumstances on the website will definitely help the customer in evaluation such risks to create a positive perception and hence increasing the ranking of the website.

All of the above recommendations might help in better search engine optimization for an e-commerce website as these are the results obtained from customers willing to perform online purchase.

7. Scope for Future Research

The present research was limited to structure optimization technique of SEO. However other techniques for SEO

also include keyword optimization, content optimization and link optimization which can be the extension of this research. Further research can be highly useful in better optimization of an e-commerce website. This research is limited to structure optimization of e-commerce website. The future research can also be extended for structure optimization of m-commerce sites. A research in a similar manner could be carried out for generalized SEO for e-commerce and m-commerce sites also.

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