

# An Empirical Study on Search Engine Optimization Effecting on Purchase Intention in E-Commerce: The Evidence From Vietnam

Nguyen Thi Van

Faculty of Business Administration, Industrial University of Ho Chi Minh City, Vietnam.

Email: nguyenthivan@iuh.edu.vn

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## Abstract

In the present innovation, the job of the web is quickly expanding and will keep on doing as such later on. In this quick increment, the correct information access and joins have become a test. Since web indexes oversee 93 % of web traffic, investigating the capability of web indexes is vital. Site design improvement (SEO) is one of the most significant apparatuses for accomplishment in electronic trade. This paper looks at to address inquiries regarding how our SEO's parts influence client buy goal in electronic commerce (online business). We led our examination by an overview on site [www.hotdeal.vn](http://www.hotdeal.vn), which is one of the most significant gathering purchasing sites in Vietnam during the period from June 2018 to August 2019. Both subjective and quantitative research techniques were utilized with the inspecting of 262 clients, 32 watched factors in a 5-focuses Likert scale. The examination results demonstrated that the five segments of SEO, including watchword, back-connect, on-page, content, social sign, have a stable association with client buy expectation. Suggestions and future research on this subject are talked about in the last piece of this examination.

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## 1. Introduction

The work that advances the exploration for better result positioning of the web indexes is known as Search Engine Optimization. As indicated by Bureau of Statistics of Vietnam on January 2018, above 64 million individuals utilized the Internet represented more than 67 % of the national populace, and over 90% web clients worked web search tools, for example, Google, Yahoo, Coccoc, Every day, above 40 million individuals in Vietnam utilize the web index to look through data, items, and administrations they need. In any case, with excellent site pages on the web, how clients can discover the business site in incalculable unmistakable sites is anything but an underlying

issue. Along these lines, web crawlers are the most critical devices, which assume an outstanding job for the sites to arrive at the purchaser, regarding getting a higher positioning. Most clients know a website through web indexes, so if any locales of the ventures are low evaluating, these organizations have lost countless potential clients that their rivals have. This way, site business venture is continuously keen on website streamlining, likewise called SEO (Search motor advancement), to build the positioning situations on Google for arriving at potential clients the quickest at the most reduced expense. It likewise helps clients simpler, looking, and discovering the most appropriate items and administrations with their needs. In all actuality, nearly organizations in internet

businesses are keen on and apply SEO on their sites to more readily comprehend their clients and give them increasingly advantageous in the purchasing procedure. Be that as it may, in writing, there exist next to no examinations about the connection between SEO and client buy aim. Thus, in this paper, we incorporate and recommend another point of view on this issue.

## 2. Literature Review

Search engine optimization (SEO) is the process of increasing the quality and quantity of website traffic by increasing the visibility of a website or a web page to users of a web search engine [1]. The search engine is some software, which collects data about web sites. At this point, the collected data includes the web site URL, some keywords or keyword groups that define the content of the web site, the code structure that forms the web page and also links provided on the web site. The related collected data is indexed and stored on a database. All of these operations are performed by the search engine software (crawler, spider). Search engines use special programs, which are named as spider or bot. These programs move by using the hyperlink structure of the Web. They navigate through web pages periodically and capture changes that have been made since last navigation (Spiders / Crawlers). Data obtained by the related programs are stored in a very wide database system. This database is called the index of the search engine.

On the other hand, the performed operation is called "indexing." When users perform a query to get some data or information, the related query is transferred to the search engine index, and results are shown to users (query). Essential competition factor among search engines is appeared during "relevant result showing, sorting" process. After determining the related pages with the performed query, they must be shown to users in a sorted list structure. At this point, search engine algorithms play an important role, and they try to show the most relevant results

for users. Briefly, searching robots collect data about each URL and store the collected data in a database. When a user connects to the search engine for a search session, references in the related database are evaluated and obtained results are returned to the user [2]. John [3], the author of "Strategy SEO Google" said search engine optimization or SEO (Search engine optimization), is a set of methods aimed at improving the ranking of a website in the result pages of search engines and can be considered a sub-field of marketing through search engines. Search engine optimization or SEO tools include On-Page, Keyword, Content, Backlink, and Social Signals. The search engine displays a list of formats in the search engine result pages (SERP) including pay-per-click advertising and searches result in lists. The goal of SEO is mainly to enhance the ranking of a free search listing along with many keywords to increase the quantity and quality of visitors to the page. Sharing the same view above, These factors raise the efficiency of the search engine believed that search engine optimization (SEO) is the process of improving the display of a website or a web page in search engines via the "natural" or un-paid ("organic" or "algorithmic") search results. Other forms of search engine marketing goals (SEM) are to submit a list. In general, the earlier (or higher on the page) and the more frequently a site appears in the search result list, the more visitors it will receive from the search engine. SEO may target all kinds of search, including image search, local search, video search, and search engine specific vertical that allows a website presently. The two authors emphasized the role of Social Signals because social networks have become so popular nowadays; besides, everyone has a smartphone and online to update continuously. Therefore, the work of search engine optimization (SEO) is to create interaction between businesses and customers on social networks. The more popular and interaction with customers the brands are, the better social signals are considered for operating search engine optimization (SEO) in the enterprise

also agreed with the point of view and confirmed that SEO is a strategic marketing tool on the Internet. Optimizing a website may involve editing its content, writing articles and linking codes to increase its relevance to specific keywords and to remove barriers to the search operation. SEO has to promote the site to increase the number of backlinks, or links to local links. Towards SEO, the backlink building plays an important role in increasing "keyword rankings" on the search results page, and Google is an example. The more backlinks from other websites this site gets, the more attention from visitors this website gets. Google will appreciate this and help increase "keyword rankings" for the site. He suggested that SEO should focus on the following algorithm: On-Page, Keyword, Content, Backlink, Social signals.

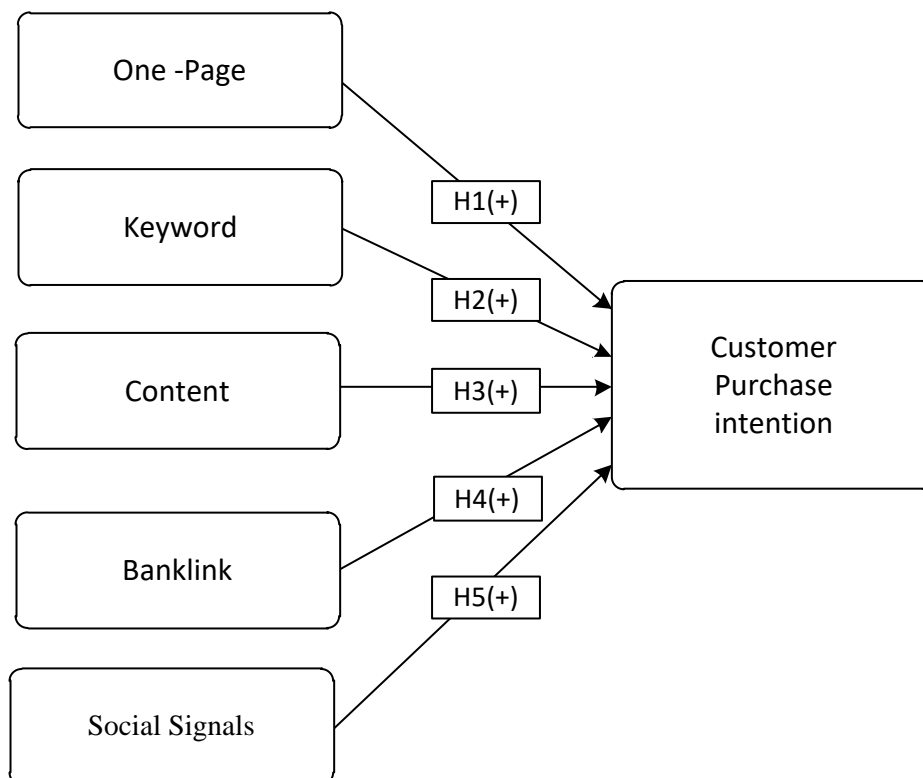
**Purchase intention** is defined as a consumer's

willingness to purchase products or services from a particular web site. Purchase intention may be influenced by an individual's willingness to trust web sites by the information collected in the search engine. Previous studies showed that SEO could have a strong effect on customer trust when they want to buy on the internet. And customer trust also has a positive impact on customer purchase intention[4-6]. Generally, the direct relationship between information collected from search engines and purchase intentions is assumed to be positive.

### 3. Research model and hypotheses

Based on the theoretical framework and the results of research and other authors, ideas from experts in the retail sector are consulted, and a formal model of study is proposed as following:

SEO components



**Figure 1. Research model**

From the previous literature, we can hypothesize that:

*H1: On-page has a positive relationship on customer purchase intention*

*H2: There is a positive relationship between keyword and customer purchase intention.*

*H3: Content has a positive effect on customer purchase intention.*

*H4: Backlink has a positive impact on customer purchase intention.*

*H5: There exists a positive relationship between social signal and customer purchase intention.*

#### 4. Methodology

The two major research methods, qualitative and quantitative research, are focused, specifically. The research process includes three stages:

Stage 1: Based on the theory and the related results mentioned above, the qualitative research method was used for group discussing and leading expert consultation to select the variables and observed variable groups.

Stage 2: Based on the group components of the search engine optimization (SEO) which influencing customer purchase at www.hotdeal.vn, a questionnaire survey was designed to collect the opinions of 297 customers in the HCM city. The research model includes 5 scales, 32 observed variables (questionnaires), using 5-point Likert scale (Likert scale with a 5-point), Distance value = (Maximum - Minimum)/n = (5 - 1)/5 = 0.8: 1. Completely disagree; 2. Disagree; 3. No opinion/Normal; 4. Agree; 5. Completely agree. Survey results were entered SPSS 20.0, and Cronbach's alpha coefficient was used to test the reliability of the scale.

Stage 3: After testing the reliability using Cronbach's alpha coefficient, Exploratory Factor Analysis - EFA was analyzed to shrink and

summarize the data of the scale [7]. This method is based on the extraction ratio factor (Eigenvalue), under which only those factors are having ration (Eigenvalue) greater than one will be kept. Those smaller than one will not show information better than the original variable because after standardizing, each original variance is 1. The method of extracting **the main components (Principal components) and original method of factor rotation (Varimax Procedure) was used to** minimize the number of variables that have large coefficients for the same factor, which increases explaining the factors. The above results were used to analyze multiple linear regressions to test the assumptions of the model, which assess the impact of SEO's factors to customer purchase intention at www.Hotdeal.vn.

The results of Cronbach's Alpha for the SEO's components influencing customer purchase intention are shown in table 1 below:

**Table 1. Cronbach's alpha results**

Variables	Code	Factors	Cronbach's Alpha
	PA	Page web	0.905
<b>Independent variable</b>	KE	Keyword	0.858
	CO	Content	0.898
	BK	Backlink	0.907
	SO	Social signal	0.937
<b>Dependent variable</b>	EF	Efficiency of CPI	0.900

Table 1 showed that the test results of scales had pretty high accuracy on Cronbach's alpha coefficient were > 0.6, and the total correlation coefficients of the measurement of the variables met the standard (> 0.3). The scales were acceptable. Therefore, the scale would be better. There were 32 items observed left for analyzing

factors explored in the next step.

**Table 2. KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.907
Approx. Chi-Square	6896.851
Bartlett's Test of Sphericity	Df 496 Sig. .000

Source: Authors analyzing

Table 2 showed that the KMO coefficient value = 0.907 > 0.6 => logical factor analysis. Therefore, factor analysis reached the standard.

Also worth sig. (Bartlett's test) = 0.000 < 0.05 => The variables are correlated in general. This data is very good for regression analysis. The results of Exploratory Factor Analysis (EFA) showed the total variance extracted is 60.011 % greater than 50 %. This means that the withdrawing factors would explain 60.011 % for the model; other factors explain 39.989 %. The extraction ratio factor (Eigenvalue) is greater than the one that is kept. Regression analysis for various factors influencing customer purchase intention.

**Table 3. Regression analysis model**

Model	R	R square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.735	.540	.596	.446	1.972

**ANOVA ANALYSIS**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	63.352	5	12.670	63.699	.000
	Residual	53.905	292	.199		
	Total	117.257	297			

**COEFFICIENT**

Variables	Unstandardized Coefficients		Standardized Coefficients (Beta)	t	Sig.	Collinearity Statistics	
	B	Std. Error				Tolerance	VIF
(Constant)	.255	.198		1.288	.199		
X1: (PA)	.298	.044	.358	6.700	.000	.594	1.683
X2: (KE)	.144	.048	.138	2.996	.003	.796	1.256
X3: (CO)	.170	.052	.188	3.296	.001	.519	1.928
X4: (BK)	.130	.042	.139	3.110	.002	.844	1.185
X5: (SO)	.183	.045	.195	4.036	.000	.723	1.382

Table 3 showed the correlation coefficient adjustment: R<sup>2</sup>= 0.532 (verification F, sig. <

0.05), which means 53.2 % of the variable Y shift is explained by the five independent



variables (Xi). Coefficient Durbin - Watson ( $d$ ) = 1.972; some observers  $n = 297$ , parameter  $k = 5$ , the level of significance of 0.01 (99%), in the statistical tables Durbin - Watson,  $dL$  (less statistical value) = 1.623 and  $dU$  (statistical value over) = 1.725. So ( $dL = 1.623$ ) < ( $d = 1,972$ ) proved that the model has no autocorrelation. Table 3 showed that the ANOVA of the test results  $F = 63.699$  value and  $Sig. = 0.000 < 0.05$  shows the building model is consistent with the data set, and the variables included in the model are related to the dependent variable. Generally, regression analysis is 99 % reliability, corresponding to the selected variables with statistically significant at the  $p < 0.01$ ; the results also show that all variables satisfy the demand. The verification of the conformity of the model shows that the multicollinearity phenomenon does not violate ( $VIF < 10$ ). Results of regression analysis showed that factors affecting SEO performance with a significance level of 5 %.

## 5. Conclusion

The research results showed that all  $t$  value  $> 2$  was statistically significant and high data reliability. Besides, the regression coefficients were positive. This showed that the effects of independent variables in the same direction with the customer purchase intention. In this study, the results had the Variance Inflation Factor (VIF) and Tolerance shown to be the following  $VIF < 10$ . ( $1 < VIF < 10$ ). This showed that there wasn't multicollinearity in this study. This study showed that there are five factors of SEO affecting the customer purchase intention, and the degree of influence of each factor is different. According to the analysis, five factors correlated to the impact of customer purchase intention, respectively: (1) Keyword; (2) Backlink; (3) On-Page; (4) Content; (5) Social signals. This is an important basis for firms to consider in building customer attraction and customer purchase intention.

## 6. Limitations and recommendations

Since this study has focused only on website [www.hotdeal.vn](http://www.hotdeal.vn) although it is one of the biggest group buying website in Vietnam, during the period from June 2018 to August 2019

The recommended that future studies on the current topic are to be done in other developing big companies in Vietnam because the results might not be **extendable to another enterprise service on supply e-commerce websites**. The results gained from different **enterprises** could then be compared, and **enterprise supply e-commerce websites** can consider and choose the right solutions to improve search engine optimization (SEO) performance to attract customers in making their buying decision.

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