KEY WORD EFFECTIVENESS IN PAID PLACEMENT ADVERTISING: AN EXPLORATORY STUDY IN THE CONTEXT OF A TRAVEL WEBSITE

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ABSTRACT

Purpose: The paper looks at how different categories of keywords used in paid placement campaigns influence the click through rate of potential searchers.

Design/ Methodology: The paper analyses data from a online travel agency based in Thailand and considers over 5000 keywords for analysis.

Findings: The predominant influence of the average position achieved by a keyword in a paid placement campaign in determining the 'click-through' rate is reemphasised However some other interesting insights like the difference in effectiveness of broad versus narrow keywords were found.

Originality/Value: This is one of the first paper that looks at effectiveness of keywords in a Paid placement context and hence can guide researchers in the future.

Limitation: The categorisation of the keywords is not perfectly objective and for lack of prior theory in this area, there is certain difficulty in positioning the study.

Keywords: Paid placements, Internet, e-intermediaries, keyword effectiveness

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Introduction

Paid placement advertising through search engines, has been increasing by leaps and bounds in the past few years. It is estimated that paid placement advertising generated about $8.2 billion in revenues in the year 2005 (Satagopan, et al, 2005). Fuelling this surge is the realisation that advertisers find it much more cost efficient and effective to adopt paid placement services rather than search engine optimisation Sen (2005). This is probably more due to the unpredictability of search engine optimisation where the contents of the web-site needs to be suitably altered in a dynamic fashion to be shown prominently in the non-paid section of a search output. As a consequence there is a huge interest among practitioners as well as researchers to know more about how individuals search and retrieve relevant information from the web. To meet this interest, several studies in the last few years have focused on search behaviour and the consequent outcomes (to see a review refer: Jansen and Spink (2005)). This stream of research complements the research into how visitors behave once they visit the web-site of their choice. However, very few research studies have dealt with the issue of paid placements in search engines and its effectiveness. The few studies (eg. Chen and He, 2006; Feng, Bhargava, and Pennock, 2003 and Edelman and Ostrovsky 2005) which have looked into this issue takes the perspective of the search engine and attempts to develop analytical models to explain and predict the pricing of the places in the sponsored part of the search engine.

However, an important issue that has not yet received significant research attention is the effectiveness of key words in the context of its use in paid placements. Advertisers who embrace paid placement programs through search engines like google.com typically give more preference and bid higher for those key words that they feel would be used most by its potential customers to search for the type of products offered by the advertiser. However, in practice, thousands of keywords may be associated with the advertiser's product especially when the advertiser is offering multiple products and services. The advertiser typically pays a per click rate and hence may not loose too much by choosing poor or ineffective key words. However, by not choosing the right keywords, the advertiser may be loosing opportunities to reach potential customers. It is therefore very critical to choose key words in a strategic manner such that the advertiser can enhance the click through rate to the maximum.

In this paper we look at the effectiveness of keywords used by an internet based tourism intermediary and try to discover some pattern in the effectiveness of certain types of keywords in comparison to others. The two main questions addressed are:

1. Can a qualitative categorisation of keywords explain variations in click rates in paid placements?
2. To what extent does the 'average position' achieved by the URL in the output screen influence click-through rates?

These two issues have gained immense practical importance in the context of the popularity of paid placement programs. Here we first present the study context, then the procedure adopted followed by the main results.

The study context

Tourism industry has adopted the internet with high levels of efficiency and effectiveness over the past decade. It is estimated that in 2006, about a third of all the travel booking in the United Sates of America was through the Internet earning a combined revenue of more than $62 billion[2]. In the travel intermediary sector, large websites like Expedia.com, Travelocity.com, Hotels.com etc. command a huge chunk of this market. Apart from such large websites, small e-intermediaries which focus on a small market segment have proliferated offering cheap and comfortable rooms in mainly independent owned hotels that are usually not covered by large websites. Such niche players usually concentrate on a small geographical area and offer more variety and choice to its customers. However being small, these e-intermediaries are not well known to its potential customers and thus have to advertise substantially through the main search engines like google.com and msn.com. These e-intermediaries practically survive by virtue of getting noticed in the output page of the search engine, when potential customers search using some popular key word. Here we look at the effectiveness of the key words used in google.com by an e-intermediary operating out of Thailand which offers potential visitors an opportunity to search and book rooms in about 1000 hotels in Thailand. The e-intermediary specialised in offering rooms in independent owned and operated hotels in some exotic and emerging destinations in Thailand.

Paid placement is one of the most important ways through which the e-intermediary markets itself to its potential customers spread across the world. The e-intermediary has a dedicated team of executives who interact with search engines like google.com

[2] This figure is available from http://www.forbes.com/2006/02/17/travelocity-orbitz-tripadvisor-in_mr_bow0217_inl.html accessed on 12-02-‘07

and yahoo.com to bid for key words on an ongoing basis. The company also maintains a record to gauge the effectiveness of all the keyword used on a regular basis. The number of impressions (ie. page appearances) generated for each key word, the average position in the page generated for the key word as well as the number of clicks generated by the keywords are all recorded.

The study

The present study attempts to understand patterns that could describe the effectiveness of key words in generating clicks for the intermediary in the paid placement program through google.com. Keywords vary in their meaning and connotation and different types of keywords could lead to different outcomes. One of the important factors to be considered in this context is the type of individual using a particular keyword. Individual searchers vary in terms of their motivation to search as well as their knowledge. For instance, a searcher who is looking for general information on Thailand may use the keyword 'Thailand' and a person who is planning a holiday may use the keyword 'Thailand vacations'. If an e-intermediary uses the keyword 'Thailand' it may lead to greater page impressions but fewer clicks since the typical searcher who uses the keyword is not interested in visiting Thailand or the hotel rooms in Thailand. However, if the e-intermediary adopt the keyword 'Thailand vacation', the URL may not get shown in as many page impressions as before, though the URL may receive greater clicks since all those who search using the keyword 'Thailand vacation' are interested in visiting Thailand and are more probable to be looking for rooms to stay. However, this simple logic may not work always. Several potential customers who wish to visit Thailand may also use the broad key word 'Thailand' instead of the more qualified keyword 'Thailand vacation' and hence

adopting the keyword ‘Thailand’ may in fact not be a very poor strategy after all. The problem is compounded when we consider selling rooms in multiple locations. For instance, Thailand has several scenic locations like Phuket, Pattaya, Krabi etc. Hence a searcher with more knowledge about Thailand to the extent that she knows about these locations may search with these keywords and not broad keywords like Thailand or Bangkok. Also keyword qualifications like ‘hotel’, ‘resort’, ‘vacation’ etc. can have different levels of effectiveness. Thus it is clear that the click-through rates are significantly determined by several qualitative characteristics of the keywords used.

The present study analyses the effectiveness of the set of keywords used by the e-intermediary during a one year period from January2005 to January 2006 in google.com. We looked at 5308 keywords for the study. The first part of the study involved developing a taxonomy to categorise the keywords into meaningful groups. The grouping scheme imposed on the set was meant to understand their relative effectiveness in terms of their impact on the click through rate. In reality since thousands of keywords are used, it is possible to categorise the keywords in multiple ways. Here, to understand the effectiveness of keywords, two qualitative frameworks are used. The first framework tried to categorise keywords using a ‘destination-activity’ framework where all the components of the keyword was used in categorisation. In the second framework, a ‘broad-focused’ destination framework was used, where only one aspect of the keyword was used. In order to broaden the scope of the analysis, a third type of categorisation of keywords is also used where, the keywords are grouped based on the average position occupied by the URL in the output screen generated by the keyword.

Categorising Key-words

Categorisation of Key words used in paid placement campaigns has not been considered in many studies in the past. Some of the efforts at categorising keywords used in web search have been mostly searcher oriented (eg. Tieh, Chyan, and Lung, 2001). Here we adopt a purely qualitative framework for categorising the keywords. The framework involved analysing the content of the keyword universe and developing a schema for categorising them based on discussion with the executives who developed the keywords. The main objective was to develop a schema that addressed the main motive behind the keyword development process. Keywords are developed by the advertiser by imagining (often by guessing) the type of keywords that customers normally use in their search. Since it is difficult to imagine exact phrases that could be used, keyword developers normally consider simple words or phrases that may be used by the searchers. In this process, Keyword developers also consider all the services offered by the advertiser and develop appropriate keywords. Often it is also an iterative process wherein, the keyword developers would tryout different keywords and then decide to drop or retain keywords based on the response. Potential customers to the e-intermediary used a variety of keywords to search for the services provided by the web-site. In order to achieve a high level of efficiency in the paid placement strategy, it was therefore important to understand the context in which the potential customers search.

The potential customers search for the services provided by the e-intermediary when they are interested in visiting Thailand for a holiday or for a business trip. Also, some (or many) of the potential customers wished to explore the availability of rooms in such other locations inside Thailand like Phuket, Pattaya, etc. All the key words used

by the e-intermediary therefore had a location component. This component was described by the use of the words: (i) Thailand (ii) Bangkok (iii) Phuket (iv)Pattaya (v) Krabi (vi) Samui (or Koh Samui) or (vii) Koh Chang. These seven locations covered most (almost 90%) of the tourist locations in Thailand. Some of the keywords also had more specific location words attached to it. This was because each of these major locations had some very attractive places to visit like Kata beach in Phuket or Chewang beach in Samui. Thus the location part of the keywords sometimes incorporated a more focused location word like 'Kata beach' or 'Chewing beach'. Apart from the location component, most of the keywords also had a service/activity component. This was in the form of such additional words like 'hotel', 'accommodation', 'vacation' etc. Some of the keywords pertained to specific hotels in certain destinations while a significant number of keywords included the word 'beach'. Therefore the activities were divided into basically five categories: (i) keywords where there was no mention of an activity or service (ii) general activity: which included all such phrases like 'vacation', 'holiday' etc. (iii) General facilities: which included all such phrases like 'hotels', 'resort', 'accommodation' etc. (iv) 'particular hotels' and (v) 'beaches'.

The first part of the analysis involved categorising the keywords using the 'destination-activity' framework. Using this framework all the keywords were categorised into a matrix comprising of seven 'destination' categories as rows and five 'activity/service' categories as the columns. Thus all the keywords considered were divided into 35 categories. Table. 1 explains this matrix and provides examples of the keywords. Thus each of the 5308 keywords were coded into one of the several categories.

Take in table. 1 here

The subsequent analysis basically tried to search for patterns in the effectiveness of keywords across the different destination-activity categories. Table. 2 gives the number of key words used during the one year period under each category.

Take in Table.2 here

For the second part of the analysis, a different categorisation scheme was considered. This was based on the assumption about the difference between the profile of customers who would search with a more general key word like 'Bangkok' or 'Phuket' and a more focused keyword like 'Kata beach'. The second type of customer is more informed and probably a repeat customer (to Thailand). Hence differences in effectiveness could occur between more broad keywords and more focussed keywords. The first part of the Keyword classification effort was to group keywords into 'Broad location keywords' which mentioned only a broad location (eg. 'Thailand vacation', 'Bangkok hotels', 'Phuket beach', 'Pattaya beach' etc.) and a 'Focused location keyword (eg. 'Sukhumwit hotels', 'Chewang buri beach', 'Aung Nang resorts' etc.). The focused location keywords were associated with a major location and hence it was decided to split all keywords into two categories for each major location.

Analysis

The analysis was conducted in three phases. In the first phase of analysis, the 'activity destination' framework was applied to compare the effectiveness of the keyword categories. In the second part the 'broad-focussed' framework was applied to compare

the variations in effectiveness. In the third part of the analysis, no qualitative categorisation framework was applied to categorise keywords.

The keywords were analysed by considering four important indices associated with the effectiveness of key words in the paid placement campaigns: (i) the number of page impressions that each of these keywords generated (ii) the number of clicks generated by the key words (iii) the average position occupied by the URL of the e-intermediary for the keywords and (iv) the number of clicks per impression for each of the categories of key words.

As stated above, for the first part of the analysis, the 'destination-activity' framework was applied. The first phase of the analysis involved calculating the average values for the four indices across the keyword categories. Table. 3 summarises these indices. Those key word categories with less than 10 key words used were not considered in this table.

Take in table. 3 here

A cursory glance of the table reveals certain important patterns. For instance those key word categories with the highest levels of average impressions also seem to generate the highest levels of average clicks. Key words categorised under 'Koh chang', 'Thailand general hotel', 'Pattaya', 'Thailand particular hotel', 'Bangkok general hotel' and 'Thailand general activity' have high values for both average impressions as well as average clicks. However 'Krabi beach' has a high average clicks despite a low average impression. Of these key word categories, only 'Pattaya',

‘Krabi beach’ and ‘Koh chang’ and ‘Thailand general activity’ have an average position of less than three.

In order to probe further, two types of regressions were conducted across each of the different keyword categories. In the first regression, the dependent variable was the clicks per impression for each keyword and the dependent variable was the inverse of the average position for a keyword (called ‘rank’ hence forth). The rank denoted the position that the website’s URL occupied in the sponsored part of the output screen. Hence if the rank had a major impact on the eventual click troughs, the lower the rank, the higher the possibility of a click-through. This will also be reflected in the regression equation. In the second regression equation, the clicks generated by a key word are used as the dependent variable and the impressions are used as the independent variable. The results of the two regression equations across the key word categories are presented in table. 4 and table. 5.

Take in table. 4 here

Take in table. 5 here

Table. 4 show that ‘rank’ is not a very good predictor of the ‘clicks-per-impression’ generally across most of the categories of key words. In the case of key words under categories ‘Bangkok general hotel’, ‘Bangkok Particular hotels’, ‘Phuket general hotels’, ‘Pattaya particular hotel’, ‘Samui general hotel’, ‘Samui beach’, ‘Koh chang general hotel’, the F- value is significant at 0.05 level. However even in these instances, the R-square value is quite less with the exception of the keywords under the category ‘Bangkok Particular hotels’. Moreover no discernable patterns seem to exist that could relate the type of key word and the value of the R-square.

Table. 5 present a different picture. The independent variable ‘impressions’ seems to be highly related to the dependent variable ‘clicks’. For all the key word categories, the F- value is significant at 0.01 level and for most of the keywords, the R-square value is remarkably high (except in the case of key words under the ‘Koh chang particular hotel’ category). Thus the results from the two regressions tend to point to the relative irrelevance of ‘rank’ in influencing the clicks per impressions for key words regardless of the different key word categories. This conclusion however may be premature. Since the F values are significant in several instances, the impact of ‘rank’ on ‘clicks per impressions’ cannot be totally ruled out. Moreover, the relationships between ‘impressions’ and ‘clicks’ would always be significant to a certain extent since ‘clicks’ always follows ‘impressions’. However what is more important is the apparent lack of a pattern in the variation in the strength of the association based on the keyword categories. For instance from the tables, it is not possible to claim that ‘general hotel’ category of keywords is more effective than ‘general activity’ category of keywords. Hence, a more valid conclusion is that when the keywords are grouped using the ‘destination-activity’ framework, no discernable pattern that relates the strength of the relationship between ‘rank’ and ‘click per impression’ is evident. One problem with this categorisation method is that it clubs together ‘focused key words’ and ‘broad keywords’. Hence in the next stage of analysis, the key words were split into ‘focused key words’ and ‘broad key words’. This categorisation was purely based on the destination component of the keywords.

The major objective of the second part of the analysis was to see whether a broad keyword ensured greater effectiveness than a focused keyword. The effectiveness was assessed by: (i) comparing the ‘clicks-per-impression as well as (ii) regressing the

average rank of the keyword and the clicks per impression. The results are shown in table. 6

Take in table.6

The comparison of the ‘clicks per impression’ clearly shows that focussed key words are more effective than broad keywords. Except in the case of ‘Bangkok broad’ and “Bangkok focussed’, for all the other destinations where a set of key words could be considered as ‘focused’, the ‘clicks per impression’ is higher. A look at the average position of the ‘broad’ and ‘focused’ key words show that typically ‘focused’ keywords occupy a better ‘average position’ than broad keywords. This could be one of the reasons why the ‘focused’ key words are seen to be more effective. The table also shows the regression results. Here, the strength of the relationship between the rank (inverse of the average position) and clicks per impression is considered as an index of the effectiveness of the keywords. This is because, the strength of the relationship indicate the extent to which the rank achieved by the keyword explains the number of clicks generated. Since firms typically bid for positions, it is assumed that a better position will imply a larger cost. Therefore if there is a strong relationship between the rank and the click per impression, it would imply that at least a more costly keyword is generating greater click through than a less costly keyword. As can be seen from the table, focused keywords always seem to have a much stronger relationship (and hence effectiveness) than broad keyword except in the case of Krabi. In the case of Pattaya and Kohchang, no ‘broad-focused’ keyword classification was used since it was not possible to find such a distinction for the key words used. In the case of Krabi, the broad keywords give greater effectiveness than the focussed keyword even though the focussed keyword also gives a significant result. The contrast between the broad keywords and focussed keywords is more perceptible in

the case of Krabi, Phuket and Samui. This is probably because, along with Pattaya, these three locations are the most well known locations in Thailand and a large number of searchers use these keywords to search.

The third type of analysis involved categorising all the keywords based on their average position and then conducting regression between impressions and clicks within each category. The analysis doesn't categorise key words based on any qualitative criteria but rather on their average position. The main objective of the analysis was to explore the extent to which the average position achieved by a keyword influences the 'clicks per impression' independent of the qualitative characteristic of the key word. The results of the analysis is shown in table.7

Take in table. 7

As expected, keywords which had achieved an average position of between 1 and 2 have the highest average value for 'clicks per impression'. Also, as expected, the average value for 'clicks per impression' decreases as the average position increases. However the regression results give some interesting results. The R^2 value which basically measures the extent to which the dependent variable is influenced variable, increases with the increase in the 'average position'. This implies that as the 'average position' increases, the clicks generated become entirely proportional to the number of impressions. With lesser values of 'average position', the number of impressions is only one of the influencers of 'clicks'. Especially, if the average position is between 3 and 5, hardly 20% of the 'no. of clicks' is determined by the 'no. of impressions' though if the average position of a keyword is between 1 and 2, the influence of the 'no of impressions' is about 50%. Seen along with the results in Table.6, this leads to a lot of practical implications.

Discussion and Practical implications

The study presents some very interesting practical implications. The study basically endorses the well known fact that the probability of generating a click for a URL is basically determined by the position occupied in the output screen. Results from the first analysis, show that the 'clicks per impression' doesn't follow any strong pattern across the 'destination-activity' based categories. However, the second analysis shows that the 'clicks per impression' exhibit a very interesting pattern across a 'broad-focused' categorisation of key words. The analysis shows that a 'focused' key word has a better chance of generating 'clicks' than a broad keyword. This would imply that advertisers should try more 'focused' keywords that describe the products/services offered by the company narrowly. While this is probably already known among practitioners, the study gives some strong empirical evidence to support this belief. Broad keywords are used by a large number of searchers many of whom are probably not searching with the intention of consuming a service immediately. While focused keywords are used more by purposive searchers. While further study is required to establish this, the present study is a pointer in this direction. Further it is relatively easy to achieve a better position with a 'focused' key word than a 'broad' keyword.

The third analysis indicates that, across different positions, the number of clicks generated by a keyword is not entirely determined by the number of impressions. This implies that going for highly popular keywords that generate a large number of impressions is effective only if you achieve certain positions (like 1 and 2). Even in these positions, the number of clicks generated is not entirely due to the number of impressions. While the scope of the present study doesn't permit the exploration of

other factors that influence the number of clicks generated other than the impressions and average position, the need for further research in this regard is supported.

Limitations and Future Research

Paid placement programs are emerging as a critical form of promotion through the Internet. However, lack of adequate research studies in this area indicate the lack of in-depth knowledge about the effectiveness of paid placement programs. The present study is one of the first attempts at exploring the interesting field of effectiveness of paid placement efforts. The scope of the present study is limited to the effectiveness of keywords used in the context of tourism industry in Thailand. However, the study throws up some interesting results. The main limitation of the study is the method used for the qualitative classification of the 'keywords' in to various categories. While the logic behind the qualitative classification is based on expert judgement and hence practically valid, the lack of prior studies in this regard limited the theoretical rigour. Future studies could adopt the present framework for the qualitative categorisation of keywords or develop other methods based on the context. The study limits its exploration to the 'click through' behaviour and thus it does not look into the processes that occur once the potential customer has clicked the URL. Future studies could look into this aspect as well as the effectiveness of 'keywords' in other paid placement contexts. The study was done in the context of e-tourism intermediaries, hence the generalisability of the results are limited. The study also makes some assumptions future studies could explore the validity of these assumptions.

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Table. 1 Key word category examples.

	No theme/activity	Particular hotel	General hotel/ resort	General activity	Beach
Thailand	'Thailand'	'Central hotel Thailand'	'Thailand hotel'	'Thailand vacation'	'Thailand beach'
Bangkok	'Bangkok'	'comfort suites Bangkok'	'Bangkok hotels'	'Bangkok shopping'	'Bangkok beach'
Phuket	'Thailand Phuket'	'Kata Thani Phuket'	'Phuket accommodation'	'Phuket sight seeing'	'Kata Beach'
Pattaya	'Pattaya'	'Jomtein beach resort'	'Pattaya beach resort'	'Pattaya shopping'	'Pattaya beach'
Koh Samui	'Thailand samui'	'Central hotel Samui'	'Samui accommodation'	'Samui holiday'	'Chewang Beach'
Krabi	'Krabi in Thailand'	'Laguna Krabi'	'Krabi hotel'	'Krabi sight seeing'	'Aung Nang beach'
Koh Chang	'Koh chang'	'Central hotels Koh chang'	'Koh chang hotel'	'Koh chang vacation'	'beach in Koh chang'

Table.2: Different types of Keywords and the frequency of occurrence

	No theme/activity	Particular hotel	General hotel/ resort	General activity	Beach	Total number of times each category was used
Thailand	2	12	361	299	1	675
Bangkok	0	109	297	42	3	451
Phuket	27	128	696	68	53	972
Pattaya	33	72	177	33	18	333
Koh Samui	99	190	866	42	100	1297
Krabi	133	55	723	7	114	1032
Koh Chang	59	38	429	2	20	548
Total	353	604	3549	493	309	5308

Table. 3 Basic values for key word categories

Key word category	No. of keywords in the category	Average no. of Impressions	Average no. of Clicks	Average position	Average clicks per impression
Thailand Particular hotel	12	1180.58	78.91	2.75	.0126
Thailand general hotel	361	1597.17	12.67	5.86	.0166
Thailand general activity	299	1025.64	20.53	4.02	.0288
Bangkok particular hotel	109	75.05	1.42	5.12	.0071
Bangkok general hotel	297	1031.05	11.20	6.57	.0111
Bangkok general activity	42	255.45	6.12	4.51	.0109
Phuket	27	625.62	5.33	4.33	.0163
Phuket particular hotel	128	48.00	.50	4.59	.0102
Phuket general hotel	696	209.47	2.59	7.07	.0125
Phuket general activity	68	429.85	5.54	8.47	.0406
Phuket beach	53	135.39	5.84	3.58	.0271
Pattaya	33	1360.00	13.72	2.28	.0056
Pattaya particular hotel	72	39.79	.37	3.71	.0114
Pattaya general hotel	177	123.32	1.56	6.12	.0128
Pattaya general activity	33	287.48	2.60	1.93	.0040
Pattaya beach	18	172.88	2.16	2.30	.0077
Samui	99	684.22	8.80	3.00	.0214
Samui particular hotel	190	52.15	.58	3.52	.0080
Samui general hotel	866	155.65	2.09	4.85	.0199
Samui general activity	42	183.09	3.02	7.22	.0132
Samui beach	100	59.42	1.22	2.48	.0162
Krabi	133	254.57	6.33	2.67	.0260
Krabi particular hotel	55	24.85	.41	3.42	.0189
Krabi general hotel	723	43.75	1.06	4.77	.0217
Krabi beach	114	320.82	11.64	2.09	.0349
Kohchang	59	1778.49	77.47	2.58	.0385
Kohchang particular hotel	38	29.47	.3947	2.48	.0136
Kohchang general hotels	429	150.03	3.88	4.15	.0284
Kohchang Beach	20	79.55	3.50	2.60	.0179

Tabl.4 Regression results: clicks per impression as dependent variable and rank as independent variable

Key word category	R square	Adj. R-square	F - value	Sig. level of F	Constant	Coefficient
Thailand general hotel	0.002	-0.001	0.557	0.456	0.014	0.012
Thailand general activity	0.007	0.002	1.58	0.21	0.02	0.022
Bangkok particular hotel	0.226	0.219		0.007	-0.010	0.065
Bangkok general hotel	0.012	0.008	3.52	0.062	0.007	0.020
Bangkok general activity	0.018	-0.04	0.817	0.371	0.017	-0.011
Phuket particular hotel	0.00	-0.008	0.010	0.919	0.011	-.011
Phuket general hotel	0.046	0.045	33.57	0.00	-0.002	0.075
Phuket general activity	0.10	-0.005	0.640	0.427	0.024	0.062
Phuket beach	0.003	-0.017	0.132	0.718	0.020	0.018
Pattaya particular hotel	0.191	0.179	16.53	0.00	-0.024	0.099
Pattaya general hotel	0.004	-0.001	0.767	0.382	0.009	0.014
Samui	0.069	0.060	7.24	0.008	-0.031	0.122
Samui particular hotel	0.012	0.006	2.24	0.139	0.003	0.012
Samui general hotel	0.019	0.018	16.63	0.00	0.00	0.077
Samui general activity	0.056	0.032	2.35	0.133	0.023	-0.044
Samui beach	0.044	0.034	4.5	0.036	-0.04	0.038
Krabi	0.024	0.017	3.27	0.073	0.011	0.030
Krabi particular hotel	0.024	0.005	1.29	0.26	0.001	0.045
Krabi general hotel	0.005	0.004	3.822	0.051	0.014	0.026
Krabi beach	0.006	-0.003	0.672	0.414	0.022	0.022
Kohchang	0.027	0.010	1.596	0.212	0.019	0.047
Kohchang particular hotel	0.00	-0.028	0.001	0.979	0.014	0.00
Kohchang general hotels	0.022	0.02	9.65	0.002	0.005	0.082

Table. 5 Regression details: with clicks generated by each key word as the dependent variable and the no. of impressions as the independent variable

Key word category	R square	Adj. R-square	F - value	Sig. level of F	Constant	Coefficient
Thailand general hotel	0.265	0.263	129.6	0.00	7.73	0.003
Thailand general activity	0.637	0.636	421.8	0.00	1.933	0.018
Bangkok particular hotel	0.863	0.862	675.2	0.00	-0.689	0.028
Bangkok general hotel	0.386	0.384	185.7	0.00	5.53	0.005
Bangkok general activity	0.282	0.266	17.3	0.00	0.723	0.020
Phuket particular hotel	0.347	0.342	67.05	0.00	0.170	0.007
Phuket general hotel	0.617	0.617	1118.5	0.00	0.882	0.008
Phuket general activity	0.761	0.758	210.5	0.00	1.25	0.010
Phuket beach	0.979	0.979	2422.4	0.00	-1.19	0.052
Pattaya particular hotel	0.680	0.676	148.9	0.00	-0.30	0.017
Pattaya general hotel	0.808	0.807	737.4	0.00	0.126	0.012
Samui				0.00		
Samui particular hotel	0.594	0.592	445.0	0.00	-0.103	0.013
Samui general hotel	0.625	0.624	1439.0	0.00	0.283	0.012
Samui general activity	0.959	0.958	930.0	0.00	0.034	0.016
Samui beach	0.75	0.562	125.6	0.00	-0.025	0.021
Krabi	0.937	0.936	1944.0	0.00	-0.339	0.026
Krabi particular hotel	0.447	0.436	42.8	0.00	0.023	0.016
Krabi general hotel	0.751	0.75	2169.3	0.00	-0.141	0.027
Krabi beach	0.99	0.99	10963.1	0.00	-1.728	0.042
Kohchang	0.763	0.759	184.0	0.00	15.8	0.035
Kohchang particular hotel	0.138	0.114	5.77	0.00	0.108	0.010
Kohchang general hotels	0.808	0.808	1801.4	0.00	-0.32	0.028

Table.6 Regression results of focussed versus broad key word categories

	Total number of Keywords	Clicks per impression	R^2	Adjusted R^2	F-value	Regression coefficient	Standardised regression coefficient
Thailand	675	0.0206	.010	0.009	6.88*	.025	.101
Bangkok Broad	239	0.0115	.000	-0.004	0.001	.000	.002
Bangkok focussed	111	0.0112	.023	0.014	2.57	.025	.152
Phuket Broad	436	0.0131	.011	0.009	4.75*	.043	.104
Phuket focussed	434	0.0179	.037	0.035	16.56*	.065	.192
Pattaya	319	0.0110	.006	0.003	1.79	.011	.075
Samui Broad	698	0.0153	.004	0.002	2.46	.021	.059
Samui focussed	442	0.0252	.022	0.020	9.81*	.071	.148
Krabi Broad	200	0.0097	0.14	0.145	34.77*	.088	.387
Krabi focussed	832	0.0272	.004	0.003	3.39*	.02	.064
Koh Chang	472	0.0206	.024	0.022	11.61*	.082	.155

* $p \leq 0.05$

Table. 7 Regression results for key words stratified based on their average position values.

Average position category	No. of key words	Average clicks per impression*	R-square	F value**	Constant	Coefficient
1 to less than 2	695	0.029	0.524	976.00	-0.927	0.057
2 to less than 3	789	0.0274	0.493	981.00	5.627	0.008
3 to less than4	752	0.017	0.129	143.73	5.83	0.002
4 to less than 5	753	0.0154	0.218	270.05	3.94	0.002
5 to less than 6	643	0.0154	0.378	502.74	3.162	0.005
6 to less than 7	543	0.0113	0.466	609.23	2.43	0.005
7 to less than 8	423	0.0094	0.74	1545.22	1.165	0.008
8 to less than 10	431	0.0076	0.979	25426.11	0.118	0.009
10 and above	274	0.0084	0.919	1890.00	-0.057	0.010

* the values were all significant at p values less than 0.01

** the F- values were all significant at p values less than 0.01