Search Engine Advertising (SEA) Adoption and Utilization: An Empirical Investigation of Inflectional Factors

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Abstract

Search Engine Advertising (SEA) is at the same time a prominent source of revenue for search engine companies, and also a new solution for businesses to promote their visibility on the Web. However, there is little research about what factors and the extent to which these factors may contribute to businesses' decision to adopt SEA. Building upon Theory of Planned Behaviour, Technology Acceptance Model, and Unified Theory of Acceptance and Use of Technology, this study has developed a context-specific model for understanding the factors that influence the decision of businesses to utilize SEA. Using structural equation modelling and survey data collected from 142 businesses familiar with an SEA model, this research has found that the intention of businesses to utilize SEA is directly influenced by four factors: (i) attitude toward SEA, (ii) subjective norms, (iii) perceived control over SEA, and (iv) perceived benefits of SEA. Furthermore, the research has discovered six additional factors that have an indirect influence: (i) trust in search engines, (ii) perceived risk of SEA, (iii) ability to manage keywords and bids, (iv) ability to analyse and monitor outcomes, (v) advertising expertise, and (vi) using external experts.

Keywords: *Search engine advertising, sponsored search, paid search, SEA adoption*

1 Introduction

Search engine advertising (SEA) has become an important and fast-growing source of revenue for search engine companies (Feng et al., 2007) and appears to be their major long-term business model for the foreseeable future (Google Quarterly Report, 2012, Jansen et al., 2009a). Total industry revenue increased from approximately US$0.9 billion in 2002 to about US$10 billion in 2005 (Rashtchy et al., 2007) and exceeded US$37 billion in 2009 (Quinn et al, 2012). It has been calculated that more than 90% of Google's annual revenue is derived from its sponsored search service which was reported as being around $40 billion for 2011 (Google Quarterly Report, 2012). Without SEA, it is unlikely that search engines would be able to finance anything close to their infrastructure to support the massive and extensive infrastructure that they need to be able to provide a free search service to users (Jansen et al., 2009).

The viability as well as the further development of SEA, as the long-term business model of search engine companies, depends on whether or not businesses decide to adopt sponsored links as a tool to promote their visibility over the Internet. Such a decision could be influenced by a variety of factors as it has been confirmed by an extensive amount of research that decision making is a complex process, and a wide range of elements contributes to the decision of an individual or an organization to take an action or to adopt a technology or innovation (Abedin and Sohrabi, 2009, Venkatesh and Davis, 2000, Taylor and Todd, 1995, Harrison et al., 1997, Plouffe et al., 2001).

Enhancing SEA adoption eventually will result in higher level revenues for search engine providers, which in turn will guarantee the provision of their free search service to Internet users. However, despite the importance of search engine advertising for business, there has not been much research into the factors that impact organizations' decision about engaging in SEA practices (Jafarzadeh et al., 2013). The present research is therefore an attempt to address this gap and aims to investigate the factors that contribute to the formation of businesses' decision to use and adopt SEA.

The rest of this paper is organized as follows: Section 2 represents the literature review, section 3 develops a conceptual model for the determinants of SEA adoption based on well-known behavioural theories, section 4 elaborates on the analysis and results, section 5 discusses the theoretical and practical contributions, and finally section 6 provides the concluding remarks.

2 Theoretical background and research model

SEA not only has been an attractive phenomenon for practitioners, but also has come to be an interesting topic for researchers (Jafarzadeh et al., 2013). This interest has resulted in the emergence of a large body of literature around SEA, however, to the best of our knowledge, so far only Dinev et al. (2009) have looked into the determinants of intention to use SEA. The focus of their research however has been on understanding the undesirable phenomenon of click fraud [1] in the context of SEA by investigating whether the issue of click fraud had a destructive impact on the intention of businesses to advertise through the SEA model. They have concluded that although click fraud is a concern for advertisers, it is not a significant decrement towards investment in SEA.

The foundation of the Dinev et al. (2009) study has been build up on the Theory of Reasoned Action (TRA) which argues that the behavioural intention is determined by solely two factors (namely, attitude towards behaviour and subjective norms). The present research however will employ three famous extensions of TRA (i.e., the Theory of Planned Behaviour, Technology Acceptance Model and the Unified Theory of Acceptance and Use of Technology)

[1] Click fraud is a type of Internet crime that occurs in pay-per-click online advertising when a person, automated script or computer program imitates a legitimate user of a Web browser clicking on an advertisement, for the purpose of generating a charge per click without having an actual interest in the target of the advertisement's link.

to create a more comprehensive understanding of the determinants of SEA adoption. The details of research model development are explained in the next section.

This study has developed its research model based on three well-established behavioural theories: Theory of Planned Behaviour (TPB), Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT). These behavioural theories have been extremely successful in predicting and explaining the drivers of behavioural intention across a wide range of organizational and social settings, and their explanatory power in explaining intentions and behaviours has been proved by an extensive body of literature in various fields, including psychology, sociology, marketing and information systems (e.g., Giles and Rea, 1999, Albarracin et al., 2001, Mathieson, 1991, Abedin and Jafarzadeh, 2013, Venkatesh et al., 2003).

The basic assumption of these three theories is that individuals are rational in the process of deciding to take an action and are thoughtful about the implications and consequences of their behaviour (Venkatesh et al., 2003). This assumption is valid in the present study because the final decision of businesses to employ, or not to employ, the SEA method is ultimately made by an individual (or a group of individuals) in that business, as a result of a rational decision-making process which considers the cost-benefit analysis associated with this decision. In the following, we apply these theories in the context of SEA to develop our research model.

2.1 Direct antecedents of intention to use SEA: Adoption of TPB and TAM

2.1.1 Attitude, subjective norms and perceived control

TPB states that one's decision to perform, or not to perform, a behaviour is influenced by three factors: the individual's positive or negative feelings about performing the target behaviour (attitude toward the behaviour), "the person's perception that most people who are important to him/her think he/she should or should not perform the behaviour (subjective norms), and the perception of the decision maker regarding ease or difficulty of engaging in the action (perceived behavioural control) (Ajzen, 1991, Taylor and Todd, 1995). Therefore, according to this theory, it is expected that the decision of a business to become engaged in SEA is affected by their positive or negative feeling about using SEA, by the opinion and the behaviour of other parties important to that business about SEA (such as competitors, business partners or field experts), and by their perception of difficulty of getting engaged in SEA. Therefore, to empirically investigate these propositions, we hypothesise:

H1) Attitude toward SEA significantly influences the businesses' intention to use SEA.
H2) Subjective norms significantly influence the businesses' intention to use SEA.
H3) Perceived control over SEA significantly influences the businesses' intention to use SEA.

2.1.2 Perceived benefits

Another robust, powerful and parsimonious behavioural theory is Technology Acceptance Model (TAM). The core of TAM lies in the premise that the intention to use a system/technology is determined by two variables: perceived ease of use (which is a rephrase of perceived behavioural control in TPB) and perceived usefulness (or perceived benefits) which refers to the cost-benefit analysis of the outcomes and benefits received from performing a behaviour (Davis, 1989, Venkatesh and Davis, 2000, Mathieson, 1991).

In the SEA context, the primary benefit of investment in SEA is to transfer more traffic to the website of the company through improving the visibility of the website on search engine result pages (Rashtchy et al., 2007, Karjaluoto and Leinonen, 2009, Barry and Charleton, 2009). While increasing Web traffic is the primary purpose of businesses utilizing SEA, the ultimate goal however is to increase sales (similar to the goal of any other marketing method). Moreover, there is some evidence in the literature suggesting that businesses (specially small ones) employ SEA to promote their brands and products/services in the market and increase the awareness of the public towards their business (Karjaluoto and Leinonen, 2009, Rashtchy et al., 2007). This means that the main benefit that advertisers expect to receive from SEA is *increasing Web traffic*, *increasing sales* and *creating awareness*. Therefore, it is expected that the perception of businesses about these three types of benefits influences their intention to utilize SEA. To examine this assumption, we posit:

H4) The perception of advertisers of the benefits of SEA (in terms of increasing Web traffic, increasing sales and creating awareness) has a significant influence on their intention to use SEA.

2.2 Indirect antecedents of intention to use SEA: Adoption of UTAUT

While according to TPB and TAM, the sole predictors of behavioural intention are the aforementioned four constructs, UTAUT (Venkatesh et al., 2003) proposes that anxiety and self-efficacy indirectly predict behavioural intention (through attitude toward behaviour and perceived behavioural control, respectively) [2].

2.2.1 Anxiety factors

Anxiety represents the feeling of apprehension that one experiences when deciding to perform a behaviour (Compeau et al., 1999). To deal with the concept of anxiety, in studies on technology and innovation adoption, researchers frequently applied the constructs of "trust" and "risk" (Pavlou, 2003, Pavlou and Gefen, 2004a, Ba and Pavlou, 2002, Mayer et al., 1995, Dinev and Hart, 2006, Featherman and Pavlou, 2003, Forsythe et al., 2006, Hwang and Kim, 2007, Jarvenpaa et al., 1999). In line with these studies and in the context of the present study, it can be assumed that advertisers' trusting belief in search engine companies (which refers to businesses' belief that search engine companies will keep the best interests of the advertiser in mind) and their perception of the level of risk they are experiencing while adopting SEA (which refers to their perception of possibility of loss during SEA practice) impact on their ultimate decision to adopt SEA by influencing their attitude towards SEA. So, we hypothesis:

H5) Trust in search engines significantly influences the businesses' attitude toward SEA.
H6) Perceived risk of SEA significantly, and negatively, influences the businesses' attitude toward SEA.

2.2.2 Self-efficacy factors

Self-efficacy refers to people's judgment on their own ability to take an action to reach a particular goal (Igbaria and Iivari, 1995, Bandura, 1982, Hsu et al., 2007, Compeau et al., 1999). UTAUT argues that the higher the sense of self-efficacy, the higher chance that the person decides to perform the behaviour because he/she believes that the behaviour is under his/her control (perceived behavioural control) (Venkatesh et al., 2003).

While scholars agree with, and a great deal of significant support exists for, the role of self-efficacy in relation to the intention to behave, the exact translation of self-efficacy in different research remains context specific. Researchers must identify salient factors that represent self-efficacy in their specific research context. We conducted a search in four major academic databases (i.e. ScienceDirect, IEEE, Google Scholar, and Springer) to find out what factors are required for effective adoption of SEA. We looked for papers which were published after 2000, and had explicitly reported factors that may play a critical role in adoption of SEA by organizations. The result was a list of six factors that have been directly reported as being critical for businesses when they decide to step into SEA practise (Table 1). Relying on UTAUT, it is expected that advertisers who believe they are equipped with these ability (efficacy) factors are more likely to get engaged in SEA because they have a greater sense of control over SEA practice. These factors are discussed in the following and their potential impact on the sense of control over SEA is hypothesised:

Table 1. Important factors in effective adoption of SEA

	Source addressing the factor

[2] Although UTAUT considers attitude as an indirect determinant, this research considers it as a direct predictor as well, because TPB have proven the significant direct effect of attitude on behavioural intention.

Factored	(Laffey, 2007)	(Barry and Charleton, 2009)	(Karjaluoto and Leinonen, 2009)	(Rashtchy et al., 2007)	(Weischedel et al., 2005)	(Dinev et al., 2009)	(Murphy, 2008)	(Porter, 2007)	(Fain and Pedersen, 2005)	(Jansen et al., 2009)	(Yao and Mela, 2009)
Ability to manage keywords and bids	✓	✓		✓			✓	✓			✓
Ability to measure and monitor outcomes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Level of knowledge and expertise about advertising	✓	✓	✓				✓			✓	
Exploiting advanced third party tools	✓	✓	✓	✓	✓	✓		✓			
Using external experts			✓	✓							
Ability to detect click fraud	✓	✓		✓		✓					

i) Ability to manage keywords and bids: selecting the terms on which to bid is a critical and challenging decision in paid search industry and involves many considerations (Rashtchy et al., 2007, Laffey, 2007, Jansen et al., 2009, Porter, 2007). For example, it is important to bid on keywords that searchers themselves actually use rather than those preferred by industry professionals (Laffey, 2007). Also each advertiser, according to the nature of its business, must figure out whether they would benefit more from bidding on highly popular broad terms or on more specific ones (Porter, 2007). Moreover, in many cases, advertisers need to bid on a very large number of terms which makes keyword management a complex and difficult task (Rashtchy et al., 2007). Therefore, it is expected that those businesses which find themselves capable is managing keywords and bids are more likely to adopt SEA because they have a greater sense of control over the SEA process. So we postulate:

H7) Advertisers with a larger number of keywords and bids managing ability have a higher level of perceived control over SEA.

ii) Ability to monitor outcomes: Monitoring the behaviour of SEA is essential as this enables precise measurement of how successful the advertising method has been in terms of achieving its set objectives (Laffey, 2007). It is futile to implement an SEA campaign without measuring its achievements (Barry and Charleton, 2009). However, for some businesses analysing the available information with the aim of measuring their achievements is one of the main challenges they face when undertaking SEA (Rashtchy et al., 2007, Karjaluoto and Leinonen, 2009, Laffey, 2007). This shortcoming ultimately may destroy the intention of businesses to adopt SEA because they feel a lack of control over SEA. To validate this assumption, we posit:

H8) Advertisers with a higher ability to measure and monitor outcomes have a higher level of perceived control over SEA.

iii) Advertising expertise: Another challenge faced by businesses conducting SEA is having sufficient knowledge and expertise about SEA practice. Whereas prior research has shown that domain knowledge is an important contributor to success (Watts et al., 2009, Saini et al., 2009, Ju, 2007, Morgan et al., 2009, Galbreath, 2005), a significant number of advertisers do not have adequate knowledge and expertise about their SEA practices and, for some of them, much needs to be understood in the area of marketing and advertising generally (Barry and Charleton, 2009, Rashtchy et al., 2007). Therefore, we propose that businesses with more confidence about their SEA domain knowledge (i.e., advertising knowledge) are more likely to choose to use SEA because they believe they have greater control over SEA activity:

H9) Advertisers with higher level of advertising/marketing knowledge have a higher level of perceived control over SEA.

iv) Ability to detect click fraud: A serious problem that threatens the SEA industry is the phenomenon of click fraud

(Dinev et al., 2009, Jansen and Mullen, 2008). While search engine providers emphasize that they are continuously monitoring the SEA campaigns to make sure that the expenditure of advertisers is well protected against bogus clicks, some advertisers prefer not to rely solely on search engine companies and look after their money themselves by, for example, using specific tools for click fraud detection (such as VeriClix, ClickLab, Click Forensisc and WhoClickingWho). But nevertheless, detecting fraudulent clicks is technically a difficult job for advertisers which many are unable to do (Rashtchy et al., 2007). Therefore, some researchers argue that the inability of some advertisers to detect click fraud could act as a deterrent against SEA adoption, while other researchers maintain that it is not a major concern for advertisers and that they rely on search engine providers to control and manage this problem (Dinev et al., 2009). To empirically uncover which of these premises is true, we hypothesise:

H10) Advertisers with more ability to detect click fraud have a higher level of perceived control over SEA.

2.2.2.1 Using third-party tools

v) *Using third-party tools:* While some advertisers prefer to just rely on the free tool that search engine companies supply, as part of their SEA solution, to handle their SEA campaign and monitoring its progress, others prefer to employ external web analytic tools developed by third parties (Mordkovich and Mordkovich, 2007). There are many entries on Internet forums from advertisers claiming that they have managed to raise their SEA campaign from failure to success by employing third party tools. To empirically investigate if employing third party tools has a significant impact on controlling SEA practice, we hypothesise:

H11) Advertisers that use third-party tools have a greater perceived control over SEA.

vi) Using external experts: As with the probable role of third-party tools in improving SEA effectiveness, employing external experts from outside the organization has been identified as having an influence on SEA outcomes. Rashtchy et al., (2007) identified that, as SEA grows rapidly and becomes more complex, advertisers increasingly rely on third party experts. Approximately one-third of companies have reported that they have planned to use external agencies and experts to help them with their paid search spending (SEMPO, 2007). Other researchers, like Karjaluoto and Leinonen(2009), have made similar points and realized that for some companies, external support is essential during SEA practice. Therefore, we posit:

H12) Advertisers that use external experts”have a greater perceived control over SEA.

Figure 1 represents the research model and the associated hypotheses as discussed above.

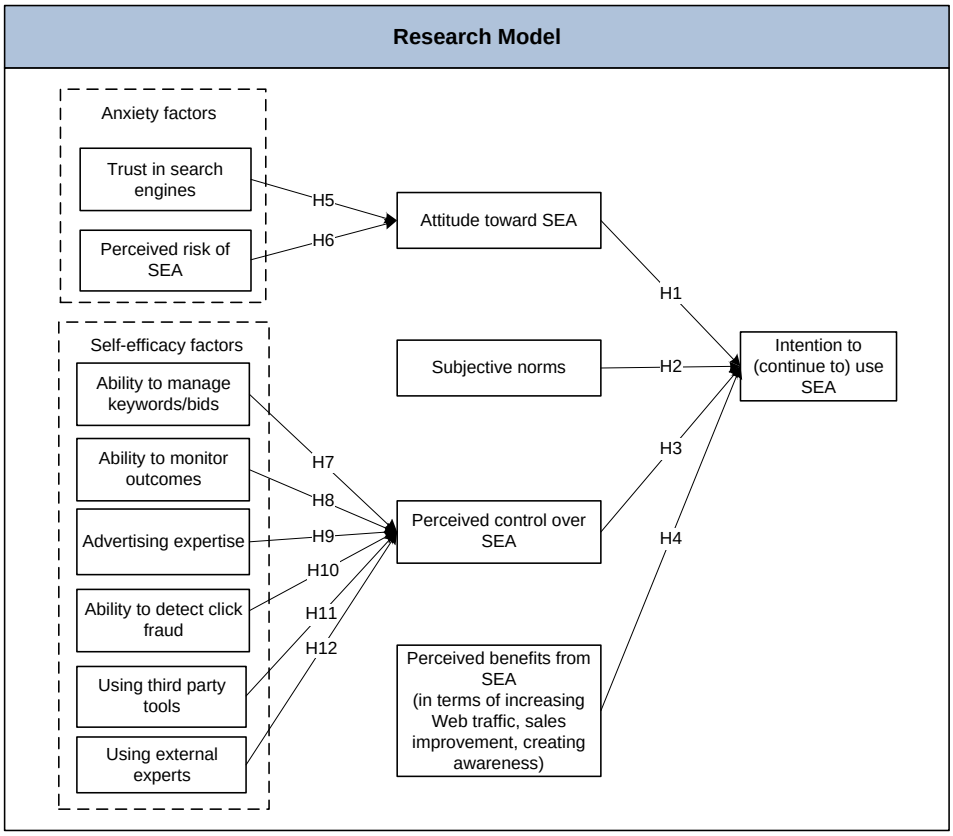

Figure 1. Research model

3 Research design

3.1 Instrument development

The construct of our research model were well-established and frequently-used concepts in the literature and thus reliable solid indicators were available for measuring them. Therefore the first draft of the web-based questionnaire of the research was built based on the available measures in the literature (Appendix). ((add 1-2 lines here and explain whether the questions that you used in your questionnaire came verbatim from existing literature or are they composed from scratch by the researchers))

To ensure that the questionnaire is reliable and valid, it was pre-tested and pilot-tested. In the pre-test (Hair et al., 2007), a panel of seven academics (knowledgeable and experienced in designing and developing survey questionnaires) and three practitioners (experienced in SEA field) were asked to probe the questions in terms of content, wording, sequence, format, layout, question difficulty and instructions as well as the range and labelling of scales. Minor revisions were suggested by the panel and applied accordingly.

((add some details about the pilot test: how you collected data, why some factors failed the reliability/validity test, did that impact the model?, what test was used for reliability and validity analysis)) Then the questionnaire was pilot-tested (N=38) (Straub, 1989) and those measures that failed to pass the reliability and validity tests were dropped. The refined questionnaire was then uses for data collection in the main study.

3.2 Data collection

To investigate our hypotheses, we conducted a survey to study businesses that have invested in search engine advertising. We purchased an email list containing 20,257 email addresses of Australian businesses in four major states of Australia (New South Wales, Queensland, Victoria and South Australia). All addresses on the email list

were contacted via an email containing a cover letter and a link to the online questionnaire of the research. Obviously, not all businesses on the email list were qualified to participate in the study as many of them perhaps had no idea about what SEA is or have never thought about using it. We were only interested in those businesses that have previously considered using SEA. So, we started our questionnaire with qualifier questions to make sure that the questionnaire would be answered by suitable respondents. ((What were the qualifier questions; please add them here)) ((discuss how many organizations (out of 20,257) remained after you applied qualifier questions))

The questionnaire needed to be filled out by the most appropriate person who could represent the organization's experience with SEA (i.e., the person who was handling the SEA activity). In most cases, this person was the account holder of the SEA system (e.g. the account holder of Google AdWords) or the marketing manager. However, it was left to the business to decide the most appropriate person to respond. Overall, 205 responses were received from which 142 were useful. Table 2 shows the profiles of respondents.

Table 2. Profile of respondents

Profile item		No. or %
Industry	Apparel/Clothing	25
	Beauty & Personal Care	4
	Computers	29
	Consumer Electronics	19
	Family & Community	0
	Finance / Banking / Insurance	9
	Food	23
	Gifts & Occasions	21
	Health	19
	Hobbies & Leisure / Entertainment	8
	Home & Garden	8
	Law & Government Products / Professional services (accounting, consulting)	21
	Media & Events	4
	Real Estate	15
	Sports & Fitness	4
	Travel & Tourism / Hospitality	4
	Motor Vehicles	8
	Education	20
	Other	32
Experience	Less than 1 month	28.1 %
	1 to 3 years	31.0 %
	More than 3 years	36.6 %

Profile item		No. or %
Number of employees	Less than 100	57.7 %
	100 to 250	24.6 %
	250 to 1000	7.3 %
	1,000 to5,000	3.5 %
	5,000 to50,000	0 %
	More than 50,000	2.8 %
Ratio of Ad budget spent on SEA	Less than 20 %	36 %
	20-50 %	15 %
	50-80 %	18 %
	More than 80 %	22 %
Nature of Biz	B2C	63 %
	B2B	21 %
	Both	12 %
Business domain	International	10.6 %
	National	58.5 %
	Regional	26.8 %
Position	CEO/ President of the company	67
	CFO	2
	Marketing manager	29
	IT staff	5
	Marketing staff	15
	Other	18

4 Analysis and findings

4.1 Treating second-order construct (perceived benefits)

As discussed in section 3.1.2, perceived benefits of SEA has got three dimensions: increasing Web traffic, improving sales and creating awareness. To incorporate this multidimensional construct into our analysis, we employed hierarchical modelling (Edwards, 2001, Jarvis et al., 2003, MacKenzie et al., 2005, Law et al., 1998, Petter et al., 2007, Wetzels et al., 2009). In hierarchical modelling, while both the higher-order constructs and the

lower-order constructs (i.e., dimensions) are simultaneously included in the model as latent variables, only higher-order constructs are connected to the other factors (Edwards, 2001, Jarvis et al., 2003). In respect to measuring the constructs, repeated indicators approach was used in which each indicator is used twice: once for the higher-order construct (i.e., perceived SEA benefits) and once for lower-order constructs (i.e., increasing Web traffic, improving sales and creating awareness) (Lohmöller, 1989, Chin and Gopal, 1995, Wetzels et al., 2009, Akter et al., 2010, Akter et al., 2011b).

4.2 Measurement model analysis

Confirmatory factor analysis (CFA) was conducted to assess reliability, convergent validity and discriminant validity of the measurement model. Reliability was found to be satisfactory because all indicators loaded on their latent variable constructs with a value above 0.7 and composite reliability were greater than 0.7 for all of the constructs (Table 3) (Straub et al., 2004, Hair et al., 2006). Also, according to Fornell and Larcker (1981) and Gefen and Straub (2005), convergent validity was achieved as the average variance extracted (AVE) of all constructs were higher than the cut-off value of 0.50 and the t-values of all indicators were above 3.29 which asserts that indicators are significant at the alpha level of 0.001 (Table 3). For discriminant validity, satisfactory results was evidenced since for each construct, the square root of AVE was larger than the correlations of that construct with the other constructs in the model (Table 4), and also for each indicator, the loading on its own latent variable was larger than any other cross loading with other constructs (Gefen and Straub, 2005).

Table 3. Properties of the constructs and measures

Construct	Composite reliability	AVE	Item (indicator)	item loading	t-value
Attitude	0.980	0.943	Attitude_1	0.972	183.642
			Attitude_2	0.973	124.805
			Attitude_3	0.968	90.672
Control	0.974	0.903	Control_1	0.905	40.034
			Control_2	0.956	85.250
			Control_3	0.969	161.838
			Control_4	0.970	165.619
Perceived benefits (creating awareness)	0.976	0.910	EF_Aware_1	0.967	192.344
			EF_Aware_2	0.980	240.713
			EF_Aware_3	0.920	60.420
			EF_Overall_3	0.948	83.798
Perceived benefits (improving sales)	0.980	0.846	EF_Sale_1	0.977	189.585
			EF_Sale_2	0.973	189.986
			EF_Sale_3	0.920	49.091
			EF_Sale_4	0.972	252.980
			EF_Overall_2	0.917	33.358
Perceived benefits (increasing traffic)	0.987	0.937	EF_Traffic_1	0.969	157.631
			EF_Traffic_2	0.985	476.841
			EF_Traffic_3	0.981	335.192
			EF_Traffic_4	0.980	346.983
			EF_Overall_1	0.925	70.193
Experts	0.969	0.864	ExpertA_1	0.945	113.830
			ExpertA_2	0.960	103.140
			ExpertA_3	0.852	25.698
			ExpertA_4	0.959	117.162
			ExpertB_1	0.927	63.944
Click fraud	0.963	0.985	Fraud_1	0.973	11.806
			Fraud_2	0.943	11.668
			Fraud_3	0.923	10.552
Intention	0.988	0.964	Intention_1	0.969	155.361
			Intention_2	0.992	477.857
			Intention_3	0.984	383.032
Keyword	0.946	0.779	KeywordA_1	0.911	72.493

Construct	Composite reliability	AVE	Item (indicator)	item loading	t-value
			KeywordA_2	0.758	13.780
			KeywordA_4	0.956	124.777
			KeywordA_5	0.897	32.169
			KeywordB_1	0.879	37.335
Advertising expertise	0.949	0.789	MarketingA_1	0.760	20.906
			MarketingA_2	0.888	31.894
			MarketingA_3	0.871	23.180
			MarketingA_4	0.938	72.609
			MarketingB_1	0.971	183.034
Subjective norms	0.941	0.841	Norms_1	0.918	35.031
			Norms_2	0.931	41.109
			Norms_3	0.903	64.792
Outcome	0.937	0.755	OutcomeA_1	0.948	34.338
			OutcomeA_4	0.904	33.499
			OutcomeA_5	0.963	39.365
			OutcomeB_1	0.920	27.062
Risk	0.932	0.820	Risk_1	0.916	46.143
			Risk_2	0.857	19.567
			Risk_3	0.941	97.250
Third-party tools	0.980	0.925	ToolsA_1	0.971	167.598
			ToolsA_2	0.979	248.586
			ToolsA_3	0.979	276.957
			ToolsA_4	0.918	38.881
Trust	0.971	0.893	Trust_1	0.929	52.360
			Trust_2	0.964	183.156
			Trust_3	0.937	60.262
			Trust_4	0.949	91.704

Table 4. Intercorrelations of the latent variables

	Attitude toward SEA	Perceived benefits (creating awareness)	Perceived benefits (improving sales)	Perceived benefits (increasing traffic)	Perceived control over SEA	Intention to use SEA	Subjective norms
Attitude toward SEA	**0.968**						
Perceived benefits (creating awareness)	0.758	**0.957**					
Perceived benefits (improving sales)	0.630	0.864	**0.946**				
Perceived benefits (increasing traffic)	0.730	0.857	0.715	**0.967**			
Perceived control over SEA	0.754	0.741	0.828	0.707	**0.951**		
Intention to use SEA	0.765	0.787	0.841	0.938	0.824	**0.979**	
Subjective norms	0.500	0.655	0.634	0.709	0.689	0.729	**0.900**

Square root of the AVE on the diagonal

4.3 Structural model analysis

Component-based Structural Equation Modelling (or PLS)) (Chin, 1998, Chin and Newsted, 1999), with nonparametric bootstrapping of 200 replications, was used to investigate the relationships between the constructs in the research model. We used PLS (Partial Least Squares), rather that covariance-based SEM (LISREL), mainly because PLS is a distribution-free approach (there was no evidence indicating that our raw data was normally distributed), and also PLS results in more accurate analysis when the sample size is rather small (142 in our case)

(Chin and Newsted, 1999). The tool used for the analysis was SmartPLS 2.0.M3[3].

The results of the path analysis (path coefficients, t-values and R-squares) are presented in Figure 2. This figure indicates that all, except two, of the hypothesised relationships in the research model are significant. The non-significant ones are the relationships between the ability to detect click fraud and perceived behavioural control, and between using third-party tools and perceived behavioural control. The implication and interpretation of the findings (for both significant and non-significant relationships) are discussed in section 6.

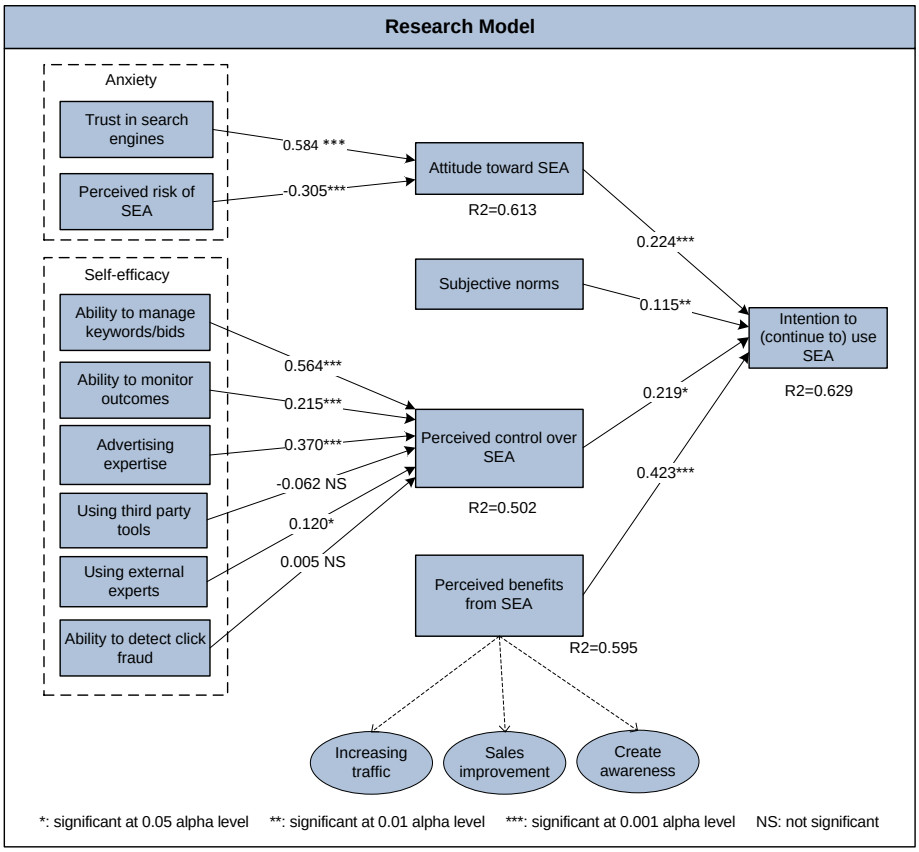

Figure 2. Results of analysis

4.3.1 Overall model fit

We calculated the goodness of fit (GoF) of the model as the geometric mean of the average AVE and average R^2 for the endogenous construct of the model (Tenenhaus et al., 2005, Wetzels et al., 2009, Akter et al., 2010):

$$\text{GoF} = \sqrt{\overline{\text{AVE}} \times \overline{\text{R}^2}} = \sqrt{\frac{0.964+0.943+0.903+0.846}{4} \times \frac{0.629+0.613+0.502+0.595}{4}} = 0.731$$

Wetzels et al. (2009) provided a guideline for interpreting GoF, by calculating baseline cut-off values for this index that are GoF_{small}=0.1, GoF_{medium}=0.25 and GoF_{large}=0.36 (in line with small, medium, and large effect sizes for R^2 which are 0.02, 0.13, and 0.26 respectively (Cohen, 1988)). Therefoe, according to this guideline, we can conclude that our model performed well compared to the baseline value of 0.36 for large effect size of R^2.

4.3.2 Power of analysis

[3] http://www.smartpls.de/forum/index.php

We also applied power analysis (1-β) to validate the results of the PLS path modelling analysis (Akter et al., 2011a). Power, which is an indicator of the probability of obtaining valid results, is calculated as the probability of rejecting false null hypothesis (H0) when H1 is true (Baroudi and Orlikowski, 1989, Cohen, 1988). The power of a PLS analysis is dependent on a set of parameters including the significance level (α), the sample size, the effect size and the complexity of the model (Cohen, 1988, Chin et al., 2003). Using G*power 3.1.2 software (Faul et al., 2009), we found that, for our model, with alpha=0.05, effect size of 0.26 (suggested by Cohen (1988) as large effect size), and the sample size of 142, the power of analysis is above 0.9 which is well above the cut-off value of 0.8 as suggested by Cohen (1988) and Baroudi and Orlikowski (1989) as being satisfactory power for behavioural studies.

Obtaining satisfactory results for GoF and the power of analysis, along with gaining satisfactory evidence for reliability, convergent validity and discriminant validity, as well as achieving a good R^2 for the dependent variable, allow us to conclude that our findings globally validate the PLS model.

5 Discussion

5.1 Implication for theory

The present study contributes to the literature by fostering an understanding of the drivers of intention to use SEA. First of all, *A*s SEA is a relatively recent phenomenon, most research on advertisers' behaviour so far have been *exploratory qualitative* studies (based on some interviews with SEA experts (e.g., Karjaluoto and Leinonen, 2009) or personal opinions of researchers (e.g., Laffey, 2007)) in which quantitative support is limited. In trying to alleviate this shortcoming, our research is one of the first attempts (Dinev et al., 2009) to supply more quantitative evidence to the field by taking an explanatory qualitative approach based on survey methodology to study the behavioural aspects of SEA from advertisers' perspectives.

Secondly, the research model hypothesised that intention to use SEA is directly predicted by attitude toward SEA, subjective norms, perceived control over SEA and perceived benefits of SEA. The empirical tests used for the study supported these four hypotheses. These four factors together managed to explain a considerable proportion of variance observed in the dependent variable. Obtaining the supporting results for H1 to H4 once again confirmed the power of behavioural theories in predicting the behaviour of decision makers, even at organizational level (i.e., where the unit of analysis is organizations rather than individuals).

Thirdly, while some researchers have assumed that making use of SEA is quite a simple task and thus there is no need to consider any role for perceived ease of use in forming the decision of business managers toward adopting SEA (e.g., Dinev et al., 2009), the present research found that the perception of ease/difficulty associated with using SEA (which is labelled as perceived control over SEA in our model) is a considerable influential factor on the intention to use SEA. This implies that some advertisers do not step into the SEA domain perhaps because they simply think that SEA is too difficult for them to handle, even though they may have a favourable opinion toward SEA (attitude toward SEA) and/or might be positively impressed by other people who use SEA (subjective norms). In general, this finding is in accordance with TAM and UTAUT which state that perceived ease of use and effort expectancy influence the attitude towards using technologies and innovations (Davis, 1989, Venkatesh et al., 2003). Also, this finding is corroborated by anecdotal evidence in the literature stating that SEA is a complex and dynamic form of advertising (Laffey, 2007) and managing it is by no means easy (Karjaluoto and Leinonen, 2009, Barry and Charleton, 2009).

Fourthly, the study also revealed that the perceived benefits of SEA plays a very significant role in encouraging businesses to utilize the SEA model. In aiming to provide a more accurate understanding of the formation of expected benefits in the context of SEA, this study developed a multidimensional higher-order benefit construct. Applying PLS hierarchical path modelling (Wetzels et al., 2009) and repeated indicators approach (Lohmöller, 1989), the study showed that the perceived benefits of SEA is reflected by increasing Web traffic, improving sales, and creating market awareness towards the business. While logically the primary purpose of SEA is to direct more Web traffic to the website through improving the visibility of the website on the SERP (Rashtchy et al., 2007, Karjaluoto and Leinonen, 2009, Barry and Charleton, 2009), our empirical results confirm that increasing sales (which is the ultimate goal of every marketing effort) as well as improving awareness are of high importance to

advertisers. This finding implies that if businesses seek to receive benefits from their investment in SEA, they need to have effective plans, strategies and initiatives for converting the Web traffic obtained to actual sales. Without such strategies and initiatives, it is not possible to enjoy the full benefits of SEA. While investigating effective ways for converting Web traffic to real business value (e.g., sales) is beyond the scope and purpose of the present research, some suggestions are as follows: connecting sponsored links to a good and appealing landing page (Porter, 2007); reasonable and competitive prices for products and services (Karjaluoto and Leinonen, 2009); appropriate customer support (Laffey, 2007); and easy-to-use and convenient electronic purchase facilities on the website (Rashtchy et al., 2007).

Fifthly, another contribution of this study comes from the role that trust and risk play in the behavioural models. As with general literature on trust, Dinev et al. (2009) found that trust plays a substantial role in combating the negative impact of click fraud on advertisers' perceptions. The present study complements their work by revealing that not only is trust in search engines needed to overcome advertisers' concerns about bogus clicks, but also a strong level of trust is essential to override the negative influence of perceived risk associated with SEA activity; otherwise, perceived risk may act as a barrier to shaping a favourable attitude towards the SEA model (since our data indicated a strong relationship between perceived risk and attitude).

And finally, another significant contribution of the current study is in determining the factors that influence advertisers' perceptions about the level of their control over the SEA process. In line with anecdotal evidence in the literature (Karjaluoto and Leinonen, 2009, Rashtchy et al., 2007), we empirically found that the ability of advertisers to work with keywords and bids has a strong and significant influence on behavioural control. Similar results were found for the ability to analyse and monitor outcomes, for marketing and advertising expertise, and for using external experts. Qualitative studies are now needed to further investigate the ways in which businesses can enhance such abilities and also to identify how search engine providers could assist advertisers in this regard. At the same time, the relationship between the ability to detect click fraud and perceived control over SEA, as well as the relationship between using third-party tools and perceived control over SEA were found to be statistically insignificant. As mentioned previously, these insignificant relationships imply that 1) While most advertisers are aware of the existence of fraudulent clicks, apparently they have come to accept that a small percentage of invalid clicks is a "fact of life" (Dinev et al., 2009), and 2) apparently the quality of the tool that search engine companies (such as Google) have embedded in their SEA solution has removed the need for extra third-party tools for many advertisers.

5.2 Implications for practice

This study has several implications for the practitioner in search engine advertising industry. *First of all*, uncovering the underlying factors that contribute to businesses' decision to adopt SEA would be of value to search engine companies as it may enable the development of strategies and initiatives to enhance the use of SEA which is the main source of income for search engine companies. To that end, the structural equation modelling of this study showed that subjective norms play a significant role in motivating businesses to adopt SEA. It means that when organizations realize that other parties important to their business (e.g., competitors, business partners, industry leaders, etc.) are using SEA to increase their exposure over the Internet, they are more likely to take the same action. It implies that search engine companies might be able to attract more customers for their SEA service if they share more information about the companies that are active in SEA. In this way perhaps more new businesses would decide to utilize SEA when they see that their co-workers or competitors are engaged in SEA.

Secondly, among the four direct drivers of behavioural intention, perceived benefits of SEA was found to be the strongest one. It is a reasonable result because SEA is basically a method of marketing and businesses would engage in a marketing activity if they see that it has business value. However, the strong impact of perceived benefits implies that search engine companies would be able to increase the adoption of SEA if they brought its benefits to the attention of marketers. The literature on SEA indicates that many Web searchers do not know anything about what sponsored links are (Jansen et al., 2007, Jansen and Resnick, 2006), conceivably, there could be a large number of business practitioners who similarly do not know enough, or probably know nothing at all, about SEA and the benefits it can bring to their business. In that regard, search engine companies would be able to attract more customers if they enhanced the awareness and knowledge of practitioners about SEA and its benefits.

Now, more in-depth research is needed to find strategies and initiatives to do so.

Thirdly, another implication for search engine companies is drawn from the significant roles observed for the perceived risk of SEA and trust in search engines. The impacts of both factors on attitude towards SEA were found to be statistically significant. While perception of the risks associated with SEA activity is a deterrent factor to SEA usage, its negative influence can be overridden or at least mitigated by trust in search engines. This fact clearly suggests that search engine providers need to act in a way that leads to the development of a strong sense of trust from advertisers. If advertisers firmly believe in the honesty of search engines, and believe that search engines do not seek to take advantage of the situation, they are more likely to become engaged in using SEA. While identifying the ways in which search engines can promote and improve a trusting relationship with advertisers needs separate research, this could be developed around the basic components of trust: ability, honesty and identity. For example, as prescribed by Dinev et al. (2009), search engine companies can enhance advertisers' trust by demonstrating that they have implemented effective technological solutions to protect advertisers against bogus clicks; by being transparent and supportive in handling click fraud complaints raised by advertisers; and by supporting advertisers with high quality guidance on how to best spend their advertising budget.

Fourthly, the findings showed that the ability to manage keywords/bids, ability to measure and monitor outcomes, and advertising expertise have significant impacts on the perception of control over the SEA process. This means that businesses with a higher level of ability in these three factors are more likely to engage in SEA because, as compared to other businesses, handling SEA activity is easier for them. For those businesses which are thinking to step into the SEA domain, this finding is insightful as it highlights that these businesses have to develop their ability in 1) selecting right and effective keywords, 2) monitoring and analysing the progress of their SEA campaign, and 3) enhancing their knowledge of marketing and advertising principles. Similar implications are also offered to businesses that currently use SEA but face problems in managing the SEA process. According to our findings, the root of their problem could be either lack of ability in keyword/bid management, inadequate capability in monitoring and analysing the SEA campaign, or insufficient familiarity with marketing and advertising knowledge. It should be noted that while we have identified the factors that determine perceived control over SEA, it is not within the scope of this current research to provide prescriptions for how to enhance those factors. It is left to future research to work out such prescriptions.

And lastly, having found a significant relationship between using external experts and perceived control over SEA, it is advisable that advertisers consider employing external consultants during their practice of SEA. The reason is that nowadays it is becoming increasingly competitive to gain high visibility on search engine results pages and thus, in such a competitive environment, the suggestions and solutions provided by experts is of high value. At the same time, the role of third-party tools was found to be insignificant. A probable reason for this finding could be that the quality, functionality and usability of the SEA tool offered by search engine companies are quite high. The implication of this finding for advertisers is that they would be better to concentrate on the SEA tool supplied by search engine companies rather than focusing on third-party tools. Apparently, the functionalities provided by search engine tools are adequate for handling the SEA process.

5.3 Conclusion

The objective of this study was to identify the drivers of SEA adoption by businesses. The empirical findings of the study revealed that the intention of businesses to utilize SEA is influenced by four direct factors (attitude toward SEA, subjective norms, perceived control over SEA and perceived benefits of SEA) and several indirect factors (trust in search engines, perceived risk of SEA, ability to manage keywords/bids, ability to monitor outcomes, advertising expertise, using external experts).

Although we did our best to identify the influential factors on businesses' intention to use SEA, there might be some other factors that have not been investigated in this research. This limitation, however, can be considered acceptable as 1) the research model has been developed based on well-established behavioural theories, and 2) it also explains a significant proportion of the variance in the dependent construct of the model. Future study may use other theoretical lenses and research methods (e.g., ground theory and qualitative methods) to discover other potential factors. Another area for further study is investigating other important behavioural aspects of SEA from

business perspective (e.g., identifying the critical success factors in effective and successful use of SEA).

Appendix

Questionnaire items (measured on seven-point Likert-type scale)

Construct	Item code	Item	Source
Intention to use SEA	Intention_1	We intend to (continue to) advertise our company on search engine sites.	Adapted from Dinev et al. (2009), Venkatesh et al. (2003), Chau and Hu (2002)
	Intention_2	We intend to (continue to) place sponsored links for our company on search engines in the near future	
	Intention_3	We plan to (continue to) use sponsored search advertising to increase exposure for our company's products and services.	
Attitude toward SEA	Attitude_1	We believe it is a good idea to place sponsored links on search engines.	Adapted from Dinev et al. (2009), Venkatesh et al. (2003), Chau and Hu (2002)
	Attitude_2	We believe that online advertising with search engines is a good thing to do for our business	
	Attitude_3	We have a favorable opinion about advertising on search engines by placing sponsored links	
Subjective norms	Norm_1	People who are important to our business think that our company should place sponsored links on search engines	Venkatesh et al. (2003), Dinev et al. (2009)
	Norm_2	People who are influential to our business think that it is good for our company to place sponsored links on search engines	
	Norm_3	Our peers in other companies think that it is a good idea to market goods and services through placing sponsored links on search engines	
Perceived control over SEA	Control_1	We have the required ability to employ Sponsored Search Advertising (SSA)	Chau and Hu (2002), Venkatesh et al. (2003), Seneler et al. (2010)
	Control_2	Using Sponsored Search Advertising is entirely within our control	
	Control_3	We have the resources necessary to make use of SSA	
	Control_4	We can easily employ Sponsored Search Advertising	
Perceived benefits of SEA (increasing Web traffic)	B_Traffic_1	Our Sponsored Search Advertising (SSA) efforts have enabled us to attract more traffic to our website	Eikebrokk and Olsen (2008), Dinev et al. (2009), Morgan et al. (2009), Watts et al. (2009)
	B_Traffic_1	We believe placing sponsored links on search engines has been helpful in promoting our website on the web	
	B_Traffic_1	We believe that it is beneficial to our company to place sponsored links on search engine sites (in term of attracting more traffic to website)	
	B_Traffic_4	In general, our company has experienced positive effects from its SSA efforts (in term of attracting more traffic to our website)	
	B_Overral_1	How would you rate the overall effectiveness of your SSA practice for attracting more traffic to your website	
Perceived benefits of SEA (improving sales)	B_Sale_1	Our Sponsored Search Advertising (SSA) efforts have improved our sales	Eikebrokk and Olsen (2008), Dinev et al. (2009), Morgan et al. (2009), Watts et al. (2009)
	B_Sale_2	We believe placing sponsored links on search engines has generated more sales for us.	
	B_Sale_3	We believe that it is beneficial to our company to place ads on search engines as it leads to increased sales	
	B_Sale_4	In general, our company has experienced positive effects from its SSA efforts (in term of sales improvement)	
	B_Overral_2	How would you rate the overall effectiveness of your SSA practice for increasing sales	

Perceived benefits of SEA (creating awareness)	B_Aware_1	Because of placing sponsored links on search engines, people have become more familiar with the products or services of our company	Collins (2007), Yang et al. (2008)
	B_Aware_2	Because of placing sponsored links on search engines, people are more aware of our brand	
	B_Aware_3	Because of placing sponsored links on search engines, people recall us better	
	B_Overral_3	How would you rate the overall effectiveness of your SSA practice for creating more awareness about your company's products and services in the market	
Trust in search engines	Trust_1	Search engines are trustworthy in keeping the best interests of SSA advertisers in mind	Pavlou and Fygenson (2006), Dinev et al. (2009)
	Trust_2	We trust that search engines are doing everything possible to maximize the achievements of advertisers in SSA	
	Trust_3	Search engine companies are honest in dealings with SSA advertisers	
	Trust_4	Search engine companies do not seek to take advantage of SSA advertisers.	
Perceived risk of SEA	Risk_1	We risk wasting our money by placing sponsored links on search engines	Pavlou (2003), Pavlou and Gefen (2004b), Dinev et al. (2009)
	Risk_3	We may quickly deplete our advertising budgets by placing sponsored links on search engines	
	Risk_2	For our company, there is a high potential for loss involved in utilizing SSA.	
Advertising expertise	MarketA_1	We are experts in marketing	Watts et al. (2009), Eikebrokk and Olsen (2008)
	MarketA _2	We know very little about marketing	
	MarketA _3	Our company has a high level of understanding of how marketing can be of value to our business	
	MarketA _4	In general, marketing is well understood in our company	
	Market B_1	How knowledgeable is your company about marketing?	
Keyword management ability	KeywordA_1	Our company has a high level of knowledge on how to select and manage keywords in its SSA efforts	Eikebrokk and Olsen (2008), Mithas et al. (2008), Morgan et al. (2009)
	KeywordA_2	We usually have problems with selecting and managing keywords and bids in our SSA practice	
	KeywordA_4	We are comfortable with selecting and handling keywords	
	KeywordA_5	We can easily select and manage keywords in SSA.	
	KeywordB_1	What is the overall competency level of your organization in keyword management?	
Ability to monitor outcomes	OutcomeA_1	Our company has a high level of knowledge on how to monitor and measure the outcomes of its SSA practice	Eikebrokk and Olsen (2008), Mithas et al. (2008), Morgan et al. (2009)
	OutcomeA_4	We are comfortable with monitoring and measuring outcomes in SSA	
	OutcomeA_5	We can easily monitor and measure our outcomes in our SSA practice.	
	OutcomeB_1	What is the overall competency level of your organization in monitoring and measuring SSA outcomes?	

Ability to detect click fraud	Fraud_1	We are able to detect click frauds on our sponsored links	Eikebrokk and Olsen (2008), Mithas et al. (2008),
	Fraud_2	We are able to differentiate between true and bogus clicks on our sponsored links	
	Fraud_3	We have the level of expertise required to detect click frauds	
Using third party tools	ToolA_1	We use third-party tools very often	Weill and Vitale (1999), Gefen (2000), Gill (1995), Rai et al. (2002)
	ToolA_2	Our company frequently uses tools provided by third party companies	
	ToolA_3	We are dependent on third party tools	
	ToolA_4	It is important for us to use third-party tools in our SSA practice.	
Using external experts	ExpertA_1	We use external experts for SSA very often	Weill and Vitale (1999), Gefen (2000), Gill (1995), Rai et al. (2002)
	ExpertA_2	Our company uses external experts in SSA frequently	
	ExpertA_3	We are dependent on external experts for SSA	
	ExpertA_4	It is important for us to use external experts in our SSA practice.	
	ExpertB_1	Which of the following best describes the status of using external experts for SSA in your company?	

References

Abedin, B and Sohrabi, B. (2009), "Graph theory application and web page ranking for website link structure improvement." *Behaviour & Information Technology*, Vol. 28 No.1 pp. 63-72.

Abedin, B. and Jafarzadeh, H. (2013), "Attracting and retaining customers on Facebook business pages: a content analysis of an online discussion forum", *International Journal of Technology Marketing*, Vol. 8 No 3, pp. 304-315

Ajzen, I. (1991), "The theory of planned behavior", *Organizational Behavior and Human Decision Processes*, Vol. 50 No. 2, pp. 179-211.

Akter, S., D'Ambra, J. and Ray, P. (2011a), "An Evaluation of PLS based complex models: The Roles of Power Analysis, Predictive Relevance and GoF index", in *AMCIS Proceedings*, pp. Paper 151.

Akter, S., D'Ambra, J. and Ray, P. (2011b), "Trustworthiness in mHealth information services: An assessment of a hierarchical model with mediating and moderating effects using partial least squares (PLS)", *JOURNAL OF THE AMERICAN SOCIETY FOR INFORMATION SCIENCE AND TECHNOLOGY*, Vol. 62 No. 1, pp. 100-16.

Akter, S., D'Ambra, J. and Ray, P. (2010), "Service quality of mHealth platforms: development and validation of a hierarchical model using PLS", *Electronic Markets*, Vol. 20 No. 3-4, pp. 209-27.

Albarracin, D., Johnson, B.T., Fishbein, M. and Muellerleile, P.A. (2001), "Theories of reasoned action and planned behavior as models of condom use: A metaanalysis", *Psychological Bulletin*, Vol. 127 No. 1, pp. 142–61.

Ba, S. and Pavlou, P.A. (2002), "Evidence of the effect of trust building technology in electronic markets: Price premiums and buyer behavior", *MIS Quarterly*, Vol. 26 No. 3, pp. 243–68.

Bandura, A. (1982), "Self-efficacy mechanism in human agency", *American Psychologist*, Vol. 37 No. 2, pp. 122–47.

Baroudi, J.J. and Orlikowski, W.J. (1989), "The problem of statistical power in MIS research", *MIS Quarterly*, Vol. 13 No. 1, pp. 87–106.

Barry, C. and Charleton, D. (2009), "In search of search engine marketing strategy amongst SME's in Ireland", *Communications in Computer and Information Science*, Vol. 48, pp. 113-24.

Chau, P.Y.K. and Hu, P.J.-H. (2002), "Investigating healthcare professionals' decisions to accept telemedicine technology: an empirical test of competing theories", *Information & Management*, Vol. 39, pp. 297–311.

Chin, W.W. (1998), "Commentary: Issues and Opinion on Structural Equation Modeling", *MIS Quarterly*, Vol. 22, pp. 7-16.

Chin, W.W. and Gopal, A. (1995), "Adoption intention in GSS: importance of beliefs", *Data Base Advance*, Vol. 26, pp. 42–64.

Chin, W.W., Marcolin, B. and Newsted, P. (2003), "A partial least squares latent variable modeling approach for measuring interaction effects: Results from a Monte Carlo simulation study and an electronic-mail emotion/adoption study", *Information Systems Research*, Vol. 14 No. 2, pp. 189–217.

Chin, W.W., Marcolin, B. and Newsted, P. (2010), "How to write up and report PLS analyses", in V. Esposito-Vinzi, V., Chin, W.W., Henseler, J. and Wang, H. (Eds.), *Handbook of Partial Least Squares: Concepts, Methods and Application*, Springer, Germany, pp. 645-89.

Chin, W.W. and Newsted, P.R. (1999), "Structural Equation Modeling Analysis with Small Samples Using Partial Least Squares", in Hoyle, R. (Ed.) *Statistical Strategies for Small Sample Research*, Sage, pp. 307–41.

Cohen, J. (1988), *Statistical Power Analysis for the Behavioral Sciences*, Hillsdale, NJ: Lawrence Erlbaum Associates.

Collins, C.J. (2007), "The interactive effects of recruitment practices and product awareness on job seekers' employer knowledge and application behaviors", *Journal of applied psychology*, Vol. 92 No. 1, pp. 180-90.

Compeau, D., Higgins, C.A. and Huff, S. (1999), "Theory and Individual Reactions to Computing Technology: A Longitudinal Study", *MIS Quarterly*, Vol. 23 No. 2, pp. 145-58.

Davis, F.D. (1989), "Perceived usefulness, perceived ease of use, and user acceptance of information technology", *MIS Quarterly*, Vol. 13 No. 3, pp. 319- 40.

Dinev, T. and Hart, P. (2006), "An extended privacy calculus model for e-commerce transactions", *Information Systems Research*, Vol. 17 No. 1, pp. 61–80.

Dinev, T., Hu, Q. and Yayla, A. (2009), "Is There an On-line Advertisers' Dilemma? A Study of Click Fraud in the Pay-Per-

Click Model", *International Journal of Electronic Commerce*, Vol. 13 No. 2, pp. 29–59.

Edwards, J.R. (2001), "Multidimensional Constructs in Organizational Behavior Research: An Integrative Analytical Framework", *Organizational Research Methods*, Vol. 4 No. 2, pp. 144-92.

Eikebrokk, T.R. and Olsen, D.H. (2008), "An empirical investigation of competency factors affecting e-business success in European SMEs", *Information & Management*, Vol. 44, pp. 364–83.

Fain, D.C. and Pedersen, J.O. (2005), "Sponsored search: A brief history ", *Bulletin of the American Society for Information Science and Technology*, Vol. 32 No. 2, pp. 13-18

Faul, F., Erdfelder, E., Buchner, A. and Lang, A.G. (2009), "Statistical power analyses using G*Power 3.1: tests for correlation and regression analyses", *Behav Res Methods*, Vol. 41 No. 4, pp. 1149-60.

Featherman, M.S. and Pavlou, P.A. (2003), "Predicting e-services adoption: A perceived risk facets perspective", *International Journal of Human-Computer Studies*, Vol. 59 No. 4, pp. 451–74.

Feng, J., Bhargave, H.K. and Pennock, D.M. (2007), "Implementing Sponsored Search in Web Search Engines: Conceptual Evaluation of Alternative Mechanism", *INFORMS journal of computing* Vol. 19 No. 1, pp. 137-48.

Fornell, C. and Larcker, D.F. (1981), "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.

Forsythe, S., Liu, C.L., Shannon, D. and Gardner, L.C. (2006), "Development of a scale to measure the perceived benefi ts and risks of online shopping", *Journal of Interactive Marketing*, Vol. 20 No. 2, pp. 55–75.

Galbreath, J. (2005), "Which resources matter the most to firm success? An exploratory study of resource-based theory", *Technovation*, Vol. 25, pp. 979–87.

Gefen, D. (2000), "It is not enough to be responsive: the role of cooperative intentions in MRP II adoption", *The DATA BASE for Advances in Information Systems* Vol. 31 No. 2, pp. 65-79.

Gefen, D. and Straub, D. (2005), "A Practical Guide to Factorial Validity Using PLS-Graph: Tutorial and Annotated Example", *Communications of the Association for Information Systems*, Vol. 16, pp. 91-109.

Ghose, A. and Yang, S. (2008), "An Empirical Analysis of Sponsored Search Performance in Search Engine Advertising", paper presented at *International Conference on Web Search and Data Mining*.

Giles, M. and Rea, A. (1999), "Career self–efficacy: An application of the theory of planned behaviour", *Journal of Occupational and Organisational Psychology*, Vol. 72, pp. 393-98.

Gill, T. (1995), "Early expert systems: where are they now?", *MIS Quarterly*, Vol. 19 No. 1, pp. 51–81.

Google Quarterly Report. (2012), "Google Announces Fourth Quarter and Fiscal Year 2011 Results".

Hair, J.F., Black, B., Babin, B., Anderson, R.E. and Tatham, R.L. (2006), *Multivariate Data Analysis*, Prentice Hall.

Hair, J.F., Money, A.H., Samouel, P. and Page, M. (2007), *Research Methods for Business*, John Wiley & Sons, Ltd.

Harrison, D.A., Jr, P.P.M. and Riemenschneider, C.K. (1997), "Executive decisions about adoption of information technology in small business: Theory and empirical tests", *Information Systems Research*, Vol. 8 No. 2, pp. 171- 95.

Hsu, M.-H., Ju, T.L., Yen, C.-H. and Chang, C.-M. (2007), "Knowledge sharing behavior in virtual communities: The relationship between trust, self-efficacy, and outcome expectations", *International Journal of Human-Computer Studies*, Vol. 65 No. 2, pp. 153-69.

Hwang, Y. and Kim, D.J. (2007), "Customer self-service systems: The effects of perceived Web quality with service contents on enjoyment, anxiety, and e-trust", *Decision Support Systems*, Vol. 43 No. 3, pp. 746-60.

Igbaria, M. and Iivari, J. (1995), "The effects of self-efficacy on computer usgae", *Omega*, Vol. 23 No. 6, pp. 587–605.

Jafarzadeh, H., Aurum, A., D'Ambra, J., Abedin, B. (2013), "Determinant of Intention to Use Search Engine Advertising: A Conceptual Model", *International Journal of Enterprise Information Systems*, 9(3), 22-38

Jansen, B.J., Brown, A. and Resnick, M. (2007), "Factors relating to the decision to click on a sponsored link", *Decision Support Systems*, Vol. 44 No. 1, pp. 46-59.

Jansen, B.J., Flaherty, T.B., Baeza-Yates, R., Hunter, L., Kitts, B. and Murphy, J. (2009), "The Components and Impact of

Sponsored Search", *Computer,* Vol. 42 No. 5, pp. 98-101.

Jansen, B.J. and Mullen, T. (2008), "Sponsored search: an overview of the concept, history, and technology", *International Journal of Electronic Business,* Vol. 6 No. 2, pp. 114 - 31.

Jansen, B.J. and Resnick, M. (2006), "An Examination of Searcher's Perceptions of Nonsponsored and Sponsored Links During Ecommerce Web Searching", *Journal of the American Society for Information Science and Technology,* Vol. 57 No. 14, pp. 1949-61.

Jansen, B.J. and Spink, A. (2007), "Sponsored Search: Is Money a Motivator for Providing Relevant Results?", *Compurer* Vol. 40 No. 8, pp. 52-57.

Jarvenpaa, S.L., Tractinsky, N., Saarinen, L. and Vitale, M. (1999), "Consumer trust in an Internet store: A cross-cultural validation", *Journal of Computer-Mediated Communication,* Vol. 5 No. 2, pp. 44–71.

Jarvis, D., MacKenzie, S. and Podsakoff, P. (2003), "A Critical Review of Construct Indicators and Measurement Model Mis-specification in Marketing and Consumer Research", *Journal of Consumer Research,* Vol. 30 No. 3, pp. 199-218.

Ju, B. (2007), "Does Domain Knowledge Matter: Mapping Users' Expertise to Their Information Interactions", *Journal of the American Society for Information Science and Technology* Vol. 58 No. 13, pp. 2007–20.

Karjaluoto, H. and Leinonen, H. (2009), "Advertisers' perceptions of search engine marketing", *International Journal of Internet Marketing and Advertising,* Vol. 5 No. 1/2, pp. 95-112.

Laffey, D. (2007), "Paid search: The innovation that changed the Web", *Business Horizons,* Vol. 50 No. 3, pp. 211–18.

Law, K.S., Wong, C. and Mobley, W.H. (1998), "Toward a Taxonomy of Multidimensional Constructs", *Academy of Management Review,* Vol. 23 No. 4, pp. 741-55.

Lohmöller, J.-B. (1989), *Latent Variable Path Modeling with Partial Least Squares,* Heidelberg: Physica-Verlag.

MacKenzie, S.B., Podsakoff, P.M. and Jarvis, C.B. (2005), "The Problem of Measurement Model Misspecification in Behavioral and Organizational Research and Some Recommended Solutions", *Journal of Applied Psychology,* Vol. 90 No. 4, pp. 710-30.

Mathieson, K. (1991), "redicting User Intentions: Comparing the Technology Acceptance Model with the Theory of Planned Behavior", *Information Systems Research,* Vol. 2 No. 3, pp. 173-91.

Mayer, R., Davis, J.H. and Schoorman, F.D. (1995), "An integrative model of organizational trust", *Academy of Management Review,* Vol. 20 No. 3, pp. 709–34.

Mithas, S., Jones, J.L. and Mitchell, W. (2008), "Buyer intention to use Internet-enabled reverse auctions: the role of asset specificity, product specialization, and non-contractibility", *MIS Quarterly: Management Information Systems,* Vol. 32 No. 4, pp. 705-24

Mordkovich, E. and Mordkovich, B. (2007), *Pay-Per-Click Search Engine Marketing Handbook: Low Cost Strategies To Attracting New Customers Using Google, Yahoo & Other Sear* LULU.

Morgan, N.A., Slotegraaf, R.J. and Vorhies, D.W. (2009), "Linking marketing capabilities with profit growth", *International Journal of Research in Marketing,* Vol. 26, pp. 284–93.

Morochove, R. (2008), "Search engine optimization, advertising 101 ", *PC World (San Francisco, CA),* Vol. 26 No. 7, pp. 47-48.

Murphy, H.C. (2008), "Do small and medium-sized hotels exploit search engine marketing?", *International Journal of Contemporary Hospitality Management,* Vol. 20 No. 1, pp. 90-97.

Pavlou, P.A. (2003), "Consumer acceptance of electronic commerce: Integrating trust and risk in the Technology Acceptance Model", *International Journal of Electronic Commerce,* Vol. 7 No. 3, pp. 101–34.

Pavlou, P.A. and Fygenson, M. (2006), "Understanding and predicting electronic commerce adoption: An extension of the theory of planned behavior", *MIS Quarterly,* Vol. 30 No. 1, pp. 115–43.

Pavlou, P.A. and Gefen, D. (2004), "Building effective online marketplaces with institution-based trust", *Information Systems Research,* Vol. 15 No. 1, pp. 37–59.

Pavlou, P.A. and Gefen, D. (2004), "Building Effective Online Marketplaces with Institution-Based Trust", *Information Systems Research,* Vol. 15 No. 1, pp. 37-59.

Petter, S., Straub, D. and Rai, A. (2007), "Specifying Formative Constructs in Information Systems Research", *MIS Quarterly*, Vol. 31 No. 1, pp. 623-56.

Plouffe, C.R., Hulland, J.S. and Vandenbosch, M. (2001), "Research Report: Richness Versus Parsimony in Modeling Technology Adoption Decisions-Understanding Merchant Adoption of a Smart Card-Based Payment System", *Information Systems Research*, Vol. 12 No. 2, pp. 208-22.

Porter, A. (2007), "Target practice in search engine marketing, opportunity outweighs risk ", *Marketing Health Services*, Vol. 27 No. 2, pp. 26-28.

Rai, A., Lang, S.S. and Welker, R.B. (2002), "Assessing the validity of IS success models: an empirical test and theoretical analysis", *Information Systems Research*, Vol. 13 No. 1, pp. 51–69.

Rashtchy, S., Kessler, A.M., Bieber, P.J., Schindler, N.H. and Tzeng, J.C. (2007), "The user revolution: the new advertising ecosystem and the rise of the internet as a mass medium", in, Piper Jaffray.

Saini, A., Grewal, R. and Johnson, J.L. (2009), "Putting market-facing technology to work: Organizational drivers of CRM performance ", *Marketing Letters*, pp. 1-19.

Sen, R. (2005), "Optimal Search Engine Marketing Strategy", *International Journal of Electronic Commerce*, Vol. 10 No. 1, pp. 9-25.

Seneler, C.O., Basoglu, N. and Daim, T.U. (2010), "An empirical analysis of the antecedents of adoption of online services: A prototype-based framework", *Journal of Enterprise Information Management*, Vol. 23 No. 4, pp. 417-38.

Straub, D., Boudreau, M.-C. and Gefen, D. (2004), "Validation Guidelines For IS Positivist Research", *Communications of the Association for Information Systems*, Vol. 13, pp. 380-427.

Straub, D.W. (1989), "Validating Instruments in MIS Research", *MIS Quarterly*, Vol. 13 No. 2, pp. 147–69.

Taylor, S. and Todd, P.A. (1995), "Understanding information technology usage: A test of competing models", *Information Systems Research*, Vol. 6 No. 3, pp. 144–76.

Tenenhaus, M., Vinzi, V.E., Chatelin, Y.-M. and Lauro, C. (2005), "PLS path modeling", *Computational Statistics & Data Analysis*, Vol. 48 No. 1, pp. 159-205.

Venkatesh, V. and Davis, F.D. (2000), "A theoretical extension of the technology acceptance model: Four longitudinal field studies", *Management Science*, Vol. 46 No. 2, pp. 186-204.

Venkatesh, V., Morris, M.G., Davis, G.B. and Davis, F.D. (2003), "User Acceptance of Information Technology: Toward a Unified View", *MIS Quarterly*, Vol. 27 No. 3, pp. . 425-78.

Watts, S., Shankaranarayanan, G. and Even, A. (2009), "Data quality assessment in context: A cognitive perspective", *Decision Support Systems*, Vol. 48, pp. 202-11.

Weill, P. and Vitale, M. (1999), "Assessing the health of an information systems portfolio: an example from process engineering", *MIS Quarterly*, Vol. 23 No. 4, pp. 601–24.

Weischedel, B., Matear, S. and Deans, K.R. (2005), "The use of emetrics in strategic marketing decisions: a preliminary investigation", *International Journal of Internet Marketing and Advertising*, Vol. 2 No. 1/2.

Wetzels, M., Odekerken-Schröder, G. and Oppen, C.v. (2009), "Using PLS path modeling for assessing hierarchical construct models: guidelines and empirical illustration", *MIS Quarterly*, Vol. 33 No. 1, pp. 177-95.

Yang, X., Chen, J. and Smith, R.E. (2008), "The Impact of Advertising Creativity on the Hierarchy of Effects", *Journal of Advertising*, Vol. 37 No. 4, pp. 47-62.

Yao, S. and Mela, C.F. (2009), "Sponsored Search Auctions: Research Opportunities in Marketing", *Foundations and Trends in Marketing*, Vol. 3 No. 2, pp. 75-126.