

Selecting a free web-hosted survey tool for student use

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ABSTRACT

This study provides marketing educators a review of free web-based survey services and guidance for student use. A mixed methods approach started with online searches and metrics identifying 13 free web-hosted survey services, described as demonstration or project tools, and ranked using popularity and importance web-based metrics. For each web-based survey tool, 187 undergraduate marketing students ranked each tool by completing a short survey project. A regression model's latent factor points to intuitiveness as a highly favorable feature of web-based survey products. Results identify Free Online Surveys as a superior demonstration tool, and Question Pro as the best project tool. The findings help users identify which of the popular free web-hosted online survey tools should best meet their needs.

Key words: Online Survey Tools; Technology Acceptance Model; Online Survey Features; Popularity and Importance metrics.

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PsycINFO Classification: 3510

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Introduction

The Internet provides scholars and students a channel through which to solicit information using web-based surveys. Gone are the days when knowledge of web authoring software, Hypertext Markup Language (HTML) and scripting software acted as effective barriers against those interested in the use of online surveys. Today's online survey products present users with a remarkable array of features to help facilitate the design, implementation and analysis of survey data. The purpose of this study is to help marketing educators select a free web-hosted survey tool for student use by examining indirect (two website evaluation scales) and direct (web-hosted vendor ranking and student project completion times) measures. The benefits of this study are (a) offer students 24-7 access to manage their survey instrument(s) and respondent data from any computer and therefore engage in a higher order of online learning (National Center for Educational Statistics, 2005; Ronsisvalle & Watkins, 2005) and (b) offer instructors guidance for which web-hosted survey tool to use.

Literature Review

Studies addressing online populations make extensive use of online surveys offering scholars new challenges in terms of applying traditional survey research methods to the study of online behavior and Internet use (Andrews, Nonnecke, & Preece 2003). There are upwards of 125 online providers of online survey tools (Ajeebo 2009; VCL Components 2009) offering an online survey as part of their suite of services (Moodle), to PC survey software (Lime Survey) and web-hosted survey software (e.g., Vovici, Snap Surveys). For a studies addressing the advantages and disadvantages of online surveys, see Evans and Mathur (2005), or Van Selm and Jankowski (2006). In a nutshell, obstacles facing online surveys center about sample frame specification with the likelihood of ending up with a non-probability sample (Kay & Johnson 1999; Wolter-Warmerdam et al 2003) and the difficulty of determining the response rate (Andrews et al 2003; Manfreda et al 2006) and the likelihood of lower responses rates (33% versus 56%) for online versus paper surveys (Nulty 2008). In contrast, the attraction of online (versus paper) surveys enhance a project's efficiency by eliminating data entry, administrative chores and offering a 'just-in-time' service (Watt et al, 2002) as well as avoiding the need to administer surveys in class (Dommeyer et al 2004) especially given the preponderance of web-based surveying for course and teaching evaluation (Seal & Przasnyski 2001). Online surveys offer access to Internet savvy samples (Aoki & Elasmr 2000), large samples at low cost (Weible & Wallace 1998) and rapid replies (Schmidt 1997, Taylor 2000). Access to large online samples offers a way to reduce sampling error (Babbie 1990; Sills & Song 2002) together with high statistical power and access to participants in geographically distant areas (Birnbaum 2004). As such, online research is likely to grow in popularity and use as investigators devise methods to overcome the shortcomings with online research.

Given most technology performance failures are behaviorally based (Henderson & Divett 2003), the Technology Acceptance Model (Davis 1989, Davis & Venkatesh 1996) was developed specifically to predict who is most likely to accept new technology in a workplace environment and is applied to this study to answer the question 'which free web-hosted survey software would students mostly likely adopt?' The Technology Acceptance Model (TAM) based on the Theory of Reasoned Action (Ajzen & Fishbein 1980) is the primary model used to measure student adoption interest in the online-vendor hosted technology (how and when). The Technology Acceptance Model (TAM) has been used extensively during the past 20 plus years to explain user acceptance and use of technology (Chuttur 2009) such as evaluation of students' attitude towards technology use for coursework (Edmonds, Thorpe & Conole 2012). The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it (Davis 1989), notably:

1. Perceived usefulness (PU) – ‘the degree to which a person believes that using a particular system would enhance his or her job performance’, and
2. Perceived ease-of-use (PEOU) – ‘the degree to which a person believes that using a particular system would be free from effort’

This study’s focus resulted in a 13-item questionnaire structured as follows. The second TAM factor (ease of use) is modified into a 7-item scale. The first five items used to capture ease of use are drawn from surveys developed by various authors (Tero et al 2004; Venkatesh 2000; Fusilier & Durlabhji 2005; Wang et al 2003; Malhotra & Galletta 1999). A further two items were added to capture ease of use opinions regarding vendor account creation, and creation of a link to the completed survey. To complement this focus a 5-item ‘look and feel’ scale is adapted from Heinze and Brunner’s (2002) work on web site evaluation given Law and Bai’s (2006) arguments supporting the importance of website design. Both scales use a five-point Likert scale to capture student responses. The thirteenth item is used as a direct measure of a student performance, the time (minutes) the student takes to complete their project requiring for each vendor the time to (a) setup an account, (b) complete a three -item survey provided by the instructor in advance (one rank order, one multiple choice and one open-ended question), and (c) submit a link to the student’s online survey.

Method

A mixed methods approach (student preferences and vendor classification) is used for this study as detailed in the following sections.

Sample

A sample of 187 students over the period spring 2012 to fall 2013 enrolled in successive online undergraduate 300 level Principles of Marketing courses participated in this study. Students were asked to create a user account, create an online survey and submit a link to the survey via e-mail for all 13 survey tools. The upper level course students were selected as they are more likely to take evaluations seriously and respond more faithfully than their lower level classmates (Babad et al 1999). Over 95% of the participants reside in the same geographic region of the university, a finding consistent with other studies (Burbules & Callister 2000; Dutton & Dutton 2005). The mean age is 32 years, in line with prior work (Allen & Seaman 2006; Barakzai & Fraser 2005), the majority are female (63%), taking a full course load (77%), employed full-time (91%), a mean GPA of 2.94 (SD=0.5) with most preferring online courses (73%).

Measures

Student Preferences

A two-scale 13-item questionnaire was developed; a 7-item ease of use scale, a 5-item look and feel scale, and one item seeking how long the student project took. Each student evaluated each online survey tool by creating a 3-item survey supplied by the instructor for each of the 13 vendor-hosted online surveys. The data capture for this assignment was for each vendor, the time to (a) create an account, (b) complete the survey, and (c) submit an e-mail link for the survey. The order of the 13 tools presented to the student participants was randomly ordered to avoid any bias as a result of student learning from one vendor to another. Student responses were captured by use of a survey created using *Question Pro* and sending the survey link to each student that was completed in 7 days which required students to return to each of their 13 online survey links to complete the assignment.

Vendor Classification

Multiple online searches and vendor website examination identify the population of free vendor-hosted online survey tools that are described in detail. A popularity-

importance (P-I) ranking of the vendors is developed as a proxy for vendor quality used to confirm the student preference findings. The vendors are then classified into two groups as an instructional aid for instructors to select a survey tool appropriate for student use.

In line with the educator orientation of this study, we did not include PC survey software downloads that require on-site software support, posting the survey and associated scripting files, and software access limited to the educator's computer or college server. Web-based survey software selection is limited to free vendor-hosted survey software offering educators' flexibility in software access (limited only to Internet access and a web browser) and absence of problems related to software downloads and maintenance. Using the Google search engine, the key words 'online survey' and 'webpage survey' and 'Internet survey' returned 63 vendor web sites, a larger number than the 40 posted by CBSolution.net (2012). Each web site was visited to determine if the site did offer free vendor-hosted online survey tools. This process resulted in a list of 13 vendors meeting the selection criteria of free vendor-hosted web survey tools, a number consistent with reviews conducted by Bates (2006), Idealware (2008) and Toledano (2008). Two ranking schemas (popularity and importance) help educators make informed judgments about each vendor's service.

Vendor website popularity. A useful metric to assess a vendor's website popularity are links from other web sites. This metric is known as in-links (aka. incoming links, inbound links, and inward links) that are links from other web sites to at least one page inside a vendor's web site. Vaughan and Thelwall (2003) note that in-link counts measure impact beyond scholarly impact to a wider audience of students, practitioners and other interested parties. In-link counts from for the home page URL of each web-based survey vendor were supplied by the online links counter service Small SEO Tools (2013).

Vendor website importance. Google's Page Rank algorithm is used to define a web page's importance (Rogers, 2002) such that a link to a page represents support for that page. Chen et al (2007) suggest that the Page Rank favors more important links. The online service SEOCentro (2013) generated the Page Rank values which range from 0 to 10. According to Rogers (2002, p.2), each Page Rank value is a logarithmic scale (0=0 to 10; 1=10 to 100; etc). It is therefore prudent to consider each vendor's website's Page Rank score representing a cohort of similarly scored vendor websites.

Overall vendor ranking. Vendor website popularity and importance help differentiate the various services and offer substantive direction regarding which vendors are perceived as offering a sound service, particularly when the goal is to seek free service. Each vendor's mean popularity and importance (P-I) rank offers a snapshot of all 13 vendors.

RESULTS

Online Metrics

Vendor Popularity. Data collection took place on November 12, 2013 in a constrained time period, from 0800hr to 0835 hrs EST to remove typical in-link count fluctuations. For each search engine, the total number of in-link counts for each of the 13 vendors was tabulated. The results in Table 1 show each vendor's web site's relative popularity that measures links from both scholarly and non-scholarly web sites. Poll Daddy is the most popular vendor with 38.9% share of in-links, with Survey Monkey with 26.5% share of in-links. The top four vendors account for 88.8% of all in-link counts – a proxy for market space share.

Vendor Importance. The Page Rank scores in Table 1 refine the in-link count ranks by emphasizing the quality from where the links come from, analogous to an emphasis of

links from scholarly web sites (Page Rank) versus all web sites (in-link count). Data collection took place on November 11, 2013, from 0900hr to 01040 hrs EST. The 3 vendors tied first in term of in-link importance (in alphabetical order) are Question Pro, Survey Monkey and Zoomerang Surveys.

Overall Popularity and Importance (P-I) Ranking. The overall popularity and importance (P-I) ranking is the average popularity and importance ranks for each vendor's website as presented in Table 1. The top five vendors in rank order are Survey Monkey, Question Pro, Poll Daddy, Zoomerang Surveys and Survey Gizmo.

Table 1:

Popularity and importance (P-I) ranking of free web-hosted survey tools

P-I Rank*	Online Survey Tool Supplier	PageRank Score**	PageRank Rank	In-links (000's)**	In-links Rank
1	Survey Monkey	9	=1	1,790	2
2	Poll Daddy	7	=3	2,620	1
3	Qualtrics	9	=1	590	4
4	Question Pro	7	=3	980	3
5	Fluid Surveys	7	=3	110	7
6	Survey Gizmo	7	=3	71.1	8
7	Kwik Surveys	6	=8	298	5
8	eSurveys Pro	7	=3	15.6	12
9	Free Online Surveys	5	=10	135	6
10	Survey Methods	6	=8	27.6	10
11	FormSite	5	=10	67.1	9
12	Question Form	5	=10	21.9	11
13	Zap Survey	4	=13	5.2	13

*P-I (popularity and importance) rank = (PageRank rank + In-links rank)/2.

**Larger value indicates greater importance and/or popularity

Each of the 13 web-hosted survey vendor sites was visited and details describing each service based on each vendor's website and the authors' experience using all 13 survey tools are reported in Table 2. This process allowed for the grouping of services as demonstration tools and project tools, with the difference being the latter included the feature to download survey results. All the project tools offer data download via an Excel file which requires cleaning up because there is no pre-download data coding opportunity. Further, answers to open-ended answers are typically available as a separate Excel file download.

Student Attitude and Behavior

Survey Look and Feel. The look and feel scale in Table 3 (M=13.1, SD=2.7, n=7) has a Cronbach's alpha = .924 and Cochran's Q=156, $p < .00$ indicating good scale consistency. This scale scores rank the best performing Project Tools as Survey Methods (M=1.80, SD=0.35) and Question Pro (M=1.8, SD=0.57), whilst for Demonstration Tools it is Survey Monkey (M=1.63, SD=0.36).

Survey Ease of Use. The ease of use scale in Table 4 (M= 11.25, SD=1.74, n=5) Cronbach's alpha=.785 and Cochran's Q=358, $p < .00$ supports this scale's consistency. To determine the ease of use of each free online survey tool, students were invited to open an account, design a short survey (questions supplied by the author) and launch the survey. From this experience, students were asked to evaluate their experience with the results shown in Table 4. The summated 7-item ease of use scale identifies *Question Pro* (M=1.58, SD=0.9) as the student's most favored project tool, and *Free Online Surveys* (M=1.38, SD=0.6) as the most favored demonstration tool.

Table 2:
Free web-hosted survey tools for student project and demonstration purposes

	Project tools										Demonstration tools		
	Question Pro	Poll Daddy	Survey Gizmo	Kwik Surveys	Zap Survey	Qualtrics	Survey Methods	Question Form	Form Site	Fluid Surveys	Survey Monkey	eSurveys Pro	Free Online Surveys
Overview													
Max. number of surveys	2	Unlimited	Unlimited	Unlimited	Unlimited	2	Unlimited	2	5	Unlimited	NA	Unlimited	Unlimited
Max. questions per survey	10	10	Unlimited	Unlimited	10	50	20	5	50	20	10	Unlimited	20
Max. responses	Unlimited	100/month	250/month	Unlimited	15/month	100	500	Unlimited	10/survey	100/survey	100/survey	Unlimited	50/month
Availability of results	Unlimited	When quota reached	NA	Unlimited	NA	NA	1 year	NA	Unlimited	NA	Unlimited	Unlimited	10 days
Support	Online help and discussion board	E-mail	Forum, tutorials, FAQs	Online contact form	E-mail	FAQs and e-mail	FAQs	Online form and Help forum	FAQs and online form	E-mail and telephone	FAQs and online form	E-mail	E-mail
Design													
Create from scratch?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Survey templates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Greeting message	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes
Ending message	Yes	Yes	No	No	No	Yes	Yes	No	No	No	No	Yes	No
Question types	16	4	18	11	14	20	20	8	8	8	15	15	10
Randomized response options	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
Save/copy/edit surveys	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Deployment													
Launch via e-mail/website link	Yes (copy and paste)	Yes (copy and paste)	Yes (copy and paste)	Yes (copy and paste)	Yes (copy and paste)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Reporting													
View results online	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Data export	Excel and CSV	Excel and CSV	Excel and CSV	Excel and CSV	Various Excel formats	CSV and PDF	Excel, PDF	Excel, TSV, CSV	Excel, CSV	CSV	No	No	No

Table criteria adapted from Toledano (2008), Bennekom (2009), and vendor website information.

Table 3:

Student attitudes about 'look and feel' characteristics among project and demonstration survey tools (n=187).

Survey Elements	Project tools										Demonstration tools		
	Survey Methods	Question Pro	Poll Daddy	Qualtrics	Fluid Surveys	Survey Gizmo	Zap Survey	Question Form	Kwik Surveys	Form Site	Survey Monkey	eSurveys Pro	Free Online Surveys
Look: This survey has the best look & feel	1.4	2.0	1.9	2.3	1.7	2.1	2.1	1.6	2.8	1.7	1.3	1.5	2.2
Look: The fonts and background colors are compatible with the survey's look and feel	2.3	1.9	1.8	2.1	2.4	2.4	2.3	2.6	2.6	2.7	2.2	2.3	2.1
Layout: The pages are easy to read	1.6	1.3	1.5	1.5	1.9	1.6	1.9	1.8	1.7	2.2	1.3	1.7	1.6
Media Elements: The media elements (graphics, sound, animation) enhance the survey's appeal	1.7	2.6	2.6	2.2	2	2.4	2.3	2.3	2.8	2.6	1.6	1.8	2.2
Navigation: Easy to get around the survey	2	1.2	1.3	1.6	1.9	1.4	1.6	2.5	1.6	2.7	1.7	1.8	1.8
Summed score	M=1.8, SD=.35	M=1.80, SD=.57	M=1.82, SD=.5	M=1.94, SD=.36	M=1.98, SD=.26	M=1.98, SD=.46	M=2.04, SD=.3	M=2.16, SD=.44	M=2.30, SD=.27	M=2.4, SD=.43	M=1.63, SD=.36	M=1.82, SD=.29	M=1.98, SD=.27

Each scale item was measured using a 5-point Likert scale, with 1 =- strongly agree, 2 = agree, 3 not sure, 4 = disagree and 5 = strongly disagree.

Table 4:*Student perceptions of 'ease of use' with project and demonstration survey tools (n=187).*

Ease of use items	Project tools										Demonstration tools		
	Question Pro	Survey Gizmo	Poll Daddy	Qualtrics	Zap Survey	Question Form	Form Site	Kwik Surveys	Survey Methods	Fluid Surveys	Free Online Surveys	Survey Monkey	eSurveys Pro
Setting up the user account was a snap.	1.5	1.3	1.4	1.4	1.3	1.2	1.3	1.5	1.8	1.5	1.1	1.4	1.3
My interaction with the survey software was clear and understandable.	2.0	1.6	1.7	2.0	1.7	2.0	2.2	2.2	2.3	2.3	1.5	1.5	1.9
Learning to use the survey software was easy for me.	1.7	1.7	1.7	1.7	1.8	2.4	2.1	2.2	2.1	2.2	1.5	1.5	1.9
It was easy to get the software to do what I want done	1.5	1.9	2.0	1.8	1.9	2.1	2.3	2.3	2.2	2.5	1.5	1.6	1.9
Using the survey software does not require a lot of mental effort.	1.5	1.7	1.8	1.6	1.6	2.3	2.0	2.3	1.7	2.1	1.4	1.5	1.9
It would be easy for me to become skillful in using the online survey.	1.5	1.8	1.6	1.5	1.8	1.9	1.7	1.9	2.2	1.9	1.5	1.7	1.9
Setting up the survey's e-mail link was a snap	1.3	1.4	1.5	1.9	1.9	1.4	1.9	2.0	2.1	2.0	1.1	1.6	1.6
Summed score	M=1.6 SD=0.9	M=1.6 SD=0.7	M=1.6 SD=0.9	M=1.7 SD=.2	M=1.7 SD=0.8	M=1.9 SD=1.1	M=1.9 SD=1.0	M=2.0, SD=1.2	M=2.1 SD=1.2	M=2.1 SD=1.3	M=1.4 SD=0.6	M=1.5 SD=0.9	M=1.8 SD=0.99

Each scale item was measured using a 5-point Likert scale, with 1 = - strongly agree, 2 = agree, 3 not sure, 4 = disagree and 5 = strongly disagree.

Time to Complete the Survey. Table 5 shows the mean time students took to open an account, create a 3-item survey, and create a link to a survey for each of the 13 survey vendors. Overall, the mean time was 10.8 minutes (SD=6.1 minutes). Using the data in Table 5, a one-way ANOVA compared the time to complete the online survey between all 13 providers ($F=21.01$, $df=12$, $p<.00$) suggesting that the mean time to complete the 13 projects are different. The Tukey HSD=2.61, $p=.05$ identifies Qualtrics as the project taking the most time.

Table 5:

Time (minutes) to complete the survey project (n=187)

Project tools									
Question Pro	Survey Gizmo	Poll Daddy	Qualtrics	Zap Survey	Question Form	Form Site	Kwik Surveys	Survey Methods	Fluid Surveys
M=9.29 SD=5.8 2	M=10.5 SD=7.0	M=10.8 SD=6.6	M=19.0 SD=14.3	M=10.3 SD=6.0	M=11.7 SD=8.0	M=10.9 SD=8.2	M=9.5 SD=4.4 1	M=11.5 SD=7.4	M=10.0 SD=6.6
Demonstration tools									
Free Online Surveys	Survey Monkey	eSurveys Pro							
M=8.68 SD=6.5	M=10.7 SD=7.1	M=10.1 SD=6.1							

Relationship between Direct and Indirect Measures of Student Achievement

A regression model was developed to assess the relationship between the sole direct measure (time to complete a survey) and the nine indirect measures drawn from the two scales (ease of use and look and feel). The scales ease of use (7 items) and look and feel (5 items) were used in a stepwise multiple regression analysis to predict time to construct and online survey. The correlations of the variables are shown in Table 6. As can be seen, variable #2 to #7 report medium to high correlations ($.57 < r < .81$) indicating a possible collinearity problem.

Table 6:
Correlations of the 'ease of use' and 'look and feel' scale items (n=187)

Variable	2	3	4	5	6	7	8	9	10	11	12	13
1.Time to complete survey	-.08	.09	-.07	.10	.41*	.18*	.02	.07	-.15*	.09	.07	-.01
2.User account setup	--	.68*	.70*	.57*	.50*	.61*	.47*	-.09	.43*	.52*	.14*	.60*
3.Survey software interaction		--	.84*	.85*	.73*	.83*	.61*	-.00	.50*	.70*	.23*	.75*
4.Learn software			--	.80*	.62*	.81*	.48*	-.15	.20*	.58*	.21*	.80*
5.Manage software				--	.72*	.77*	.48*	-.00	.49*	.63*	.29*	.77*
6.Software uses little mental effort					--	.80*	.34*	-.15	.20*	.41*	.22*	.46*
7.Easy to be skillful						--	.49*	-.08	.39*	.55*	.28*	.64*
8.E-mail link							--	.00	.49*	.55*	.28*	.62*
9.Look and feel								--	.26*	.18*	.39*	.16*
10.Compatible fonts and colors									--	.60*	.48*	.78*
11.Easy to read web pages										--	.48*	.63*
12.Media elements enhance webpages											--	.29*
13.Navigation												--

*Significant correlation ($p < .05$)

The prediction model contains four of the twelve predictors and was reached in four steps with eight variables removed. The model is statistically significant, $F(4, 182) = 23.77$, $p < .001$, and accounted for approximately 34% of the variance of the time to complete the survey project ($R^2 = .343$, Adjusted $R^2 = .329$). 'Time to complete the survey in minutes' is primarily predicted by ease of using the survey software and ease to setup an account and to a lesser extent by mental effort to complete the survey and the survey's look and feel. The raw and standardized regression coefficients of the predictors together with their correlations with self-esteem, their squared semi-partial correlations, structure coefficients, and variance inflation factors are shown in Table 8. Use of mental effort to complete the survey received the strongest weight in the model (Beta=.76) and to a lesser extent ease to learn the survey software (Beta=-.37), website look and feel (Beta=.20), and setting up the user account (Beta=-.18). With the sizeable correlations between the predictors (from Table 7), the Variance Inflation Factors range between 1.13 and 2.65 put to rest concerns about multicollinearity (see Cohen et al, 2003, p.423). The unique variance explained by each of the variables indexed by the squared semi-partial correlations are relatively low with the exception of mental effort: mental effort, ease to learn the software, website look and feel and setting up the user account uniquely accounted for approximately 33%, 5%, 4%, and less than 2% of the variance of time to complete a survey in minutes. Inspection of the structure coefficients suggests that mental effort to complete a survey is a very strong indicator of time to complete the survey project. The latent factor represented by the model appears to be highly influenced by student mental effort and with the other three independent variables may be interpretable as intuitiveness.

Table 7:
Model to Predict Student Project Completion Time (n=187)

Model	<i>b</i>	SE- <i>b</i>	Beta	Pearson <i>r</i>	sr ²	Structure Coefficient	Variance Inflation Factor
Constant	2.24	2.24					
6.Software uses little mental effort*	7.68	.80	.76	.41	.33	.70	1.75
4.Learn software*	-4.41	1.16	-.37	-.07	.05	-.12	2.65
9.Look and feel*	1.96	.62	.20	.07	.04	.12	1.13
2.User account setup*	-1.76	.85	-.18	.08	.015	.14	2.05

Note. The dependent variable is 'time to complete survey in minutes.' $R^2=.343$, Adjusted $R^2=.329$, sr^2 is the squared semi-partial correlation.
 * $p<.05$

Discussion

Before discussing this study's findings, it is worthwhile noting the small sample size as an inevitable shortcoming that would benefit from a larger sample of student participants. Nonetheless, the observed consistency between each vendor's popularity-importance rank (see Table 1), student preferences regarding 'look and feel' (see Table 3) and 'ease of use' (see Table 4) offer a reasonable level of confidence in the findings.

Free Web-Based Survey Vendors

Examination of each vendor's home page suggests three distinct vendor product differentiation strategies in play. Most of the vendors include well-known Fortune 500 corporate users on their home page (Kwik Surveys, Form Site, Survey Monkey, Free Online Surveys, Survey Gizmo, Poll Daddy, Fluid Surveys, eSurveys Pro), other focus on Academe (Qualtrics) whilst others focus on their core service (QuestionPro, Zap Survey, Survey Methods, Question Form).

As reported in Table 2, for a typical student project, all vendors offer 2 or more surveys with 10 or more questions per survey (except for *Question Form* with 2 and *Form Site* with 5). If the student project is likely to generate up to 100 responses per month, then vendors offering a lower response limited should be avoided (*Zap Survey, Form Site, and Free Online Surveys*).

If students are the target sample for an online survey, then the most appropriate surveys based on student attitudes to the look and feel of each survey as reported in Table 3 suggest that *Survey Methods* is best as a project tool. For in-class project use, the results in Table 4 identify *Question Pro* as the students' overall most favored (ease of use) Project Tool. If more than 2 surveys are to be created, or more than 10 questions per survey, then *Survey Gizmo* would be the preferred tool. For Demonstration Tools, *Free Online Surveys* as the most favored, though if over 50 and fewer than 100 responses are expected, then *Survey Monkey* would be selected. The average time students took to open an account, create a 3-item survey and create a link to a survey was 10.8 minutes (see Table 5) which underscores the user friendly nature of all the vendor's services and therefore allowing the instructor to confidently invite students to set-up their online vendor account, create the survey based on items supplied by the instructor or created by the students and create the link to the survey for respondent use.

Student Preference

The latent factor 'intuitiveness' derived from the model predicting student project completion time (the time a student takes to setup an account, create a three-item web-based survey, and secure the survey's link) offers construct validity given the model's heavy dependence on mental effort (Table 7) that is part of the TAM, offering user interface engineers pause for thought. From a descriptive perspective, focusing on the variable mental effort in Table 5 would rank *Free Online Surveys* (score=1.4) and tied for second are *Question Pro* and *Survey Monkey* (score=1.5).

Results from Tables 2, 4 and 5 show consistency between the various methods to rank the survey vendors. For student demonstration purposes, *Survey Monkey* (highest popularity and importance rank, best look and feel and second best ease of use) is the preferred tool. For student projects, *Question Pro* (fourth highest popularly, second best 'look and feel' and best 'ease of use') is likely the best choice.

Whether the instructor selects *Question Pro* for a student project, or *Survey Monkey* for student demonstration purposes, these and the other highly rated free vendor-hosted online survey tools offers students the opportunity to engage and focus on the issues directly involved with primary research without having to learn scripting languages, or worry about the compatibility or maintenance of survey software. The results of this exploratory study provide instructors a measure of confidence in the use and reliability of free vendor-hosted online surveys for student demonstration and project use. The services are relatively easy to setup and use, and might well offer students additional satisfaction by being empowered to manage the entire online survey process.

Conclusion

Using this study as a spring board, additional work comparing undergraduate and graduate students would help refine the findings, as well as an examination of all the question types offered by each vendor. Other studies might consider a larger sample of vendors using fee-based services and the advantages and disadvantages among them given most vendors offer a student/academic discount. Naturally, a study on fee-based services would be of interest to scholars in Marketing and other disciplines.

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