

## Website quality for SME wineries: Measurement insights

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### Abstract:

#### Purpose

The study aims to offer a general review of website evaluation, with particular application to the winery tourism field. Automated website evaluation is explored as a complementary tool in the evaluation of small and medium enterprise (SME) winery websites.

#### Design/methodology/approach

The study adopted a mixed-method investigation including a critical review of winery website evaluation literature and analysis of winery website scores generated through a free service of a commercial automated evaluation scoring system.

#### Findings

No standards currently exist for winery website evaluation metrics and current evaluation processes suffer from human rater bias. An automated evaluation scoring system used in the study was able to discriminate between a sample of known best practice websites and other independently formed samples representing average wineries in the USA and in North Carolina.

#### Research limitations/implications

Wineries and other small business tourism firms can benefit by incorporating automated website evaluation and benchmarking into their internet strategies. Reported human rater limitations noted in manual evaluation may be minimized using automated rating technology. Automated evaluation system metrics tend to be updated more frequently and offer better alignment with trending consumer expectations for website design.

#### Originality/value

The current study used an automated website quality evaluation tool that serves to move winery website design efforts forward and supports the goals of reputation management for tourism businesses relying on internet marketing.

**Keywords:** Evaluation | Tourism | Quality | Website | Internet | Winery

**Article:**

## **1. Introduction**

Business websites elicit a mix of multisource impressions and reactions from diverse stakeholders. More specifically, a tourism operator's website resides in the internet space and can be accessed by users who both interact with the site and react to the quality of the site. The quality of the website is a factor that contributes to reputation; much as an operator's physical facility is assessed within a geographic landscape.

Key stakeholders include operators themselves, who are trying to control external perceptions of the business. Next are visitors, who will make critical impression and consumption decisions based on website content and services (Wiseman and Ellig, 2004). Third-party government agencies and professional associations frequently authenticate tourism businesses in their regions. They can, for example, regulate which tourism websites are linked into their portal or central network. Web designers influence websites when they compete for projects and design awards (Simmons *et al.*, 2011). Lastly, a tourism website is central to employees' perceptions of company strategy, market status and how the business fits into the greater tourism destination.

Website evaluation is a natural extension of reputation management for tourism businesses. This study is predicated on the increased importance of the website as a tourism communication tool driving reputation both in terms of multichannel marketing and stakeholder responsiveness.

However, research, to date, is spotty, and there is little consensus about the website evaluation process, particularly with respect to ensuring rater competency. In fact, rater types vary widely across existing studies, including end users (Pang *et al.*, 2009), Web development or usability professionals (Korgaonkar *et al.*, 2009) and student evaluators or academic researchers (Dragulanescu, 2002). Moreover, website evaluation techniques being used are reported as problematic because of biases in human judgment. Emerging evidence points to the use of automated website evaluation as a tactic to reduce the degree of rater error in website evaluation. This paper explores the use of automated Web evaluation as a feasible practice for assessing winery website quality.

Wineries are a high-value tourism sector, yet tend to be family run or small in size, as well as geographically isolated; they are highly dependent on the internet to increase visibility and drive sales and reputation (Canziani and Byrd, 2014). The study has meaning for any tourism business where bricks-and-mortar facilities are difficult to engage with on a regular basis. The study uses a free automated website rating system to collect discrete and global measures of winery websites.

## 2. Literature review

### 2.1 Defining website quality and website evaluation

*Website quality* can generally be defined as conformance to specified expectations of stakeholders. Various steps for website evaluation have been suggested (Olsina *et al.*, 2000; Rocha, 2012), which are abridged as follows:

#### 2.1.1 Step 1: verify that the organization exists in the relevant domain.

The domain selected, i.e. *.edu*, *.gov* or *.com*, must fit the organization hosting the website. The site domain *.com*, for example, suggests an organization within the commercial sector. There is accepted variability in website design across domain sectors (Simmons *et al.*, 2011), yet the expectation in this paper is that winery operators compete under the *.com* umbrella, as it signals commercial activity.

#### 2.1.2 Step 2: apply rational criteria to website evaluation.

Website design and concomitant evaluation are criteria-driven; criteria and methods for website evaluation evolved over time because of technological advances and recognition of societal needs (Saha and Grover, 2011, p.15). Website design has advanced across five sequential themes depicted in Figure 1: usability, information/content, interactivity (Web 2.0), mobility/integration and more recently the semantic intelligence promised by Web 3.0. These five stages are not discrete constructs but rather indicate evolving foci over the history of website and ecommerce development.



Figure 1.  
Five sequential  
themes of website  
quality

Usability dominated much of the earlier Web development literature (Chen *et al.*, 2009; Selz and Schubert, 1998; Srivihok, 2000). Nielsen (2000) related *usability* to the quality of the technology interface between company and users. The International Organization for Standardization explicitly recognizes three dimensions of *usability*: efficiency (the level of resource consumed in performing tasks); effectiveness (the ability of users to complete tasks using the technology and the quality of output of those tasks) and satisfaction (users' subjective satisfaction with using the technology) (ISO 9241-11, 1998).

Usability has been linked to the subsequent success of ecommerce (Nielsen, 2000; Shneidermann, 1998). Palmer (2002) reported that five usability factors (download delay, navigability, content, interactivity and responsiveness) positively correlated with consumers' frequency of use, likelihood of return and user satisfaction. From usability work, *information quality*, i.e. type and display of content, was spun off from *system quality*, i.e. site design factors that are more technical in nature (Heldal *et al.*, 2004; Miranda and Bañegil, 2004; Rabin,

2001; Robbins and Stylianou, 2003). During this period, a majority of firms explored moving catalogs online and expanding shopping cart and search engine functionality.

The third discrete focus in website design to arise was interactivity, spurred by Web 2.0 innovations (Auger, 2005; Bland, 2009; Simon, 2010); consumers could now expect to respond to businesses by using the website itself as a two-way communication system. Innovations related to interactivity thinking included increased *accessibility* for users (Power *et al.*, 2009) and the deployment of *user-generated content*, i.e. comments and blog entries. The next design theme, mobile readiness of websites, refers to supporting the use of smaller devices capable of accessing the internet, such as phones and tablets (LoPresti *et al.*, 2014). Lastly, the advent of Web 3.0 promises search capabilities that simulate semantically natural conversation linking the user into a vast global intelligence network.

Changes in technology are not unduly disruptive in terms of designing tourism websites, as prior criteria continue to be mandatory for website design even while new foci and criteria come into play (Pearrow, 2000). However, small and medium enterprise (SME) tourism businesses tend to have steeper learning curves and longer implementation timeframes because of restricted time and resources for ecommerce development and technology adoptions.

### ***2.1.3 Step 3: pursue reliable global measures of website quality.***

A single website quality score is advantageous, as it can be more easily used for comparing oneself to industry standards and competitor websites. For example, Elliot (2002) introduced a system where specific features of a website are scored and an overall quality mark is calculated from the discrete metrics and used to rank the website compared to other sites. Some researchers have adapted a service quality framework to website evaluation, as in SITEQUAL (Yoo and Donthu, 2001); eQual (Barnes and Vidgen, 2005); E-S-QUAL (Parasuraman *et al.*, 2005); E-SEQUAL (Petre *et al.*, 2006); WebQual (Loiacono *et al.*, 2007); and NetQual (Bressolles and Durrieu, 2010).

## ***2.2 The virtues of automated website evaluation***

The extant literature has concluded that, at a minimum, a website evaluation method needs to provide trustworthy guidance to firms. Stevens and Burns (2005, p. 73) suggested that “technical content [in manual website assessments] was not worth reporting possibly due to the technical nature of a website being harder to observe without significant programming ability”. They call for an evaluation approach that actively manages the role of the rater and attempts to reduce rater error.

Palmer (2002), an early adopter of automated Web checking procedures, believed these may be cost-effective and viable tools either to complement or in the absence of reliable raters. Other advantages of automated tools include reduction of rater fatigue and objectivity and independence from local circumstances or bias (Kincl and Štrach, 2013). Ivory and Hearst (2001, p. 471) summarized the advantages of automation over non-automated evaluation as follows: reducing evaluation costs, increasing consistency of errors uncovered, predicting time and error costs across an entire website, reducing the need for expert evaluators, increasing the coverage of

evaluated features, supporting comparisons between alternative designs and incorporating evaluation within the design phase of website construction. Automated evaluation methods are effective from a threefold perspective of being:

- useful in producing relevant results for stakeholders;
- viable in terms of moderate resource use; and
- consistent across multiple implementations of the tool (Brajnik, 2004).

According to Ford *et al.* (2012) and Vaucher *et al.* (2013), automatic website checking tools have become widely deployed in many business sectors and can be used to inspect numerous aspects of website construction and usability, including source code, functioning Web page attributes and content, usage statistics, server performance and search engine positioning.

Based on the aforementioned discussion, research is merited on how to better evaluate tourism website design, particularly for small businesses that depend on websites as their number one outreach and marketing tool. Study research goals are to increase the literature in this area by piloting an automated assessment of winery websites. Wineries clearly represent the small tourism business sector and are growing in numbers across many rural sectors of the world.

### ***2.3 Background on the winery sector***

A majority of wineries are small- to medium-sized operations (SMEs), which forces wineries to be cautious in spending on marketing and related technology. Wineries do not have ready streams of cash flow to meet the burden of technical license fees or to support specialized technical staff to manage websites and social media strategies. Thus, websites of SME wineries tend to evolve over time, adding increased functionality in phases as funds permit (Simmons *et al.*, 2008).

Winery tourists are highly educated, technology-literate and motivated to acquire detailed product knowledge and information (Houghton, 2008), leading wineries to allocate funding to website design. In addition, social media is increasingly being incorporated into site design (Alonso *et al.*, 2013). Websites are particularly important in attracting specific audiences, i.e. wine club members, younger consumers and non-local tourists, who tend to generate word-of-mouth reputational intelligence and contribute authentic website content through blogging and testimonials. Websites further enable wineries to use interactive Web 2.0 technologies to embellish their image and brand, e.g. virtual winery tours, story-telling and educational videos, virtual wine tasting and social media networking (Thach, 2009).

### ***2.4 Background on winery website evaluation***

A review of the winery tourism literature revealed only 24 studies relevant to winery website quality (Begalli *et al.*, 2009; Bernet and Stricker, 2001; Bruwer and Wood, 2005; Davidson, 2009; Farshid *et al.*, 2012; Janes, 2010; Mills *et al.*, 2012; Murphy *et al.*, 2005; Notta and Vlachvei, 2013; Nowak and Newton, 2008; Quinton and Harridge-March, 2006; Reyneke *et al.*, 2011; Sellitto *et al.*, 2003; Taylor *et al.*, 2010). The limited reference list is likely because of the present focus on winery website quality rather than on ecommerce in general.

No standards currently exist for winery website evaluation metrics; the number of different site metrics/items evaluated ranged from 4 to 95 across the 24 articles. Almost one half of the studies (11) used simple presence ratings to score website features, i.e. being “there” or “not there”. Only 3 of the 11 studies using presence ratings (Velikova *et al.*, 2011; Yuan *et al.*, 2004; Zhu *et al.*, 2009) explicitly stated that the researchers calculated global website ratings from the “yes/no” metrics. Nine of the 24 studies used either Likert-type scales or some other more complex scoring device to assess individual feature quality and compute global measures. Types of raters reviewing winery websites in the literature ranged across academic researchers browsing selected sample winery websites (12); consumer groups testing websites (5); and use of automated evaluation applications available for purchase or as free assessment services (4). The use of identified experts from the Web development field seemed to be minimal, although one study (Petre *et al.*, 2006) reported supplementing academic rater evaluations with usability consultants in a second phase of their study.

### ***2.5 Validating Website Grader® in the winery context***

Validating an automated tool in the context of winery websites is a key step in understanding the usefulness of such tools for the industry. One such tool is the Website Grader® by Hubspot, a marketing and sales software company; their free service supplies the following four subtotal metrics as well as a global evaluation score from 0 to 100:

1. *Performance (of 30 points)*: Examining site’s page size, requests, speed and more.
2. *Mobile Readiness (of 30 points)*: Checking to see if website is mobile-friendly in terms of responsiveness and viewport settings.
3. *Search engine optimization (SEO) (of 30 points)*: Determining if website is easy to find – by both humans and bots. This determination will take factors like page titles and meta-descriptions into consideration.
4. *Security (of 10 points)*: Looking for things like an SSL certificate as a way to prove to visitors that the site is both authentic and safe for contact information submissions (Shah, 2015).

It is worth noting that, with respect to the evolution of website design depicted in Figure 1 (usability, information content, interactivity, mobility and intelligence), this tool concentrates heavily on usability with some attention to mobility issues. Effectiveness of marketing content and dynamic features of Web 2.0 and 3.0 are not evaluated by the tool. General automated tools tend to focus on technical aspects because of these being relevant regardless of industry sector and being more difficult for non-technical business professionals to evaluate on their own.

Evaluation is generally comparative in nature, as the tool rates a single winery’s website or a group of websites against a desirable standard score or against competitor wineries. In this study, the evaluation of North Carolina websites was part of a greater winery marketing investigation effort. Nonetheless, the study helps exemplify how a scoring tool might help a “client” address the quality of its websites. A valid scoring tool should be able to discriminate between best designs and average designs. Because best-practice wineries are described as such on the basis of highly ranked design features, one expects a set of best practice websites to exhibit higher

evaluation scores when compared to a sample of randomly selected North Carolina winery websites. Such a disparity is not expected between a random set of North Carolina websites and a random set of US websites, as the design ranking was not a sampling factor in the latter case.

Given this study's focus on supplementing human rater evaluation of websites with automated evaluation methods, the following hypotheses were designed to validate the global scores produced by the deployed webcrawler:

### ***Hypotheses***

*H1.* The mean performance of a random sample of North Carolina winery websites would be significantly lower than the mean performance of a set of best practice winery websites. *H2.* The mean performance of North Carolina winery websites would not differ significantly from the mean performance of a random sample of winery websites from outside the state.

## **3. Research methodology**

### ***3.1 Sampling design***

The initial sampling frame constituted the URLs of 140 wineries in the State of North Carolina listed on the state tourism portal. The NC sample comprised a random sample of 72 usable websites, i.e. wineries in the data set had a clear, independent Web presence, a unique domain and the website's sub-pages were accessible to the webcrawler. A benchmark comparison set of 20 top US winery website URLs identified from an independent blog source, i.e. The Winery Web Site Report (Duffy, 2006). Table I lists the elements reportedly used by The Winery Web Site Report with best-practice wineries attaining a minimum of 75 points out of 100 compared to a mean and median of 48 points across 2,000-plus winery sites.

A control sample of 65 website URLs was composed by randomly sampling publicly available government or state trade association winery lists in the following states: California (15), New York (14), Colorado (11), Virginia (15) and Oregon (10).

### ***3.2 Data collection using the automated webcrawler scoring system***

Website quality was assessed in this study by using the Website Grader<sup>®</sup> by Hubspot (Shah, 2015). After one inputs the winery URL, the webcrawler begins at a winery's homepage. For a hypothetical NC Vineyards, the process starts at [www.NCVineyards.com/](http://www.NCVineyards.com/) and accesses sub-pages to generate global scores of 1 to 100 as well as scores for performance, SEO, security and mobility. Table II provides the breakdown of evaluated components and weightings that underlie these four rated dimensions (Shah, 2015).

The metrics deployed in both Tables I and II are based on standards used to develop secure and usable electronic commerce websites and also conform to metrics identified in previous studies cited in this paper, practitioner journals and the researchers' experience in website usability consulting. Overlap between the original scoring of The Winery Website Report and the Website

Grader<sup>®</sup> exists, in that approximately half or more of measured items relate to the usability dimension of website quality.

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	Rating element	Maximum score
<b>272</b>	Branding/identification	5
	Compatibility	5
	Contact information	3
	Domain name	3
	Freshness	4
	Information: current releases	6
	Information: past releases	3
	Media: media kit	4
	Navigation: buyers	5
	Navigation: browsers	5
	Navigation: trade	4
	Navigation: media	3
	Navigation: consistency	5
	Navigation: site map	5
	Navigation: link to home page	5
	Newsletter	1
	Obstacle-free	5
	Personalization	4
	RSS	4
	Responsiveness and availability	1
Search rank	5	
Shipping information	5	
Site search	1	
Trade: marketing materials	4	
Visual appeal	5	
Overall score	100	

**Table I.**  
Best-practice wineries scoring method  
**Source:** Duffy (2006)

### 3.3 Statistical analysis

SPSS Version 23 was used to test hypotheses. To test *H1*, the study sample was compared to 20 top US winery websites. Second, in a test of *H2*, the study sample was compared to a control sample of 65 US winery websites.

## 4. Results

### 4.1 Validating an automated scoring system against best practice and control samples

*H1* and *H2* were focused on validating the usefulness of the automated tool in the context of wineries using NC wineries as a hypothetical “client” and comparing their results to best practice wineries and to targeted standard scores defined by the tool itself. To assess criterion-related validity NC wineries were compared against independently ranked best-practice winery websites. Figure 2 provides a quick look at the differences in total scores (out of 100 points) of the NC sample ( $\bar{x} = 55.06$ ), the top website groups ( $\bar{x} = 63.75$ ) and a random control sample of US wineries ( $\bar{x} = 60.27$ ).



Means comparison tests using SPSS Version 23 were used to test the hypotheses. Best-practice wineries had overall higher website quality compared to the NC wineries sample (Table III), with a significant mean difference of 8.69 in the overall website score ( $t = -2.198$ ;  $p = 0.034$ ), providing support for *H1*. The primary factor that that set apart the best practices was their mobile technology platform which exceeded the average NC winery by 10.04 points.

Component	What this means and why it matters	Weighting	Website quality for SME wineries
<i>Performance – 30 points, broken down as follows</i>			
Page size	The heavier the page, the slower the load. For optimal performance, try to keep page size below 4MB	5 pts	
Page requests	The more HTTP requests your website makes, the slower it becomes. Combine files to minimize the number of requests made	5 pts	<b>273</b>
Loading time	Best-in-class pages should load within 3 seconds. Any slower and visitors will abandon your site, reducing conversions and sales	10 pts	
Browser caching	Browser caching speeds up your website by storing frequently used content in local memory. Dynamic caching keeps content fresh	3 pts	
Page redirects	Page redirects add an additional loading cycle, increasing the time to display the page	2 pts	
Image compression	When JavaScript and CSS resources are fit and trim and properly compressed, it makes your website run much faster	3 pts	
Render blocking	JavaScript and CSS can slow websites down. Remove or defer JavaScript and CSS that interferes with loading above-the-fold content	2 pts	
<i>Mobile – 30 points, broken down as follows</i>			
Responsive	Responsive design gives you a bump in search rankings for search on mobile devices	15 pts	
View ports	Viewports let you control your page width and scale on different device types	15 pts	
<i>SEO – 30 points, broken down as follows</i>			
Page titles	Page titles should be no longer than 70 characters in length and not repeat keywords	10 pts	
Meta descriptions	Meta descriptions should be no longer than 155 characters in length and should be relevant to the page	5 pts	
Headings	Heading tags distinguish headings from core page content	5 pts	
Sitemap	Site maps help users navigate your site quickly and easily	10 pts	
<i>Security – 10 points, broken down as follows</i>			
SSL certificate	SSL certificates protect websites from attacks and give visitors more confidence that your site is authentic and trustworthy	10 pts	

**Table II.**  
Breakdown of Website Grader® evaluation components

Source: Adapted from Shah (2015)

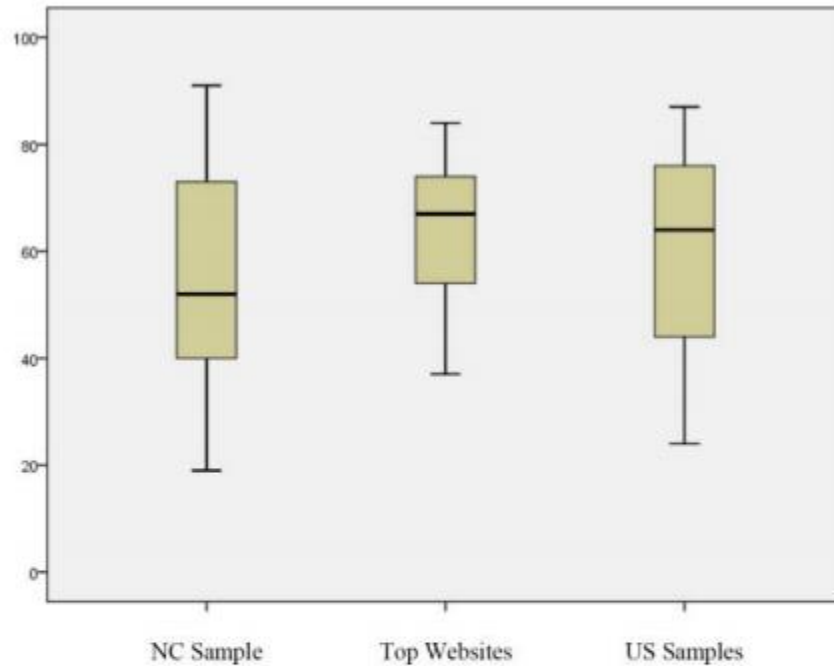
Means comparison tests using SPSS Version 23 were used to test the hypotheses. Best-practice wineries had overall higher website quality compared to the NC wineries sample (Table III), with a significant mean difference of 8.69 in the overall website score ( $t = -2.198$ ;  $p = 0.034$ ), providing support for *H1*. The primary factor that that set apart

The results found in Table IV have us to also accept *H2*. An average group of NC wineries did not perform differently in overall score performance from a random sample of wineries from other states. Mobile readiness was still observed to be lower in the NC sample.

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274

**Figure 2.**  
Sample distributions  
on overall Web  
quality score across  
three winery samples



**Table III.**  
Comparison of mean  
scores between North  
Carolina winery  
websites and best-  
practice websites

	Type of wineries sampled				<i>t</i>	<i>p</i> value
	North Carolina wineries ( <i>N</i> = 72)		Best-practice ( <i>N</i> = 20)			
	Mean	SD	Mean	SD		
Overall score	55.06	19.232	63.75	14.498	-2.198*	0.034
Performance	22.00	4.152	22.15	3.360	-0.148	0.882
Mobile	13.96	14.534	24.00	11.309	-3.285*	0.002
SEO	17.29	7.958	14.60	7.224	1.364	0.176
Security	1.81	3.873	3.00	4.702	-1.042	0.248

Note: \*Significant at *p* less than or equal to 0.05

## 5. Conclusion

A review of the literature led to the validation of a free generic automated tool in the context of winery website evaluation. Because no consensus existed in the winery tourism literature regarding a preferred approach to website evaluation, standardized measures were sought that would support the website design trends depicted in Figure 1. One goal was to locate a website evaluation tool that would be useful to SME tourism practitioners, in light of the growing use of internet marketing by many SME wineries which comprise the majority of units in the USA. Also, work reported to date in winery website evaluation showed that human rater bias impacts decisions about website quality. The lack of an acceptable routinized tool for evaluating website

quality is limiting on the winery field itself, as it does not clarify or balance the foci that are important in website design.

Website Grader<sup>®</sup> was used with a sample of wineries to collect global and subset measures of winery website quality. A comparison of means indicated that the sample of NC wineries scored lower in website quality than a sample of independently recognized best-practice websites, but did not perform significantly differently overall from a random sample of US winery websites. Findings did indicate a tendency for NC wineries to be less mobile-friendly than other wineries scored in this study, suggesting that the state’s wineries were not moving as rapidly in upgrading their websites to adopt latest technologies.

### 5.1 Implications for tourism practitioners

Wineries, like many tourism businesses, have a strong desire to reach expanded audiences, yet many wineries cannot afford to invest blindly in Web designs. The automated webcrawler has several critical features that support benchmarking: *multidimensionality* in terms of industry-relevant, user-critical and Web expert-defined metrics; *rater consistency* [being automated]; and *scoring complexity* in offering both discrete and overall measures. Supported by global and sub-metric measures, Web development staff can use results to refine individual website components. The degree to which usability features and SEO dominate the automated evaluation of websites is clearly a factor in determining the usefulness of automated tools. This study provides evidence that the automated tool can be a valid method for rating both usability and mobile platform support. Given the research in the technical literature, the preference for reducing human rater error through automation, as well as the winery literature’s insufficient evidence of recommended evaluation techniques, the use of a tool such as Website Grader<sup>®</sup> is worth considering.

	Type of wineries sampled				<i>t</i>	<i>p</i> value	
	North Carolina Wineries ( <i>N</i> = 72)		US sample ( <i>N</i> = 66)				
	Mean	SD	Mean	SD			
Overall score	55.06	19.232	60.27	17.107	-1.678	0.094	<b>Table IV.</b> Comparison of mean scores between North Carolina winery websites and control sample
Performance	22.00	4.152	20.80	4.333	1.657	0.100	
Mobile	13.96	14.534	19.55	13.664	-2.321*	0.021	
SEO	17.29	7.958	16.89	7.273	0.306	0.760	
Security	1.81	3.873	3.03	4.631	-1.677	0.096	

Note: \*Significant at *p* less than or equal to 0.05

Wineries can also ascertain competitive positions against comparison groups, as seen by the various hypotheses tested in the present study. Thus, at the individual level, the scoring tool provides useful data about how each winery website generally performs and offers insight as to what improvements would be warranted based on review of specific metric scores against targeted standard scores. And, overall scores provide a basis for comparing two or more wineries against each other or a set of wineries against another as in current examinations of North Carolina wineries.

## ***5.2 Limitations and future research***

This paper is focused primarily on assessing websites. The study does not assess overall internet strategy of a winery or website impacts on ecommerce outcomes. There were considerable restrictions on information reported from the free service because of the commercial nature of the evaluation tool. Thus, while the validation of the tool for winery websites is satisfactory, the level of detail available for making actual improvements or recommendations was severely limited in a practical sense. Furthermore, the use of a primary sample in North Carolina was dictated by broader research goals focusing on winery tourism within the state. However, no evidence emerged during this study to indicate that using North Carolina as a “client” was in any way inadequate as a pilot test of the automated evaluation tool.

Future research is still required on website design and evaluation. In particular, it is desirable to verify if the automated tool is complete within itself or only complementary to other types of website evaluation. Other foci of website design, such as relevance of content to various users and interactivity (user-generated content and accessibility), demand increased attention in the website evaluation field. Future research can be particularly beneficial as one takes into consideration evolving social media measures available from services such as TripAdvisor, Yelp and Facebook. Also, further research can help define exactly what about automating the evaluation process is better than human judgment, beyond its ability to manage a large set of quality metrics or reducing undesirable levels of human fatigue and increasing rater reliability. Research on the aggregation of metrics into global scores will continue to be an area of interest for all types of tourism website evaluations. Furthermore, future research is needed to expand site benchmarking for wineries and for other tourism subsectors, e.g. tour guides or bed and breakfasts, to support these small businesses that depend on websites for their marketing and promotions. This is particularly true when the business is in a rural district, as many wineries are due to the nature of their business, i.e. agritourism.

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