Abstract: Land-grant universities were established with a tripartite mission:
education, research, and outreach through the Cooperative Extension Service. The purpose of the study reported here was to evaluate the online presence and technological adoptions of Extension on land-grant university, college of agriculture, and state Extension websites. Almost half of the university websites did not contain a direct link to Extension, and only 10% highlighted Extension services. Many state Extension websites had some form of social media, but only 45% had a link to eXtension. The results demonstrate the need to expand Extension's Internet presence, particularly on land-grant university websites.

Introduction

Land-grant universities were established with a tripartite mission: to educate, to conduct research, and to disseminate information to the public through the Cooperative Extension Service (Extension) (USDA, 2011b). This mission has endured since the Smith-Lever Act was passed in 1914, but in many states, Extension is struggling to continue its services due to budget cuts and changing priorities within the legislative system (Verea-Hammond, 2004). Extension personnel are working to keep Extension relevant and research based, but part of the problem may lie in a general lack of public knowledge and presence of Extension, particularly in the online environment (Abrams, Meyers, Irani, & Baker, 2010; Seger, 2011; Rader, 2011). A recent article indicated that only 25% of Ohio residents were familiar with Extension (Loibi, Diekmann, & Batte, 2010). A similar poll conducted with Alaskan residents indicated that while 73% of the sample population had heard of Extension, that number dropped to only 16% among respondents ages 18-29 years old (Dittman Research & Communications Corporation, 2010).

Diem, Hino, Martin, and Meisenbach (2011) found Extension professionals in Oregon were interested in using technologies to expand audiences, but reported doing so was a barrier to work responsibilities. One national initiative to improve public communication of Extension was the development of eXtension in 2008, an educational website aimed at connecting university resources and experts to the community (eXtension, 2012). This communication channel, in addition to other technologies, should be used to expand the public presence of Extension.

Literature Review and Framework

Extension personnel acknowledge that Extension must do more to market itself and its programs. As Rader (2011) stated, "Extension's websites are so unpopular, those who seek research-based, unbiased information will likely not find it." Research has
highlighted the need to promote improved awareness and knowledge of Extension to the public (Abrams et al., 2010; Debord, 2007; Kalambokidis, 2011; Varea-Hammond, 2004). Kalambokidis (2011) discussed the importance of communicating the public value of Extension to users and non-users of its services. The *Marketing of Cooperative Extension* guidebook was created to assist Extension in its marketing efforts to increase public funding and support (Varea-Hammond, 2004).

The DAGMAR (Defining Advertising Goals for Measured Advertising Results) marketing model proposed by Colley (1961) outlines four stages of customer product acceptance that can be useful for Extension to consider in its promotional strategies. The stages are defined as:

1. Awareness: The customer must be aware the product, service, or organization exists.

2. Comprehension: The customer must have an understanding of the benefits and utility of the product.

3. Conviction: The customer must have a preference to buy the brand.

4. Action: The customer selects the product or service.

The model states that consumers are at different stages due to varying levels of understanding. Emphasis focuses on building a customer base through communication rather than working backwards from numerical goals such as sales or number of participants (Colley, 1961; Jones, 1994). Assessing awareness of Extension is one of the first steps to building its public presence and increasing communication efforts. Colley (1961) explained the awareness stage is not simply an initial understanding that the product or service exists; it refers to getting a customer's attention and sustaining awareness during market fluctuations and competition. This awareness must be created and sustained within a target audience or focus and interest will decline.

**Methods**

The purpose of the study reported here was to evaluate the online presence and technological adoptions of Extension on university, college of agriculture, and state Extension websites. The objectives were to: (1) identify the presence of Extension on university and college of agriculture websites and (2) identify the technologies that state Extension websites used for promotion. The population consisted of the 108
land-grant universities as defined by the USDA.

The sample included 51 land-grants, excluding 1890s, 1994s, and schools outside of the United States (USDA, 2011a). University and college websites were evaluated on a numerical system outlined in a user-created code book based on the following criteria: if they contained a direct link to Extension on the primary page (dropdown menus under titles such as "outreach" were accepted), the number of clicks required to reach the Extension website, and if the website highlighted, featured, or described Extension and/or the tripartite mission. State Extension websites were assessed on the use of technologies featured on the homepage, including, but not limited to, social media, photos, videos, a slide show, or eXtension. Three researchers used the coding workbook to compile the data. Ten websites were coded simultaneously and compared among researchers to ensure inter-rater reliability (Ary, Jacobs, Razavieh, & Sorensen, 2006). Descriptive statistics, including means and frequencies, were calculated.

Results

Of the university websites evaluated, 51% (n = 26) had a direct link to Extension on their main website. On average, a user had to click 1.42 times to reach an Extension site, but 20% (n = 13) of the universities had no obvious link on the homepage (such as through an "outreach," "extended university," or "public service" tab). Ten percent (n = 5) of the universities highlighted Extension through pictures, advertisements, or program spotlights; 29% (n = 15) provided some type of definition or explanation of the tripartite mission and/or Extension. On average, college of agriculture websites required 1.25 clicks to reach an Extension website, but seven of those websites had no obvious link or access to Extension.

Overall click frequencies are outlined in Table 1. Twenty-nine percent (n = 15) of college websites had an Extension highlight, and 39% (n = 20) provided some type of definition or explanation of the tripartite mission and/or Extension. Of the state Extension websites evaluated, 75% (n = 38) used Facebook, 61% (n = 31) used Twitter, 32% (n = 16) had a livefeed, 45% (n = 23) had a YouTube page, and 37% (n = 19) utilized some other form of social media (such as a blog, Flickr, Vimeo, or LinkedIn). Thirty-three percent (n = 17) had some type of video on their main webpage, 78% (n = 40) had a picture related to an Extension activity, 43% (n = 22) had a rolling slide show, and 45% (n = 23) offered an eXtension link. Table 2 provides a summary of technologies used to promote Extension across all websites.

Table 1.
Number of Clicks Needed to Access a State Extension Website From Main University/COA Homepage (N=51)

<table>
<thead>
<tr>
<th>Website type</th>
<th>One click % (n)</th>
<th>Two clicks% (n)</th>
<th>Three Clicks% (n)</th>
<th>No obvious link% (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>University</td>
<td>45(22)</td>
<td>27(13)</td>
<td>2(1)</td>
<td>25(12)</td>
</tr>
<tr>
<td>College of Agriculture</td>
<td>67(34)</td>
<td>18(9)</td>
<td>2(1)</td>
<td>14(7)</td>
</tr>
</tbody>
</table>

Table 2.
Media University/COA/State Extension Websites Use to Promote Extension (N=51)

<table>
<thead>
<tr>
<th>Website Type</th>
<th>Highlight Extension% (n)</th>
<th>Description% (n)</th>
<th>Slide Show% (n)</th>
<th>Video% (n)</th>
<th>eXtension% (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>University</td>
<td>10(5)</td>
<td>29(14)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
</tr>
<tr>
<td>College of Agriculture</td>
<td>29(14)</td>
<td>39(19)</td>
<td>0(0)</td>
<td>0(0)</td>
<td>0(0)</td>
</tr>
<tr>
<td>State Extension</td>
<td>0(0)</td>
<td>0(0)</td>
<td>43(21)</td>
<td>33(16)</td>
<td>45(22)</td>
</tr>
</tbody>
</table>

Conclusions

Although Extension is a major part of the mission of every land-grant university, only half of the main university websites have a direct link to Extension services, and fewer than 30% provided an explanation of the tripartite mission and/or Extension. Most university websites showcased education and research on their main page, but only 10% highlighted Extension services. Colley’s (1961) DAGMAR model demonstrated the need for awareness and comprehension of a service; however, the majority of university websites evaluated did not meet those goals. College of agriculture websites had generally better results, but 14% (n = 7) made no mention of Extension. The majority of state Extension websites had adopted some sort of social media to promote their services, but only 45% had a link to eXtension, a disappointing number compared with the 75% adoption rate envisioned by eXtension.
leaders (Harder & Lindner, 2008).

**Recommendations and Implications**

As the founding body of Extension, land-grant universities should be doing more to promote Extension to the general public, particularly those with no knowledge of its services. Land-grant university websites are well established and heavily trafficked, making them an obvious choice for expanding the online presence of Extension. In many cases, understanding Extension's outreach goal through its corresponding university website would have been virtually impossible. Universities and colleges must work to ensure Extension links are deliberately placed and obvious to consumers who may or may not know about the types of outreach the land-grant system provides. Most websites already have a system in place to promote the land-grant mission, such as a scrolling slide show, which would provide an ideal outlet. Extension should be marketed as part of that mission through pictures and descriptions. Additionally, Extension professionals must be educated on current technologies to reach new audiences and prioritize its use rather than encounter it as a work barrier (Diem, Hino, Martin, & Meisenbach, 2011).

While most of the state Extension websites were easily navigable and well maintained, 20% did not have descriptive pictures, slide shows to add visual interest, or video links. Given Extension's struggle to stay technologically current (Diem et al., 2011), the under-utilization of eXtension links was disappointing. On a positive note, a large majority did utilize some sort of social media, a step in the right direction to keep Extension relevant across age groups. All university, colleges, and Extension programs should continually evaluate their websites for public presence. Regardless of the marketing model adopted by Extension, the message is clear: Extension's Internet presence must be expanded.

**References**


new technologies to deliver extension programming and how to address them.

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