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Facebook Closed Group Surveys Can Provide Representative Data in Certain Situations

Abstract

As hog producers worldwide faced challenges related to porcine epidemic diarrhea (PED), a web-based survey was used to better understand Taiwanese hog farmers' use of a Facebook closed group (FCG) for communication and to determine whether Extension professionals could use an FCG as an effective survey tool. The study found that the FCG sample appeared to be largely representative of Taiwanese hog producers overall. This finding may have been partly due to the impact of PED, which led many producers to be highly engaged at the time. This endeavor offers a good example of how Extension can collect and disseminate information through an FCG.

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Introduction

Porcine epidemic diarrhea (PED) syndrome infects the small intestines of pigs and causes severe diarrhea and dehydration. PED is highly infectious and leads to extremely high levels of morbidity and mortality. PED typically leads to sickness and weight loss in older pigs but more often to death in newborns within 5 days. Therefore, PED can create a significant economic burden for producers. PED is widespread not only in the United States but also in European countries. Moreover, it is an increasing challenge for Asian countries, such as Korea, Japan, China, Taiwan, Philippines, and Thailand.

The first PED outbreak in Taiwan was announced in November 2013, and the peak of the outbreak seemed to occur during January and February 2014. Therefore, providing information to Taiwanese hog farmers and helping them deal with the highly infectious virus became one of the most important issues for Extension programming at that time. Prior to the PED outbreak, Taiwanese hog farmers had been challenged by low market prices and high feed costs since the end of 2012. As a result, many had been using a Facebook closed group (FCG) to share and exchange information as they dealt with these financial challenges. The closed group option was attractive because

information shared could not be seen by nonmembers. Every member was required to have approval to enter the Taiwanese hog farmer FCG so that members could receive and share information among themselves. As of March 2014, there were 1,034 members in the Taiwanese hog farmer FCG. Most members were second- or third-generation hog farmers. If Extension professionals could use the FCG as a potential tool for educating hog farmers, they might be able to lessen the impact of the PED outbreak. A key question in determining the effectiveness of the FCG centered on how representative the farmers using the FCG were of the overall Taiwanese hog farmer population.

Facebook is an easy tool to adopt and use for information sharing. Originally, Facebook users were able to send messages, chat, tag photos, and comment back and forth with one another (Occhino, 2009). More recently, Facebook users also can use features such as private or public pages; open, closed, or secret groups; online games; statuses; and member locations. These features allow members to discuss both private topics and public topics that are of concern. Members also can easily receive feedback/information from other members or specific groups. Many researchers already are devoting more effort to the development and application of social networking media such as Facebook (Doyle & Briggeman, 2014; Hill, 2014; Mains, Jenkins-Howard, & Stephenson, 2013; Skrabut, 2014; Ferree, 2015). Although many potential advantages for Extension programming via Facebook are possible, it is unclear how much interest exists among Extension professionals in using this tool. Further investigation is needed to determine whether surveys via Facebook would provide solid samples, and making that determination was the primary purpose of the study reported here.

Ellison, Steinfield, and Lampe (2007) point out that relationships and connectivity among members in the offline world can be supported by a connection on Facebook. However, although potential benefits exist, face-to-face Extension contact cannot be fully replaced by online Extension programming. Still, using Facebook has the potential to help Extension professionals meet the demands of additional audiences (Mains et al., 2013). Many Extension researchers still have questions about the features of Facebook and its potential contribution to Extension. On the Taiwanese hog farmer FCG, all members can express their opinions and comments, but it is obvious that some are actively sharing information whereas others are largely observing. Therefore, this study moved beyond observation by surveying members of the Taiwanese hog farmer FCG to determine their interest in participation and comparing those responding on Facebook to the overall Taiwanese hog farmer population. This methodology allowed the authors to consider the effectiveness of Facebook as a sampling strategy.

Methods

Instruments

After joining the Taiwanese hog farmer FCG in January 2014, over 90% of FCG members were discussing topics related to PED and strategies for dealing with the situation. However, most strategies involved considerable uncertainty on the part of the producers. Therefore, the authors developed a 10-min web-based survey consisting of 15 questions to sort out the information for each farm as a quick method for finding out an appropriate strategy. Questions related to "PED case

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confirmed," "when did it occur," "how severe," "what are the current strategies," and "expectation of government assistance" and demographic questions were included in the survey. The survey was established via Google Form, which can provide a link for respondents to easily complete the survey. To make sure the questions were understandable, the survey was pretested with two Taiwanese hog producers known personally by one of the authors. Both have been in the hog industry for over 20 years. After the pretest, the web-based survey received approval by the FCG manager for posting on the FCG on March 7, 2014, and was closed on March 21, 2014.

Procedure

Google Form was used to set up a link by which to share the survey on the FCG. This study was not funded, and no incentives were provided to FCG members upon completion. The primary aims were to gather information and share outcomes with Taiwanese hog farmer FCG members and to determine how similar those respondents were to the overall population of Taiwanese hog farmers. To ensure the uniqueness of respondents, it was asked that only one representative from each farm fill out a survey. Therefore, it was assumed that only one response per farm was received.

Results

As mentioned previously, Taiwanese hog farmers were given 2 weeks to complete the survey. If respondents did not complete the survey, that observation was considered a failed observation and was not recorded. Google Form surveys cannot track uncompleted surveys, so calculating a response rate is not possible when using this instrument, but a total of 96 responses were received. The authors attempted to compare the Facebook survey with the official data source (Council of Agriculture, 2014) to determine how representative the Facebook survey data are of the overall Taiwanese hog industry. It is interesting to note that the percentage of hog farms in each region in the country is similar between the two data sources (Table 1). Specifically, more responses were received from regions 5 and 7, which are the two largest regions in terms of hog farms. The two data sets with respect to each region can be found in Table 1. Also the identification of each region can be found in Figure 1.

Based on farm size, the official data and the sample survey data exhibit a slight difference in the total number of head per farm. However, both of the highest frequencies are concentrated at the range of 1,000–1,999 head in both data sets. The frequencies above 5,000 head also are similar between the official data and sample data. Combining the number of hog farms in each region with the number of hogs per farm suggests that the survey data seem to represent the official data reasonably well.

Table 1.

Comparison Between Official and Sample Data on Respondent Location and Number of Head per Farm

Variable	Official Distribution (%)[a]	Sample Distribution (%)

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Region[b]		
1	3.03	1.04
2	3.03	4.17
3	14.91	3.12
4	15.10	16.67
5	18.79	40.62
6	16.41	13.54
7	28.72	20.83
Head per Farm		
1–499	11.89	2.08
500–999	21.35	13.54
1,000–1,999	25.44	31.25
2,000–4,999	17.72	30.2
5,000–9,999	10.28	12.5
10,000-plus	13.32	10.42

[a]The official distribution refers to the Council of Agriculture (2014) Statistic Reports.
[b]Region 1 consists of Taipei City, New Taipei City, and Keelung City; region 2 covers Yilan County and Hualien County; region 3 consists of Taoyuan County, Hsinchu County, and Miaoli County; region 4 covers Taichung City, Changhua County, and Nantou County; region 5 consists of Yunlin County and Chiayi County; region 6 covers Tainan City and Kaohsiung City; region 7 consists of Pingtung County and Taitung County.

Figure 1.

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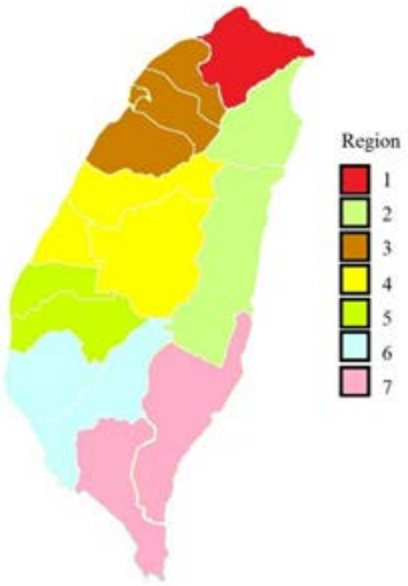
Using Region Number to Identify the Representative Sample



Discussion and Implications

The authors attempted to gather information via the Taiwanese hog farmer FCG and to determine how representative that sample is of all hog farmers in Taiwan. It was encouraging to see that the distribution of the surveyed respondents was very similar to Council of Agriculture data. This similarity may have been largely due to the fact that the PED outbreak generated a common topic among FCG members and led to increased willingness for hog farmers to share information and seek solutions. The findings of this study suggest that quality web-based survey data can be achieved through the use of an FCG. This likely is a tool that Extension professionals can use when they need to collect or disseminate information in a timely manner.

References

Council of Agriculture (2014). Statistic reports. Retrieved from http://agrstat.coa.gov.tw/sdweb/public/book/Book.aspx

Doyle, M., & Briggeman, B. C. (2014). To like or not to like: Social media as a marketing tool. *Journal of Extension* [Online], *52*(3). Article 3IAW1. Available at: http://www.joe.org/joe/2014june/iw1.php

Ellison, N., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook "friends": Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication*, *12*(4), 1143–1168. doi:10.1111/j.1083-6101.2007.00367x

Ferree, R. (2015). Facebook groups improve volunteer communications. *Journal of Extension* [Online], *53*(1). Article 1TOT3. Available at: http://www.joe.org/joe/2015february/tt3.php

Hill, P. (2014). "Connecting" with your clients [on Facebook]. *Journal of Extension* [Online], *52*(2). Article 2COM2. Available at: http://www.joe.org/joe/2014april/comm2.php

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Mains, M., Jenkins-Howard, B., & Stephenson, L. (2013). Effective use of Facebook for Extension professionals. *Journal of Extension* [Online], *51*(5). Article 5TOT6. Available at: http://www.joe.org/joe/2013october/tt6.php

Occhino, T. (2009, September 10). *Tag friends in your status and posts*. Retrieved from http://blog.facebook.com/blog.php?post=109765592130

Skrabut, S. (2014). Save time and increase social media reach by using IFTTT—If this, then that. *Journal of Extension* [Online], *52*(5). Article 5TOT2. Available at: http://www.joe.org/joe/2014october/tt2.php

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