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Abstract

Social marketing involves applying traditional commercial marketing techniques to public good outcomes. We share findings from use of this approach in reaching woodland owners to promote sustainable forestry in southwest Wisconsin. We experimentally tested three direct mail campaigns. Each included two offers—a free handbook and a free forester visit, but the campaigns varied in terms of landowner segments and marketing messages. Key results across the campaigns include consistent performance of the offers (handbook 17%–19%, forester visit 3%–5%) but varied effects of segment and message. Our results suggest that social marketing can pay dividends in reaching landowners and, potentially, other Extension clientele, but there is more to learn.

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Introduction

Covering 107 million ha, family forests are critical to forest sustainability. These lands are key sources of timber supply and provide myriad ecosystem services. However, the extent to which these lands are

intentionally managed toward maintaining or enhancing these or other beneficial outcomes is limited. Of the 10 million landowners nationally, only 4% have prepared a written management plan and 14% have asked for the advice of a resource professional (Butler, 2008). Because of the lack of prevalence of such actions, invasive species, poor harvesting practices, or uninformed decisions may adversely affect forests and threaten the interests of both landowners and society.

These potential threats and a commitment to forest sustainability have led the forestry community, through public policy and private endeavors, to target resources (incentives, education, etc.) toward improving forestry practices. Forestry Extension educators have explored a range of engagement pathways that assist landowners in achieving their goals or advance broader public policy goals (e.g., Catanzaro, Markowski-Lindsay, Milman, & Kittredge, 2014; Joshi, Grebner, Henderson, & Gruchy, 2015; Straka & Franklin, 2008). The challenge faced by the forestry Extension community in effectively reaching target audiences and moving them toward action is not unique. Extension educators and other professionals across diverse domains can face similar challenges in promoting educational and engagement strategies that enhance individual or societal well-being. One tool that has emerged in accessing outreach audiences is social marketing (Skelly, 2005). In this article, we share findings from a large-scale field test involving use of this approach for reaching family forest owners. The findings illustrate the potential and challenges of using social marketing to reach an important, but not necessarily engaged, audience.

Social Marketing

Social marketing involves applying traditional commercial marketing techniques to public good outcomes (Weinreich, 2011). Early practice and research primarily focused on public health outcomes (Grier & Bryant, 2005), but both practice and research have spread to other domains, including environmental protection and natural resources management (McKenzie-Mohr, 2011). In the context of family forests, social marketing has generally been focused on using social science data to better understand landowners and thereby implement more effective engagement strategies. Notable early work applied social marketing to stewardship planning to target those owning very small parcels in New England (Tyson, Campbell, & Grady, 1998).

Social marketing in practice is an iterative process of data-driven refinement and targeting for the purpose of achieving specific behavioral outcomes (Weinreich, 2011). As is the case for many domains whose practitioners and researchers are interested in behavior change, the forestry literature is rich in studies that identify and segment landowners—key steps in social marketing (e.g., Fischer, Kline, Charnley, & Olsen, 2012; Kendra & Hull, 2005). Of note, the work by Butler et al. (2007) exemplifies these steps and stands out as offering actionable insights for two reasons. First, through segmenting landowners using data from the National Woodland Owners Survey, the researchers found four distinct subgroups present throughout the United States. Second, they recognized that any engagement strategy requires prioritization and modeled "prime prospects" to identify those who are most likely to engage in active management.

Lacking in the literature, if not in practice, though, are efforts that move these foundational elements (i.e., landowner segments) into social marketing campaigns and test the efficacy of such approaches. Since 2011, the Driftless Forest Network (DFN), through My Wisconsin Woods, has been doing just this. In this article, we present the results of three direct mail social marketing campaigns that sought to reach landowners with little or no previous engagement in forestry.

The DFN "Laboratory"

The DFN is a collaboration of local, state, and national partners working to increase landowner engagement in the Driftless Area in southwest Wisconsin (Greenberg, Koshollek, & Rickenbach, 2012). Applying and testing social marketing techniques intended to move landowners toward active forest management is central to the DFN's activities. As such, the Driftless Area is a laboratory in which to test various engagement strategies that typically include marketing campaigns presenting landowners with some type of offer (e.g., free woodland handbook, free forester visit). The DFN's offers are not tied to specific ecological outcomes; rather, they are intended to promote the adoption of any practice that might contribute to good forest stewardship.

Social marketing requires some degree of targeting that links a marketing message and offer to a select group (i.e., segment) who might find the message and offer attractive. To help identify segments, the DFN relies on an extensive landowner database. Data include public records on landownership (i.e., property tax information), purchased marketing data (i.e., individual- and household-level sociodemographic and marketing measures), DFN partner data (e.g., organizational memberships), and action and relationship data (e.g., response to campaigns, history of follow-up communications and action). Analyses of these data allow the DFN to identify and select segments that should be more likely to respond to a particular message and offer, over simply relying on a generic message and delivery to a random sample of landowners. Herein, we share (a) the results of three social marketing campaigns and the relative effects of message, offer, and segment in reaching family forest owners and (b) descriptions of how those marketing campaigns evolved. Taken together, the results and details about the evolution of the campaigns provide useful insights for operationalizing and learning from social marketing campaigns to advance engagement by landowners, and presumably other Extension clients.

Methods

Over an 18-month period, the DFN completed three direct mail social marketing campaigns. The common threads across all three campaigns were (a) two distinct offers, (b) standard four-wave mailing, and (c) experimental design to test response. Varied across the three campaigns were segment (i.e., the characteristics of those selected to receive a mailing) and the messaging frame used on the materials to encourage response. The common threads are described next, followed by descriptions of designs and results of the campaigns and explanations of how information gained from each campaign served as groundwork for the next.

Offers

Landowners were randomly assigned to one of two possible promotions: a free visit by a My Wisconsin Woods forester who would walk the land with the owner or a free woodland handbook. The responding My Wisconsin Woods forester was either associated with the DFN or employed by the Wisconsin Department of Natural Resources. The goals of a forester visit were to help the landowner better understand his or her land and to offer recommendations for future actions. The handbook is a full-color, 80-page softbound book that provides basic forest ecology and management information (Swenson, 2010). When a forester visit or handbook was requested, DFN staff scheduled the visit or sent the handbook as appropriate.

Four-Wave Mailing

Each campaign followed a four-wave approach (Table 1), similar to that used in survey research (Dillman, Smyth, & Christian, 2014). First-class postage was used for each wave of mailings. When a recipient accepted an offer, no further waves were sent. Campaigns were conducted in spring 2012, fall 2012, and fall 2013.

Table 1.
Descriptions of Direct Mail Campaign Mailings

Wave	Mailing piece	Mailing date	Description
1	Postcard		Full-color 5" × 7" postcard. Serves to introduce My Wisconsin Woods and the partnership with the Driftless Forest Network. Alerts landowner to more information/offer arriving in mail soon.
2	Brochure (offer #1)	~1 week out	Full-color 6" × 17" quad-fold self-mailer. Each part has a purpose: providing a reason for the contact/creating a void in landowner's mind, introducing the offer, making the offer, and building credibility for the Driftless Forest Network. Includes perforated postage-paid reply card.
3	Letter (offer #2)	~3 weeks out	Personal letter addressed to landowner and signed by either My Wisconsin Woods forester or handbook author. Envelope includes two inserts: (a) a postage-paid reply card and (b) an "info card" containing a forester photo/bio or a landowner testimonial for the handbook. Intent is to connect to the landowner on a personal level, reducing potential feelings of intimidation by putting a face to the name or building credibility for the handbook as a resource.
4	Brochure (offer #3)	~6 weeks out	Identical repeat of touch 2/offer 1.

Experimental Design

Each campaign was a discrete experiment of offer acceptance (forester visit or handbook), followed by analysis of the effects on offer acceptance of landowner segmentation (all three campaigns) and message framing (first two campaigns). Statistical analyses of each campaign included a chi-square goodness-of-fit test to assess differences by offer and a logistic regression model to test for effects of segment and message frame on each offer. Odds ratios were calculated for significant segments, message frames, and interaction effects. The

different experimental designs are summarized in Table 2 and further described in the "Campaign Designs and Results" section. In reporting results, we interpret significance and indicate level of significance ($p < .10$, $p < .05$, and $p < .01$). Data were analyzed through the use of SAS/STAT software, version 9.4 of the SAS System for Windows.

Table 2.

Descriptions of Landowner Segments and Message Frames by Campaign

Effect	Spring 2012		Fall 2012		Fall 2013	
	Level (#)	Description	Level (#)	Description	Level (#)	Description
Segment	2	NWOS typologies: (a) working the land, (b) woodland retreat	3	Landholding size categories: (c) small, (d) medium, (e) large	3	Hunting score categories: (f) low, (g) medium, (h) high
Message	2	(i) general, (ii) wildlife	3	(i) general, (ii) wildlife, (iii) financial	1	(iv) hunting

Note. NWOS = National Woodland Owners Survey.

Campaign Designs and Results

Spring 2012 Campaign

Questions

Our research questions were as follows: Does acceptance differ by offer? Do broad segments and aligned messages increase offer acceptance?

Design

Preliminary survey data and analysis identified and segmented two primary audience typologies from the National Woodland Owners Survey (Butler et al., 2007). The "working the land" and "woodland retreat" types accounted for, respectively, 50% and 44% of landowners in the study area. The spring 2012 campaign targeted these two segments and followed a 2-by-2 between-subjects experimental design for each offer (see Table 2). Sample size per cell (i.e., unique combination of segment and message) ranged from 422 to 434, with a total of 3,417 (Table A1). Each mailing piece was tied to a message and offer, and the two messages (general benefits of woodlands and wildlife focus) were designed so that each would be more attractive to one of the segments.

Results

The free handbook offer was accepted at a rate roughly 4 times that of the free forester visit offer (Table 3). In estimating the experimental segment and message effects, we found that neither was significant for the handbook offer and only segment (i.e., landowner typology) was moderately significant for the forester offer (Table 4). Those landowners segmented as "working the land" had odds of accepting a free forester visit 1.2 times more than those segmented as "woodland retreat." Interaction effects were not significant for either offer.

Table 3.

Comparison of Offer Acceptance by Campaign

Campaign	Handbook		Forester visit		Chi-squared	Odds ratio
	Percentage	<i>n</i>	Percentage	<i>n</i>		
Spring 2012	19.2%	1,700	5.3%	1,717	153.5***	4.2
Fall 2012	16.9%	1,004	5.1%	1,006	72.3***	3.8
Fall 2013	18.4%	1,499	2.8%	1,497	192.3***	7.8

****p* < .01.

Table 4.

Main and Interaction Effect Wald Chi-Squared Scores (Type 3) for Individual Models by Offer and Campaign

Effect	Handbook offers			Forester visit offers		
	Spring 2012	Fall 2012	Fall 2013	Spring 2012	Fall 2012	Fall 2013
Segment	0.0044	5.3082a*	1.0046	3.0281c*	0.0345	0.0153d**
Message	0.6577	0.2319		0.3005	1.1516	
Interaction	0.2891	8.1189b*		2.0642	6.8965	

aThose owning medium-sized parcel are more willing to accept handbook, large-sized parcels, less willing. bThose owning large-sized parcels are more willing to accept handbook with financial message, less willing for general. cThose segmented as "working the land" are more likely to accept forester visit. dThose segmented as having high hunting scores are more likely to accept forester visit.
p* < .10. *p* < .05.

Fall 2012 Campaign

Question

Our research question was as follows: Are there alternative segmenting approaches, in particular landholding size, and associated messages?

Design

Post-hoc analysis of the spring 2012 campaign indicated that although National Woodland Owners Survey typology was a significant factor in offer acceptance, limits in acquired data prevented segmentation of all landowners in the database. The post-hoc analysis also showed that the key factor driving whether someone was segmented as "working the land" or "woodland retreat" was the size of his or her landholding: 10–24 ac and 25–96 ac, respectively. Landholding size is a long-recognized factor in models of landowner behavior (Hatcher, Straka, & Greene, 2013). Hence, for the fall 2012 campaign, we used landholding size category to segment landowners (small = 10–24 ac, medium = 25–96 ac, large \geq 97 ac). To reflect the potential financial interest of those owning larger parcels, we added a financial message to the original two messages (i.e., general benefits of woodlands and wildlife focused). The resulting design for each offer had two experimental effects (segment and message) with three levels for each effect (see Table 2). Initial sample sizes for the cells varied due to limited numbers of landowners in the different landholding size categories. Across the three categories (small, medium, and large), sample sizes ranged from 86 to 154 per offer, with a total sample of 2,010 (Table A1). The range is wide due to the limited number of medium and large ownerships in the broader population.

Results

Similar to the spring 2012 campaign, handbook offers were accepted at nearly 4 times those for forester visits (see Table 3). Unlike the previous campaign, there were no significant main or interaction effects for the forester offer and for the handbook offer, segment (i.e., parcel size) and interaction effect were moderately significant (see Table 4). Compared to those in the small landholding segment, those in the large landholding segment were 1.3 times less likely to accept the handbook offer and those in the medium segment were 1.3 times more likely to accept the handbook offer. There were more pronounced effects, however, within the large landholding segment (i.e., interaction effects). Those in the large landholding segment receiving the financial message had odds of accepting the handbook 1.4 times higher than those in the large landholding segment receiving the wildlife message. Also for the large landholding segment, landowners receiving the general message were 1.7 times less likely to accept a handbook than those receiving the wildlife message. In essence, for those owning large parcels, the financial message outperformed the wildlife message, which, in turn, outperformed the general message. No other interaction effects were significant.

Fall 2013 Campaign

Question

Our research question was as follows: Does more targeted messaging within a segment affect offer acceptance?

Design

Results from the previous two campaigns suggested that there was a consistent trend in offer response and

that segment, more than message, was a factor in acceptance. However, the success of the financial message with the large landholding segment suggested a linkage between segment and message, which was of continued interest to the DFN. For fall 2013, the emphasis would be on a single message: hunting (as opposed to the three messages used previously). Segments of landowners representing three hunting interest levels—low, medium, and high—were identified through a hunting interest score that was part of the purchased marketing data. The hypothesis was that those with a higher hunting score (i.e., greater hunting interest) would be more likely to take an offer. The sample size for each segment was approximately 500, with a total of 2,996 (Table A1).

Results

As with the previous two campaigns, acceptance of the handbook offer exceeded that of the forester visit, but, in this case, by a factor of nearly 8 times (see Table 3). The difference in offer acceptance between the third campaign and the previous campaigns is reflected in the poor acceptance rate for the forester offer, which was less than 3%. The effect of segment on response was highly significant for the forester offer, but not for the handbook (see Table 4). Those with a high hunting score were 1.9 times as likely to accept the forester offer as those with a medium hunting score.

Discussion and Implications

Taken together, these three campaigns reflect the DFN's intention to apply social marketing toward family forest owner outreach and engagement. Key results include the consistent performance of the two offers (i.e., free forester visit and free handbook) and the inconsistent effects of segment and message frame.

Offer Performance

Across all three campaigns, landowners accepted the free handbook more frequently than the free forester visit. Although the forester visit might be considered to have higher value (i.e., hourly cost to hire a forester), it also presents a higher investment threshold for the landowner. For example, a landowner must navigate the logistics of setting up the visit and the opportunity cost of spending time with the forester versus doing something else. Moreover, although a forester visit is expensive, a landowner may not appropriately value it if the landowner is not sufficiently interested in forestry or his or her land at that time. For the handbook offer, the landowner returns a postcard and receives a handbook a week or so later. The landowner is not obligated to read or do anything with the handbook; thus, this is a much simpler exchange. The value to the DFN of a forester visit is that it can provide a clear deliverable: direct forester contact with a landowner on his or her land. It also offers the potential for creating a personal relationship between the landowner and a forester, a basis on which to develop a deeper tie that would be expected to lead to active management. A landowner's acceptance of the handbook potentially creates a relationship between the landowner and My Wisconsin Woods and offers the opportunity for the DFN to engage that landowner in the future with a different offer (e.g., free forester visit, e-newsletter subscription).

An important goal of the DFN is to explore possible pathways that lead to active forest management by family forest owners by attempting to meet landowners where they are and move them forward through a series of interventions along those pathways. As we note above, the forester offer—and similar "high-demand" offers such as cost shares, peer mentors, and so on—may be too much too soon for some landowners. Further work

of the DFN and others interested in using social marketing might involve identifying a particular mix of "low-demand" interventions (e.g., handbook, e-newsletter, occasional check-ins) that could facilitate uptake of "higher demand" offers. Notably, the three campaigns presented here relied on a recipient's willingness to engage professional services or to read, as opposed to other offers that might target different learning styles and engagement preferences (Hujala, Pykäläinen, & Tikkanen, 2007). This approach represents a shift from how Extension, state agencies, and others think about their outreach activities. The question shifts from "What was the impact of my specific workshop or visit?" to "How does my intervention help move my target audience toward active engagement in the desired behavioral or attitudinal change?"

Segment Versus Message

Somewhat surprisingly, segment and message had inconsistent effects on offer acceptance. When main effects were significant, they were always associated with segment. The message frame was not significant in either of the two campaigns that included different messages. The former finding suggests that certain segments are more likely to respond to offers than other segments. The latter finding, lack of a message effect, suggests that no specific message outperformed another across all segments and campaigns.

Of course, the ultimate goal of market segmentation is to develop message frames that are more appealing to members of specific segments. Given the designs of our first two campaigns, significant interaction effects would indicate that message frames were connecting with specific segments. This outcome was evident in the fall 2012 campaign, in which the financial message resonated with those owning more acres. For the fall 2013 campaign, the message was targeted toward hunters, and the main effect suggests that the forester offer connected most with those having high hunting scores. This situation might be termed modest success, but it also suggests that additional work on message frame development (e.g., creation, pretesting) could yield still higher responses. At the same time, findings for the fall 2013 campaign also indicate the downside of a mismatched segment and message frame, as that campaign had the lowest overall forester offer acceptance rate of the three campaigns. A marketing message targeted toward a specific segment may not appeal to others. Worse, it may be viewed as negative, which could have a negative effect on the brand (in our case, My Wisconsin Woods).

Key elements not tested in the three DFN campaigns were promotion—either through offer or message—of a specific desired forestry practice, such as timber harvesting or invasive species removal, and specific ecological outcomes, such as oak restoration or deer habitat. Target activities were referenced in communications with landowners but not identified as desired outcomes. This is a direction DFN could pursue, but doing so would represent a shift in strategy. There is a difference between encouraging "good forest stewardship" and encouraging something more specific. First, a generic stewardship message is applicable to nearly all forest owners. More targeted outcomes likely will require better targeted marketing based on ecological conditions as well as demographic ones. In addition, connecting message and segment is more crucial for practices and outcomes that require more active and intense management activities (e.g., timber harvesting, tree planting). Therefore, it is all the more important to thoroughly test and develop messages, approaches, and timing before fielding this type of campaign. The DFN is moving in this direction for two reasons. First, we believe we have developed sufficient knowledge and experience to do so. And, second, the funding organizations (e.g., U.S. Department of Agriculture Forest Service and Wisconsin Department of Natural Resources) are interested in specific ecological and behavioral outcomes.

Conclusion

The DFN began with a novel premise: Apply social marketing techniques to reach family forest owners through large-scale field trials. Carrying out this endeavor required unprecedented coordination among agencies and organizations and new ways of doing business (Greenberg et al., 2012). The results presented here reflect some of the initial learning that emerged from careful design, testing, and measuring of performance. Our results are promising and suggest that "unengaged" landowners are interested in forest management and that social marketing can pay dividends. However, more work is needed to determine when social marketing might be most effective in reaching Extension audiences.

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Appendix

Numbers of Mailings

Table A1.

Numbers of Mailings Sent for Each Campaign by Offer, Segment, and Message

Campaign	Segment	Message	Offer		Total
			Free handbook	Free forester visit	
Spring 2012	Typology	General (i)	426	427	853
		Wildlife (ii)	426	425	851
	Woodland retreat (b)	General (i)	422	431	853
		Wildlife (ii)	426	434	860
	Total			1,700	1,717

Fall 2012	Ownership size				
	Small (c)	General (i)	128	139	267
	Medium (d)	General (i)	99	86	185
	Large (e)	General (i)	103	95	198
	Small (c)	Wildlife (ii)	133	136	269
	Medium (d)	Wildlife (ii)	110	93	203
	Large (e)	Wildlife (ii)	87	102	189
	Small (c)	Financial (iii)	147	154	301
	Medium (d)	Financial (iii)	100	99	199
	Large (e)	Financial (iii)	97	102	199
Total			1,004	1,006	2,010
Fall 2013	Hunting score				
	Low (f)	Hunting (iv)	500	500	1,000
	Medium (g)	Hunting (iv)	500	498	998
	High (h)	Hunting (iv)	499	499	998
Total			1,499	1,497	2,996

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