Indiana Nonprofits:
Information Technology Resources and Challenges

KIRSTEN A. GRØNBJERG AND PAYTON A. GOODMAN
WITH SARAH DYER

March 2019

INDIANA NONPROFIT SURVEY: ROUND III

ACTIVITIES Series #2
Report 1

INDIANA NONPROFITS PROJECT:
SCOPE & COMMUNITY DIMENSIONS

A JOINT PRODUCT OF
The Lilly Family School of Philanthropy
AND
The O'Neill School of Public and Environmental Affairs
Indiana University Bloomington

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INTRODUCTION

What challenges are Indiana nonprofits facing today? How are they utilizing information technology as government policies, funding streams, and organizational priorities change? How do these patterns vary by nonprofit field of activity, size, or funding profile?

This report on **Indiana Nonprofits: Information Technology Resources and Challenges** is based on a major survey of Indiana nonprofits conducted by the Indiana Nonprofits Project in 2017. Two previous rounds of surveys were conducted in 2002 (Round I), and 2007 and 2010 (Round II). The current report is the first in a series of reports on nonprofit activities (Series 2) based on the most recent Round III survey of Indiana nonprofit organizations. This report answers the following urgent and important questions regarding IT infrastructure: to what extent do Indiana nonprofits utilize **information technology** and what challenges do they face in using these types of resources?

Indiana Nonprofits Project

The *Indiana Nonprofits Project: Scope and Community Dimensions* began in June 2000 and since then has produced a substantial body of research. The project is designed to provide information about the nonprofit sector in Indiana: its composition and structure, its contributions to Indiana, the challenges it faces, and how these features vary across Indiana communities. The goal of this collaborative research effort is to help community leaders develop effective and collaborative solutions to community needs and to inform public policy decisions.

The project is directed by Kirsten Grønbjerg, Efroymson Chair in Philanthropy at the Lilly Family School of Philanthropy (LFSOP - IUPUI) and Distinguished Professor at the O'Neill School of Public and Environmental Affairs Indiana University Bloomington. Under the guidance of the Project's distinguished Advisory Board[1] the Project has produced a variety of materials to inform policymakers, nonprofit administrators and boards, and Indiana residents, including:

- Nonprofit Surveys: Our research team has surveyed Indiana nonprofits to learn how they operate, how they contribute to the state's economy and its quality of life, and how they face and overcome challenges.
- Nonprofit Employment Analysis: Our research team has examined trends in paid nonprofit employment in Indiana including the size, composition, and distribution of employees.
- Local Government Officials Analysis: Our research team has analyzed how local government officials view important nonprofit-related policy issues including

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[1] See https://nonprofit.indiana.edu/AboutTAB/index.html

government trust of nonprofits, collaboration, awareness of 2-1-1 services, and support for PILOT and SILOT policies.

- Community and Regional Analysis: Our regional analysis describes the impact, scope, and composition of nonprofits in specific Indiana communities and regions.

For a full description of the Project and access to all Project reports, please visit https://nonprofit.indiana.edu. A summary of project components is also included in Appendix C.

Indiana Nonprofits Survey – Round III

The Indiana Nonprofits Project received survey responses from 1,036 nonprofits in Indiana from April 2017 to February 2018, reflecting an overall response rate of approximately 24 percent. Of these, 397 nonprofits were part of a "panel" of nonprofits that also responded to our 2002 Round I survey, and 639 came from a new randomly selected "primary" sample developed specifically for this survey (see Appendix B for a description of the sampling strategies).

For the "primary" sample, respondents were randomly selected from three major nonprofit listings: nonprofits (1) registered with the IRS as tax exempt entities with Indiana reporting addresses, (2) incorporated with the Indiana Secretary of State as not-for-profit corpora-tions, or (3) listed in the yellow pages as churches, temples, synagogues, mosques or similar religious entities. The original "panel" sample was created under a similar, but more extensive protocol.

The 2017 survey represents almost the full scope of Indiana nonprofits. Respondents include traditional public charities, such as homeless shelters, museums, and cancer groups. They also include other types of tax-exempt entities registered under all other 501(c) sections of the IRS tax code, such as private foundations, fraternal organizations, social clubs, business groups, and advocacy organizations. In addition, respondents include organizations not registered at all with the IRS, whether because they are churches, exempt from registration, or for other reasons are not found on the IRS listing. However, we excluded colleges, hospitals, bank-managed trusts, and public school building corporations because the survey instrument was not well-suited to these types of entities and they had very low response rates to the 2002 survey.

Our survey asked about a variety of topics: programs and services, organizational structure and program evaluation, human resources, marketing and technology, financial informa-tion, advocacy and policy activities, and relationships with other organizations. There were also questions specific to membership associations and faith-based organizations.

Because of the richness of the survey data, we plan to produce two series of reports: Series 1 will provide overviews of the Indiana nonprofit sector and various types of organizations

such as arts & culture nonprofits, faith-based organizations, and membership organizations. Series 2, including this report, will provide in-depth analysis of the activities and experiences of Indiana nonprofits on topics such as information technology, program evaluation, advocacy and political activities, human resource management, and a range of other topics.

EXECUTIVE SUMMARY

Information technology allows nonprofits and other organizations to communicate with constituents who want to use their services or support the organization. It also provides the internal support and back-office operation that organizations need in order to monitor their own activities and operate more efficiently.

This report on *Indiana Nonprofits: Information Technology Resources and Challenges* is designed to answer several key questions about the extent to which Indiana nonprofit organizations use **information technology** (IT) and what challenges they face in using such resources. We also consider which organizational characteristics appear to be associated with both of these features. To do so, we rely on a comprehensive survey of 1,036 Indiana nonprofits that responded to our 2017 survey.

We provide overall descriptive statistics on the use of information technology, challenges Indiana nonprofits encounter in using information technology, and their basic organizational characteristics. We then use bivariate and multivariate analysis techniques[2] to examine how the full set of organizational characteristics explain IT usage and challenges. Our detailed findings highlight only those factors that appear significant in bivariate analyses. Finally, we examine which relationships appear significant in multivariate analysis. The following summaries highlight findings presented in the body of this report.

Extent to which Indiana Nonprofits use IT Resources

We first examine the extent to which Indiana nonprofits use key IT resources and what factors may explain different patterns of use. In addition to a question about having an organizational website, the survey asked how frequently the responding nonprofit used eleven different types of information technology resources over the past twelve months. This includes IT security (e.g., using secure servers, anti-virus programs), electronic financial records, routine data backups, Facebook, and other resources listed below.

Respondents could select from four response options: organization uses the IT resource never/rarely, occasionally, frequently, or almost all the time. Many nonprofits report having an organizational website or using information technology resources, however few report using these resources almost all of the time. For several types of IT resources, the percent of nonprofits using the resource frequently is substantially lower than those reporting more sporadic use. Equally important, with a couple of exceptions, about a third, and in some

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[2] We use a mixture of frequencies, crosstabs, and ANOVA tests. To facilitate the bivariate analyses, we use factor and reliability analysis to categorize groups of IT resources and challenges. To check multivariate significance, we use regressions. Additional details on the statistical procedures used and analysis results are available from the authors.

cases two-thirds or more, say they rarely or never use IT resources, such as receipts of online donations or donor databases.

To facilitate the analysis that follows, we first converted these technology "use" responses into a scale for each type of resource, with scores ranging from 1 (never/rarely) to 4 (almost all the time). Next, to simplify our presentation, we used factor and reliability analysis to examine whether these eleven types of IT resources could be grouped. We found two under-lying groupings, labelled as **internally-focused IT resources** and **externally-focused IT resources**. Nonprofits that reported using one of the items in a particular grouping were more likely to also use the other types of IT resources in the same grouping.

Internally-focused IT resources include:
  o IT security (such as secure servers and anti-virus programs)
  o Routine data backups
  o Electronic financial records
  o Electronic client records

Externally-focused IT resources include:
  o Facebook
  o Twitter
  o Other social media
  o Donor databases or constituent relationship management software
  o Dedicated and reputable websites for nonprofits
  o Standard search engines
  o Receipt of online donations

For internally-focused IT resources, nonprofits reported using IT security and routine data backups most frequently and using electronic client records least frequently. For externally-focused IT resources, nonprofits reported using Facebook most frequently and using dedicated and reputable nonprofit sites (such as GuideStar, Foundation Center, or Indiana Nonprofit Resource Network) least frequently.

Association between IT Resources and Organizational Characteristics

To examine possible explanations for why Indiana nonprofits differ in their use of IT tools and in the IT-related challenges they face, we look to their responses to other questions in our survey. We expect older and larger nonprofits, those with more organizational components in place (more formalized organizations), and those relying on particularly demanding funding sources—government or donations—to utilize IT resources most frequently. We also consider whether organizations have board vacancies, their location, and their primary field of activity (National Taxonomy of Exempt Entities code, NTEE). We found the following factors to be significantly ($p < .05$) associated with use of IT resources:

Age: We use decade in which the organization was founded as a measure of age.

- As expected, older nonprofits founded before 1990 use both externally and internally focused IT resources more often than nonprofits founded after 1990.

Number of Full-Time Equivalent Staff (FTE): We use FTE to capture organizational size. FTE is defined as all full-time staff plus ½ of all part-time staff.

- As expected, Indiana nonprofits with a higher number of FTE staff are more likely to use certain externally-focused IT resources than those with fewer paid staff.

Formalization: To capture the level of formalization in Indiana nonprofits, we counted the number of organizational components they have in place (described more fully in the body of this report).

- As expected, nonprofits with more organizational components in place—more formalized organizations—are more likely to have an organizational website and to use a wider variety of other technology resources than their counterparts.

Board Vacancies: We use number of board vacancies as another indicator of capacity, ranging from no vacancies to more than three.

- Nonprofits in the highest quartile of board vacancies (more than three) report using internal and external IT resources most frequently while those in the lowest quartile (only one board vacancy) or no board vacancy use IT resources less frequently.

Public Charities: We used the IRS listing of exempt entities to determine whether responding organizations are registered as public charities with the IRS under section 501(c)(3) of the Internal Revenue Tax Code. Charities tend to be larger and more established than other types of nonprofits.

- As expected, IRS-registered charitable organizations are more likely than other types of nonprofits to use all types of technology resources.

Funding Profile: To determine funding profile, we grouped organizations by whether they receive half or more of their total revenues from donations, government, fees or sales, special events, or a mix of these sources.

- Nonprofits that rely primarily on government funding are significantly more likely to use externally-focused IT resources than those with other types of funding profiles.
- Nonprofits that rely mainly on funding from donations are significantly more likely to use internally-focused IT resources than those with other types of funding profiles.

Location: To capture location, we grouped organizations by zip code to determine whether each respondent is located in a central city metropolitan county, a metropolitan ring-county, or a non-metropolitan county.

- Nonprofits in central city metropolitan counties reported having an organizational website and using externally and internally-focused IT resources more often than nonprofits located in metropolitan ring or non-metropolitan counties.

Primary Purpose (NTEE): Our research team classified Indiana nonprofits by their primary purpose as defined under the National Taxonomy of Exempt Entities (NTEE), using respondents' identification of three major program areas and our own online research.

- Arts, culture, and humanities organizations reported having an organizational website more often than other types of nonprofits.
- Arts, culture, and humanities nonprofits and religious organizations tend to have the highest use of IT resources, while mutual benefit, public and societal benefit, and education nonprofits have the lowest technology usage.

IT Application and Capacity Challenges

Many Indiana nonprofits face significant challenges in using IT. Respondents were asked to rate challenges using the following five categories: not a challenge, minor challenge, some-what of a challenge, major challenge, or "don't do this activity." To facilitate the analysis that follows, we first converted these "challenge" responses into a scale for each of six types of IT challenges, with scores ranging from 1 (not a challenge) to 4 (major challenge), removing those who selected "don't do this activity." Next, to simplify our presentation, we used factor and reliability analysis to examine whether these six types of IT challenges grouped in some ways. We found two groupings: IT application challenges and IT capacity challenges.

IT application challenges include:
  o Creating, updating, and using donor database software to track donors and conduct fundraising analyses
  o Creating and maintaining an engaging, up-to-date website
  o Getting help to address information technology problems

IT capacity challenges include:
  o Identifying technology tools and resources for improving service
  o Training staff/volunteers in software/applications
  o Getting decision-makers or funders to understand the importance of acquiring good technology

Association between IT Challenges and Organizational Characteristics

Among IT application challenges, nonprofits reported that creating and maintaining an engaging, up-to-date website was the most challenging. For IT capacity challenges, nonprofits reported that identifying technology tools and resources for improving service was the most challenging. The body of our report elaborates on how organizations vary in IT application and capacity challenges.

Number of Full-Time Equivalent Staff: We found that Indiana nonprofits with more FTE staff are more likely to use certain IT resources than those with fewer paid staff.

- The extent to which IT presents application and capacity challenges to Indiana nonprofits is slightly higher for organizations with paid staff than for those without paid staff.

Formalization: We reported that nonprofits with more organizational components in place—more formalized organizations—are more likely to have an organizational website and to use a wider variety of other technology resources than their less formalized counterparts.

- Organizations with a more formal structure also report higher IT application and capacity challenges than less formalized organizations.

Board Vacancies: We reported that nonprofits in the fourth quartile—those with the most board vacancies—report using IT resources most frequently.

- Nonprofits with more board vacancies were also more likely to report higher IT application and capacity challenges.

Public Charities: We found that, for both internally and externally-focused resources, nonprofits registered as a public charity with the IRS under section 510(c)(3) of the tax code use information technology more frequently.

- Charities report higher IT application and capacity challenges than other types of organizations.

Funding Profile: We reported that nonprofits that receive the majority of their funding from government sources used internally focused technology resources more than organizations that received major funding from other sources, followed closely by nonprofits that receive 50 percent or more of their funding from all other combinations of sources, or from donations.

- Nonprofits that receive the majority of their funding from government reported the highest IT application and capacity challenges followed by those who receive the majority of their funding from donations. Those that receive most of their funding from fees and sales, special events, and other earned revenues reported slightly lower IT challenges.

Primary Purpose (NTEE): We reported that arts, culture, and humanities nonprofits and religious organizations tend to have the highest use of IT resources, while mutual benefit, public and societal benefit, and education nonprofits have the lowest technology usage.

- IT application and capacity challenges were highest for health, environmental, & international organizations as well as arts, culture, and humanities organizations. Mutual benefit organizations reported the lowest IT application and capacity challenges.

KEY FINDINGS

A number of key findings stand out from our analysis of the information technology resources and challenges the nonprofit sector reported:

1. Many Indiana nonprofits lack key IT resources that would facilitate more effective communication with key constituency groups or manage their own organization. Over one-third (35 percent) do not have an organizational website, 40 percent rarely or never use electronic client or member records, and more than a third rarely or never use electronic financial records (35 percent) or IT security (34 percent).

2. As expected, older, larger, and more formalized organizations are more likely to use IT resources or have a website. Additionally, public charities, organizations located in central city metropolitan counties, and organizations with several board vacancies are more likely to use IT resources or have a website.

3. In our multivariate analysis we include all explanatory factors at once in order to predict the use of externally-focused IT resources, the use internally-focused IT resources or having a website. All of our models were significant. However, only formalization and nonprofit field of activity (NTEE) remain significant in any of the three analyses, once we control for all other factors. More formalized organizations are more likely to have an organizational website and utilize internally and externally-focused IT resources more often than other organizations. Additionally, arts, culture, and humanities organizations are more likely to use internally and externally-focused IT resources more likely than other types of organizations. However, they are less likely to have an organizational website.

4. When asked about challenges using various types of information technology resources, Indiana nonprofits reported the most challenges with creating and maintaining websites, but also they reported other high IT application challenges (e.g., using donor databases) as well as high IT capacity challenges (e.g., identifying IT tools and resources or training staff and volunteers).

5. In general, larger, more formalized nonprofits, and those that are public charities report more challenges, as do those with more board vacancies. Funding profile and nonprofit field are also relevant.

6. Our multivariate analysis, where we consider all explanatory factors at once, is significant only for IT capacity challenges, and explains only a small amount of variance.

7. Those that use IT more extensively generally report more challenges using IT. Normally, we would expect those that use particular tools to develop expertise and thus find the activity less challenging. However, our findings suggest that more extensive usage reveals the complexity of IT resources and the challenges nonprofits face using them effectively. By comparison, those without much experience with these types of resources may underestimate the challenges involved.

INFORMATION TECHNOLOGY

Many people probably cannot imagine getting along without access to the internet or to a full scope of information technology (IT) tools and resources. Indeed, the vast majority of Americans now use the internet (88 percent) or have a smartphone (77 percent)[3], giving them greater access to information, including websites, social media platforms, peer reviews, and volunteer opportunities.

As a result, all types of organizations—businesses, government, nonprofits—must use Information Technology (particularly websites and social media) to communicate with their various stakeholder groups, including customers, constituents, members, and service recipients. Additionally, information technology is critical for the internal operation of organizations. Technology resources allow organizations to monitor their own activities and operate more efficiently. In short, IT is important for any organization, and it is crucial that nonprofit organizations are equipped to utilize these resources effectively.

However, as we show in this report, many Indiana nonprofits lack key IT resources that would facilitate more effective communication with key constituency groups. Over one-third (35 percent) do not have an organizational website and almost a quarter never or rarely use Facebook (23 percent), the most frequently used social media platform. Many nonprofits also lack critical back-office IT resources: 29 percent never or rarely do routine data backups and 34 percent never or rarely use security measures, such as storing data on secure servers or using anti-virus software or similar protection programs. Not surprisingly, many Indiana nonprofits report facing significant challenges in obtaining and/or using many of these resources.

In this report, we provide a comprehensive assessment of the state of information techno-logy for Indiana nonprofits – what IT resources they use and how challenging various IT components are for them. We rely on several sets of questions from our survey: (1) whether responding nonprofits have an organizational website, (2) how frequently they used specific IT resources during the past twelve months, and (3) the extent to which they find it chal-lenging to acquire and/or use particular types of IT tools or resources. We also examine whether responses to these broad questions are related to other characteristics of Indiana nonprofits, such as their size, age, level of formalization, sources of funding, field of activity, etc.

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[3] Aaron Smith, "Record shares of Americans now own smartphones, have home broadband," Pew Research Center, January 17, 2017; http://pewrsr.ch/2jbjymk.

Technology Use by Indiana Nonprofits

We first examine the extent to which Indiana nonprofits use key IT resources and what may explain different patterns of use. We use a survey question about having an organizational website as well as questions about how frequently the responding nonprofit used eleven types of technology resources during the past twelve months. Respondents could select from four response options: never/rarely, occasionally, frequently, and almost all the time.

About two-thirds (65 percent) reported having a website for their organization (Figure 1).[4] However, no more than a third say they use any of eleven other IT resources almost all the time (Figure 2). This includes IT security (e.g., using secure servers, anti-virus programs), routine data backups, electronic financial records, Facebook, and keeping electronic client records. The percentage of organizations utilizing several other types of IT resources "almost all the time" is substantially lower. This indicates that very few organizations are actively using their IT resources. Additionally, about a third—and in some cases two-thirds or more—say they use IT resources rarely or never (with the exception of Facebook, routine data backups, and internet searches).[5]

Figure 1. Does the organization have a website? (n=1,036)

Organizational website not reported, 35%

Has an organizational website, **65%**
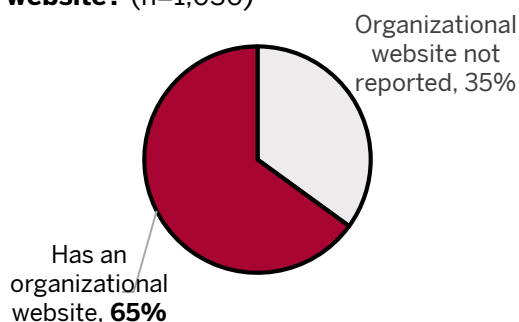
To facilitate the analysis that follows, we first converted these "use" responses into a resource utilization scale, with scores ranging from 1 (never/rarely) to 4 (almost all the time). This allows us to take the full distribution of responses into account. For example, although slightly more said they use IT security (33 percent) than Facebook (28 percent) almost all the time, the use of Facebook had a higher average score (2.7) than use of IT security (2.5), because more respondents said they use Facebook more frequently (32 percent) than IT security (18 percent). Additionally, more organizations said they never or rarely use IT security (34 percent) than was the case for Facebook (23 percent).

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[4] This is a lower percent value than we reported in our two previous reports based on this survey and reflects a change in methodology in order to present more conservative estimates. We are now reporting the percent that checked having a website as a percent of all responding organizations. Previously, we excluded those who skipped the entire battery of questions that included having a website, unless respondents also checked a separate box saying "we have none of these." We are concerned that this latter question was too easily overlooked, leading us to overestimate how many Indiana nonprofits have this particular component.

[5] The n value in Figure 2 varies due to survey nonresponse.

Figure 2. Frequency of using specific IT resources (n=896-919)

Resource	Almost all the time	Frequently	Occasionally	Never/Rarely
IT security	33%	18%	15%	34%
Routine data backups	30%	21%	20%	29%
Electronic financial records	30%	21%	14%	35%
Facebook	28%	32%	17%	23%
Electronic client records	27%	19%	15%	40%
Internet searches	25%	28%	22%	25%
Receipt of online donations	21%	13%	15%	51%
Donor database	15%	8%	7%	70%
Twitter	9%	11%	11%	70%
Other social media	8%	12%	18%	63%
Dedicated and reputable sites	2%	4%	20%	74%

As mentioned, in order to simplify our presentation, we used statistical techniques[6] to examine whether these eleven types of IT resources grouped in some ways. We found two underlying groupings, which we labelled as **internally** and **externally-focused IT resources**. Nonprofits that reported using one of the resources in a particular grouping were also very likely to use the other types of IT resources in this grouping.[7]

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[6] We used factor and reliability analysis to group these eleven resources. Additional details on statistical procedures used and analysis results are available from the authors.

[7] We also examined whether the use of the various types of IT resource shown in Figure 2 above is related to each of the explanatory factors discussed below. Those results are generally consistent with what we find when we use the two scales, suggesting overall robustness of the results.

Internally-Focused IT Resources.

Internally-focused IT resources relate to the organization's operational activities: the use of IT security (such as secure servers and anti-virus programs), routine data backups, electronic financial records, and electronic client records. The average usage score for these four items range from 2.52 for using IT security and routine data backups to 2.34 for electronic client/member/ program records. The combined average usage score of the four internally-focused IT resources is 2.46, which is notably higher than for all of the externally-focused IT resources except for Facebook and internet search engines (Figure 3).

Externally-Focused IT Resources.

Resources in the externally-focused IT grouping relate to organizations' interactions with their external environment, such as communicating with constituency groups and other external audiences. External IT resources also include the use of Facebook, Twitter, other social media, donor databases or constituent relationship management software, dedicated and reputable sites for nonprofits, standard search engines, and receipt of online donations. We also consider having a website to be an externally-focused IT resource, but our survey only asked whether the organization has a website, not how frequently it is used, so it is not included in our externally-focused IT resource grouping.

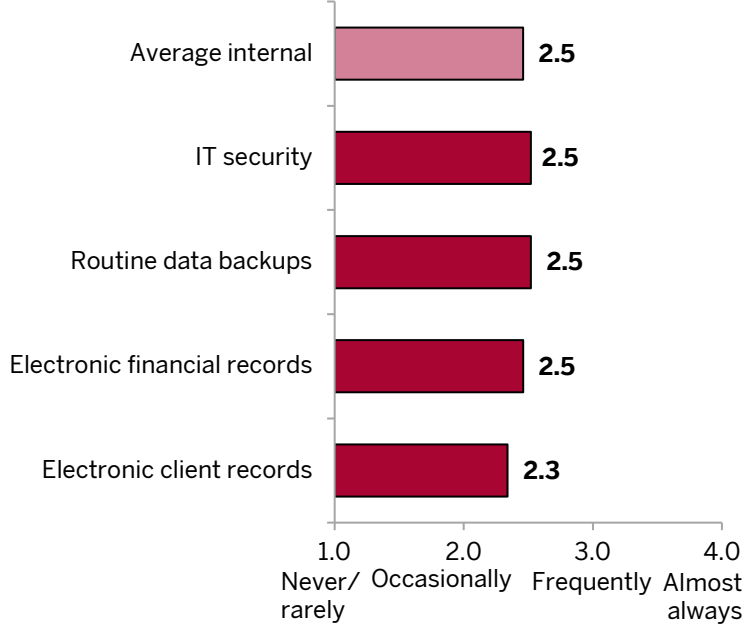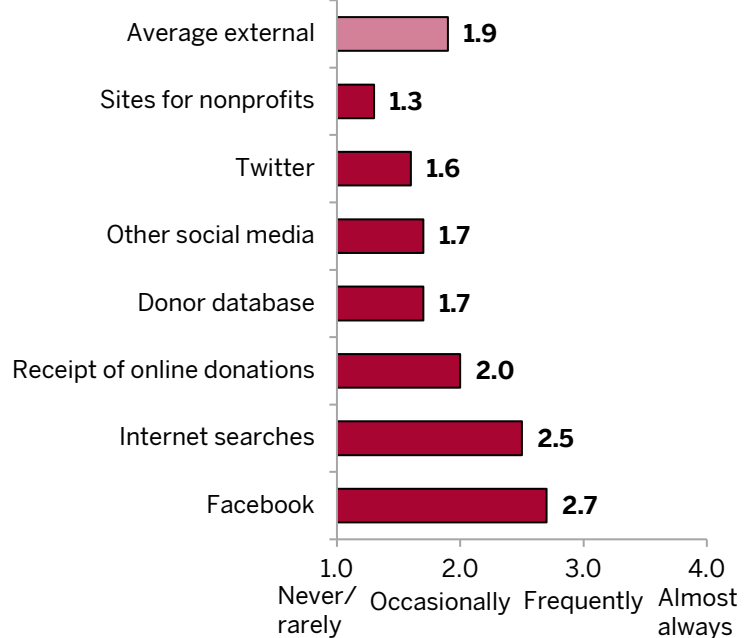**Figure 3. Average scores on Internally-Focused IT Resources** (n=897-905)

Figure 4. Average scores on Externally-Focused IT Resources (n=896-919)

The average usage score for these seven items ranges from 2.66 for using Facebook and 2.52 for using internet search engines (such as Google, Bing, Yahoo) to 1.34 for using dedicated and reputable nonprofit sites (such as GuideStar, Foundation Center, or Indiana Nonprofit Resource Network) (Figure 4). The overall average for all seven externally-focused IT resources is 1.93.

Explaining IT Use by Indiana Nonprofits

Thus far, we have shown that many Indiana nonprofits make use of a variety of IT tools and resources, but that some do so much more frequently than others, while others use very few if any at all. We turn now to the analysis of how IT usage differs among various types of nonprofit organizations in Indiana.

We consider eight possible explanatory factors that we believe are likely to be related to having an **organizational website** and using **internally-focused** and **externally-focused IT resources**. We have more informed expectations about the use of internally-focused IT because these types of resources tend to be costly to acquire and require expertise to use effectively. By contrast, with the possible exception of donor databases, most of the other externally-focused IT resources may not require much capacity beyond access to the internet and savvy employees or volunteers to operate at a basic level. However, special expertise and training will likely be necessary for more sophisticated use of these types of resources.

In general, we expect the use of IT resources (especially internally-focused resources) to be more prevalent among older nonprofits, because these nonprofits have had more time to put relevant capacities in place. However, younger nonprofits may be more attuned to the growth of social media and therefore use particular externally-focused IT resources more extensively. To test this hypothesis, we measured (1) age, as the number of decades since the organization was founded.[8]

For similar reasons, we expect IT resources to be more prevalent among (2) larger non-profits, and those with (3) more organizational components in place. These nonprofits are likely to have relevant capacities in place, larger staff, expertise, and resources. We also consider one specific board-related capacity: having a full board. In previous surveys (Round II), we found board vacancies to be a good predictor of organizations with fewer organizational components in place and relatively high management challenges. In this

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[8] We also expect responding nonprofits that were part of our original panel from 2002 to show greater use of IT resources across the board, since they have successfully survived for that 15-year period. In our final, over-arching analysis, we include a dummy variable for whether the responding organization was part of the original panel.

analysis, we explore whether that pattern still holds and examine whether (4) board vacancies may be associated with lower usage of IT resources.

Access to and dependence on particular sources of revenues are also likely to be important in determining IT usage. Organizations that secure donations and government funding may benefit from the use of some IT resources, and in some cases may even be required to do so. Hence, we consider whether nonprofits are (5) charities registered with the IRS, which allows them to receive tax-deductible donations, but subjects them to added scrutiny by regulators and charity watchdogs. We also examine their (6) revenue profile, that is whether they rely primarily on donations, government funding, special events, fees and sales, or a mix of these revenue sources. Government funding, in particular, is likely to require use of internally-focused IT resources, while dependence on special events will likely benefit from use of more externally-focused IT resources, like social media.

Finally, we expect nonprofits' (7) geographic location will be an important factor. We predict that nonprofits located in metropolitan counties are likely to have better access to IT resources as well as IT consultants and other professionals. We are less certain about how (8) nonprofit major field of activity may impact IT use, so this part of our analysis is exploratory.

(1) Age (Year Founded)
(2) Number of Full-Time Equivalent Staff (FTE)
(3) Formalization
(4) Board Vacancies
(5) Public Charities
(6) Funding Profile
(7) Location
(8) Primary Purpose (NTEE)

To determine whether our expectations fit the actual patterns of IT use among our sample of Indiana nonprofits, we first examine whether each of the eight explanatory factors listed above help predict whether Indiana nonprofits use internally-focused and externally-focused IT resources or have a website. We follow this with the results of multivariate analyses to determine which combination of predictor variables remain significant, once we control for all other relevant factors, in predicting the use of internally-focused and externally-focused IT resources.

DETAILED FINDINGS – USE OF IT RESOURCES

We now turn to a discussion of how the major explanatory variables listed above are related to the use of various types of IT resources: having an organizational website and the frequency of using other internally and externally-focused IT resources.

Internally & Externally-Focused IT Resources

The internally-focused IT resources include use of IT security, routine data backup, electronic financial records, and electronic client/member/program records. As noted, between a quarter and one-third of Indiana nonprofits use internally-focused resources almost all the time, but about as many rarely or never use them. The latter is particularly worrisome, since these resources make it possible for nonprofits to monitor their activities and safeguard their internal operational data. As in the case of having an organizational website or using externally-focused IT resources, we expect the use of internally-focused IT resources to be higher for older, larger, and more formalized nonprofits as well as those without board vacancies. We also expect public charities, organizations that depend mainly on demanding funding sources (such as government funding), and those located in the central cities of metropolitan areas to have higher internally-focused IT usage rates.

We also look at other externally-focused resources, such as Facebook, Twitter, other social media, donor databases or constituent relationship management software, dedicated and reputable sites for nonprofits, standard search engines, and receipt of online donations. As we noted earlier, relatively small percentages of Indiana nonprofits say they use these types of resources almost all the time or frequently. This section of our report examines whether any particular organizational characteristics help explain why some Indiana nonprofits use these externally-focused IT resources extensively and others hardly at all. As noted earlier, we consider the age of Indiana nonprofits, their size, degree of formalization, board vacancy, status as a public charity, funding profile, location, and major field of activity.

One increasingly important aspect of externally-focused IT resources is having an organizational website. Two-thirds (65 percent) of Indiana nonprofits have a website and our analysis considers which factors may explain the use of this particular IT resource.

Age - Year Founded.
Our survey asked respondents to indicate the decade in which the organization was founded. As Figure 5 shows, about 40 percent of Indiana non-profits were founded during the last three decades, with the rest scattered across prior decades. Nonprofits founded between 1910-1949 account for 12 percent of the total sample as do those founded before 1910. Because IT is a relatively recent development, we were particularly interested in how the use of web-sites and other IT resources varies for nonprofits established during the last 30 years compared to older nonprofits.

Figure 5. Frequency of year founded (n=935)

We expect older organizations to use IT resources more extensively than younger ones because they have built up greater capacity over their organizational lifetime. As Figure 6 shows, age is a significant factor in determining IT use. Older nonprofits founded before 1990 and between 1990 and 1999 reported using internally-focused information technology resources significantly more often than nonprofits founded after 1999. Year founded and use of externally-focused IT resources appear to have no significant relationship, so we have omitted the results.

Figure 6. Extent to which nonprofits use internally-focused IT resources, by year founded (n=841, significant at p<.05)
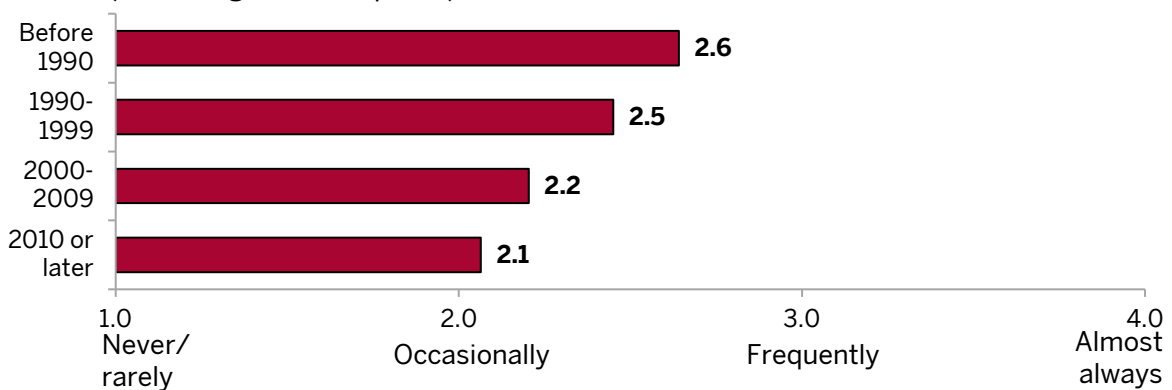
As Figure 7 shows, two-thirds or more of Indiana nonprofits established prior to 2010 use an organizational website. However, as expected, nonprofits established since 2010 were significantly less likely to have an organizational website (56 percent) than their older counterparts.

Figure 7. Presence of organizational website, by year founded (n=841, significant at p<.05)

Number of Full-Time Equivalent Staff (FTE). We use staff size to capture the size of Indiana nonprofits, rather than revenues or expenses, because it appears to be a more robust measure.[9] We use responses to questions about whether the organization had any paid employees, and if so, the number of paid full-time employees (defined as working 35-40 hours per week) and the number of part-time employees currently working for the organization. To compute the number of full-time equivalent (FTE) employees, we

Figure 8. Frequency of full-time equivalent staff (n=911)

added half of the number of part-time employees to the number of full-time employees. Then we divided those with employees into rough quartiles depending on the number of FTE paid staff (see Figure 8).

Among all Indiana nonprofits, the mean FTE is 12, while the median is 1. However, when excluding those organizations without staff, the mean is 22, median is 4, and mode is 1. These numbers reflect the presence of some very large nonprofits (some with more than 1,000 FTE paid staff). To facilitate our analysis, we group nonprofits with any paid staff into rough quartiles. As Figure 8 shows, more than two-fifths of Indiana nonprofits have no paid staff (44 percent) and another 17 percent have 1 or fewer FTEs. The rest split about evenly among the remaining size categories: 1.5 to 3 FTEs, 3.5 to 11.5 FTEs, and 12 or more FTEs.

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[9] When we compared responses to survey questions about total revenues and expenses in the most recently completed fiscal year to what the respondents' IRS Form 990 for the corresponding or nearly corresponding year we found some notable discrepancies that warrant further assessment.

We expect larger organizations (defined as more FTE staff) to use IT resources more frequently. As Figure 9 shows, that is the case. Nonprofits in the largest quartile (with 12 or more paid staff members) report using each of these types of IT resources significantly more often than nonprofits with fewer paid staff or no paid staff.

Figure 9. Use of internally and externally-focused IT resources, by number FTE staff (n=892-901, significant at p<.05)
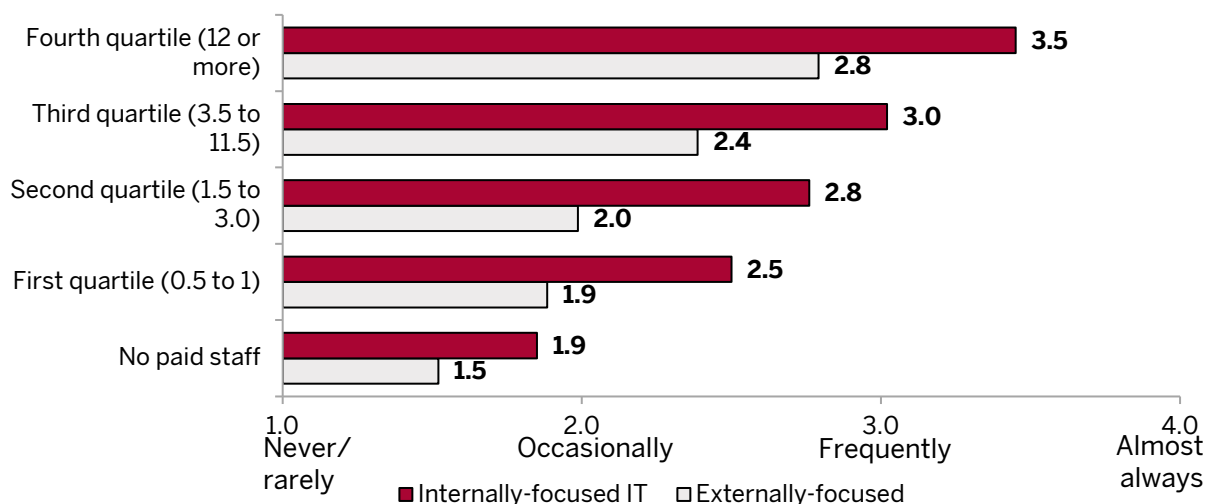
As Figure 10 shows, nonprofits in the largest quartile also report having a website significantly more often (95 percent) than those without paid staff (52 percent) or those in the two smallest quartiles (79 and 84 percent, respectively). However, those in the third quartile closely follow those with the most paid staff in having an organizational website (90 percent). This is consistent with our hypothesis that larger nonprofits are more likely to have organizational websites.

Figure 10. Presence of organizational website by number full-time staff, Indiana nonprofits (n=911, significant at p<.05)
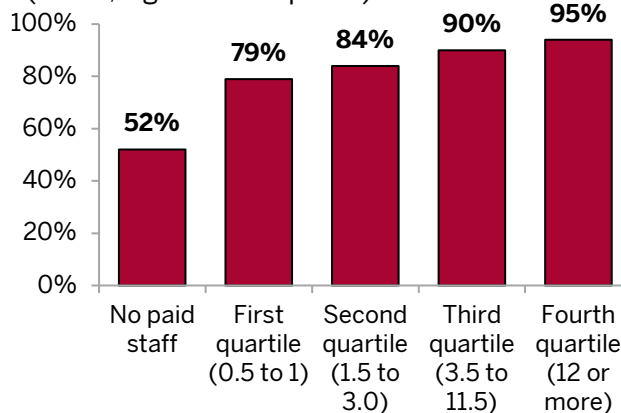
Formalization. Our survey asked whether respondents have various types of organizational components in place (Figure 11). We believe that the presence of more such components signals a more formalized organization.

Figure 11. Presence of organizational components (n=945)

	Have this component	Do not have this component
Written governance policies or by-laws	80%	20%
Written minutes of board meetings	79%	21%
Annual report with financial information produced within the last year	66%	34%
Other written policies & procedures	52%	48%
Audited financial statement produced within the past two years	43%	57%
Written conflict of interest policy	39%	61%
Written dissolution plan	28%	72%
Written document retention policy	27%	73%
Written whistleblower policy	20%	80%

■ Have this component □ Do not have this component

We also looked at whether each organization provides specific human resource support for employees, board members, and volunteers. As Figure 12[10] shows, Indiana nonprofits generally offer more resoucs for empoyees and board members than for volunteers.

Figure 12. Presence of human resource support resources for employees, board members, and volunteers (n=528-815)

	Employees	Board members	Volunteers
Position/job descriptions	43%	51%	38%
Training/development opportunities beyond orientation	35%	24%	21%
Written personnel policies	32%	24%	12%
Orientation process	31%	33%	30%
Written instruction manuals	29%	33%	19%

■ Employees ■ Board members □ Volunteers

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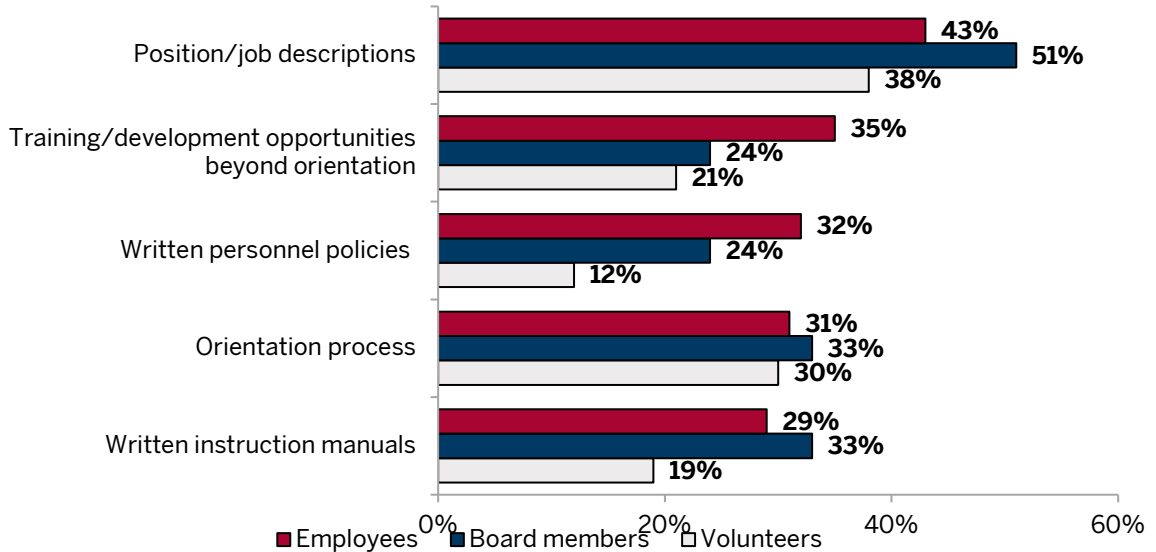
[10] The lower n value in Figure 12 is due to nonresponse. Some respondents without employees, board members, and volunteers did not respond to this section.

We computed a formalization scale[11] by counting the number of organizational and human resource components responding nonprofits have in place (adjusting for whether the organization has no volunteers). The count of components ranged from 0 to 16 with a mean and median of 7.

We expect nonprofit organizations with more organizational components to use information technology more often than those with fewer organizational components. As Figure 13 shows, that is the case. Nonprofits with more organizational components (in the fourth quartile) reported using internally and externally-focused IT resources significantly more (average score of 3.3 and 2.6 out of 4, respectively) than nonprofits with fewer organizational components. The score on the internally-focused IT scale drops significantly by quartile to 2.6 out of 4 for those in the third quartile, to 2.1 and 1.6 out of 4, respectively for the two bottom quartiles. A similar pattern exists for externally-focused IT resources; the score drops significantly by quartile to 2.0 out of 4 for those in the third quartile to 1.6 and 1.4 out of 4, respectively, for the bottom two quartiles.

Figure 13. Use of internally and externally-focused IT resources, by formalization (n=920, significant p<.05)

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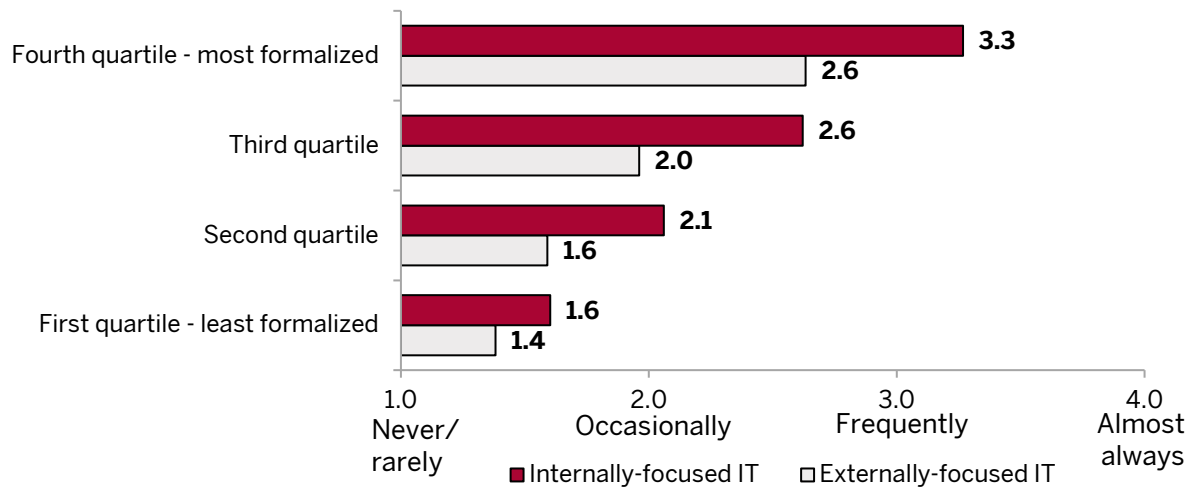
[11] We performed a reliability analysis to confirm that the items included in our measure of formalization do form a scale. Analysis methods and findings are available upon request.

We also hypothesized that more formal-ized nonprofits are more likely to have a website because they have more resources. As Figure 14 shows, that is the case. Almost all (97 percent) of Indiana nonprofits in the fourth quartile (those with the most organizational components) reported having a web-site, as did 87 percent of those in the third quartile, compared to only 67 percent of those in the second quartile. Nonprofits with the fewest organi-zational components (those in the first quartile) reported having a website significantly less than all other respond-ents (25 percent).

Figure 14. Presence of organizational website, by quartile of organizational formalization, Indiana nonprofits (n=1,036, significant at p<.05)
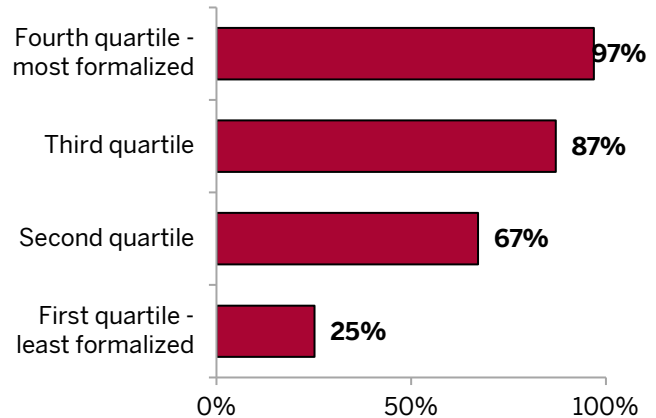
Public Charities. Nonprofits registered with the Internal Revenue Service as tax-exempt under section 501(c)(3) of the IRS code (commonly known as "charities") are subject to special scrutiny by the IRS, dedicated charity watchdogs (such as Charity Navigator and BBB Wise Giving Alliance), and the general public. This suggests that they may need to pay attention to IT-related resources such as electronic financial records or databases. Some 76 percent of our survey respondents are IRS-registered charities.

Figure 15. Use of internally and externally-focused IT resources, by public charity (n=597-606, significant at p<.05)
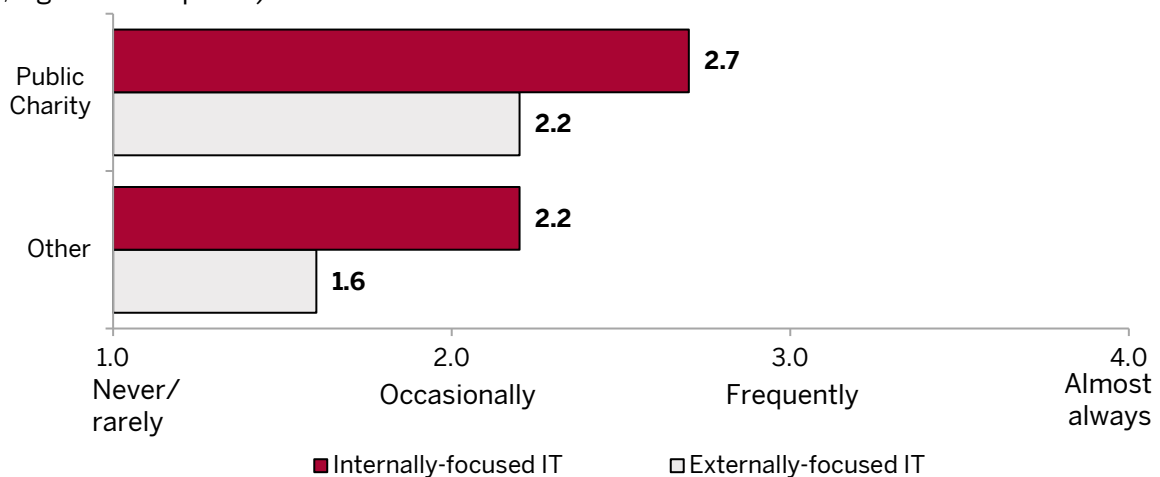
For both internally and externally-focused IT resources, IRS-registered public charities use information technology (2.7 and 2.2 out of 4) significantly more frequently than other types of nonprofits (2.2 and 1.6 out of 4) (Figure 15). The same pattern holds for having an organizational website. As Figure 16 shows, respondents registered as public charities with the IRS reported having an organizational website significantly more than other nonprofits (74 versus 59 percent).

Figure 16. Presence of organizational website, by public charity (n=676, significant at p<.05)
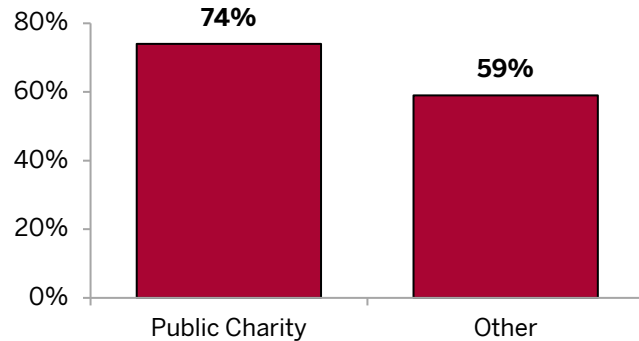
Board Vacancies. Most Indiana nonprofits (66 percent) report no board vacancies. The rest report between 1 and 12 and we group those into rough quartiles. Overall, 11 percent report 1 vacancy, 10 percent report 2 vacancies, 5 percent report 3 vacancies, and 8 percent report more than 3.

As Figure 17 shows, nonprofits in the fourth quartile (with the most board vacancies) report using both internally and externally-focused IT resources most frequently, but the patterns are not very clear for internally-focused IT resources. However, the use of externally-focused resources increases steadily as the number of board vacancies increases. Perhaps nonprofits with the most vacancies are attempting to attract board members with external IT resources, such as Facebook.

Figure 17. Use of internally and externally-focused IT resources, by board vacancy (n=731, significant at p<.05)
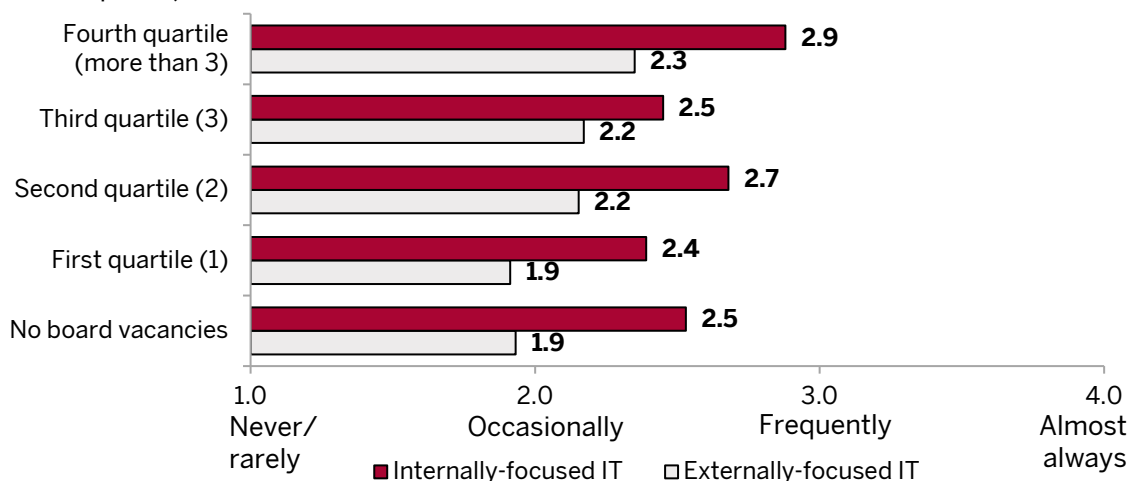
Funding Profile. To see whether the type of funding on which Indiana nonprofits rely is an important predictor of using IT resources, we use survey questions about the percent of revenue received from each of several major funding types during the most recently completed fiscal year. We then determine whether respondents receive half or more from a particular type of funding.

Figure 18. Frequency of funding profiles (n=851)
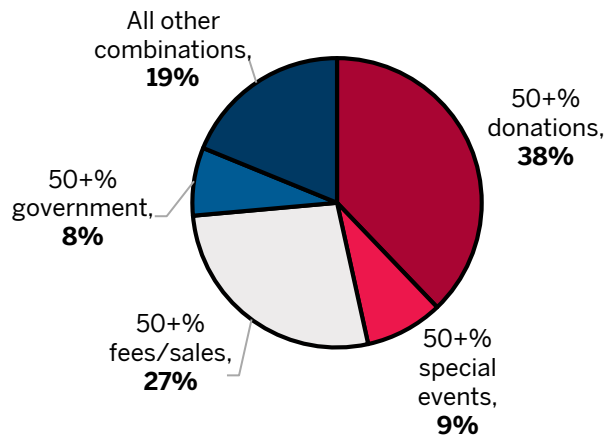
As Figure 18 shows, more than a third (38 percent) of Indiana nonprofits receive half or more of their revenues from private donations. About a quarter (27 percent) rely primarily on fees and sales from private (non-government) sources, and less than a tenth rely primarily on special events (9 percent) or government funding (grants and contracts and fee for service arrangements, 8 percent). The remaining 19 percent have no dominant funding source, but rely on a mix of sources.

We expect nonprofits that receive the majority of their funding from the government to use internally-focused information technology resources more often than those receiving the majority of their funding from other sources since government funding often has demanding reporting requirements, We expect those that rely mainly on donations to use externally-focused IT resources more frequently, since these resources help increase their visibility to donors.

As Figure 19 shows, nonprofits that receive the majority of their funding from government had the highest score on the internally-focused IT usage scale (2.8 out of 4), followed closely by those that receive 50 percent or more of their funding from all other combinations or donations (2.7 and 2.6 out of 4, respectively). Nonprofits that receive 50 percent or more of their funding from fees/sales or special events had the lowest scores on the use of internally-focused IT resources scale (2.3 and 2.0 out of 4, respectively). A similar pattern follows for externally-focused IT resources; nonprofits that receive majority of their funding from government, all other combinations, and donations all score 2.1 out of 4, which is significantly higher than those that receive funding from fees and sales and special events (1.7 and 1.6 out of 4, respectively).

Figure 19. Use of internally and externally-focused IT resources, by funding mix (n=844, significant at p<.05)

Category	Internally-focused IT	Externally-focused IT
50+% government	2.8	2.1
All other combinations	2.7	2.1
50+% donations	2.6	2.1
50+% fees and sales	2.3	1.7
50+% special events	2.0	1.6

Scale: 1.0 Never/rarely — 2.0 Occasionally — 3.0 Frequently — 4.0 Almost always

■ Internally-focused IT ☐ Externally-focused IT
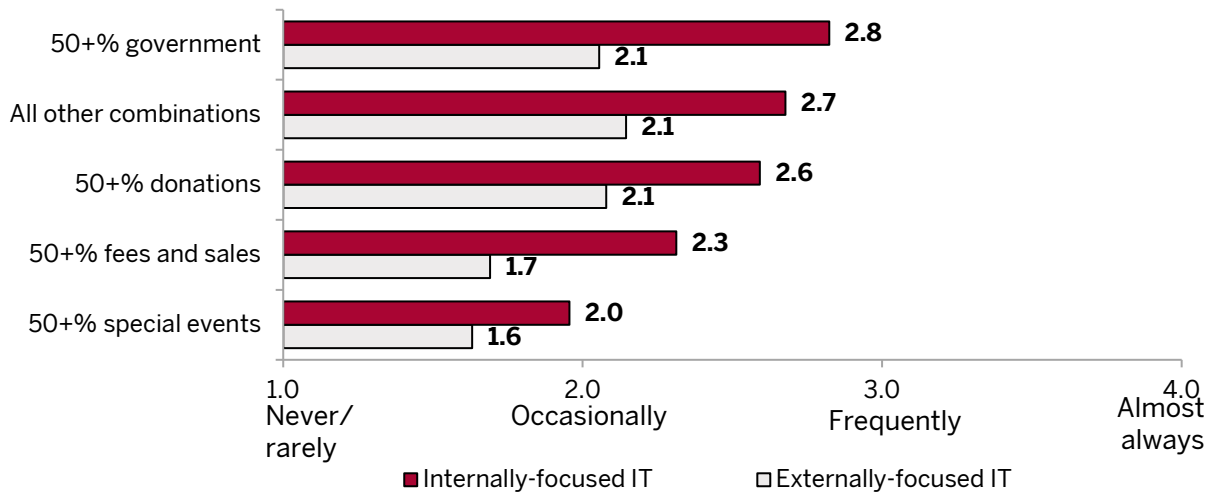
As Figure 20 shows, this pattern also holds for having an organizational website. Nonprofits that receive the majority of their funding from government sources are the most likely to report having an organizational website (83 percent) compared to 74 percent of those that rely mainly on donations, and less than two-thirds of those that receive most of their funding from fees and sales (63 percent), or special events (62 percent).

Figure 20. Presence of organizational website, by funding profile (n=851, significant at p<.05)

Funding profile	Percent
50+% government	83%
All other combinations	79%
50+% donations	74%
50+% fees/sales	63%
50+% special events	62%
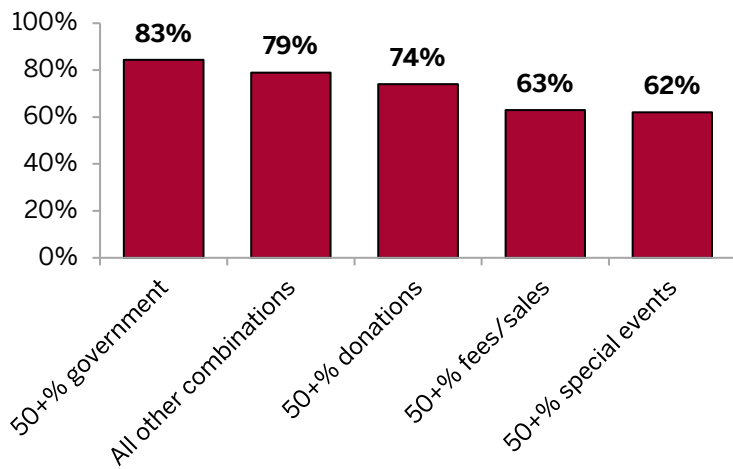
Location. To analyze whether the type of community in which Indiana nonprofits are located is associated with IT usage, we created a county variable based on the ZIP code of the organization's mailing address. We then grouped the counties by their metropolitan status as determined by the U.S. Bureau of the Census. Most Indiana nonprofits (60 percent) are located in the central city county of metropolitan regions (such as Marion County for the Indianapolis Metropolitan area, Monroe County for the Bloomington Metropolitan area), followed by nonmetropolitan counties (30 percent). Relatively few (9 percent) are located in suburban counties surrounding metropolitan cities.

We hypothesize that technology use will increase in central city metropolitan counties because nonprofits located in these communities will have greater access to IT resources (especially those requiring broadband access[12]) and volunteers, staff, and consultants with IT expertise. Our analysis shows that nonprofits in central city metropolitan counties report using internally and externally-focused IT resources slightly more often (2.5 and 2.0 out of 4, respectively) than those in nonmetropolitan counties and metropolitan ring counties (Figure 21)[13].

Figure 21. Use of internally and externally-focused IT resources, by county type (n=908, significant at $p<.05$)
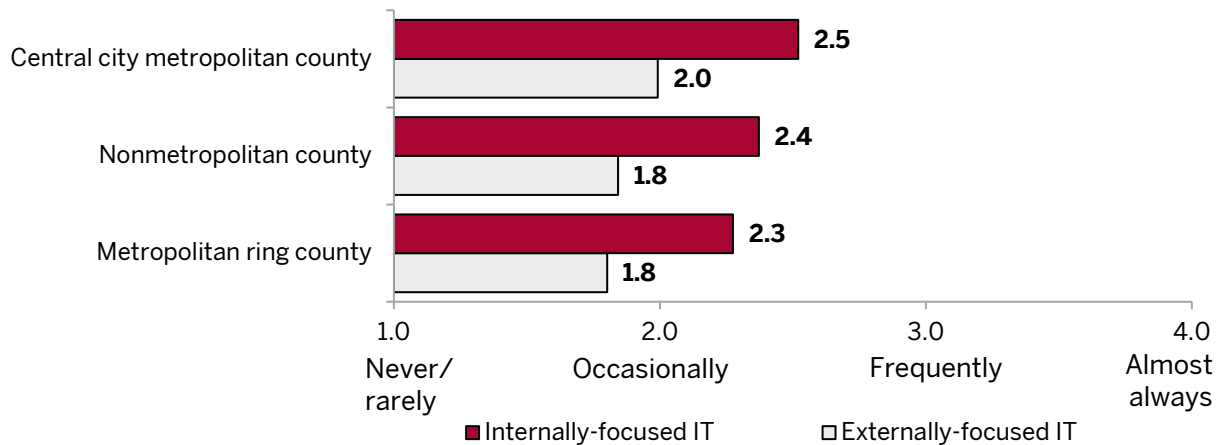
As Figure 22 shows, nonprofits located in central city metropolitan counties also report having an organizational website (70 percent), compared to fewer than 60 percent of nonprofits in nonmetropolitan counties or metropolitan ring counties (58 and 57 percent, respectively).

Figure 22. Presence of organizational website by type of location (n=1,033, significant at $p<.05$)

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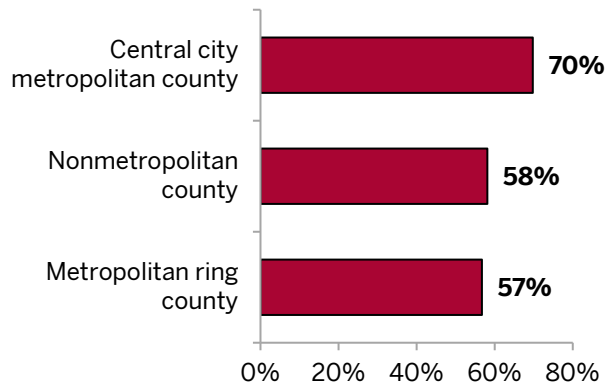
[12] Access to broadband and wireless services varies significantly across Indiana and is poor or absent for many rural communities (see http://www.indianabroadbandmap.com/, accessed March 6, 2019).

[13] The differences between categories in Figure 21 are relatively small, but the model is significant due to the large sample size.

Primary Field of Activity (NTEE). Our survey asked respondents to select up to three classifications from the National Taxonomy of Exempt Entities (NTEE) Codes that best describe their primary purpose or mission. Our research team then classified each respondent into one primary NTEE code. Unlike the self-reported NTEE codes, these codes are mutually exclusive so that each organization has only one code, reflecting its primary purpose or activities.[14]

As Figure 23 shows, about a quarter (27 percent) of Indiana nonprofits provide some type of human services as their primary activity, including youth development, recreation, employment, food, and housing. Another quarter are religious organizations, primarily churches. Public and societal benefit groups (17 percent) include advocacy, community improvement, and economic development organizations as well as foundations, the United Way, etc. The remaining categories each account for no more than 10 percent of the total.[15]

Figure 23. Frequency of major NTEE codes (n=1,036)
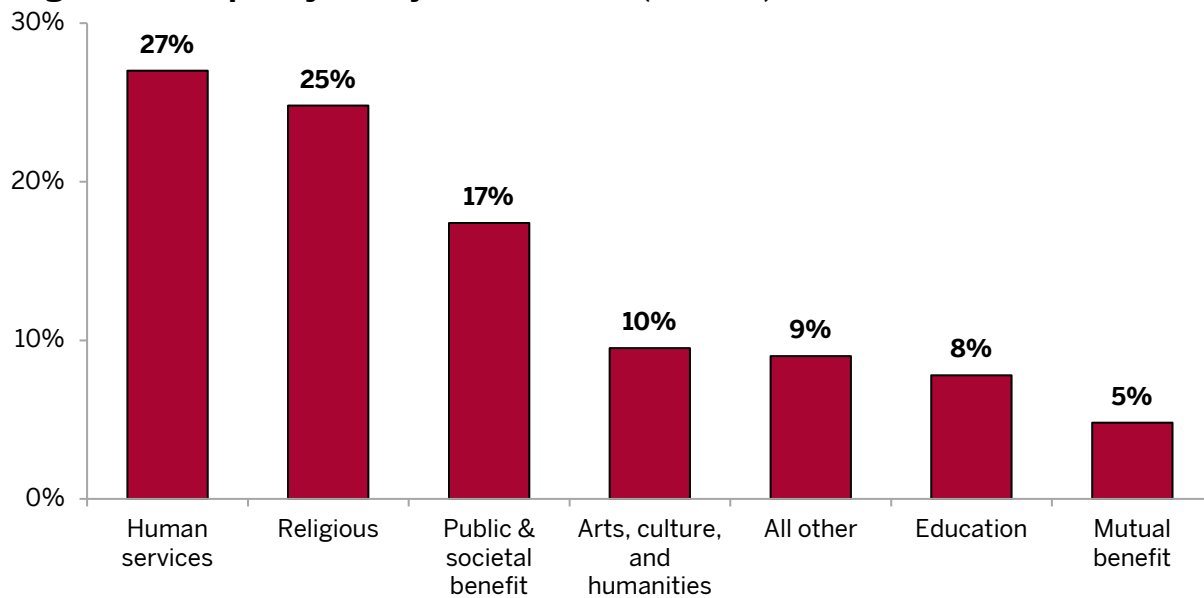
We have no basis for expecting nonprofits in some fields to have more IT resources than others. Our analysis of whether there are significant differences in the use of internally and externally-focused IT resources by primary field of activity is therefore exploratory. The rank order of fields is quite similar for both types of IT resources (Figure 24). Arts, culture,

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[14] We based these codes on coding instructions for the NTEE system, along with a review of the organization's mission statement or description of purpose in the IRS-registration system, its articles of incorporation, or its website. We also considered its name (e.g., church, or "theatre") and consulted NTEE codes assigned in the IRS registration system. In some cases, our classification is different from how respondents coded themselves.

[15] We grouped Health, Environment, and International organizations into an "All Other" category because our sample included so few of these organizations (less than 5 percent each).

and humanities, religion, and "all other" (health, environment & international) nonprofits tend to have the highest use, while mutual benefit and public and societal benefit nonprofits use IT resources the least.

Figure 24. Use internally and externally-focused IT resources, by NTEE code (n=911-920)

	Internally-focused IT	Externally-focused IT
Arts, culture, and humanities	2.6	2.1
Religion	2.6	2.0
All other	2.5	2.1
Human services	2.5	2.0
Education	2.4	1.9
Public & societal benefit	2.3	1.8
Mutual benefit	2.1	1.4

Scale: 1.0 Never/rarely — 2.0 Occasionally — 3.0 Frequently — 4.0 Almost always

■ Internally-focused IT   □ Externally-focused IT
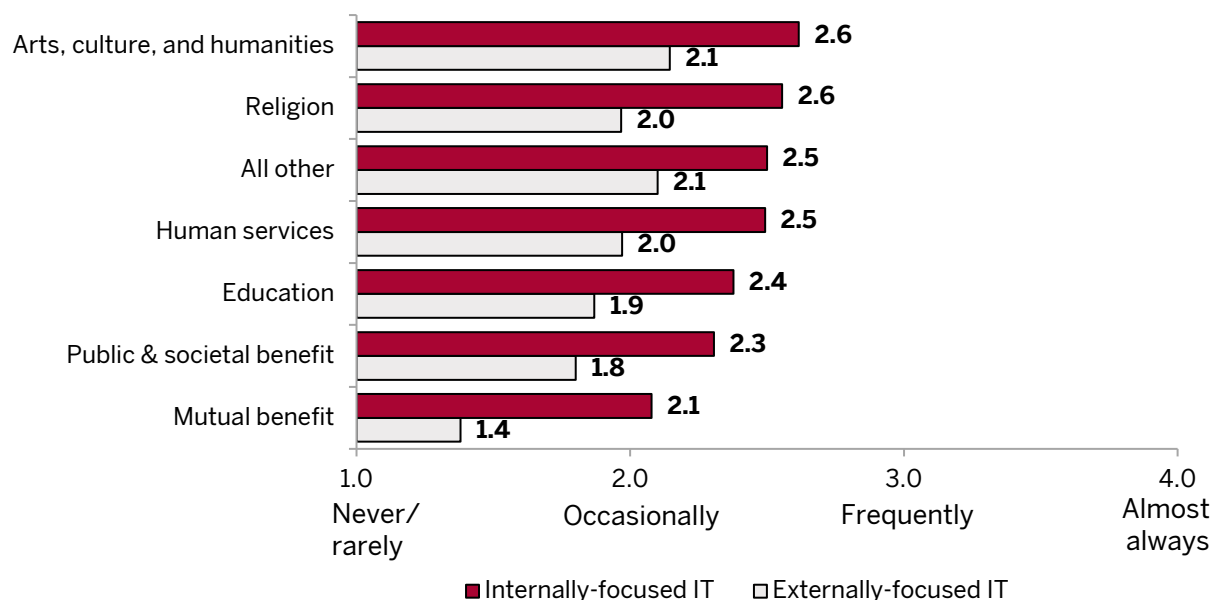
Figure 25 shows that the primary field of activity also appears to make a significant difference in whether a nonprofit has an organizational website. The vast majority of arts, culture, and humanities organizations have an organizational website (74 percent), followed closely by all other (71 percent), and religious organizations (69 percent). About two-thirds of public benefit organizations (68 percent), education organizations (67 percent), and human services organizations (61 percent) also

Figure 25. Presence of organizational website, by NTEE code (n=797, significant at p<.05)

Arts, culture, and humanities	74%
All other	71%
Religious	69%
Public & societal benefit	68%
Education	67%
Human services	61%
Mutual benefit	34%

have an organizational website. However, only a third (34 percent) of mutual benefit organizations have an organizational website.
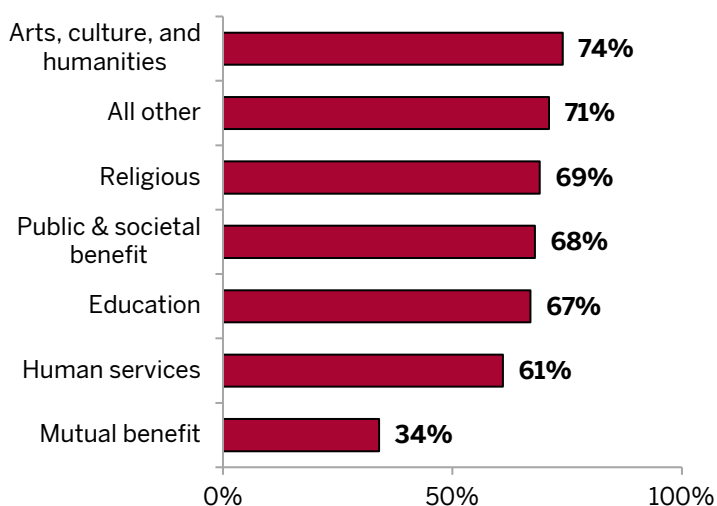
Overall Assessment - IT Use

Our analysis so far has focused on whether a particular organizational feature, such as the size or age of Indiana nonprofits, is related as we expect to the use of different types of IT resources. Although useful, this approach is limited in that it forces us to consider each explanatory feature separately. More advanced statistical techniques – multivariate analyses – make it possible to include multiple explanatory features in a statistical model to determine which of them significantly relate to the feature we are trying to understand while controlling for all other factors considered in the analysis. We now take a closer look at how the various organizational characteristics we have considered so far perform in explaining the use of the various types of IT resources when we allow all of them to operate at the same time.[16]

In order to benefit from the full power of multi-variate analyses, we use the actual numeric versions of several explanatory factors (variables) explored above instead of grouping these measures into segments. This includes the number of decades since being established, the actual count of FTE paid staff, the count of organizational components (formalization scale), and the number of board vacancies. Two of these variables (FTE, board vacancies) are highly skewed, and we therefore use their natural log to minimize distortions in the analyses.

In the case of explanatory variables that are categorical in nature, we convert each category into a "dummy" variable that has the value 1 (yes) if the responding organization fits that category (e.g., is a charity) and otherwise has a value of zero (no). If the categorical variable has more than two categories, as does our location variable: central city metropolitan county, metropolitan-ring county and non-metropolitan county, we construct three dummy variables to capture each type of location in this yes/no format. Our funding-mix variable has six categories and therefore requires six dummy variables, etc.

For each family of dummy variables, however, we must exclude one from the multivariate analysis in order to have a comparison for the remaining variables in that family. For dummy families with three or more categories, we exclude a variable that provides useful comparisons to the remaining dummy variables in that family:
(1)   Funding Profile – exclude "All other combinations"
(2)   Location – exclude: Nonmetropolitan counties
(3)   Primary Purpose (NTEE) – exclude "all other" (health, environment, and international)

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[16] As noted earlier, we also consider whether the responding nonprofits were part of our nonprofit panel that participated in our 2002 survey, to see whether they differ from respondents that were drawn exclusively from our 2017 sample since the panel nonprofits have survived the 15 intervening years.

Internally-focused IT Resources and Externally-focused IT Resources

Table 1 presents the findings from our multivariate analysis. The eight explanatory factors considered previously remain important in predicting the extent to which Indiana nonprofits use IT resources, once we control for all other factors. A panel variable indicating whether respondents were part of the 2002 survey was also significant in multivariate analysis. Column 1 shows factors predicting the use of Internally-focused IT resources (electronic financial records, electronic client records, routine data backups, and IT security) and column 2 shows those that predict the use of Externally-focused IT resources (Facebook. Twitter, other social media, donor databases or constituent relationship management software, dedicated and reputable websites). Only those explanatory factors that significant in the final analysis are flagged as to whether the relationship is positive (marked with '+') or negative (marked with '− ') as explained in the notes below the table. All other explanatory factors do not contribute independently to explaining the use of the two types of IT resources.

Table 1. Estimates from Linear Regression of Internally-focused IT Resources and Externally-focused IT Resources

Variables in the Equation (Hypothesized Relationship)	Internally-focused IT Resources	Externally-focused IT Resources
Age (+)		−
Ln of Number of FTE Staff (numeric) (+)	+	+
Formalization (+)	+	+
Ln of Number of Board Vacancies (numeric) (−)		
Public Charity (+)		
Funding Mix-Donations (+)		
Funding Mix-Fees and Sales (−)		−
Funding Mix-Government (+)		−
Funding Mix- Special Events (−)		
Location- Central City Metropolitan County (+)		
Location- Metro Ring County (+)		
NTEE-Arts, Culture, and Humanities (?)	+	+
NTEE-Education (?)		
NTEE-Mutual Benefit (?)		
NTEE-Human Services (?)		
NTEE-Public & Societal Benefit (?)		
NTEE-Religion (?)	(+)	
Panel (+)		

Notes: The hypothesized direction of the relationship is shown in the parenthesis after each explanatory factor. Coefficients significant at the p<0.05 level are flagged in **red** and those that are only borderline significant at the p<0.1 appear in parentheses and are flagged in **blue**. Both models are significant at p=.000. For Column 1, the Adjusted R-squared =.412 (the proportion of variation in the **use of internally-focused IT resources**, explained by the independent variables). For column 2, the Adjusted R-squared =.504 (the proportion of variation in the **use of externally-focused IT resources**) explained by the independent variables), For full results, see Appendix B.

We draw several conclusions from these results. First, both models are highly significant (p<.000) and explain a robust amount of variance in the two dependent variables: 41 percent in the use of Internally-focused IT Resources and 50 percent in the use of Externally-focused IT Resources. Second, controlling for all other factors, the use of both types of IT Resources is significantly higher the more FTE paid staff nonprofits have, the more formalized they are, and if their primary field is arts, culture and humanities compared to our "all other" NTEE field category. Importantly, these patterns are similar to what we found for bi-variate analysis presented above, suggesting that these are indeed robust findings.

Third, no other factors appear relevant for the use of Internally-focused IT Resources, although religion is borderline significant (and positive), including whether the responding nonprofits were part of the 2002 survey panel. However, two additional factors are important in explaining the use of Externally-focused IT Resources: Usage is significantly lower for those relying on fees and sales or on government funding for half or more of their funding, compared to those that rely on a mix of funding.

The pattern for reliance on fees and sales is similar to what we found in the bi-variate analysis, but opposite of what we saw for relying on government funding. We note that we had expected government funding to be significant for internally-focused IT resources, but did not have any expectations with regard to externally-focused resources. Also, only 8 percent of Indiana nonprofits obtain half or more of their funding from government, perhaps accounting for the inconsistent results.

Organizational Website

Finally, we look at one particular type of externally-focused IT resource; having an organizational website and use all of the explanatory factors considered above, including whether responding organizations were part of the 2002 panel. **Table 2** shows the results of our logistic regression. This prediction model is also highly significant (p<.000, adjusted R-square 49 percent) and accurately predicts whether Indiana nonprofits have a website in 87 percent of the cases.

However, only two variables are significant. And while both were also significant in the multivariate analyses for internally-focused and externally-focused IT Resources, only one of these – formalization – has the same positive relationship: the more formalized Indiana nonprofits are, the more likely they are to have a website and to use other types of IT resources frequently. However, while arts, culture and humanities nonprofits were more likely to frequently use both Internally-focused and Externally-focused IT Resources, they appear less likely to have a website than our comparison group. The latter group combines health, environment, and international nonprofits, and two of these – health and international – have very high use of websites. Those that rely mainly on donations are marginally more likely to have a website, as we predicted.

Table 2. Estimates for Logistic Regression of Website

Variables in the Equation (Hypothesized Relationship)	*Relationship*
Year Founded	
Ln of Number of FTE Staff (numeric) (+)	**–**
Formalization (+)	**+**
Ln of Number of Board Vacancies (numeric)	
Public Charity	
Funding Mix-Donations (+)	**(+)**
Funding Mix-Fees and Sales	
Funding Mix-Government	
Funding Mix-Special Events	
County Type-Central Metro	
County Type- Metro Ring	
NTEE-Arts, Culture, and Humanities (?)	**–**
NTEE-Education	
NTEE-Mutual Benefit	
NTEE- Human Services	
NTEE-Public & Societal Benefit	
NTEE-Religion	
Panel	

Notes: The hypothesized direction of the relationship is shown in the parenthesis after each explanatory factor. Coefficients significant at the p<0.05 level are flagged in bold **red** and those only borderline significant at the p<0.1 appear in parentheses and are flagged in **blue**. The model is significant at p=.000. The Adjusted R-squared=.494 (the proportion of variation in the dependent variable (**presence of organizational website**) explained by the independent variables), and there are 85.8% estimated correct predictions in the model. For full results, see Appendix B.

DETAILED FINDINGS – IT CHALLENGES

Our analysis so far has shown that a substantial proportion of Indiana nonprofits do not use many important types of information technology resources. These resources could help them to reach constituency groups more effectively, inform the broader community about their activities, and improve their internal operations. We do not know whether they do not utilize these resources because they are not aware of their importance, or whether they do not have the capacity to acquire or use them.

Our survey does not allow us to directly examine whether Indiana nonprofits are aware of IT resources, but we did ask whether any of six IT-related activities were a major challenge, somewhat of a challenge, a minor challenge, or not a challenge on a scale from 1 (not a challenge) to 4 (a major challenge). As Figure 26 shows, among the six listed IT activities, Indiana nonprofits reported the greatest challenges creating and maintaining an engaging, up-to-date website. This is followed by creating, updating, and using donor database software to track donors and conduct fundraising analyses; getting decision-makers or funders to understand the importance of acquiring good technology; training staff/volunteers in software/ applications; and getting help to address information technology problems. Identifying technology tools and resources for improving service delivery was the activity that was rated a major challenge least often.

Figure 26. Frequency of ratings for specific IT challenges (n=580-745)

	Major challenge	Somewhat of a challenge	Minor challenge	Not a challenge
Creating and maintaining an engaging, up-to-date website	23%	33%	25%	18%
Creating, updating, and using donor database software to track donors and conduct…	21%	24%	27%	28%
Getting decision-makers or funders to understand the importance of getting good technology	17%	27%	25%	31%
Training staff/volunteers in software/applications	15%	32%	31%	23%
Getting help to address information technology problems	14%	27%	32%	27%
Identifying technology tools and resources for improving service delivery	13%	37%	31%	19%

To facilitate our analysis, we performed factor and reliability analyses to examine whether these six types of IT challenges grouped in some ways.[17] We identified two separate, significantly different, groups of challenges. **IT application challenges** include: creating and maintaining an engaging, up-to-date website; creating, updating, and using donor database software to track donors and conduct fundraising analyses; and getting help to address information technology problems. **IT capacity challenges** include: identifying technology tools and resources for improving service delivery; training staff/volunteers in software/applications; and getting decision-makers or funders to understand the importance of acquiring good technology.

As Figure 27 shows, the average score for IT application challenges is 2.4 (ranging from 2.3 to 2.6). Similarly, Figure 28 shows that the average score for IT capacity challenges is 2.4 (ranging from 2.3 to 2.4). These results suggest that on average Indiana nonprofits rate these activities as intermediary—between a minor and somewhat of a challenge. These are relatively low challenge scores compared to how these same Indiana nonprofits reported challenges related to obtaining

Figure 27. Average scores on IT application challenges (n=580-745)

financial resources or marketing their programs and services.[18] A number of theories could explain these lower IT scores. The scores could be lower because these activities are not particularly challenging, or because Indiana nonprofits lack extensive experience using IT resources and therefore have not encountered challenges with them.

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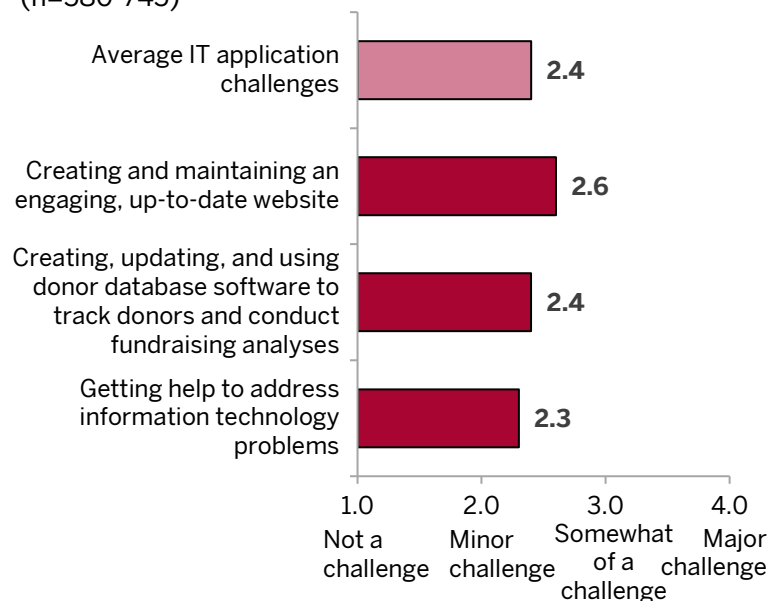
[17] This is similar to the process we used to develop the externally and internally-focused IT resource groupings described earlier in this report.

[18] In our analysis of Indianapolis area nonprofits, we found that nine of the top twelve challenges facing nonprofits related to financial and marketing challenges. The only IT-related challenge in the top twelve was creating and maintaining an engaging, up-to-date website (ranked 8th). The other five IT-related challenges ranked 13, 14, 19, 24 and 29 in the list of 39 challenges respectively (see pages 32-33 in https://nonprofit.indiana.edu/doc/publications/2017SurveyReports/Indianapolis2018.pdf).

To explore potential reasons why IT challenges seem to be relatively low, we look at the relationship between having a website and reporting website-related challenges. Of those that have an organizational website, 58 percent say it is a major challenge or somewhat of a challenge to create or maintain websites, compared to 45 percent of those without a website (Figure 29).

However, most of the difference between the two groups is because those with a website are much more likely to say that website-related work is only somewhat of a challenge than those without websites (36 versus 17 percent). Surprisingly, only 15 percent of those with websites say creating, updating, and maintaining a website is not a challenge (compared to 34 percent of those without a website).

These findings suggest that many nonprofits who use a particular IT resource find it challenging. The fact that many of those who don't use a particular IT tool also find it challenging suggests that it isn't lack of interest that limits their use, but their inability to apply the tool or resources.

Figure 28. Average scores on IT capacity challenges (n=681-726)

	Score
Average IT capacity challenges	2.4
Identifying technology tools and resources for improving service delivery	2.4
Training staff/volunteers in software/applications	2.4
Getting decision-makers or funders to understand the importance of getting good technology	2.3

Scale: 1.0 Not a challenge, 2.0 Minor challenge, 3.0 Somewhat of a challenge, 4.0 Major challenge

Figure 29. Reported challenges maintaining a website (n= 745, significant at p<.05)

	Has an organizational website	Organizational website not reported
Major challenge	22%	28%
Somewhat of a challenge	36%	17%
Minor challenge	26%	21%
Not a challenge	15%	34%

■ Has an organizational website
□ Organizational website not reported
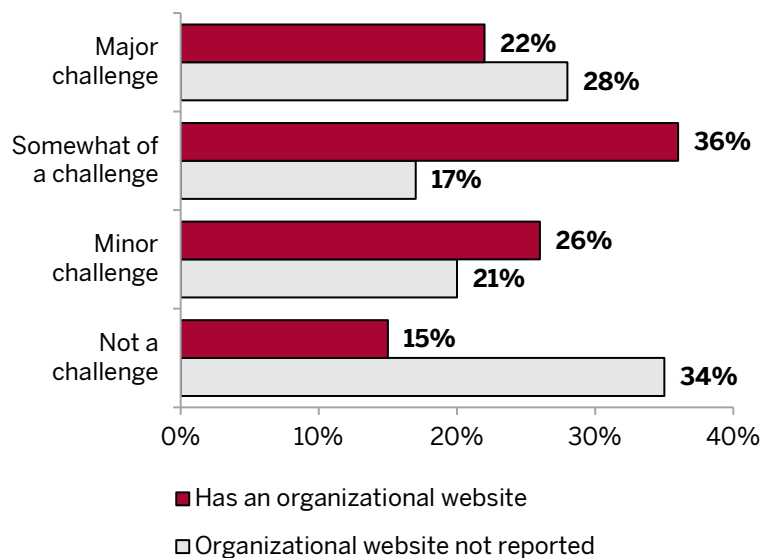
We also consider whether those who use the internally and externally-focused IT resources most extensively also score highest on the either of the two IT-challenge scales. We find some support for this argument, but not as consistently as we had expected. Those with the highest use of externally-focused IT resources (e.g., social media, donor databases, online donations) also report higher IT capacity challenges (identifying technology tools, training staff/volunteers, or getting funders/decision-makers to understand the importance of good technology (p<.05 level).

Explaining IT Application and Capacity Challenges

We turn now to look at whether the same factors that help explain IT use also are relevant in accounting for the extent to which nonprofits find IT resources challenging. Six relation-ships are significant at the p<.05 level in the bivariate analysis for IT application and capacity challenges: number of FTE staff, formalization, number of board vacancies, public charities, funding profile, and primary purpose (NTEE).

Number of Full-Time Equivalent Staff (FTE). As Figure 30 shows, organizations with paid staff report slightly higher IT application and capacity challenges (ranging from 2.4 to 2.6 out of 4) compared to those without paid staff (2.2 and 2.3 out of 4).

Figure 30. Extent to which nonprofits experience IT application and capacity challenges, by number FTE (n=734-758, significant at p<.05)

- IT application challenges ■   IT capacity challenges □
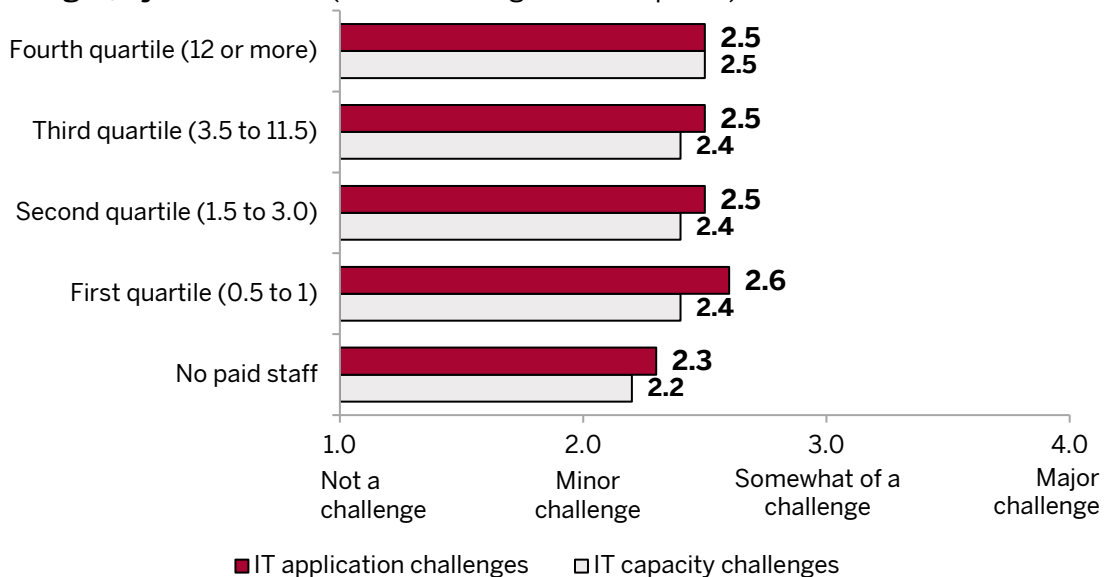
Formalization. We find a similar pattern for formalization. As described earlier, Indiana nonprofits with more organizational components in place (i.e., more formalized nonprofits) are more likely to use IT resources. However, as Figure 31 shows, more formalized nonprofits have higher average IT application and capacity challenge scores (2.5 out of 4) than those with fewer organizational components in place (2.1 out of 4).

Figure 31. Extent to which nonprofits experience IT application and capacity challenges, by level of organizational formalization (n=750-776, significant at p<.05)
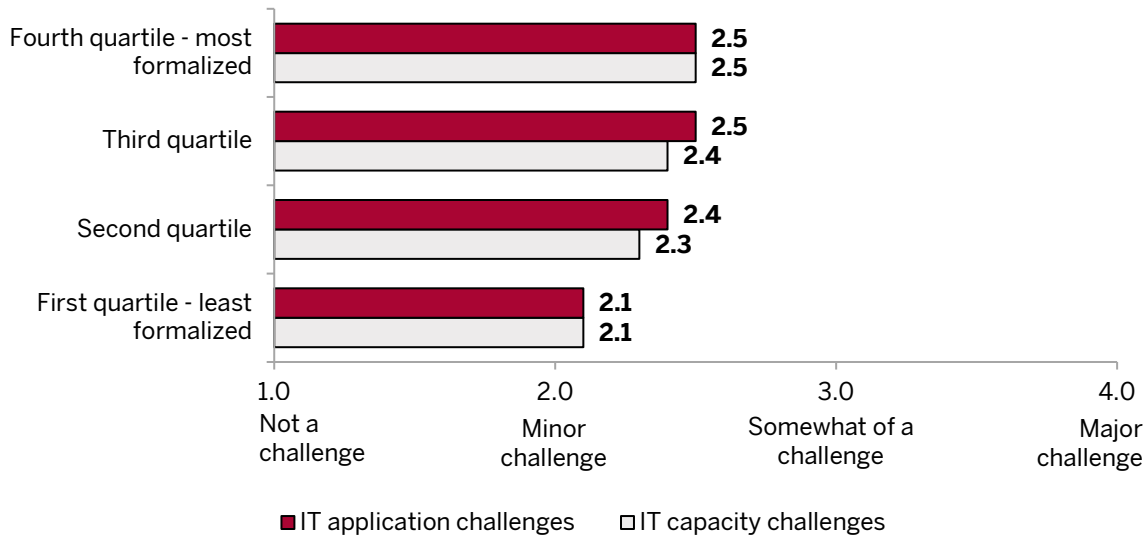
Public Charities. Nonprofits registered with the Internal Revenue Service as tax-exempt under section 501(c)(3) of the IRS code (commonly known as "charities") are subject to special scrutiny by the IRS, dedicated charity watchdogs (such as Charity Navigator), and the general public. This suggests that they may pay greater attention to IT-related resources. Some 76 percent of our survey respondents are IRS-registered charities. As Figure 32 shows, charities have slightly higher average scores on application and capacity challenges with information technology than other nonprofit organizations.

Figure 32. Extent to which nonprofits experience IT application and capacity challenges, by charity (n=506-527, significant at p<.05)
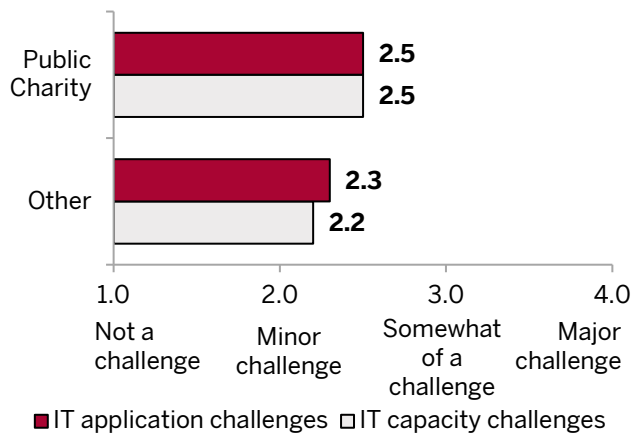
Board Vacancies. In prior surveys of Indiana nonprofits, we found that nonprofits with board vacancies were significantly more likely to report challenges across almost the full range of challenges examined.[19] As Figure 33 shows, that pattern still holds. Nonprofits without any board vacancies report the fewest challenges (average scores of 2.3 and 2.4 out of 4) and as the number of board vacancies increases to more than 3 vacancies, the average IT application and capacity challenge scores increase to 2.7 out of 4. Earlier in this report, we found that those in the fourth quartile with the most vacancies report using internally and externally-focused IT most frequently. Possibly, nonprofits with greater challenges find it more difficult to attract or keep board members. Alternatively, those with board vacancies may lack the leadership and oversight necessary to address the challenges they face. Perhaps both forces operate.

Figure 33. Extent to which nonprofits experience IT application and capacity challenges, by board vacancies (n=627-643, significant at p<.05)
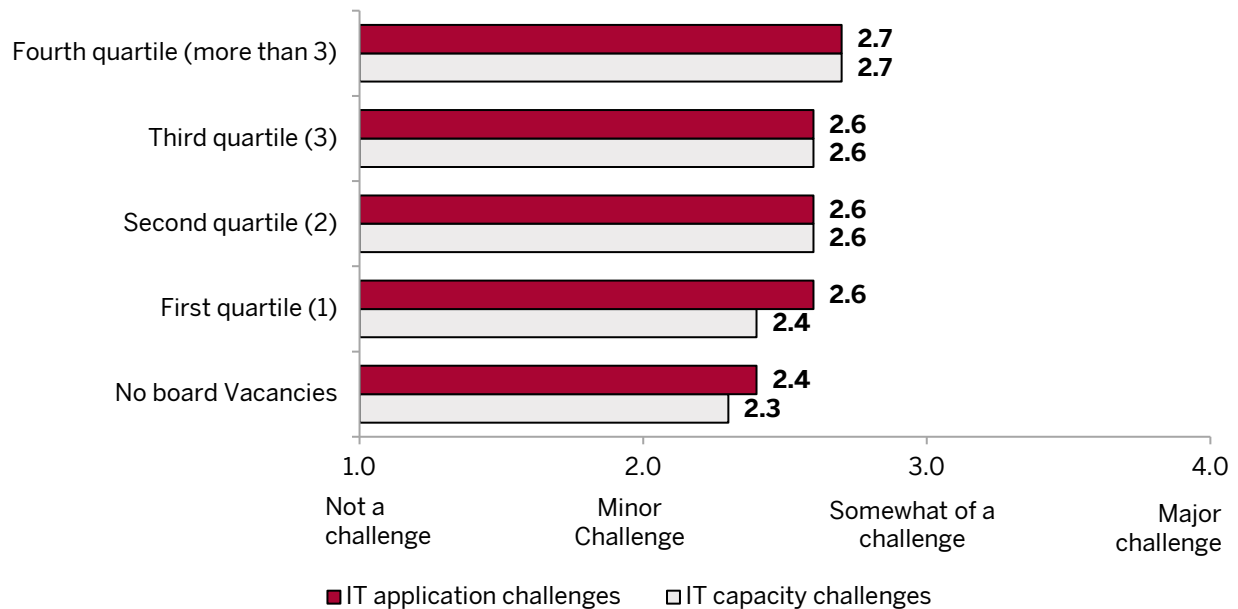
Funding Mix. As previously mentioned, the type of funding on which Indiana nonprofits rely is related to their use of IT resources. Nonprofits that receive the majority of their funding from government used internally-focused IT resources most frequently, followed closely by those that receive 50 percent or more of their funding from all combinations and private donations. Nonprofits that receive 50 percent or more of their funding from fees/sales or special events had the lowest scores on the use of internally-focused IT resources scale. A similar pattern follows for externally-focused resources.

As Figure 34 shows, nonprofits that receive the majority of their funding from the government not only use IT resources more, but also reported more application and capacity challenges (averages of 2.6 out of 4) than those that receive most of their funding from fees and sales, special events, and other earned revenues (2.3 out of 4). Those with other funding profiles—relying mainly on donations or having a mix of funding sources, report intermediary challenges.

Figure 34. Extent to which nonprofits experience IT application and capacity challenges, by funding mix (n=694-722, significant at p<.05)
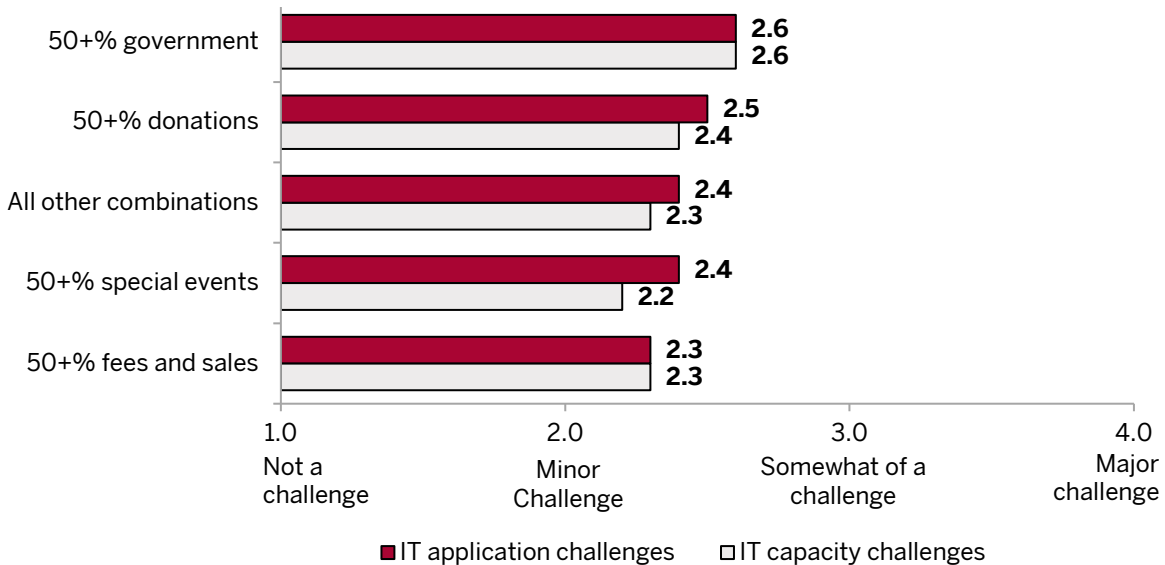
Primary Purpose (NTEE). Finally, we examine whether IT-challenges vary by primary field (NTEE code). As Figure 35 shows, we find substantial differences across the various NTEE codes. IT application and capacity challenges were highest for "all other" (health, environment, & international) organizations (2.7 and 2.6 out of 4) followed closely by arts, culture, and humanities organizations (2.6 and 2.5 out of 4). Mutual benefit organizations reported having challenges with IT application and capacity the least (2.0 and 2.1 out of 4), with human service, education, and public and societal benefit nonprofits reporting only slightly higher challenge scores. Religious nonprofits report intermediary challenge scores.

Figure 35. Extent to which nonprofits experience IT application and capacity challenges, by NTEE Code (n=750-776, significant at p<.05)
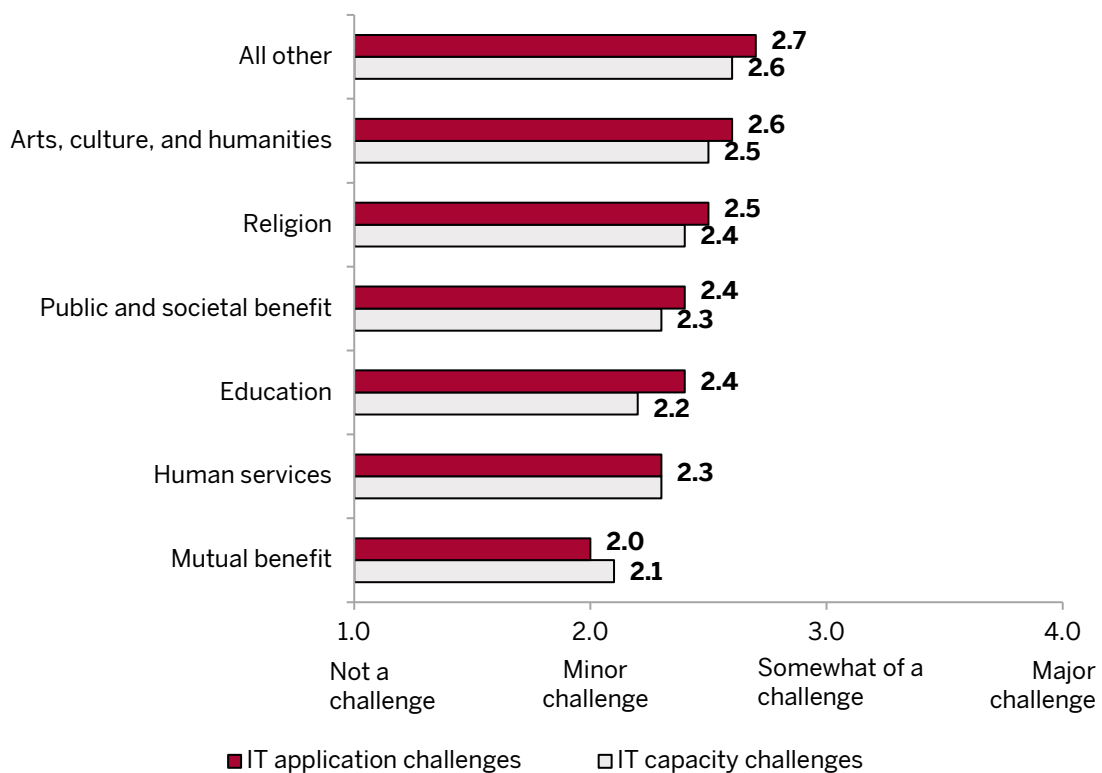
Overall Assessment – IT Challenges

Our analysis so far has focused on whether a particular organizational feature, such as the size or age of Indiana nonprofits, is related as we expect to the use of different types of IT challenges. We turn now to a more comprehensive assessment of the possible explanations for why some Indiana nonprofits face more challenges in applying IT tools or building their IT capacity. As described earlier, we use multivariate analyses to see which of the explanatory factors remain significant, controlling for all other factors.

We again use the actual numeric versions of those explanatory factors (variables) where possible: the actual count of FTE paid staff, the count of organizational components (formalization scale), and the number of board vacancies, but use the natural log of FTE and board vacancies to minimize distortions in the analyses.

For the remaining explanatory factors we again use "dummy" variables that have the value 1 (yes) if the responding organizations fit a particular category (e.g., is a charity) and otherwise has a value of zero (no). If the categorical variable has more than two categories, we developed dummy variables to capture each category in this yes/no format. For example, our Primary Purpose variable (Figure 35 above) has seven categories and therefore requires seven dummy variable, etc.

For each family of dummy variables, we again exclude one from the multivariate analysis in order to have a comparison for the remaining variables in that family. For families with three or more categories, we exclude a variable that provides useful comparisons to the remaining dummy variables in that family:
(1)   Funding Profile – exclude "All other combinations"
(2)   Location – exclude: Nonmetropolitan counties
(3)   Primary Purpose (NTEE) – Exclude "all other" (health, environment, and international)

The multivariate analysis is not significant for the IT application challenges, once we control for all explanatory factors, including whether responding organizations were part of the 2002 panel (details not presented). The same holds for the IT-capacity challenges. However, when we consider also the extent to which Indiana nonprofits use IT tools, the analysis is significant ($p<.05$), but the overall model accounts for only 3 percent of the variance, suggesting it is not very powerful. Table 4 shows the results of the logistic regression for IT capacity challenges. Including the use of IT tools does not affect the multivariate analysis for IT application challenges.

Table 4. Estimates for Linear Regression of IT Capacity Challenges

Variables in the Equation (Hypothesized Relationship)	Relationship
Year Founded	
Ln of Number of FTE Staff (numeric)	
Formalization (+)	**(+)**
Ln of Number of Board Vacancies (numeric) (+)	**+**
Public Charity	
Funding Mix-Donations	
Funding Mix-Fees and Sales	
Funding Mix-Government	
Funding Mix-Special Events (-)	**(−)**
County Type-Central Metro	
County Type- Metro Ring	
NTEE-Arts, Culture, and Humanities	
NTEE-Education (?)	**−**
NTEE-Mutual Benefit	
NTEE- Human Services	
NTEE-Public Societal Benefit (?)	**(−)**
NTEE-Religion	
Panel	
Internally-focused IT Resources (+)	**−**
Externally-focused IT Resources (+)	

Notes: The hypothesized direction of the relationship is shown in the parenthesis after each explanatory factor. Coefficients significant at the $p<0.05$ level are flagged in bold **red** and those only borderline significant at the $p<0.1$ appear in parentheses and are flagged in **blue**. The model is significant at $p=.015$. The Adjusted R-squared=.039 (the proportion of variation in the dependent variable (**presence of organizational website**) explained by the independent variables). For full results, see Appendix B.

Overall, four explanatory factors are significant in the overall prediction equation for IT capacity challenges: Those with more board vacancies are more likely to report high IT capacity challenges, controlling for all other factors (as we had predicted based on prior research), while education nonprofits were less likely to report these types of capacity challenges than the comparison group ("all other").

We also find a negative relationship between IT capacity challenges and use of internally-

focused IT resources – those that use these types of resources most extensively report fewer IT capacity challenges, controlling for all other factors. The latter would appear to be somewhat inconsistent with what we reported earlier, namely that the types of nonprofits which use various types of IT resources the most were also the ones that reported higher IT challenges.

We think there are two explanations for this potential inconsistency. First, we do control for all other explanatory factors, and, second, internally-focused IT resources include such IT tools as IT security, routine data backups, and electronic financial and client/member records. It is very likely that nonprofits that use these tools most extensively have already addressed or conquered the IT capacity challenges of identifying IT tools to improve service delivery, training staff and volunteers in software applications, and getting decision-makers and funders to understand the importance of good technology.

Two other explanatory factors—formalization and reliance on special events—have borderline relationships with IT capacity challenges. More formalized nonprofits are marginally more likely to report IT capacity challenges, as are public & societal benefit nonprofits, while those that rely mainly on special events are marginally less likely to do so.

CONCLUSION

Information technology allows nonprofits and other organizations to communicate with constituents who would like to use their services or support the organization. IT also provides the internal support and systems that organizations need in order to monitor their own activities and operate more efficiently.

This report on *Indiana Nonprofits: Information Technology Resources and Challenges* answers several particularly relevant and important questions: to what extent do Indiana nonprofit organizations utilize **information technology** and what challenges do they face in using these types of resources? We also consider which organizational characteristics appear to be associated with the use of both internal and external IT resources. To do so, we rely on a comprehensive survey of 1,036 Indiana nonprofits that responded to our 2017 survey.

Indiana nonprofits report using IT security resources the most and dedicated and reputable sites for nonprofits the least; while they report using information technology resources such as internet searches a moderate amount. Of the two groupings of resources outlined in this report, we found that nonprofits report using externally-focused IT resources significantly less often than internally-focused IT resources. When examining possible explanatory factors individually, we find that usage of IT resources varies by age (number of decades since founded), number of full-time equivalent staff (FTE), formalization, board vacancies, public charities, funding profile, location, and primary purpose (NTEE).

Additionally, Indiana nonprofits face challenges related to information technology. Overall, reported IT application and capacity challenges show similar challenge levels (average scores of 2.4 out of 4 for both scales). However, nonprofits find creating and maintaining an engaging, up-to-date website the most challenging (2.6 out of 4). These challenges vary by many of the same eight independent variables outlined above.

We find that many of the same factors that explain use of internally-focused and externally-focused IT resources also explain two broad challenges (IT application and IT capacity). Nonprofits that receive the majority of their funding from the government used IT resources most frequently and reported higher application and capacity challenges than those that receive the majority of their funding from various other revenue sources. In addition, nonprofits in metropolitan counties reported having an organizational website and using IT resources more often than nonprofits located in metropolitan ring counties or non-metropolitan counties.

Nonprofits with more organizational components in place—more formalized organizations—are more likely to have a website and use IT resources. They also report higher IT application and capacity challenges than less formalized organizations. Finally, arts, culture and humanities organizations, religious organizations, and "all other" (health, environment, and international) organizations report the highest IT usage. However, these organizations also report some of the highest application and capacity challenges.

Our multivariate analysis included all of the outlined explanatory factors at once in the model in order determine which combination of explanatory factors are best able to predict the use of IT resources, presence of an organizational website, and IT challenge, controlling for all other factors. We found that FTE, formalization, receiving revenue from fees and sales, receiving revenue from government services, and type of nonprofit field (NTEE) remain significant indicators of IT use and presence of an organizational website.

Nonprofits with more FTE staff are more likely to use both internally and externally focused IT resources more often. Additionally, more formalized organizations and arts, culture, and humanities organizations are more likely to use internally and externally focused IT resources. Organizations who receive the majority of their funding from either fees and sales or government sources are less likely to use externally focused IT resources. Arts and culture organizations and organizations with lower numbers of FTE staff are significantly less likely to have an organizational website, while more formalized organizations are significantly more likely to have an organizational website.

The corresponding analyses for the two types of IT challenges find that none of the factors explain the extent of IT application challenges, once we control for all factors. The same is also the case for IT capacity challenges, unless we control also for whether the organizations use the two types of IT resources. In this case, IT capacity challenges are greatest for nonprofits with more board vacancies, but lowest for education nonprofits and those that rely most extensively on internally-focused IT resources.

We hope this analysis is helpful to policy makers, community leaders, and others concerned about the use of information technology in nonprofit organizations. To facilitate efforts to develop training and supportive resources, Table 1 below ranks all of the average reported scores for information technology challenge questions included in the survey. One action item could be training and support for nonprofits in the areas of creation and maintenance of websites and donor databases.

Activity	Category	Average response (out of 4.0)
Creating and maintaining an engaging, up-to-date website	IT Application Challenges	2.6
Creating, updating, and using donor database software to track donors and conduct fundraising analyses	IT Application Challenges	2.4
Training staff/volunteers in software/applications	IT Capacity Challenges	2.4
Identifying technology tools and resources for improving service delivery	IT Capacity Challenges	2.4
Getting decision-makers or funders to understand the importance of getting good technology	IT Capacity Challenges	2.3
Getting help to address information technology problems	IT Application Challenges	2.3

APPENDICES

Appendix A – Selected Survey Questions

F2. During the past 12 months, how often did your organization use the following technology resources? *Response categories: Never/ rarely, Occasionally, Frequently, Almost all the time*

- Facebook account
- Twitter account
- Other social media accounts (e.g., LinkedIn, Instagram, blogs, etc.)
- Donor database or constituent relationship management software (e.g., eTapestry, Salesforce, Boomerang, Raiser's Edge)
- Dedicated and reputable sites for nonprofits (e.g., GuideStar, Foundation Center, Indiana Nonprofit Resource Network)
- Internet search using standard search engines (e.g. Google, Bing, Yahoo)
- Electronic financial records
- Electronic client/member/program records
- Routine data backups
- IT security (e.g., secure servers, anti-virus & related programs)
- Receipt of online donations or online sales

F3. How much of a challenge do the following TECHNOLOGY RESOURCES AND ACTIVITIES currently pose for your organization? *Response categories: Not a challenge, Minor challenge, Somewhat of a challenge, Major challenge, Don't do this activity*

- Identifying technology tools and resources for improving service delivery
- Getting decision-makers or funders to understand the importance of getting good technology
- Training staff/volunteers in software/applications
- Creating and maintaining an engaging, up-to-date website
- Creating, updating, and using donor database software to track donors and conduct fundraising analyses
- Getting help to address information technology problems
- Other (please specify):

Appendix B – Multivariate Analyses

Below, we display in-depth regression tables, including coefficients, for further information.

Table 1. Estimates from Linear Regression of Internally-focused IT Resources

Variable	B	S.E.	Sig.	Beta
Decades since Founded (numeric)	-.001	.013	.966	-.002
Panel	.080	.077	.302	.039
Number of FTE Staff (numeric)	.158	.035	**.000****	.232
Formalization	.116	.013	**.000****	.448
Number of Board Vacancies (numeric)	-.006	.058	.917	-.004
Public Charity	.031	.121	.796	.013
Funding Mix (ref=All other combinations)				
Funding Mix-Donations	.048	.099	.631	.023
Funding Mix-Fees and Sales	.074	.106	.486	.030
Funding Mix-Government	.045	.140	.746	.013
Funding Mix-Special Events	-.229	.151	.130	-.061
County Type (ref=Nonmetropolitan counties)				
County Type- Central Metro	-.111	.081	.171	-.054
County Type- Metro Ring	-.066	.138	.632	-.019
NTEE Code				
NTEE-Arts, Culture, and Humanities	.649	.152	**.000****	.203
NTEE-Education	.131	.164	.425	.036
NTEE-Human Services	.086	.125	.492	.039
NTEE-Mutual Benefits	.068	.252	.787	.012
NTEE-Public & Societal Benefit	.216	.140	.125	.088
NTEE-Religion	.252	.146	**.084***	.094
Constant	1.268	.194	**.000****	.094

Notes: Coefficients significant at the p<0.05 level marked with ****** and those significant at the p<0.1 marked with *****. The model is significant at p=.000. The Adjusted R-squared =.412 (the proportion of variation in the dependent variable (**use of internally-focused IT resources**) explained by the independent variables).

Table 2. Estimates from Linear Regression of Externally-focused IT Resources

Variable	B	S.E.	Sig.	Beta
Age: Decades Since Founded (numeric)	-.018	.009	**.043****	-.077
Panel	.030	.055	.586	.019
Number of FTE Staff (numeric)	.158	.025	**.000****	.299
Formalization	.090	.009	**.000****	.447
Number of Board Vacancies (numeric)	.013	.041	.758	.010
Public Charity	.113	.086	.187	.061
Funding Mix (ref=All other combinations)				
Funding Mix-Donations	.051	.070	.470	.031
Funding Mix-Fees and Sales	-.197	.074	**.008****	-.105
Funding Mix-Government	-.299	.099	**.003****	-.114
Funding Mix-Special Events	-.043	.107	.686	-.015
County Type (ref=Nonmetropolitan counties)				
County Type- Central Metro	.037	.057	.523	.023
County Type- Metro Ring	.088	.097	.365	.032
NTEE Code				
NTEE-Arts, Culture, and Humanities	.416	.107	**.000****	.169
NTEE-Education	.048	.117	.680	.017
NTEE-Human Services	.124	.089	.162	.072
NTEE-Mutual Benefit	-.018	.179	.919	-.004
NTEE-Public & Societal Benefit	.110	.099	.270	.058
NTEE-Religion	.030	.103	.772	.014
Constant	1.015	.137	**.000****	

Notes: Coefficients significant at the p<0.05 level marked with ****** and those significant at the p<0.1 marked with *****. The model is significant at p=.000. The Adjusted R-squared =.504 (the proportion of variation in the dependent variable (**use of externally-focused IT resources**) explained by the independent variables).

Table 3. Estimates for Logistic Regression of Website (n=1036)

Variable	B	S.E.	Sig.	Exp(B)
Age: Decades Since Founded (numeric)	.030	.054	.582	1.030
Panel	-.347	.359	.333	.707
Number of FTE Staff (numeric)	-.484	.201	**.016****	.617
Formalization	.655	.085	**.000****	1.925
Number of Board Vacancies (numeric)	-.103	.263	.696	.902
Public Charity	-.428	.475	.367	.652
Funding Mix (ref=All other combinations)				
Funding Mix-Donations	.813	.493	**.099***	2.255
Funding Mix-Fees and Sales	.501	.438	.252	1.650
Funding Mix-Government	.514	.699	.462	1.672
Funding Mix-Special Events	.065	.604	.915	1.067
County Type (ref=Nonmetropolitan counties)				
County Type- Central Metro	-.388	.354	.273	.678
County Type- Metro Ring	.312	.522	.550	1.367
NTEE Code (ref=NTEE-Religion)				
NTEE-Arts, Culture, and Humanities	-2.136	.792	**.007****	.118
NTEE- Education	.033	.692	.962	1.034
NTEE-Human Services	-.203	.540	.707	.817
NTEE-Mutual Benefit	.593	.878	.499	1.810
NTEE-Public & Societal Benefit	-.424	.549	.441	.655
NTEE-Religion	-.771	.620	.214	.463
Constant	-1.256	3.046	.680	.285

Notes: Coefficients significant at the p<0.05 level marked with **red** and those significant at the p<0.1 marked with **blue**. The model is significant at p=.000. The Adjusted R-squared=.494 (the proportion of variation in the dependent variable (**presence of organizational website**) explained by the independent variables), and there are 86.9% estimated correct predictions in the model.

Table 4. Estimates from Linear Regression of IT Capacity Challenges

Variable	B	S.E.	Sig.	Beta
Age: Decades since Founded (numeric)	.015	.015	.302	.058
Panel	.009	.089	.917	.005
Number of FTE Staff (numeric)	.005	.041	.911	.008
Formalization	.029	.017	**.085***	.129
Number of Board Vacancies (numeric)	.151	.068	**.028****	.113
Public Charity	.113	.149	.451	.051
Funding Mix (ref=All other combinations)				
Funding Mix-Donations	-.034	.111	.756	-.020
Funding Mix-Fees and Sales	.039	.126	.757	.019
Funding Mix-Government	.126	.159	.429	.046
Funding Mix-Special Events	-.307	.182	**.092***	-.092
County Type (ref=Nonmetropolitan counties)				
County Type- Central Metro	-.108	.092	.238	-.063
County Type- Metro Ring	-.146	.164	.375	-.047
NTEE Code				
NTEE-Arts, Culture, and Humanities	-.161	.176	.360	-.062
NTEE-Education	-.409	.190	**.032****	-.132
NTEE-Human Services	-.230	.142	.106	-.125
NTEE-Mutual Benefits	-.134	.324	.680	-.023
NTEE-Public & Societal Benefit	-.327	.168	**.052***	-.155
NTEE-Religion	-.147	.164	.372	-.066
Internally-focused IT Resources	-.191	.057	**.001****	-.216
Externally-focused IT Resources	.060	.076	.431	.054
Constant	2.634	.254	**.000****	

Notes: Coefficients significant at the p<0.05 level marked with **red** and those significant at the p<0.1 marked with **blue**. The model is significant at p=.015. The Adjusted R-squared =.039 (the proportion of variation in the dependent variable (**presence of IT capacity challenges**) explained by the independent variables).

Appendix C - Data Collection

We summarize only the key steps in the survey process here. For full details on Survey Methodology see Appendix A in our report: "The Indianapolis Nonprofit Sector: Overview &

." Our 2017 survey included a panel of nonprofits that responded to our 2002 survey and a new sample of nonprofits. For our 2002 survey (and thus our panel organizations), we merged three statewide nonprofit database listings – the IRS listing of exempt entities with Indiana reporting addresses, all entities incorporated as not-for-profit entities with the Indiana Secretary of State (SOS), and Yellow Pages listings of congregations, churches, and similar religious organizations.

We also added nonprofits appearing on local listings in selected communities across the state and those identified by Indiana residents as nonprofits for which they worked, volunteered, or attended meetings or events, including religious services. We then de-duplicated the merged listings and drew a stratified random sample in order to consider and adjust for differences in distributions by geographic location and source of listing.

### *Creating a Comprehensive Listing of Indiana Nonprofits*

For the 2017 survey of Indiana nonprofits, we relied exclusively on the same three statewide listings of Indiana nonprofits as in 2002, but used a simplified approach. The three state-wide listings included the Internal Revenue Service (IRS) listing of registered tax-exempt organizations under section 501(c) with reporting addresses in Indiana (35,720 records), the Indiana Secretary of State (SOS) listing of organizations incorporated as nonprofits (30,943 records), and the Infogroup listing of churches, congregations, temples, and mosques listed under those headings in the yellow pages of phone directories for the state (9,586 records).

We dropped "out-of-scope" entities that had very low response rates to our previous surveys as well as organizations for whom our survey instrument is not well suited (mainly hospitals, universities, and bank-managed trusts). We then undertook initial de-duplication of the three listings using search algorithms.

Figure C.1 shows the duplication segments by original source listing. About three-fifths of the entries on the IRS and SOS listings (respectively 62 and 60 percent) were unique to that particular list, as were 55 percent of the Infogroup list of congregations. For the IRS listing, 29 percent were also listed on the SOS list, and 6 percent were included on the Infogroup list. For the SOS listing, one-third were also registered with the IRS and 4 percent were included on the Infogroup list of churches. Finally, for the Infogroup list, about one-quarter (24 percent) were registered with the IRS (and another 14 percent were on the SOS listing). For congregations, the IRS percentage is considerably smaller than the 68 percent of churches that the National Center for Charitable Statistics estimates are registered with the

IRS (McKeever, 2015, footnote 2). Notably only about 60 percent of nonprofits on the combined listings were registered as tax-exempt entities with the IRS.

Figure C.1. IRS, SOS, and Infogroup listings of Indiana Nonprofits, by Duplication Status
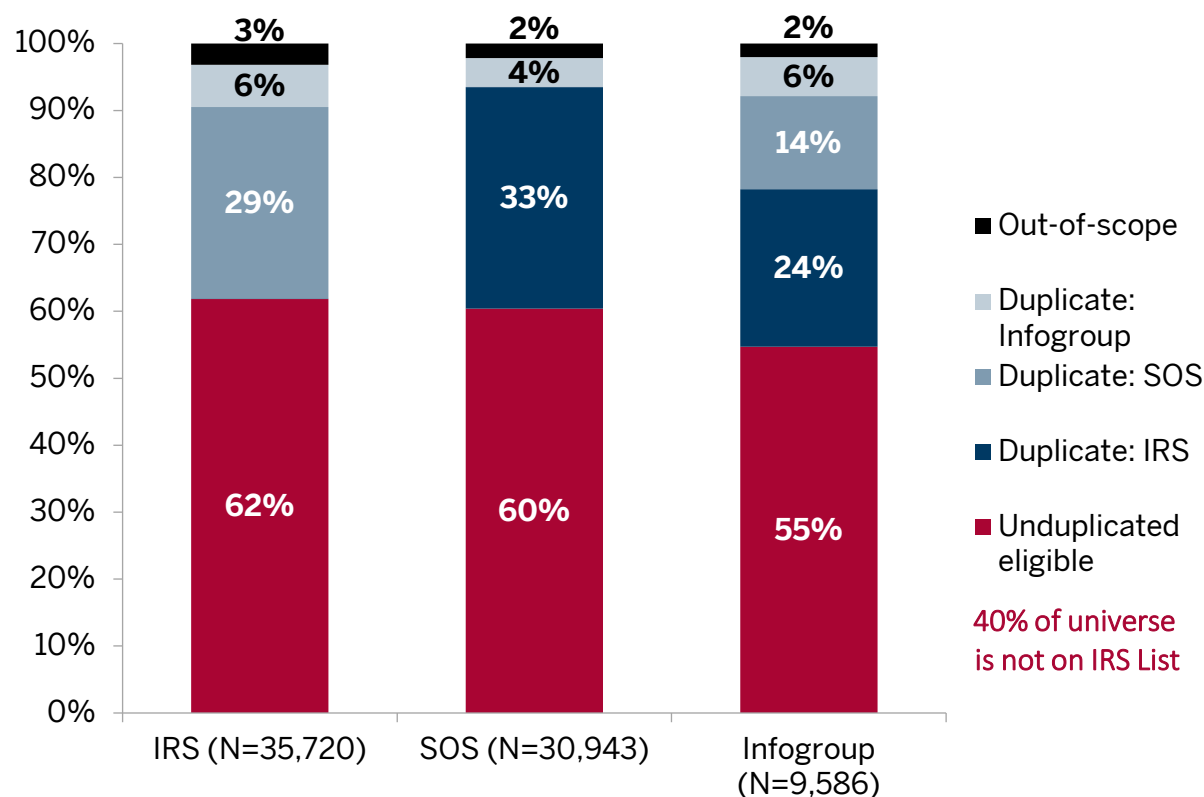
Drawing the Sample

To improve the generalizability of our results, we drew a proportionately stratified sample from the combined list of 59,833 organizations from the IRS, SOS, and Infogroup listings, using an 8-category set of regions (all three listings), filing date (SOS only), and NTEE major code categories (IRS only). Prior to selecting within strata, we implicitly stratified by zip code (all three listings) to achieve greater geographic representativeness.

After the sampling was completed, we had an initial sample of 10,257 nonprofits: 5,904 from the IRS listing (58 percent of the sample), 3,436 from the SOS listing (33 percent), and 917 from the Infogroup listing (9 percent). From this initial sample, we selected a

random subset of 4,103 nonprofits for analysis since our resources would not allow us to survey all: 2,336 from the IRS listing (57 percent of Phase I), 1,394 from the SOS listing (34 percent), and 373 from the Infogroup listing (9 percent).

Finding Contact Information

Next, we needed to find contact information for each organization in order to distribute our survey. All three listings provided us with postal mailing addresses, but we wanted to send the survey via email, so we needed to find email addresses. The Infogroup listing only provided us with 35 email addresses, which we needed to verify, and 373 phone numbers. However, for the rest, we had to find email addresses. We found some email addresses on organizations' websites, but we had to call to get most of them. When the organizations' websites did not provide phone numbers (or when these numbers were disconnected or the organizations did not have websites), we used WhitePages Premium to find phone numbers for the contact person listed in the SOS database. We gave priority to finding email contact information for executive directors or board chairs, but in some cases could only capture other key contact persons, such as vice presidents, treasurers, or secretaries.

We had an 80 percent success rate in finding correct contact information, but spent an average of 12.76 minutes on each organization, and with 4,103 organizations to research, the effort took about 873 hours.

Survey Encouragement

In preparation for the survey, we sent notifications (emails, or postcards for those for whom we had no email addresses) about the survey to potential respondents. This served both to alert them to the forthcoming survey, with the hope of encouraging participation in the survey, and to identify problematic email (or postal) addresses. After the survey invitations were sent (via email or postal mail), we sent several reminders.

The survey was administered online to potential respondents with an email address (75 percent of the sample) and sent as a paper form by postal mail to those without an email address. The survey took on average 25-30 minutes for respondents to complete and gathered information about programs and services, organization membership, organization structure and program evaluation, human resources, marketing and technology, advocacy and policy activities, relationships with other organizations, and financial information.[20]

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[20] The complete survey is available here: https://nonprofit.indiana.edu/doc/SurveyInstrument.pdf

As a special incentive for the survey, respondents were offered access to customized reporting of the results. We included a link to the study website, so respondents could learn more about the project, as well as prominent reference to and identification with Indiana University to emphasize the academic sponsorship, since that increases participation (see summary of studies in Dillman, Smyth, & Christian, 2014). Finally, we asked members of our Advisory Board for the Indiana Nonprofits Project to announce the survey to organizations on their distribution lists and encourage anyone receiving the invitation to complete the survey.

As expected, however, initial response rates were low and we made many nudge calls to encourage additional responses. While time-consuming, this process significantly increased our response rate. We limited the nudge call process to a maximum of three calls per organization depending on the status of the calls. For organizations for whom we left voice mails, we continued calling at least a week after each voice mail until we had left three voice mails. We stopped calling organizations that asked us to resend the survey or said they would complete the survey through the original email.

Our main strategy in this process was to inform the contact person that we were following up on a survey that was sent previously in order to make clear that this was not a new survey. We also asked contacts to let us know if the contact information, including the email address we sent the survey to, was incorrect and needed to be changed. Call statuses were coded in the survey sample database to ensure a systematic process and for future reference.

Survey Response Rates

As noted earlier, about 24 percent of the sample responded to the survey. This includes those that provided full or partial responses as a percent of those in the sample that were not explicitly defined as "out of sample" (e.g., hospitals, universities, bank-managed trusts) and still appeared to be in existence, located in Indiana, and nonprofit (e.g., had not converted to for-profit status). Response rates were generally higher from those that were on both the IRS and SOS listings and lowest for those that were on the Infogroup listing.

Appendix D - Overview of the Indiana Nonprofits Project

Since 2000, the **Indiana Nonprofits Project: Scope and Community Dimensions** has produced a substantial body of research about the nonprofit sector in Indiana: its composition and structure, its contributions to Indiana, the challenges it faces, and how

these features vary across Indiana communities. The goal of this collaborative research effort is to help community leaders develop effective and collaborative solutions to community needs and to inform public policy decisions.

The project is directed by [Kirsten Grønbjerg](), Efroymson Chair in Philanthropy at the [Lilly Family School of Philanthropy]() (LFSOP) and Distinguished Professor, [O'Neill School of Public and Environmental Affairs]() (SPEA), Indiana University Bloomington. It has benefitted greatly from the advice and support of the Project's distinguished [Advisory Board,](https://)[21] the contributions of more than 90 SPEA research assistants – undergraduate, masters, and doctoral students – and financial support as described in the Acknowledgements on page 1. The project's major components include:

Surveys of Indiana nonprofits. This component includes four surveys of Indiana nonprofits:

- Round I: Comprehensive survey of Indiana nonprofits (2002) in collaboration with the IU *Center for Survey Research* (CSR); 7 statewide reports on special topics and 12 regional reports on the nonprofit sector in selected communities across the state.
- Round II: Two surveys on nonprofit capacity and management challenges, including a survey (2007) for the *Indiana Philanthropy Alliance* and the *Lumina Foundation for Education* (1 report) and a more extensive survey (2010) for the *Indiana Arts Commission* (2 reports).
- Round III: Comprehensive survey of Indiana nonprofits (2017) in collaboration with the *CSR* is currently being analyzed and is the basis for this report.

Trends in paid nonprofit employment in Indiana. This component, undertaken in collaboration with the *Indiana Business Research Center* (IBRC), includes analyses of trends in paid nonprofit paid employment over time by industry and with comparisons to paid employment in the private and government sectors.

- Statewide trends in paid nonprofit employment by industry and sector (5 reports)
- Statewide trends in paid nonprofit employment for in selected industries (6 reports)

Community reports. This component focuses on the scope and composition of the nonprofit sector in communities across the state:

- Featured community reports for 7 metropolitan regions and 5 non-metropolitan counties across the state, including size and composition of the nonprofit sector and

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[21] See https://nonprofit.indiana.edu/AboutTAB/advisory-board.html

profiles based on Round I survey of Indiana nonprofits (2002)

- Regional trends in paid nonprofit employment by industry with comparisons to private and government sector employment: Metropolitan Areas and Economic Growth Regions (2007) and the Fort Wayne Metropolitan area (2015), in collaboration with *IBRC*.
- County reports on nonprofit paid employment 1995-2009 for Indiana counties with a population of 50,000 residents or more (29 reports), in collaboration with *IBRC*.

Surveys of local government officials. This component is based on surveys of Indiana local government officials (LGOs) on topics of special interest to Indiana nonprofits in collaboration with the *Indiana Advisory Commission on Intergovernmental Relations* (IACIR).

- PILOT/SILOT policies: attitudes towards requiring charities to provide payments (or services) in lieu of real estate taxes (PILOTS/SILOTS), 4 reports.
- Trust in Nonprofits: 2 reports.
- Government-nonprofit relations: 3 reports.
- 2-1-1 information and referral services: 2 reports.

Special topics. Several smaller projects have been completed in response to major national policy initiatives, as extensions of project components described above, or as special opportunities presented themselves.

- Overtime pay regulation: the likely impact on Indiana nonprofits by changes in the Fair Labor Standards Act (proposed 2016) on overtime pay for exempt employees,
- IRS Exempt Status Initiative: the impact of major changes in IRS reporting and compliance requirements mandated by the Pension Protection Act of 2006.
- Two surveys of Indiana residents conducted in collaboration with the *CSR*. This includes a 2001 survey on affiliation and involvement with Indiana nonprofits in preparation for Round I survey of Indiana nonprofits, and a 2008 survey on trust in nonprofits in collaboration with *CSR*.
- Comprehensive database of Indiana nonprofits, initially completed in preparation for Round I survey of Indiana nonprofits, now hosted by the *IBRC*.

For a full description of the project and access to all project reports, please visit https://nonprofit.indiana.edu

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