

Sadie Johnston

Hesburgh Library

University of Notre Dame Library Research Award

April 12, 2026

Metrics to Mission: Strategic Engagement Analysis for the ND Poverty Initiative

Nowadays, skimming through our inboxes and paying little attention to the subscriptions that fill them becomes an increasingly prevalent habit. Last summer, however, I wielded the Hesburgh Library's research resource catalogue and my marketing analytics knowledge to counter this trend and create positive change through reader engagement. As a Research Fellow with the Notre Dame Poverty Initiative (PI), I joined forces in their mission of "promoting and cultivating poverty-focused academic research, moving research to impact, and educating the next generation of students dedicated to eliminating poverty" (Poverty Initiative, 2025). With no prior experience using their email newsletter management software, EMMA, I analyzed their frontline communications with faculty researchers, donors, and other key stakeholders. Furthermore, I applied these insights to develop sustainable frameworks that increase engagement. This undertaking, fueled by Hesburgh Library resources, uniquely challenged me to bridge the gap between theoretical analytics and applied social impact by increasing critical anti-poverty awareness and action.

From the beginning, the library's specialized software, digital scholarship resources, and intellectual environment played integral roles in transforming EMMA's raw data into a living, sustainable analytics-based communication framework. I started the summer with nothing more than an extensive, unclean dataset — recording everything from member IDs to inbox bounces — and my "laboratory," a desk station in the library's second-floor computer lab. Utilizing

Hesburgh’s dual-monitor technology and specialized software licenses, I learned to navigate the EMMA platform’s data collection capabilities, cleanse and aggregate the exported raw data, and conduct my exploratory analysis in Excel and Power BI. Simultaneously, library workspaces enabled seamless cross-referencing of online tutorials with my Power BI workflows. Without this advanced and accessible intellectual infrastructure, this critical exploratory phase would have been infeasible; Hesburgh’s environment and technology empowered me to produce a visual demographic analysis narrative using historical data and produce a clean dataset.

Before this initial analysis, our team possessed little knowledge regarding their audience and its engagement patterns. After presenting my segmentation and temporal findings, we discussed new analytical possibilities and then combined them with the PI’s communication priorities: establishing an analytics-based framework for increasing reader engagement. To increase affiliated researchers, organizations, and donors’ participation in critical involvement opportunities — like applications for the PI’s available anti-poverty research funding — we needed to first unravel what drives clicks. Consequently, I devised our research question: Are links’ textual and spatial attributes correlated with changes in website traffic rates and, if so, which variables are engagement’s strongest predictors?

To answer this inquiry, I employed research design methods gained from the library’s data workshops and digital catalogue to progress beyond descriptive statistics into formal investigative methods. Turning again to library resources, I consulted wisdom from the “Introduction to Text Mining” course and research method books from the digital catalogue, such as *Models demystified: a practical guide from linear regression to deep learning*. Applying this wisdom, I created eight traffic categorical and continuous predictors based on spatial, structural, and textual attributes by manually recording observations in Excel across all the PI’s existing

email publications. Next, I employed institutional SPSS access to create an MLR model to predict link traffic. By tailoring the model through iterative testing under the digital catalogue's guidance, I reduced the model's ANOVA significance from 0.22 to a statistically robust 0.001. Likewise, I improved the adjusted R-squared value from explaining 12% of the data's underlying variance to 35.4%.

The improved MLR model produced unexpected and actionable results, revealing the three best engagement predictors were as follows: 1) increasing the number of links in an article by just one was associated with $\beta = -0.385$ decrease in clicks; 2) clicks decreased by an average $\beta = -0.472$ with each additional word written; and 3) the best traffic predictor, with $\beta = -0.569$, was hyperlinking to specific names rather than using generic, action-oriented text like "read more." These predictors all possessed values such that $p < 0.002$, supporting the insights' ability to ensure vital information was not merely sent and skimmed, but understood and acted upon.

My mission, however, had yet to conclude; I strived to produce results that were not only statistically significant, but also functionally so. Because the PI sought to guarantee their future capacity to measure and assess engagement, they required an accessible framework for evaluating the newsletter's health and performance after my internship concluded. To this end, I created a master Excel Workbook that auto-populates periodic engagement metrics for the team. To ensure its user-friendliness, I utilized library multimedia rooms to produce video tutorials for future users that explain how to append, clean, and track new data as new editions were released. Supplementing these videos with document templates for recording, comparing, and interpreting period-over-period changes, I thus transformed my project from a single report into a sustainable analytical framework for the communications team to continue effectively expanding the PI's impact through data.

Overall, my endeavors produced several key takeaways. For the Poverty Initiative, my project generated a sustainable and effective framework for reaching international academics, donors, and supporters. Furthermore, it illustrated Hesburgh Library's role as a catalyst in independent research — providing not only a physical space, but also an intellectual one for complex analysis, methodological mastery, and creative, multidisciplinary inquiries. At a basic level, the library's intellectual ecosystem empowered me to create a data-driven roadmap for sustainably expanding the PI's outreach and impact. In a larger sense, however, it empowered inquiries that will bolster awareness that combats destitution — an affliction that, even accounting only for its most extreme manifestations, robs 700 million of our fellow humans' dignity daily (World Bank, 2024). In this way, the Hesburgh Library resource network propelled engagement and research that will continue bettering our world for all its inhabitants.

Bibliography

Marketing Communications: Web | University of Notre Dame. (2026, April 7). Poverty initiative.

University Strategic Framework.

<https://strategicframework.nd.edu/initiatives/poverty-initiative/>

Poverty, prosperity, and planet report 2024. World Bank. (2024, October).