

IMRF GRANT REPORT  
Submitted by Jodi L. Linley & Joshua M. Holmes

**Project Title: LGBTQ+ College Student Survey Development**

**Abstract**

Despite potential negative climates, higher education is a positive context for identity development (Patton, Renn, Guido, & Quaye, 2016) and for many LGBTQ+ students, college fosters opportunities to explore one's identities and connect with peers, faculty, and staff who support their identities and lived experiences (Renn, 2017). Even though LGBTQ+ students are "more visible than ever on U.S. college campuses" (Renn, 2017, para. 1), few campuses track LGBTQ+ student enrollment, retention, and graduation (Windmeyer, n.d.). Further complicating measurement-related research is the fact that very few studies of higher education collect demographic data on sexuality and gender beyond a binary which becomes problematic from a psychometric and measurement invariance perspective. Researchers and practitioners alike assume survey constructs function equally for all students and that the validity argument holds for the sexuality and gender binaries.

The purpose of this study was to develop and pilot an instrument to measure the college experiences of LGBTQ+ individuals for its efficacy and to begin work predicting a variety of outcomes for LGBTQ+ students. From February through April 2019, 411 college students at a variety of institutional types (e.g., public, private, 2-year, 4-year) completed the survey. We developed a codebook for the 117-item survey and presented at the November 2019 annual meeting of the Association for the Study of Higher Education. Analysis and associated research articles are underway.

**Context for Survey Development**

Lesbian, gay, bisexual, transgender, and queer (LGBTQ+) college students face a host of uncertainties at an institutional level. Out of the nearly 5,000 degree-granting post-secondary institutions in the U.S., fewer than 13% prohibit discrimination based on sexual orientation, and only about 6% include explicit protections for transgender people (Windmeyer, n.d.). Scholars have continuously found that LGBTQ+ students have negative perceptions of campus climate (Garvey, Rankin, Beemyn, & Windmeyer, 2017; Rankin, Weber, Blumenfeld, & Frazer, 2010), with trans-spectrum students having the most negative perceptions of campus climate, classroom climate, and curriculum inclusivity in comparison to their cisgender LGBQ peers (Garvey & Rankin, 2015). Studies have consistently shown how LGBTQ college students experience discrimination interpersonally and systemically (Dugan, Kusel, & Simounet, 2012; Rankin et al., 2010). As recently as 2016, LGBTQ+ students felt more unsafe after their first year on campus compared to their heterosexual and cisgender peers, respectively (Bates & Bourke, 2016). LGBTQ+ students at research universities also report low levels of feeling as if their institutions respected their identities (Tyler Clementi Center, 2017). Hostile climates for LGBTQ+ students are related to various negative outcomes, specifically consequences for student learning, persistence, and mental health and wellness (Kulick, Wernick, Woodford, & Renn, 2017; Rankin et al., 2010). While scholars have noted an improvement in LGBTQ+ students' perceptions of campus climate in recent decades, there have been important differentiations in perceptions based on generational and cultural contexts, academic and cocurricular experiences, and

institutional influences, like region of the country and type of institution (i.e., urban, suburban, rural; Garvey et al., 2017).

Despite potential negative climates, higher education is a positive context for identity development (Patton, Renn, Guido, & Quaye, 2016) and for many LGBTQ+ students, college fosters opportunities to explore one's identities and connect with peers, faculty, and staff who support their identities and lived experiences (Renn, 2017). Even though LGBTQ+ students are "more visible than ever on U.S. college campuses" (Renn, 2017, para. 1), few campuses track LGBTQ+ student enrollment, retention, and graduation (Windmeyer, n.d.). Further complicating measurement-related research is the fact that very few studies of higher education collect demographic data on sexuality and gender beyond a binary which becomes problematic from a psychometric and measurement invariance perspective. Researchers and practitioners alike assume survey constructs function equally for all students and that the validity argument holds for the sexuality and gender binaries.

The largest effort to capture LGBTQ+ college student experiences has come from the National Study of LGBTQ Student Success (NSLGBTQSS). As a member of the original research team for NSLGBTQSS, Dr. Linley assisted Kristen Renn and Michael Woodford in creating the original survey instrument. This cross-sectional survey collected college experience, mental health, and behavior data from a diverse institutional and student sample of 900 LGBTQ+ college students measuring students' experiences as a LGBTQ collective. While the NSLGBTQSS did include quantitative measures, the IMRF study sought to improve the survey based on survey design theory (Dillman, Smyth, & Christian, 2014; Groves et al, 2011), as well as new research and theory for LGBTQ+ collegians (Vaccaro, Russell, & Koob, 2015; Woodford, Joslin, & Renn, 2015). The original survey instrument lacked a theoretical framework to ground the development of the instrument; researchers asked questions that were interesting and seemingly relevant at the time. Additionally, after the close of the survey, there was no psychometric evaluation of any of the various constructs beyond a LGBQ microaggressions scale published by Woodford et al. (2015). Further, the cross-sectional nature of the survey precluded analysis of students' experiences before entering college, as well as their longitudinal experiences across their collegiate lives, thus limiting the opportunity of quasi-experimental research methodological analyses. The initial NSLGBTQSS survey, while positive in spirit, resulted in a quantitative dataset that was limited in utility.

Previous LGBTQ-focused quantitative instruments commonly aggregated students across their sexual and gender identities. Some current surveys include demographic questions about students' multiple identities and have used that content in analysis, but authors have not designed or explored the instruments or specific constructs contained within the questions to ensure the items are inclusive of all students' identities (for example, researchers often conflate sexual identity and gender identities when conducting analyses). Considering each of the scales and constructs from the perspective of LGBQ+ and Trans\* collegians will ensure that there is no measurement issue stemming from the scales and that the scales are both valid and reliable for use with specific populations of LGBTQ+ college students. In this way, it provides expansive opportunities to enhance methodological knowledge about instrumentation and validate scales for use among LGBTQ+ student populations.

### **Data Collection**

In January 2019, we reached out to colleagues at the Midwest Institute for Sexuality and Gender Diversity, a non-profit organization that coordinates the largest and longest-running

conference for LGBTQ+ college students. The Institute invited us to attend the February conference in Wichita, KS (Appendix A) to administer the survey. Prior to large-scale administration, we ran two focus groups with graduate students and colleagues at the UI Center for Research on Undergraduate Education whom have experience working with college students, research design, as well as methodological considerations. This step ensured face validity among the items contained in the survey given the panel of reviewers contained individuals who have worked in LGBTQ+ centers in the United States, Residence Life and Housing, Diversity Offices at postsecondary institutions, among other expertise. With that feedback, we refined the survey and gained IRB approval. Despite blizzard conditions causing lower than usual attendance at the Midwestern LGBTQ+ college student conference, we collected 411 survey responses from a diverse sample of college students at a variety of institutional types. Given the conference included a number of LGBTQ+ Allies, the analytic sample included 404 students who identified as non-heterosexual while among those students approximately half identified as non-cisgender.

Students taking the survey represented a wide swath of demographics. Students represented over 95 institutions across the Midwest and were mostly enrolled in undergraduate (90%) programs. Institutions included community colleges, regional universities and colleges, private liberal arts institutions, as well as large research institutions within the Midwest. Students were asked to identify their institution so that we could add additional institutional information (size, geographic location, selectivity, graduation rates, etc.) within some of the additional analyses. Additionally, students represented a wide range of religious and spiritual belief systems as 75% of respondents identified some belief system. Further, nearly half of the respondents identified as Students of Color and almost 25% disclosed as receiving accommodations on campus. The students represent a rich, diverse population from which we can explore the survey measures.

### **Survey Measures and Preliminary Analysis**

The new survey instrument was designed to address limitations of past research. Namely, we grounded our survey design in Woodford, Joslin, and Renn's (2015) model that calls on researchers to incorporate a variety of inputs, environments, and outcomes when considering work with LGBTQ+ people. Specifically, our survey included a host of precollege experiences (experiences with hostility, discrimination, engagement with LGBTQ+ groups, and support) to better understand the effect of collegiate experiences. Namely, we sought to understand the causal nature of specific outcomes (e.g., grades, sense of belonging, engagement with the LGBTQ+ community) by accounting for the variance in precollege experiences to better understand the collegiate experience. One article currently being developed by us considers the Trans\* microaggression scales and their relationship with various outcomes including identity expression, academic engagement, and sense of belonging. However, to be able to write that article, we have sought to offer psychometric evidence that the microaggression scales used by other researchers for LGBQ students can also be used with Trans\* student populations.

Previous work by Woodford and colleagues (2015) has demonstrated a microaggression scale that identified three factors that included microinvalidations, microinsults/microassaults, and environmental microaggressions. For Trans\* students, our initial exploratory factor analyses resulted in 6 factors with Eigenvalues greater than 1.0. However upon further exploration of the scree plots and content of the items themselves, it seems there are 3 primary factors. Similarly to the Woodford et al. article, the factors could be grouped within the same categories. These factors had Eigenvalues of 20.96, 2.09, and 1.65 which was nearly identical to the findings of

Woodford. Additionally, the Kaiser-Meyer-Olkin (KMO) measure was high at nearly .94 which indicates an adequate sample size. While our sample wasn't large enough to split into exploratory and confirmatory factor analyses, the results mirroring earlier studies adds evidence to the utility of separate, but related Trans\* microaggression scale. We used STATA 16.0 to conduct the exploratory analysis following the recommendations of Eigenvalues above 1.0, scree plot analysis, and factor loadings (see Furr & Bacharach, 2008).

In our initial data analysis we also explored measurement invariance of items to add validity evidence that the overall survey instrument can be used by LGBTQ+ collegians. One example of this work pertains to a subset of measures that examine a student's sense of purpose. This scale was used with permission from Dr. Gitima Sharma who initially validated the scale among college students (see Sharma, Yukhymenko-Lescroat, & Kang, 2018). Comparing non-heterosexual respondents with non-cisgender respondents, we found no evidence to indicate any difference among subgroups of respondents (see Holmes, Bowman, Murphy, & Carter, 2019, for a discussion of methods and procedures). Looking at configural invariance, metric invariance, strong factorial invariance, strict factorial invariance, strict factorial invariance and invariant factor means, and finally strict factorial invariance and invariant factor means and variances (see Gregorich, 2006) among our LGBQ and Trans\* participants, we saw no evidence to support any differences. That is, with the addition of stricter measures, there were no significant changes in chi-square measures among the six models. We are in the process of summarizing these results on the rest of the scales and measures and intend to publish the findings along with the revised conference research paper from ASHE 2019.

### **Grant Deliverables and Dissemination**

In May 2019, after closing the survey, we submitted a conference proposal to the Association for the Study of Higher Education, which was accepted as a research paper for the November 2019 conference in Portland, Oregon. Aligned with the conference theme, "The Will to Reimagine the Study of Higher Education," we presented the paper, "Reimagining LGBTQ+ College Student Surveys." We are currently refining the paper for submission to a top higher education journal. After the initial article about the survey development, we will write two additional articles from the analyses of the outcomes data.

The IMRF study, alongside a Spencer Foundation project examining transgender collegians' anticipatory socialization experiences, catalyzed the creation of a new research collaborative under Dr. Linley's direction, MOSAIC: The National Study of Queer, Trans, & Ace College Student Success. Dr. Linley is coordinating grant writing efforts with colleagues at Iowa, Indiana University, Ohio University, Suffolk University, and University of Kansas to fund the launch of a longitudinal, nationally-representative study of LGBTQ+ college student outcomes.

Holmes, J. M., & Linley, J. L. *Reimagining LGBTQ+ College Student Surveys*. Paper presented at the Association for the Study of Higher Education, Portland, OR. (November 2019).

## References

- Asplund, J., Lopez, S. J., Hodges, T., & Harter, J. (2007). *The Clifton StrengthsFinder® 2.0 technical report: Development and validation*. Princeton, NJ: The Gallup Organization.
- Aultman, B. (2014). Cisgender. *Transgender Studies Quarterly*, 1(1-2), 61-62.
- Bates, A. K., & Bourke, P. Q. (2016). *2016 Your First College Year Survey*. Los Angeles, CA: Higher Education Research Institute.
- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: the tailored design method*. Hoboken, NJ: John Wiley & Sons.
- Duckworth, A. L., & Quinn, P. D. (2009). Development and validation of the Short Grit Scale (GRIT-S). *Journal of personality assessment*, 91(2), 166-174.
- Furr, R. M., & Bacharach, V. R. (2008). *Psychometrics: An introduction*. Thousand Oaks, CA: Sage.
- Garvey, J. C., Sanders, L. A., & Flint, M. A. (2017). Generational perceptions of campus climate among LGBTQ undergraduates. *Journal of College Student Development*, 58(6), 795-817.
- Garvey, J. C., & Rankin, S. R. (2015). The influence of campus experiences on the level of outness among trans-spectrum and queer-spectrum students. *Journal of Homosexuality*, 62(3), 374-393. doi: 10.1080/00918369.2014.977113
- Garvey, J. C., Rankin, S., Beemyn, G., & Windmeyer, S. (2017). Improving the Campus Climate for LGBTQ Students Using the Campus Pride Index. *New Directions for Student Services*, 2017(159), 61-70.
- Gregorich, S. E. (2006). Do self-report instruments allow meaningful comparisons across diverse population groups? Testing measurement invariance using the confirmatory factor analysis framework. *Medical care*, 44(11 Suppl 3), S78-S94.
- Groves, R. M., Fowler Jr, F. J., Couper, M. P., Lepkowski, J. M., Singer, E., & Tourangeau, R. (2011). *Survey methodology* (2<sup>nd</sup> Edition). Hoboken, NJ: John Wiley & Sons.
- Hong, J. S., Woodford, M. R., Long, L. D., & Renn, K. A. (2016). Ecological covariates of subtle and blatant heterosexist discrimination among LGBTQ college students. *Journal of Youth and Adolescence*, 45(1), 117-131.
- Human Rights Campaign (2017). 2017 state legislature. Retrieved from [www.hrc.org](http://www.hrc.org)
- Kline, R. B. (2010). *Principles and practice of structural equation modeling* (3rd ed.). New York, NY: Guilford.
- Kreighbaum, A. (2017, February 23). Transgender protections withdrawn. *Inside Higher Ed*. Retrieved from <https://www.insidehighered.com/news/2017/02/23/trump-administration-reverses-title-ix-guidance-transgender-protections>
- Kulick, A., Wernick, L. J., Woodford, M. R., & Renn, K. (2017). Heterosexism, depression, and campus engagement among LGBTQ college students: Intersectional differences and opportunities for healing. *Journal of Homosexuality*, 64(8), 1125-1141.
- National Survey of Student Engagement [NSSE]. (2017). *Engagement insights: Survey findings on the quality of undergraduate education*. Bloomington, IN: Indiana University Center for Postsecondary Research.
- Patton, L., Renn, K., Guido, F., & Quaye, S. J. (2016). *Student development in college* (3rd ed). San Francisco, CA: Jossey-Bass.
- Rankin, S., Weber, G., Blumenfeld, W., & Frazer, M. S. (2010). *2010 state of higher education for lesbian, gay, bisexual, & transgender people*. Charlotte, NC: Campus Pride.

- Renn, K. A. (2017, April 10). LGBTQ student on campus: Issues and opportunities for higher education leaders. *Higher Education Today*. Retrieved from <https://www.higheredtoday.org/2017/04/10/lgbtq-students-higher-education/>
- Sue, D. W. (2010, November 10). Microaggressions: More than just race. *Psychology Today*. Retrieved from <https://www.psychologytoday.com/blog/microaggressions-in-everyday-life/201011/microaggressions-more-just-race>
- Tyler Clementi Center. (2017, October 26). *Emerging research on queer-spectrum and trans-spectrum students in higher education*. New Brunswick, NJ: Author
- Vaccaro, A., Russell, E. I., & Koob, R. M. (2015). Students with minoritized identities of sexuality and gender in campus contexts: An emergent model. *New Directions for Student Services*, 2015(152), 25-39.
- Windmeyer, S. (no date). The path forward: LGBT retention and academic success. *Insight Into Diversity*. Retrieved from <http://www.insightintodiversity.com/the-path-forward-lgbt-retention-and-academic-success/>
- Woodford, M. R., Chonody, J. M., Kulick, A., Brennan, D. J., & Renn, K. A. (2015). The LGBQ microaggressions on campus scale: A scale development and validation study. *Journal of Homosexuality*, 62(12), 1660-1687. doi: 10.1080/00918369.2015.1078205