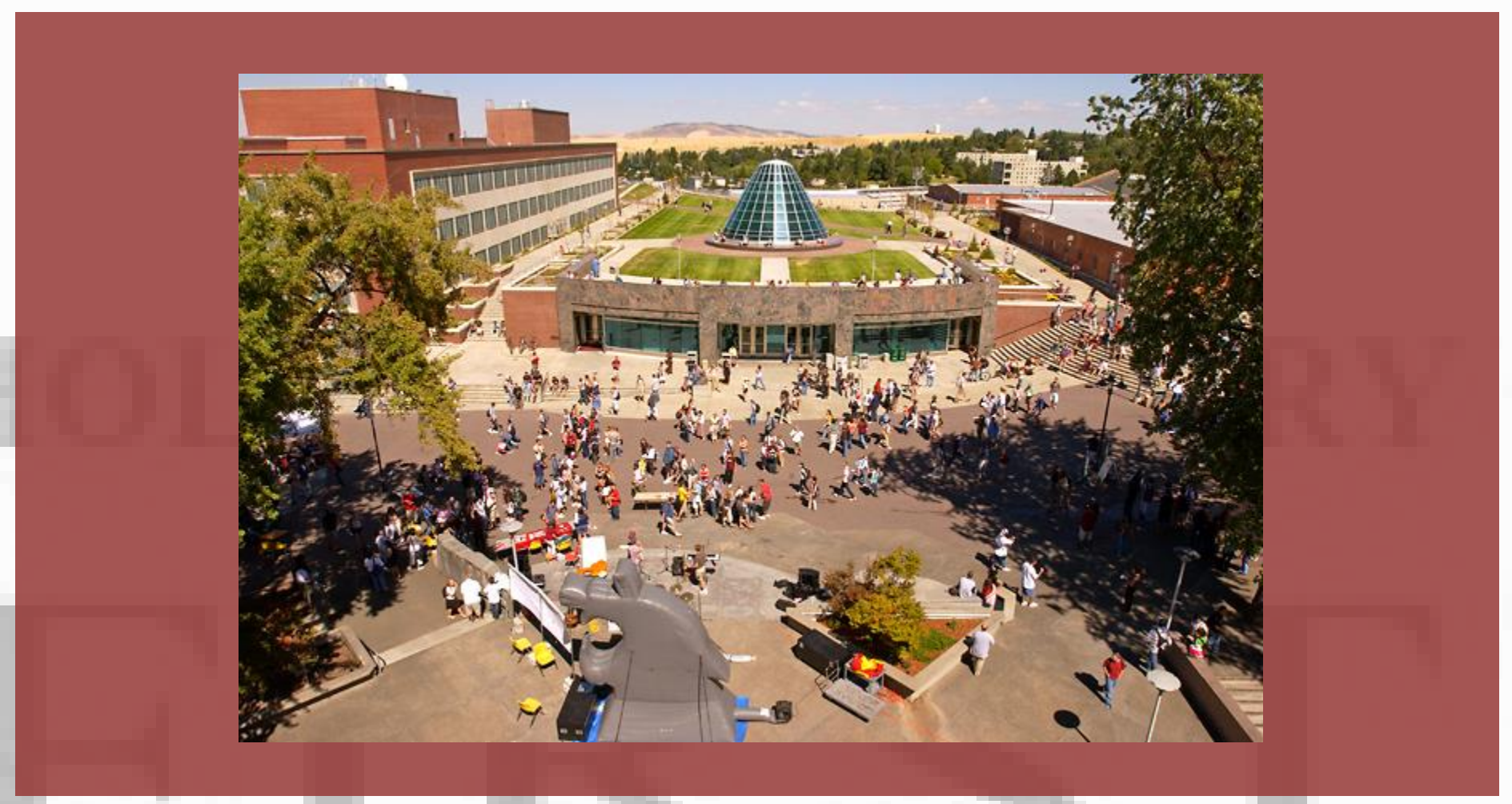


Exploring Methodologies for Identifying Impact: A Statistical Analysis of Library as Place Questions from LibQual+ at Washington State University 2003-2012

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Major Changes to Holland & Terrell Libraries' Facilities and Services

- Hours Extended to 2am most days
- CUB Corridor Opened
- Group study rooms added
- Food and drink allowed in libraries

Purpose: This exploratory study attempts to retrospectively examine the impact of changes to library facilities on user perceptions of the facilities and services of Holland and Terrell Library at Washington State university from 2003 to 2012, as evidenced by the results of LibQual+ Library as Place questions. The intent is to develop a methodology that can be fruitfully applied to analyze LibQual+ data for a retrospective analysis of changes when no direct assessment was conducted at the time of implementation, in order to better target future efforts on improving perceptions of service quality.

Design/Methodological Approach: A one-way analysis of variance was conducted, using survey year as the grouping variable, on Perceived, Adequacy Gap, and Superiority Gap for all valid responses for all Library as Place questions and for the means of all Library as Place responses. Follow-up post-hoc analyses using the Games-Howell test were conducted to identify significant mean differences.

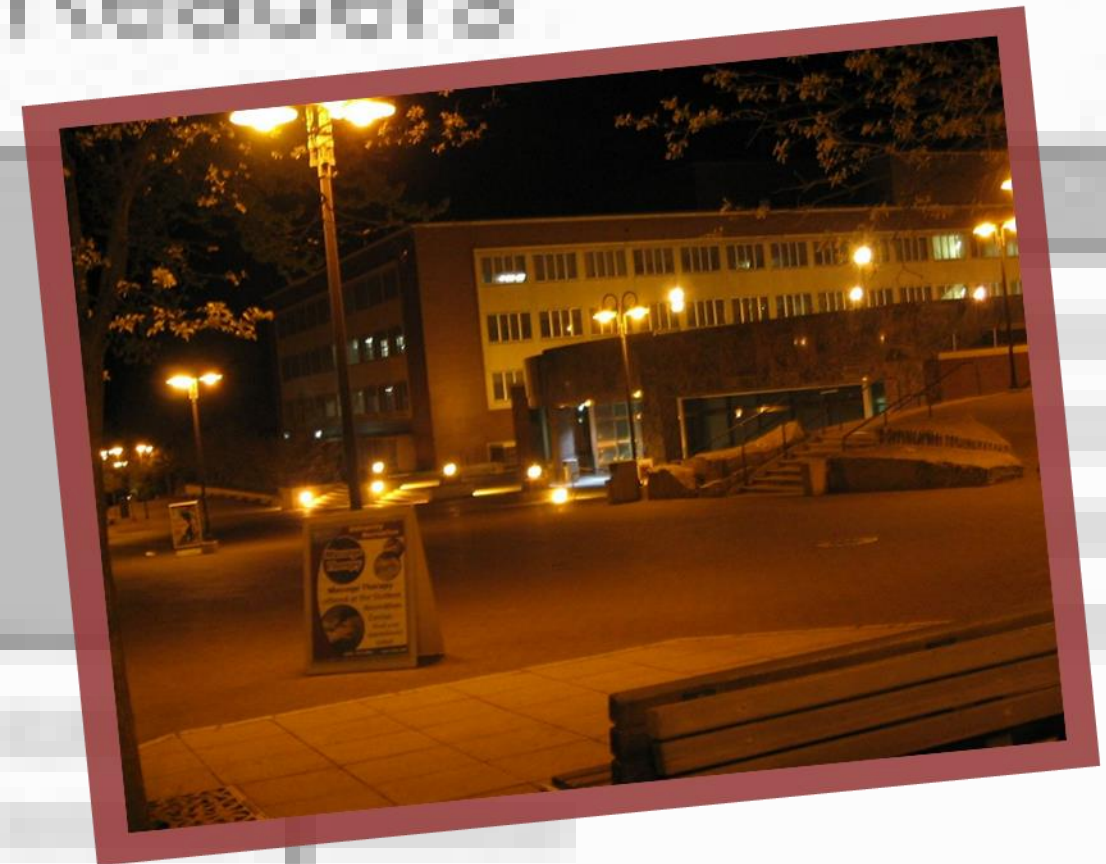
Findings: Results of the one way ANOVA of the mean of all responses to Library as Place questions showed a difference in Superiority Gap significant at the .05 level ($p = 0.0112$). For the individual questions, a statistically significant difference at the 0.05 level was found for the Superiority Gap of questions LP03 and LP08. Post-hoc analysis using the Games-Howell test identified Superiority Gap values on question LP03 ("Library space that inspires study and learning") as having statistically significant changes between 2003 and 2006 ($p < 0.02$), and 2003 and 2012 ($p < 0.04$). This analysis also showed a statistically significant change in the mean Perceived score for question LP03 from 2003 to 2006 ($p < 0.05$).

Practical Implications/Value: This statistical approach provides a vehicle for identifying changes in user perceptions in relation to specific questions on LibQual+ retrospectively, that can be further investigated with supplemental datasets to determine which changes libraries have made that have had substantial impact on user perceptions of library facilities in order to target future efforts on improving perceptions of service quality.

Discussion of Statistical Tests: In exploratory research, researchers test all possible combinations of groups to identify significant differences. A one-way analysis of variance (ANOVA) is useful when comparing three or more groups and indicates there are differences in group means, post-hoc tests are then used to determine among and between which groups significant mean differences occur. As this study examines the results of four survey years each having different sample sizes and unequal variances, the Games-Howell post-hoc test was identified as an appropriate choice to fit the data.

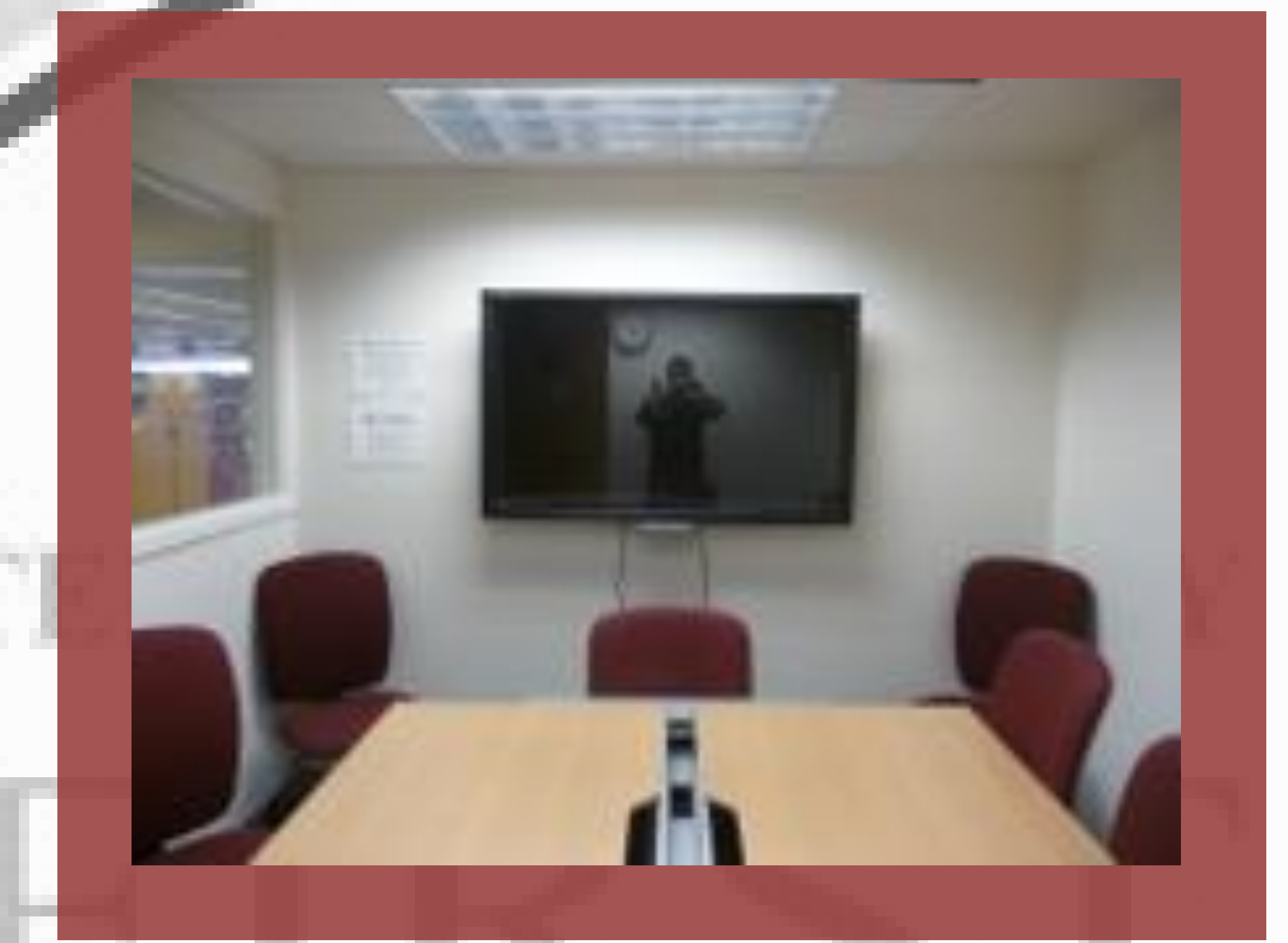
Holland / Terrell Statistically Significant Changes											
LP03 Library space that inspires study and learning				LP08 Quiet space for individual activities			LP17 A gateway for study, learning, or research			Library as a Place overall	
MN							2003-2006	faculty	↑		
MN	2003-2009	faculty	↑	2003-2009	faculty	↑					
MN							2006-2009	faculty	↓		
MN	2009-2012	faculty	↓								
PR	2003-2006	all	↓								
PR				2006-2012	undergraduates	↓					
DE							2006-2009	graduates	↑		
AD				2009-2012	graduates	↓	2009-2012	graduates	↓	2009-2012	graduates
SU	2003-2006	all	↓								
SU				2003-2009	faculty	↓				2003-2012	all
SU	2003-2012	all	↓							2003-2012	undergraduates
SU				2006-2012	undergraduates	↓					
SU				2009-2012	undergraduates	↓				2009-2012	undergraduates
SU				2009-2012	graduates	↓					

No significant change recorded in LP12: A comfortable and inviting location or LP21: Community space for group learning and group study



Changes made to Holland & Terrell Libraries' Facilities and Services

2003-2005	2006	2007	2008	2009	2010	2011	2012
Changes Undocumented	<ul style="list-style-type: none"> • Food and drink allowed in Library Facility • WSU Research Exchange (Institutional repository) launched • "Bookin" sculpture added to main library entrance 	<ul style="list-style-type: none"> • "New" Griffin library catalog (ILL product) • Article Reach (article lending service) instituted • Facebook account created and populated • Citation management sessions begin (Zetero, EndNote Web) 	<ul style="list-style-type: none"> • Corridor directly connecting Holland & Terrell Library with student union (A.K.A CUB) • 2 Library classrooms renovated (Terrell 103 & 105) • Open hours extending beyond 11pm to 2am most days • Library Website renovated • Additional study rooms added to ground floor 	<ul style="list-style-type: none"> • Additional 40 seat computer classroom added on ground floor • Office delivery of books and articles for graduate students, faculty, and staff • Elimination of ILL fees • WSU Libraries Twitter account launches 	<ul style="list-style-type: none"> • Laptops made available for checkout • Power strips added to group study tables in Reference area • BX article recommender (Ex Libris product) added to federated search • LibGuides replace html subject guides • Centralized campus service replaces old pay-as-you-go copy card process 	<ul style="list-style-type: none"> • Graduate students provide limited reference support • Tech store located on ground floor • LibAnswers integrated into web services • Evening haunted library tours begin 	<ul style="list-style-type: none"> • Smart boards and other technology added to group study rooms • Group study room reservation system launched (LibCal) • Undergraduate students provide limited reference support



Future Directions: This study has illuminated the importance of conducting direct assessments at the time of implementation of changes to services or facilities. Additional data sets of gate counts, and data collected as part of the Holland and Terrell Libraries Space Usage study, have been identified for further analysis. Researchers are hopeful that statistical analyses against these data sets will support the findings in the current analysis and can be integrated into the methodology in order to more fully develop an approach for retrospective analysis of change in academic libraries.