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Belonging and Adjustment for LGBTQ+ and non-LGBTQ+ Students during the Social
Transition to University

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Citation: Sotardi, V.A., Surtees, N., Vincent, K., & Johnston, H. (accepted). Belonging and Adjustment for LGBTQ+ and non-LGBTQ+ Students during the Social Transition to University. *Journal of Diversity in Higher Education*.

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Abstract

The transition to university can be challenging not only for the general student population but also for LGBTQ+ students, whose social experiences may be particularly demanding. In the current research, we explore first-year students' perceptions of belonging and social adjustment by (a) estimating whether such perceptions relate to achievement motivation, well-being, and academic performance, and (b) identifying whether these trends differ for LGBTQ+ students. First-year students from one public university in New Zealand ($n = 896$) completed a questionnaire to report their early experiences in higher education. Grade Point Average (GPA) was provided by the institution. Results using descriptive statistics and regression-based, moderation models offer empirical support that belongingness and social adjustment have the potential to impact first-year students in meaningful ways, and that some of these patterns vary between LGBTQ+ and non-LGBTQ+ students. Individuals who reported institutional belonging and felt as though they had adjusted well to university also reported high levels of achievement motivation and well-being. Meanwhile, individuals who reported peer belonging were linked to weaker achievement motivation yet a *higher* GPA. Our results introduce new evidence that although LGBTQ+ students reported relatively poorer well-being, they experienced relatively more enjoyment and less boredom in their classes. Interactions from moderation testing reveal that the statistical predictions of belongingness and social adjustment for academic self-efficacy and subjective well-being differed between LGBTQ+ and non-LGBTQ+ students. We discuss the practical implications of our results and identify ways for higher educational institutions to support first-year students.

Keywords: LGBTQ+; belonging; achievement emotions; well-being; self-efficacy; GPA

Introduction

Schooling transitions can impose abrupt environmental change on learners and are likely to elicit high levels of distress (e.g., Jackson et al., 2000). Students consistently report social difficulties and pressures during the transition to university (e.g., Bitsika et al., 2010; Pascarella & Terenzini, 2005). In this period, it is likely that students who perceive their social environment as uncomfortable may struggle in their adjustment, lack confidence in their academic abilities, fail to enjoy classes, experience lower well-being, and perform less well. Although these challenges pertain to most first-year university students, this may especially be the case among students of different marginalized groups. LGBTQ+ students are a particular cohort who are increasingly more visible in higher education in Western countries, and studies focused on their university experiences have grown (e.g., Taylor et al., 2018; Todorinova & Ortiz-Myers, 2019). For greater social justice and equality, there is a collective need for researchers, educators, and institutions to gain a better understanding of the first-year encounters and outcomes of LGBTQ+ students. In the current research, we adopt a social cognitive perspective to examine the interplay between students' perceptions of the social environment at university (sense of belonging and social adjustment), motivation and emotion (academic self-efficacy, enjoyment, and boredom), and behavior outcomes (academic performance). Our goal was to expand on the extant literature concerning first-year students' social and academic encounters so that higher education institutions can promote a climate that supports students from diverse backgrounds.

Understanding the Social Transition to University

First-year students' early perceptions of support, safety, and respect may give rise to a range of academic and personal outcomes. These trends may also differ between students who do and do not identify as members of LGBTQ+ communities. With regards to the social

transition to university, two perceptions may be especially meaningful: a sense of belonging and psychological adjustment to the environment.

Belongingness in Higher Education

The concept of belongingness has been defined in various ways across decades (for a review, see Mahar et al., 2013). Researchers generally agree that belongingness is a subjective experience in which a person feels valued and respected by individuals or groups, and that these interpersonal relationships serve as a universal human social need (Baumeister & Leary, 1995; Mahar et al., 2013). Although perceptions of belonging differ across cultures, these views are consistently linked to interpersonal experiences with classmates and teachers (Chiu et al., 2016). The psychosocial environment, therefore, plays an essential role in building interpersonal networks for students to develop belongingness (Allen et al., 2018). To acknowledge potential differences between university and schooling experiences, Strayhorn (2018) proposed that belongingness in higher education can be understood as:

Students' perceived social support on campus, a feeling or sensation of connectedness, and the experience of mattering or feeling cared about, accepted, respected, valued by, and important to the campus community or others on campus such as faculty, staff, and peers. (p. 4)

This conceptualization acknowledges several external referents such as campus community, faculty, staff, and peers. Hausmann and colleagues (2007) state that student belongingness implies a result of academic and social integration, and that these differences should be carefully considered. Researchers (e.g., Freeman et al., 2007) have distinguished belongingness at the campus level from other levels of analysis, such as class-related experiences. Based on these premises, we posit that belongingness of first-year university students could be distinguished between perceptions of the social environment (a) at the broad, institutional level (e.g., interactions with professors, support staff, and the university

campus), and (b) at the peer-to-peer level, (e.g., interactions with classmates and other students).

Adjustment in the First-Year Transition

Psychological adjustment represents how well a person adapts to a new environment based on their modification of thoughts and behaviors to improve interactions with the setting (Yoo et al., 2006). Examples of adjustment during the transition to university might include the need to interact with professors in ways that may be more (or less) formal than in school, seek help from others, and join interest groups with a new cohort. Indeed, a student's belief that they are adjusting flexibly to interpersonal demands may be reciprocally linked to their subjective views on belongingness (e.g., Anderman & Freeman, 2004; Freeman et al., 2007). It is possible, for instance, that students who feel as though they have adjusted well may be more open to forging new interpersonal relationships. Meanwhile, students who feel safe, respected, and supported in their environment may conclude that belongingness leads to better adjustment. In the current research, we adopt a social cognitive framework (e.g., Bandura, 1986). From this perspective, we worked on the assumption that students reflect on their social transition to university. It was expected that perceptions of the social environment would be linked to personal characteristics such as emotions and self-beliefs to perform well at university (academic self-efficacy), as well as behavior indicators such as subjective well-being and performance.

The extent to which students adjust to university depends, in part, on their perceived quality of the interpersonal relationships and supportive tone (Reeve, 2014). Students' experiences and outcomes are influenced by (and further influence) perceptions of belonging and adjustment. For instance, students with a stronger sense of belonging and adjustment tend to report greater achievement motivation (Freeman et al., 2007). Emotions have motivational properties in that they encourage students to approach or avoid interactions with students and

staff; furthermore, emotions indicate how students are feeling in their environment (e.g., Oatley & Jenkins, 1992). Therefore, in the current research, we include the role of two emotions that are sensitive to perceptions of social dynamics (e.g., support) in the classroom (e.g., Goetz et al., 2013): enjoyment and boredom. These two emotions are believed to have different valences and activations: enjoyment has positive and activating properties, and boredom has negative and de-activating properties (Westphal et al., 2018). These emotions could signal the extent to which students feel comfortable or frustrated in their environment. Individuals who feel competent, experience positive emotions, and can be their authentic selves may report greater subjective well-being and better academic performance (e.g., Reeve, 2014; Slaten et al., 2014). It is essential, therefore, to consider not only the social transition to university, but also the extent to which this subjective experience gives rise to motivation, emotion, well-being, and performance.

The Social Transition for LGBTQ+ students

Belongingness and adjustment are relevant to the social transition of all first-year students; however, as expressed by Slaten et al. (2014), transitional encounters should be considered from perspectives of diversity and inclusion. In the current research, we build on the existing literature by exploring the experiences of LGBTQ+ students. LGBTQ+ students are a particular cohort who, through traditional forms of institutional marginalization and under-representation, may face unique challenges while transitioning socially to university. Although there is a multitude of communities within the conceptualization of LGBTQ+, one of our central aims was to understand whether trends relating to belongingness and social adjustment are experienced differently for students who, broadly, do (and do not) identify as members of LGBTQ+ communities.

The transition to university can be a difficult period for many students (Zubernis & Snyder, 2007), and this is often the case for LGBTQ+ students. LGBTQ+ students face not

only the challenges their heterosexual peers may experience but also concerns related to their sexual identity (Alessi et al., 2017; Stroup et al., 2014; Zubernis & Snyder, 2007). Concerns during the social transition may range from how to cope with stigma associated with their identities, victimization, and fear of rejection (Sheets & Mohr, 2009; Zubernis & Snyder, 2007). Such matters transcend institutional settings, from classrooms to dormitories (e.g., Kortegast, 2017). Importantly, even highly-adaptive LGBTQ+ students acknowledge that the energy used to manage social stressors relating to their sexual identity takes time away from their academic studies (Alessi et al., 2017).

Campus climate is a significant focus in the research literature involving LGBTQ+ students, and the emerging work highlights the importance of belonging and adjustment for LGBTQ+ students. As Taylor et al. (2018) point out, a “welcoming campus climate is critical to LGBTQ+ students’ academic success and well-being” (p. 155). Yet, recurring themes across studies suggest that the campus climate falls short of adequately addressing LGBTQ+ students’ well-being and academic performance. These themes indicate that institutions may not only be unwelcoming of these students, but that they can also be spaces where they are marginalized in a myriad of ways (Bardhoshi et al., 2018; Garvey et al., 2012; Taylor et al., 2018). In particular, campuses and campus culture can be spaces that elicit both fear of and actual experiences of discrimination, harassment, homophobia, transphobia or other violence related to gender or sexual identity on campus (Kulick et al., 2017; Preston & Hoffman, 2015). For instance, Thompson and colleagues (2019) reported that gender-diverse students had experienced discrimination and discriminatory behaviors and--not surprisingly--held less favorable views of the institution’s social environment when compared to their cisgender counterparts. Concerning the social environment in university, researchers suggest that a sense of belonging may be more challenging for and differentially conceptualized by students of a minority group (Vaccaro & Newman, 2016). While there is a growing body of literature

which focuses on belongingness for students of color, there is much less research that takes into account the experiences of other minority groups such as LGBTQ+ students (Vacarro & Newman, 2016).

Researchers have identified meaningful links between social experiences, academic performance, and personal well-being among LGBTQ+ students. For instance, Woodford et al. (2017) reported inverse correlations between academic performance and the victimization of transgender students. Kulick and colleagues (2017) found that systemic oppressions contribute to deteriorated mental health among LGBTQIA+ students. Specifically, they noted that a heterosexist environment could decrease social and academic integration for LGBTQIA+ students, whereas a more inclusive environment can increase social and academic integration. International research suggests that LGBTQ+ students who are exposed to such social experiences may have a greater risk for poor well-being, including mental health difficulties (Bissonette & Szymanski, 2019; Woodford et al., 2017), maladaptive coping strategies, such as substance abuse (Coulter et al., 2016), and self-harm and suicide (Taylor et al., 2018). With regards to the social transition to university--and its particular challenges for belongingness and adjustment for LGBTQ+ students--the apparent gaps in the research literature deserve to be addressed.

The Current Research

In the current research, we explore first-year students' perceptions of being valued and respected by others (belongingness), and having adapted well during their transition to university (social adjustment). We consider the extent to which belongingness and social adjustment are associated with motivation, well-being, and academic performance. Our study considers the experiences and outcomes of not only the general student population but also the LGBTQ+ student communities. As identified in the aforementioned literature, the social

transition may be especially difficult for these students, and their views may be less frequently documented in the broader research literature.

Specifically, our research questions were:

1. Are there group differences between LGBTQ+ and non-LGBTQ students in terms of institutional belonging, peer belonging, social adjustment, academic self-efficacy, class-related emotions, well-being, and academic performance?
2. Do perceptions of institutional belonging, peer belonging, and social adjustment among LGBTQ+ students statistically predict academic self-efficacy, class-related emotions, well-being, and academic performance in different ways (moderation)?

Method

Participants

Our sample comprised 896 first-year university students attending one public, urban institution in New Zealand. The university is composed of roughly 17,000 students, with 27% of the university as first-year students (freshmen). As of the 2018 New Zealand Census, the institution serves a city district population that is primarily of New Zealand European descent (77.9%), and those born in New Zealand (72.9%).

Our sample included 496 females (55.4%), 395 males (44.3%), and five participants who chose not to reply (0.6%). Participant age ranged from 17 to 61 years ($M = 19.22$, $SD = 3.34$). Participant ethnicity was categorized based on criteria used in the New Zealand Census, and included the following ethnic groups: New Zealand European/Pākehā ($n = 676$, 75.4%), Asian ($n = 76$, 8.5%), Other European ($n = 46$, 5.1%), New Zealand Māori ($n = 43$, 4.8%), Unreported ($n = 34$, 3.8%), Pacific ($n = 10$, 1.1%), and Middle Eastern/Latin American/African ($n = 6$, 0.7%), and Australian ($n = 5$, 0.6%). 248 students (27.7%) had self-reported as the first member in their immediate family to attend university (hereafter referred to as first-in-family). The sample includes students from across all of the institution's

five colleges: College of Arts ($n = 169$, 18.9%), College of Business and Law ($n = 169$, 18.9%), College of Engineering ($n = 329$, 36.7%), College of Education ($n = 80$, 8.9%), and College of Science ($n = 149$, 16.6%).

Procedure

With the support of the institutional research team, the first-year student population ($N = 3,944$) was invited to complete an online questionnaire aimed to understand students' early experiences and motivation at university. Email invitations were sent in the third week of the first semester, and the questionnaire was available for four weeks, including a two-week term break. Demographics and actual GPA (not self-report) were linked to questionnaire responses based on student ID. The dataset was anonymized and received an exemption from the institution's human ethics committee (#2019/02/EX).

1,429 participants had accessed the questionnaire, resulting in an initial response rate of 36.23%. 431 cases had more than 10% of the questionnaire items missing. These were identified and deleted, as imputation with a small amount of missing data is deemed to be valid (Little & Rubin, 2002). 12 cases had no GPA scores available and were removed. Missing values were then imputed using expectation maximization procedures in SPSS version 25. The validity of imputation was checked by Little's (1988) MCAR test; no systematic cause of missingness could be identified. Upon completing the Missing Value Analysis, statistics were checked to ensure the accuracy of imputation, with negligible differences reported.

Lastly, to estimate students' self-reported status as LGBTQ+, all participants were asked the following item: "Do you identify as a member of the Rainbow (LGBTQ+) community?" Available options and corresponding frequencies were: (1) "Yes, I am a member of the Rainbow (LGBTQ+) community" ($n = 113$), (2) "No, I am not a member of the Rainbow (LGBTQ+) community" ($n = 542$), (3) "No, but I identify as an ally of the

Rainbow (LGBTQ+) community ($n = 241$), (4) “I prefer not to say” ($n = 28$), and (5) “Unsure” ($n = 62$). To create a dummy-coded variable that could accurately reflect whether participants saw themselves as LGBTQ+ or not, participant responses ($n = 90$) to options four and five were excluded from our analyses. We relied on participant responses to option one when categorizing as LGBTQ+, and we merged responses to options two and three when categorizing as not LGBTQ+. Using a final sample of 896 participants (and a final response rate of 22.71%), students’ LGBTQ+ Affiliation was categorized as: Yes ($n = 113$, 12.6%) and No ($n = 783$, 87.4%). For the analyses, LGBTQ+ Affiliation was dummy-coded as LGBTQ+ = 1, and non-LGBTQ+ = 0².

Instruments

Institutional and peer belongingness. We developed a brief, eight-item scale aimed to measure student belongingness with regards to institutional belonging and peer belonging. We selected six existing items from existing subscales from Hoffman et al. (2002), Krause and Coates (2008) and Slaten et al. (2018). Two of these items are reverse-coded. We created two new items which we felt were essential indicators of university belonging in terms of personal safety and acceptance: “I feel safe on the [institution] campus” and “I really like the culture at [the institution].” Participants responded to items using a seven-point Likert-style scale ranging from 1 (strongly disagree) to 7 (strongly agree).

We performed Exploratory Factor Analysis (EFA) in SPSS version 25 to inspect the initial factor structure. Through analysis using maximum likelihood (ML) estimation and oblique rotation, results indicated that factor analysis was appropriate and could be supported based on results of KMO (.80) and Bartlett’s Test; approximate $\chi^2 = 2,249.67$ (28), $p < .001$. Two factors emerged with eigenvalues greater than one: Factor I (3.36, 42.06%) and Factor II

² We acknowledge that our estimation of self-reported status as LGBTQ+ lacks precision: there is a range of sub-groups within the conceptualization of LGBTQ+. Therefore, the current findings must be viewed with this approximation in mind and that future studies expand on the different experiences that exist within the LGBTQ+ community.

(1.41, 17.67%). The total variance explained by the two factors was 59.73%. Based on the pattern matrix (Table 1), it was clear that four items loading onto Factor I depicted Peer Belonging as a perception of interpersonal affiliation concerning other students. The remaining four items loading onto Factor II depicted Institutional Belonging as a global sense of belonging. Internal consistency was acceptable for Peer Belonging ($\alpha = .74$) and Institutional Belonging ($\alpha = .81$).

Social adjustment. We selected four items from Baker (2003) in which students reported social adjustment indicators with a five-point, Likert-style scale ranging from (1) not well at all to (5) extremely well. The items were: “Socially, how well do you think you have adjusted to university?”, “Overall, how well do you think you’ve adjusted to university?”, “Socially, how well do you think you have adjusted to university compared to the average first-year student at [institution]?”, and “Overall, how well do you think you’ve adjusted to university compared to the average first-year [institution] student?” These items have not, to our knowledge, been tested in terms of validation; however, parallel items have received support as having adequate reliability and internal validity according to Aspinwall and Taylor (1992). Internal consistency was acceptable for Social Adjustment ($\alpha = .87$).

Academic self-efficacy (ASE). To measure academic self-efficacy, we used the Efficacy subscale of the Maslach Burnout Inventory-Student Survey (MBI-SS; see Schaufeli et al., 2002). The subscale includes six items, and participants responded using a seven-point Likert-style scale ranging from 0 (never) to 6 (always). Item examples include “I believe that I make an effective contribution to my classes”, “I can effectively solve the problems that arise in my studies,” and “In my opinion, I am a good student.” The psychometric properties have been examined across multiple countries and student contexts (e.g., Shin et al., 2011), with diverse sample data as indicating the MBI-SS to have adequate factor validity. Internal consistency was acceptable ($\alpha = .74$).

Achievement emotions. To measure overall classroom experiences at university, we selected and made slight modifications to two subscales from the Achievement Emotions Questionnaire (AEQ; Pekrun et al., 2011): Enjoyment and Boredom. We selected these emotions because they are theorized to have positive vs. negative and activating vs. deactivating properties, and therefore, offer some range in classroom experiences. The AEQ represents achievement emotions for class-, learning-, and test-related contexts. Participant data from diverse validation samples have shown the AEQ as having adequate reliability, measurement invariance, as well as internal, divergent, convergent, and external validity (e.g., Moreira et al., 2019; see Pekrun et al., 2011). For the current study, we focused on participants' class-related enjoyment and boredom. We estimated only the affective emotion component, as theorized in the instrument. Rather than focus on one particular course, participants received the following instructions to report their class-related enjoyment and boredom across their different courses:

Attending classes at university can induce different feelings. This part of the questionnaire refers to emotions you may experience when attending classes in your courses. Before answering the questions, please recall some typical situations of being in class which you have experienced in your courses.

Three modified items were used to measure Enjoyment: "I generally get excited before class," "I enjoy my classes so far," and "After a class, I usually look forward to the next class." Two items were used to measure Boredom: "I usually get bored during my classes" and "I find my classes fairly dull." As is consistent with the AEQ, participants in this study responded using a five-point Likert-style scale ranging from 1 (strongly disagree) to 5 (strongly agree). Internal consistency was acceptable for Enjoyment ($\alpha = .85$) and Boredom ($\alpha = .77$).

Subjective well-being. We used the five-item World Health Organization Well-being Index (WHO-5). WHO-5 is a scale measuring subjective well-being and has been used worldwide, including New Zealand (Topp et al., 2015). The WHO-5 has been employed across a range of contexts and cultures, and has been reported as a reliable and psychometrically sound instrument (e.g., Sischka et al., 2020). The scale uses a six-point Likert-style scale ranging from (0) at no time to (5) all of the time. Items are designed to estimate individuals' thoughts and feelings over the past two weeks. Example items are: "I have felt cheerful and in good spirits" and "My daily life has been filled with things that interest me." Internal consistency was acceptable: $\alpha = .86$.

Grade Point Average (GPA). We measured academic performance by using GPA scores at the end of students' first semester. GPA was extracted from internal transcripts based on enrolled coursework. Importantly, this measure is more objective than self-report, which reduces concerns of social desirability bias. At this institution, GPA ranges from -1 (E), 0 (D), 1 (C-), to a maximum of 9 (A+).

Data Analysis Plan

We conducted our analyses in four steps. First, we performed preliminary assumption testing. Second, we inspected descriptive statistics and bivariate correlations among the study variables. Third, we performed independent-samples *t*-tests, and Analyses of Variance (ANOVA) in SPSS version 25 to estimate the extent to which our study variables differed according to student demographics. These procedures were used to identify the appropriate inclusion of covariates for our subsequent tests.

Last, we conducted separate models using hierarchical multiple regression to examine the statistical contributions of LGBTQ+ Affiliation, Institutional Belonging, Peer Belonging, and Social Adjustment on the following: Academic self-efficacy (ASE), class emotions (Enjoyment and Boredom), Subjective well-being, and GPA (respectively). For these

hierarchical multiple regressions, Institutional Belonging, Peer Belonging, and Social Adjustment were treated as continuous, mean-centered variables to reduce potential threats of multicollinearity in the hierarchical regression analyses (Aiken, West, & Reno, 1991). Each of the five hierarchical regression models included three steps to predict the z -transformed dependent variable. In Step 1, LGBTQ+ Affiliation and any meaningful covariates were included. In Step 2, mean-centered institutional belonging, peer belonging, and Social Adjustment were included. In Step 3, interaction terms for each mean-centered independent variable \times LGBTQ+ Affiliation were added.

Results

Preliminary Analyses

Preliminary assumption testing was conducted to check for violations of normality for the computed, continuous variables using the Shapiro-Wilk statistic with Lilliefors Significance Correction. Values ranged from .94 to .99, and were associated with p -values less than .001. These estimates signal potential non-normality. Normal Q-Q plots generally indicated weak-to-moderate deviation in observed items from theoretical values, with some items—particularly the GPA subscale—indicating greater non-normality. Due to these potential deviations, our scaled variables were z -transformed.

Before interpreting results, potential outliers were examined using casewise diagnostics of Cook's distance, leverage, and covariance ratio (CVR). For the five tests, no apparent issues were found, suggesting that these are fairly reliable models that do not appear to be unduly influenced by any subset of cases. To inspect serial correlations between errors, Durbin-Watson test was performed; the obtained values ranged from $d = 1.95$ to 1.99 , indicating slight violation of the assumption of independence. To examine multicollinearity, all predictor variables were inspected using VIF and Tolerance. VIF values ranged from 1.00 to 2.36, which suggests that the regression could be biased, but does not appear to be a

serious cause for concern (Bowerman & O'Connell, 1990). Tolerance values ranged from .40 to .99, which could signal minor issues of multicollinearity due to the interaction terms included in the models.

Primary Analyses

Table 2 presents descriptive statistics and bivariate correlations among the variables of interest. As shown, the directionality of trends among university experience variables was as anticipated. A few noteworthy results warrant highlighting. We found no statistical association between Peer Belonging and Enjoyment, Peer Belonging and Boredom, and Social Adjustment and Boredom. From a theoretical stance, it seems plausible that belongingness and adjustment may not uniformly relate to classroom emotions. Further, we found no statistical association between Institutional Belonging and GPA, and Social Adjustment and GPA. We performed curve estimations to test whether there are non-linear patterns; however, no significant trends were observed.

Next, we present the results of independent-samples *t*-tests, and Analysis of Variance (ANOVA) used to identify any group differences as a function of demographic variables. We identified differences in Peer Belonging on the basis of Age ($r = -.24, p < .001$) and first-in-family status; $F(1, 894) = 14.83, p < .001$; and Institutional Belonging on the basis of Age ($r = -.08, p = .02$). Social Adjustment ($r = -.09, p = .008$), and ASE ($r = .07, p = .03$) differed according to Age. We identified differences in Enjoyment on the basis of Gender; $F(1, 889) = 30.02, p < .001$; Age ($r = .12, p < .001$) and first-in-family status; $F(1, 894) = 9.12, p = .003$; and Boredom on the basis of Gender; $F(1, 889) = 4.70, p = .03$; Age ($r = -.17, p < .001$); and first-in-family status; $F(1, 894) = 9.12, p = .003$. We identified differences in GPA on the basis of first-in-family status; $F(1, 894) = 4.52, p = .03$. These group differences suggest that gender, age, and first-in-family status might be included as meaningful demographic covariates into the subsequent regressions.

Table 3 presents group differences between LGBTQ+ Affiliation and the study variables. Levene's tests for Equality of Variances were non-significant at $p > .05$, therefore assuming variances were equal between LGBTQ+ and non-LGBTQ+ students. Self-reported university experiences differed as a function of LGBTQ+ Affiliation for all variables except for Institutional Belonging, ASE, and GPA. Specifically, when compared to non-LGBTQ+ students, LGBTQ+ participants reported lower levels of Peer Belonging, Social Adjustment, and Subjective well-being. LGBTQ+ students also reported relatively higher rates of Enjoyment and lower rates of Boredom. Although this sample is large, it is plausible that findings concerning LGBTQ+ participants could be a result of disproportional subsample sizes. Estimates using partial η^2 indicated that LGBTQ+ Affiliation was associated with very small to small effect size values (excluding Institutional Belonging, ASE, and GPA) according to Cohen's (1988) guidelines.

Hierarchical Multiple Regression

Predicting Academic self-efficacy (ASE). Our full regression model (results at Step 3) confirms that Institutional Belonging ($\beta = .36, p < .001$), Peer Belonging ($\beta = -.11, p = .009$), and Social Adjustment ($\beta = .25, p < .001$) predicted ASE; $F(10, 880) = 26.04, p < .001; R^2 = .23$. It is worth highlighting that students with greater Peer Belonging corresponded to lower ASE whereas students with greater Institutional Belonging and Social Adjustment corresponded to higher ASE. We found an interaction between Institutional Belonging \times LGBTQ+ Affiliation ($B = -.24, SE = .11, p = .04$). Results suggest that the association between Institutional Belonging and ASE was greater for non-LGBTQ+ students than for LGBTQ+ students. As shown in Figure 1, the contribution of perceived Institutional Belonging on ASE appears weaker for LGBTQ+ students; therefore, Institutional Belonging seems to play a larger role in the efficacy beliefs of non-LGBTQ+ students.

Predicting Class Enjoyment. Our full regression model confirms that LGBTQ+ Affiliation ($\beta = .09, p = .003$), Institutional Belonging ($\beta = .39, p < .001$), Peer Belonging ($\beta = -.15, p < .001$), and Social Adjustment ($\beta = .12, p = .006$) predicted Enjoyment, $F(10, 880) = 23.61, p < .001; R^2 = .21$. We found no interactions between the independent variables and LGBTQ+ Affiliation.

Predicting Class Boredom. Our full regression model confirms that LGBTQ+ Affiliation ($\beta = -.09, p = .005$), Institutional Belonging ($\beta = -.33, p < .001$), and Peer Belonging ($\beta = .12, p = .01$) predicted Boredom; $F(8, 880) = 12.32, p < .001; R^2 = .12$. We found no interaction between the independent variables and LGBTQ+ Affiliation.

Predicting Subjective well-being. Our full regression model confirms that LGBTQ+ Affiliation ($\beta = -.05, p = .05$), Institutional Belonging ($\beta = .28, p < .001$), and Social Adjustment ($\beta = .42, p < .001$) predicted Subjective well-being; $F(10, 880) = 49.19, p < .001; R^2 = .36$. We found an interaction between Social Adjustment \times LGBTQ+ Affiliation ($B = -.26, SE = .12, p = .03$). Results suggest that the association between Social Adjustment and Subjective well-being was greater for non-LGBTQ+ students than for LGBTQ+ students. As shown in Figure 2, when students report poorer perceptions of their social adjustment, there appear to be no differences in subjective well-being between LGBTQ+ and non-LGBTQ+ students. However, as perceptions of social adjustment are more favorable, their positive effects on subjective well-being are larger for non-LGBTQ+ than for non-LGBTQ+ students.

Predicting GPA. Our full regression model yielded no statistical significance; $F(10, 880) = 1.72, p = .07; R^2 = .02$. In the regression model excluding the interaction terms, only Peer Belonging ($\beta = .10, p = .03$) predicted GPA; $F(10, 880) = 2.49, p = .02; R^2 = .02$. It is worth summarizing that greater Peer Belonging corresponded to lower ASE, less Enjoyment, and more Boredom, and a *higher* GPA. We found no interaction between the independent variables and LGBTQ+ Affiliation.

Discussion

The transition to university can introduce students to opportunities for growth as well as personal challenges to be overcome. A commonly-reported difficulty during this transition is the change that takes place within the social environment. Early in the transitional phase, first-year students are likely to recognize a need to evaluate and (potentially) modify their behavior when interacting with staff and students. During this time, students may reflect on thoughts and actions within the local milieu: *Do I fit in and belong here? Am I adjusting well to the social demands of university?* The purpose of the current research was to explore such questions with a large sample of first-year university students in New Zealand. We consider not only the general student population, but also the reports of LGBTQ+ students whose social transition to university may be particularly challenging. We aimed to understand belongingness and social adjustment to the university environment by (a) estimating whether such perceptions relate to motivation, subjective well-being, and academic performance, and (b) identifying whether these trends differ for LGBTQ+ students. Overall, our results confirm that belongingness and social adjustment have the potential to shape first-year experiences in meaningful ways and that these patterns vary between LGBTQ+ and non-LGBTQ+ students.

First, we report that first-year New Zealand students' perceptions of belonging and social adjustment to university were linked to achievement motivation, subjective well-being, and academic performance. Our results support the notion that belongingness is a construct that can be distinguished between institutional and peer domains, and further adds to the existing literature in which belongingness is presumed to be contextual (Vaccaro & Newman, 2016). If students experience different degrees of belongingness across domains, then institutions need to keep in mind that their strategic efforts to foster belonging might lead to different outcomes for individuals. For instance, some students may have a sense of belonging to the university but not to their peers; therefore, they experience belongingness in

the broad term but may struggle in their social transition with classmates and making friends. In our research, institutional belonging was a stronger predictor than peer belonging of motivation in terms of academic self-efficacy, class-related emotions, and subjective well-being. Peer belonging was linked to lower academic self-efficacy and better academic performance. It is reasonable to assert that students who feel connected to, respected by, and supported by the broader institution would report more positive views of their academic competence as well as greater enjoyment and less boredom in the classroom. Students who experience support from their peers could lack confidence but feel comfortable reaching out and interacting with others outside of the classroom. In turn, actions (e.g., such as forming study groups) could contribute to better grades. Although further research is needed, these results suggest that when students who feel as though they are a part of the institution tend to report greater motivation and better well-being, whereas peer-related dynamics appear more complex. To further understand these dynamics, it may be useful for universities—who routinely collect data relating to the student experience—to identify groups whose university encounters may be less positive than others. This may be a helpful step before targeted, evidence-based support strategies are developed and monitored.

Second, we report meaningful differences in the university experiences between LGBTQ+ and non-LGBTQ+ students. Consistent with the aforementioned literature, LGBTQ+ students in our sample reported comparatively low perceptions of peer belonging, social adjustment, and subjective well-being. Interestingly, LGBTQ+ students reported greater enjoyment and less boredom in their classes, and no differences were observed in terms of institutional belonging, academic self-efficacy and performance. With regards to cohort differences in class-related emotions, it is plausible that that especially for LGBTQ+ students, emotions, belonging, and learning are intimately linked (e.g., Moore, 2016). From seminal works by Oatley and Jenkins (1992), the positive, activating properties of enjoyment

and negative, deactivating properties of boredom could serve as a general indication as to how LGBTQ+ students might be feeling in their environment. Future studies might investigate the physical and online spaces that LGBTQ+ students view as safe (and unsafe), the corresponding emotions, and causal influences on their learning. With regards to differences in peer belonging, several dynamics could be at play. For example, researchers have shown that authenticity of peer relationships are particularly important for LGBTQ+ students (Alessi et al., 2017; Vacarro & Newman, 2016), and fostering such relationships might take time. Indeed, LGBTQ+ students may view the concept of peer belongingness in ways that differ from non-LGBTQ+ students, as belongingness would presumably involve all elements of their identity, including their sexual orientation, to be valued and respected. During a schooling transition, LGBTQ+ students may be making decisions about when it is safe (and not safe) to disclose their sexual orientation. As a result, peer belongingness and factors in other areas of university life may work on a different time frame for minority students.

Our findings may be meaningful when looking at the broader transition to university: LGBTQ+ students may exhibit levels of academic confidence and performance on par with other students, and may even have more positive learning experiences, whilst also having less peer belongingness. To create an environment that embraces diversity and affirms minority groups, institutions can adopt multiple, cost-effective strategies. We agree with Payne and Smith (2012) in that strategies that promote “tolerance” or support single days of visibility may not disrupt deeply ingrained heteronormativity. Instead, creating optimal learning environments for LGBTQ+ students is paramount. At a minimum, universities can ensure there is a physical space that is a designated queer student center (e.g., Ecker, 2015), as these offer community support and serve as symbols of LGBTQ+ inclusion, activism, and social transformation (Pitcher et al., 2018; Preston & Hoffman, 2015). It is recommended that

campus initiatives actively welcome LGBTQ+ students in orientation events and student support services (Bardhoshi et al., 2018). Other examples might include reviewing student communication mechanisms (e.g., website and email correspondence systems) to confirm that images, messages, and use of pronouns are welcoming for LGBTQ+ students. LGBTQ+ friendly services should be accessible so that students are aware of what is available, and this may help with a greater sense of belonging. Since peer interactions are embedded within the broader social climate, universities might also focus on the extent to which they model inclusive practices as an expectation and commitment.

Third, we report differences between LGBTQ+ and non-LGBTQ+ students in terms of how institutional belonging and social adjustment relate to academic self-efficacy and well-being early in the transition to university. Specifically, our results confirm that institutional belongingness had a smaller statistical prediction for the academic self-efficacy of LGBTQ+ students, and that social adjustment to university had a smaller statistical prediction for the well-being of LGBTQ+ students. These findings could suggest that, based on previous experiences, LGBTQ+ students may begin university with a particular set of coping strategies. For instance, individuals who feel as though they deviate from traditional social norms at university or are marginalized by educational systems may be more likely to respond to such stressors by focusing on academic work as a means of mental distraction or cognitive restructuring (e.g., Toomey et al., 2018). It would be useful to explore not only the stressors that LGBTQ+ students confronted but also how they cope with facets of university life that may be viewed as less controllable (e.g., institutional climate, resources that are available, and how individuals are treated by other members of the university).

Limitations & Future Directions

Our research included a large, diverse sample of first-year university students in New Zealand. One unique approach to this study is that we were able to have enough statistical

power to inspect group differences between LGBTQ+ and non-LGBTQ+ students. Taking a quantitative approach to explore such dynamics can be a useful contribution to the discipline, especially when marginalized and minoritized groups, by definition, share a smaller proportion of the student population. Although our sample may add support to the generalizability of the findings, several limitations should be kept in mind and addressed in future research. For instance, our sample considered LGBTQ+ as a broad construct, and this approximation might introduce bias into the experiences of individuals across sub-groups of the LGBTQ+ population. We recommend that researchers consider the nuances that exist within the LGBTQ+ communities in measurement practices. From a sample perspective, we had disproportionately fewer LGBTQ+ students than non-LGBTQ+ students and, therefore, additional research is needed to substantiate our results. It is possible that experiences were not reported by students who did not feel comfortable self-identifying as LGBTQ+; further, students might see themselves as LGBTQ+ but not necessarily a member of the Rainbow (LGBTQ+) community. There also may be sample selection bias at play. Our study captures the experiences of students from one university in New Zealand, and such experiences would likely differ as a function of the institutional climate and quality support services available to LGBTQ+ students. Indeed, the students who completed the questionnaire may represent those with a considerably easier or more difficult transition to university, such as starting university with (or without) an existing group of friends, or having living arrangements that meet (or do not meet) their individual needs. Moreover, our instrumentation relied on relatively brief scales, especially with regards to the number of items of class-related emotions. We recommend that researchers aim to consider the measurement of variables that offer greater statistical rigour and better capture individual differences.

This study was strengthened by having access to actual student performance outcomes; however, our research otherwise relies on self-report measures and a cross-

sectional design. Although the research was conducted to estimate subjective experiences, self-reports can be subject to response biases, and cross-sectional designs limit the ability to explain processes over time. We recommend that researchers make use of diverse methods of data collection, mixed-method approaches to integrate results, and consider longitudinal designs to more accurately understand the transition to university. Reciprocal, or even reverse, effects are possible. There are limitations in using regression analyses based on correlational data, as the inferred order of variables could be put into question. It is possible that subjective well-being, for instance, could be antecedent to the social transition to university. Given such limitations, one suggestion is for researchers to test alternative models for greater understanding, and to consider the postulation and testing of empirically valid models which could argue for or against the order of effects.

There are ample opportunities for future work in this area of research. Given the results and limitations of this study, we believe that students should be supported in ways that strategically promote belongingness while aiming to reduce the often-predictable stress that occurs during the social transition to university. Such efforts may be valuable for all students, but may be crucial for LGBTQ+ and other minority students.

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Table 1.

Exploratory factor analysis pattern matrix with factor loadings depicting Institutional Belonging (iBEL) and Peer Belonging (pBEL) using Maximum Likelihood extraction and oblique rotation (n = 896)

	Factor	
	1	2
I know very few students in my classes [†] . (pBEL1)	.777	.106
I have made at least one or two close friends at [institution]. (pBEL2)	.696	-.035
No one at [institution] knows anything personal about me [†] . (pBEL3)	.637	-.020
I am actively involved in [institution] societies and clubs (e.g. cultural, special interest, etc.). (pBEL4)	.483	-.093
I really like the culture at [institution]. (iBEL1)	.223	-.752
I feel like I am "at home" at [institution]. (iBEL2)	.343	-.630
I feel safe on [institution] campus. (iBEL4)	-.004	-.471
Most of the [institution] staff are approachable. (iBEL5)	-.082	-.460

Note. [†] indicates that the item required reversed coding.

Table 2.

Means, Standard Deviations, and Bivariate Correlations among University Experiences and Performance for LGBTQ+ and non-LGBTQ

students (n = 896)

	<i>M</i> (Std. Dev)	LGBTQ+ Affiliation (Yes = 1)	Peer Belonging	Institutional Belonging	Social Adjustment	Academic self- efficacy	Class Enjoyment	Class Boredom	Subjective Well- being	GPA
LGBTQ+ Affiliation (Yes = 1)		1	-	-	-	-	-	-	-	-
Peer Belonging	4.52 (1.36)	-.08*	1	-	-	-	-	-	-	-
Institutional Belonging	5.52 (.88)	-.02	.47**	1	-	-	-	-	-	-
Social Adjustment	3.17 (.81)	-.08*	.59**	.53**	1	-	-	-	-	-
Academic self-efficacy	24.54 (4.38)	.02	.18**	.40**	.37**	1	-	-	-	-
Class Enjoyment	3.78 (.76)	.13**	.05	.36**	.20**	.50**	1	-	-	-
Class Boredom	2.68 (.92)	-.10**	-.01	-.27**	-.10**	-.40**	-.52**	1	-	-
Subjective Well-being	3.93 (.90)	-.09**	.35**	.48**	.54**	.48**	.42**	-.26**	1	-
GPA	4.86 (2.53)	.03	.10**	.04	.07*	.21**	.07*	-.14**	.10**	1

Note. *Correlation is significant at the $p < 0.05$ level (2-tailed). ** Correlation is significant at the $p < 0.01$ level (2-tailed).

Table 3.

Group Differences in Belonging, Social Adjustment, Academic self-efficacy, Class Emotions, Subjective well-being, and GPA for LGBTQ+ (n = 113) and non-LGBTQ+ Students (n = 783)

Variable	<i>t</i>	<i>p</i> -value	Mean Difference	St. Error Difference	η^2_{partial}
Institutional Belonging	.73	.47	.34	.14	.00
Peer Belonging	2.49	.01	.06	.09	.01
Social Adjustment	2.30	.02	.19	.08	.01
Academic self-efficacy	-0.52	.60	-.23	.44	.00
Class Enjoyment	-3.89	.00	-.30	.08	.02
Class Boredom	2.88	.00	.27	.09	.01
Subjective well-being	2.70	.01	.25	.09	.01
GPA	-.81	.42	-.21	.25	.00

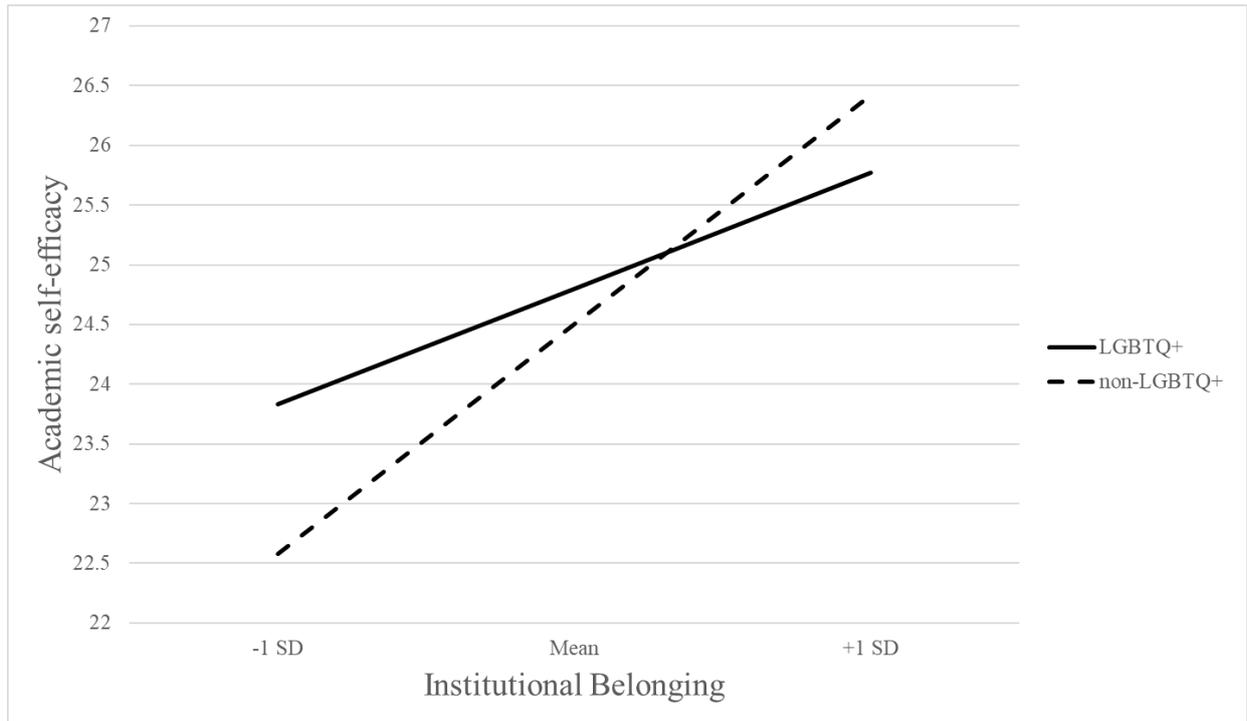


Figure 1.

Main and Interaction effects for Academic self-efficacy based on Institutional Belonging and LGBTQ+ Affiliation (n = 896)

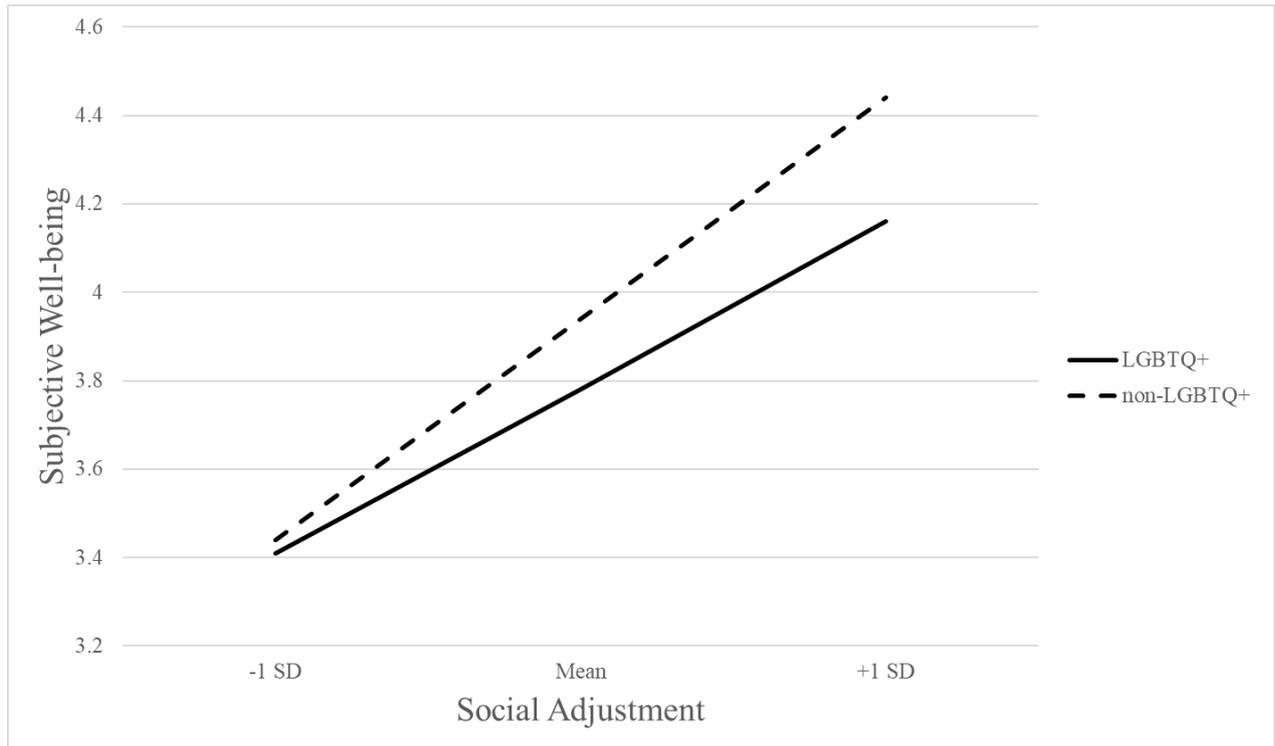


Figure 2.

Main and Interaction effects for Subjective well-being based on Social Adjustment to University and LGBTQ+ Affiliation (n = 896)