

# Construction and Validation of the Lesbian, Gay, Bisexual, and Transgendered Climate Inventory

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Workplace climate refers to formal and informal organizational characteristics contributing to employee welfare. Workplace climates for lesbian, gay, bisexual, and transgendered (LGBT) employees range from actively supportive to openly hostile. An instrument measuring LGBT workplace climate will enable research on vocational adjustment of LGBT workers and will benefit practitioners doing vocational counseling and consultants working to improve corporate environments. Three rounds of data collection contributed to the construction and validation of the LGBT Climate Inventory (LGBTCL). Use of qualitative data in item construction contributes to content validity. Factor analysis suggests that the LGBTCL measures a single construct. Measures of related constructs (work satisfaction and discrimination) correlate moderately with the LGBTCL, supporting its construct validity. The LGBTCL demonstrates excellent internal and test-retest reliability.

**Keywords:** organizational climate, work satisfaction, homosexuality, instrument construction, measurement, vocational adjustment

Workplace climate matters. It affects employee recruitment, adjustment, productivity, stress, and commitment. Workplace climate refers to formal and informal aspects of an institutional environment that affect employees' experience on the job. To know whether interventions are needed to improve organi-

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zational climate and to measure the impact of those interventions, we must be able to accurately measure workplace climate for employee populations of interest. No previous well-validated measure exists to measure the perceived workplace climate for lesbian, gay, bisexual, and transgendered (LGBT) employees. To fill this void, we constructed and gathered evidence of validity for the Lesbian, Gay, Bisexual, and Transgendered Climate Inventory (LGBTICI).

## The Need for Valid Measures of Workplace Climate

Over the past 20 years, vocational and organizational psychologists have become increasingly aware of the important role of environmental factors in employee satisfaction, work commitment, organizational effectiveness, and productivity. Results of numerous studies have provided consistent evidence demonstrating meaningful relationships between personal satisfaction indicators, such as job commitment and satisfaction, and various aspects of the work environment, such as overtime requirements, employee benefits, and coworker relationships (Allen, 2001; Heaney, 1991; Hedges, 1983).

However, Chartrand and Walsh (1999) argued that much of the existing research in this domain suffers from several methodological flaws, including (a) the use of participants already working in congruent environments, (b) incomplete evaluations of the relevant aspects of work environments, and (c) a narrow focus on traditional aspects of work environments (e.g., basic job descriptions, work tasks, and coworker relationships). They called for enhanced assessment of work environments to more fully capture the diversity of factors that encompass the workplace.

Despite vocational psychologists' recent attempts to develop more useful measures of occupational environments (e.g., De Meuse & Hostager, 2001; Thompson & Smart, 2001), there have been relatively few efforts to develop psychometrically sound assessments of work environments as they pertain to specific employee groups (Prince, 1997).

*LGBT workplace climate.* LGBT individuals may face formal or informal discrimination in the workplace (Cullen & Smart, 1991). Formal discrimination involves overt policies that discriminate in hiring, advancement, or retention based on sexual orientation or gender identity or expression. Informal discrimination involves the tolerance of harassment of or covert discrimination against LGBT employees. Formal policies (e.g., a nondiscrimination policy that includes sexual orientation) may not end informal discrimination, so assessment of workplace climate must be sensitive to both formal and informal discrimination. Chojnacki and Gelberg (1994) went beyond the discussion of discrimination and asserted that although some workplace climates for LGBT employees are overtly or covertly discriminatory, others are tolerant or affirmative of LGBT employees. The suggestion that workplace climates fall along a continuum from overt discrimination to acceptance and affirmation highlights the need for an instrument

to measure where an organization or industry may be located along the entire range of such a continuum.

There is little empirical literature on the effects of an organization's climate for LGBT individuals, but there is no shortage of theorizing about the effects of such a climate. Current theories of job motivation, involvement, and productivity suggest that workers who are treated with respect and fairness are more likely to work in a manner that promotes and enhances their organization, their coworkers, and themselves (Ellis, 1996). Conversely, fear of harassment or discrimination may drain energy away from the work at hand, reduce creative energy, decrease collaboration, and increase feelings of isolation, anxiety, and psychological distress (Jackson, 2000; Powers, 1996; Rosabal, 1996; Waldo, 1999; Winfeld & Spielman, 1995). Finally, hostile workplaces may force LGBT employees to stay closeted (that is, to hide their LGBT identities) (Cullen & Smart, 1991; Ellis, 1996; Pope, 1996; Waldo, 1999; Winfeld & Spielman, 1995). Because there is some empirical evidence that staying closeted may have an adverse effect on physical health (Cole, Kemeny, Taylor, & Visscher, 1996), hostile workplace climates may negatively affect employee health.

*Previous measures of LGBT workplace climate.* We found only two published measures that attempt to assess LGBT workplace climate. The Workplace Heterosexist Experiences Questionnaire (WHEQ) was developed to assess employees' experiences of harassment and discrimination based on sexual orientation (Waldo, 1999). The WHEQ contains 22 items designed to assess experiences on a continuum ranging from subtle forms of harassment and discrimination to more overt and explicit forms. However, measuring harassment and discrimination is only part of the task of measuring workplace climate. Such an instrument can measure the presence or absence of harm but will miss important distinctions based on more positive workplace attributes. Chojnacki and Gelberg (1994) described workplaces as falling along a continuum of the following four levels: overt discrimination, covert discrimination, tolerance, and affirmation. Instruments that focus exclusively on discrimination and harassment measure only half of this continuum. To measure the full spectrum of climate for LGBT employees, we must also address aspects at the affirmative end of the spectrum such as respect, comfort, support, and belonging.

The other published instrument, the Work Environment Scale (Driscoll, Kelley, & Fassinger, 1996), is a revision of the Campus Environment Survey (Blankenship & Leonard, 1985; Cranston & Leonard, 1990), which was designed to measure sexism in campus environments. The Work Environment Scale is a 45-item instrument designed to measure "perceptions of the workplace climate as related to homophobia and personal experiences of discrimination based on sexual orientation" (Driscoll et al., 1996, p. 235). Thus, the focus is again on the presence or absence of negative conditions (homophobia and discrimination) rather than including more positive ones (e.g., inclusion and support). In addition, by modifying an instrument originally designed to measure a

different aspect of climate (sexism), this instrument may miss important aspects of climate specific to the LGBT experience.

Although several measures of college campus climate for LGBT people do exist (e.g., Cullen & Smart, 1991), such instruments would not be appropriate for broader workplace applications. One thing these instruments do provide us however is evidence of the need for measures of LGBT climate. One Web site documenting investigations of college and university campus climates revealed more than 45 separate studies of LGBT climate on college campuses (<http://www.uic.edu/orgs/lgbt/campus-climate.html>). Campuses are only one of many workplaces that are experiencing a need to measure climate for LGBT employees. As more and more company, state, or federal protections are enacted for LGBT employees, demand for reliable instruments to measure working conditions for LGBT employees will continue to rise. We hope that the availability of a carefully constructed measure of workplace climate for LGBT employees will help stimulate a similar plethora of research on workplace climate.

## ITEM CONSTRUCTION

Rather than relying on a research team or the existing literature to generate instrument items, we chose to go to the population of interest and ask them to generate items based on their own experiences in their own workplaces. This phenomenological methodology (Giorgi, 1985) offers several advantages. It does not depend on limited literature or on the limited experiences of a small team of researchers but rather (if the sample is varied enough) can potentially sample the entire range of experience of the population. In addition, it honors the experiences of the population of interest, a particularly important issue when studying oppressed groups. Use of this methodology typically generates the major themes previously identified in the literature and may also generate important themes not previously identified (e.g., Liddle, Kunkel, Kick, & Hauenstein, 1998; Schuck & Liddle, 2002). Finally, this approach contributes to the content validity of the instrument.

## Procedure and Participants

In February 1998, we distributed 62 open-ended surveys to a network of 17 cooperating researchers in nine states (AL, CA, GA, IL, KS, MN, MO, NY, and WA) to distribute to lesbian, gay, or bisexual (LGB) potential participants in their local areas. (Although the two later studies deliberately included transgendered participants, this first study only requested survey distribution to LGB respondents.) To ensure responses from a wide variety of respondents, no more than 5 surveys were sent to any one distributor, no more than 10 were sent to any one

state, and distributors were asked to give surveys to acquaintances in a wide variety of occupations.

The one-page survey first asked for respondents' occupation, type of employer, gender, and sexual orientation (all requested in open-ended format). It then asked respondents to "Please write short phrases or sentences on the following lines describing what it's like to be a gay, lesbian, or bisexual employee at your current workplace."

Thirty-nine surveys (63%) were returned. Respondents included 24 lesbians, 12 gay men, and 3 bisexual men. Two respondents identified as transgendered. Respondents represented a wide array of occupations, including accountant, advertising assistant, architect, assembly line worker, banker, chaplain, computer operator, daycare worker, fund raiser, graduate assistant, landscaper, legal assistant, manager, nurse, office temp, professor, psychotherapist, salesperson, secretary, teacher, technical writer, and veterinarian.

The 39 respondents generated 341 phrases from which the research team would extract a manageable number of items. The team (consisting of the four authors of this article: two faculty and two advanced doctoral students representing a variety of sexual orientations and genders) was trained in the analytic methods of Giorgi (1985), which involves qualitative analysis of verbal material through scrutiny of the whole (in this case, all participant responses), identification of individual "meaning units," and comparison with other meaning units to identify uniqueness and redundancy (Liddle et al., 1998). Each team member first examined the items individually, grouping the items that reflected similar content. We then worked as a group to word items such that (a) we remained true to the meaning of each response as we understood it, (b) whenever possible we used the wording of a respondent rather than our own, (c) we minimized overlap in meanings between items, and (d) we created a set of items that covered the content of every relevant item generated by our respondents. Only responses that were judged by the team as relevant to the construct of interest, LGBT workplace climate, were included in the item set constructed. Decisions on wording and inclusion of items were reached by consensus. After gleaning 59 items from this set of responses, we also reviewed the relevant raw data from a previous study of 39 LGB psychology professors that used the same prompt (Liddle et al., 1998). To be inclusive of that content, we reworded a few items and added one additional item. The process resulted in 60 items: 33 stating positive workplace conditions and 27 reverse-scored items.

These 60 items were then used to create a survey in which respondents were instructed to "rate the following items according to how well they describe the atmosphere for lesbian, gay, bisexual, and transgendered (LGBT) employees in your workplace, using the following scale." Respondents were instructed to use a 4-point, fully anchored scale with empirically equidistant anchors (developed by Dobson & Mothersill, 1979) to allow for statistical analysis of results using parametric statistics. All items were worded to follow the stem, "At my workplace...". Response options were (1) *doesn't describe at all*, (2) *describes somewhat or a lit-*

*tle*, (3) *describes pretty well*, and (4) *describes extremely well*. Items were randomly ordered except that we chose to begin with a positively worded item and did not allow more than three positively or negatively worded items in a row to avoid response set bias.

In October 1998, we asked several doctoral students to look over the survey and alert us to any problems understanding or answering any questions. We then mailed out a small set of surveys to local LGB individuals and used those responses ( $n = 30$ ) to check for any obvious problems. As a result of this process we reworded a few items that had caused confusion.

## ITEM SELECTION

### Procedure and Participants

In February 1999, we sent the resulting 60-item survey to the original group of cooperating researchers for distribution in a similar fashion. We also solicited additional respondents from two listservs focusing on transgender issues. As surveys were returned, we noticed that the vast majority of respondents seemed to be describing workplaces that were quite LGBT affirmative. (This may be because many LGBT people, especially those who are out enough to be found by survey distributors, leave workplaces that are not affirming and find better places to work.) Thus, an adequate range of experiences was not represented in our responses. We therefore decided to deliberately oversample employees in hostile workplaces to ensure that our validity and reliability data were collected from the full range of positive and negative work settings. This oversampling was legitimate because this was not a study designed to be representative of the population sampled but rather a construction and validation of an instrument that must be able to effectively measure the full range of workplace climates. We sent out a call on several LGBT-related listservs explaining that we needed volunteers who worked in settings that were not very good for LGBT employees. This combined distribution process involved sending out a total of 173 surveys.

In addition to the 60 items to be rated, the questionnaire asked for the respondent's type of work, type of company, gender, sexual orientation, age, ethnic or racial heritage, annual income, and state of residence, all requested in open-ended format. To assess participants' level of openness about their sexual orientation at work, we followed Croteau's (1996) suggestion of using previously used openness measures that can be compared across studies. We refined a three-level measure used in two previous studies (Croteau & Lark, 1995; Levine & Leonard, 1984) by further subdividing two levels. This provided more detailed information but still allows for cross-study comparisons. We also asked participants for a code name (mother's first name and the name of the street lived on in the last year of high school) so that test-retest reliability on the LGBTCI could later be assessed

by matching surveys from repeat participants without violating anonymity. We also included a question at the end of the survey asking whether respondents had any problems completing the LGBTCI.

In this sample, 127 surveys (73%) were returned, of which 124 were useable. An open-ended question that asked about gender, sexual orientation, and transgendered identification revealed that 51% of respondents identified as female, 46% as male, and 3% either did not specify or said gender was not applicable. Of the participants, 21% identified as transgendered. Sexual orientations were 32% lesbian, 40% gay, 13% bisexual, 13% unspecified (transgendered respondents), and 2% heterosexual (transgendered respondents). Age ranged from 18 to 64 with a mean of 38 ( $SD = 9$ ) and a median of 39. Of the respondents, 87% identified as White, 6% multiracial, 2% African American, 2% Latino, 1% Asian American, and 1% American Indian. Annual income ranged from \$10,000 to \$300,000 with a mean of \$48,700 ( $SD = \$32,000$ ) and a median of \$45,000. A five-item checklist assessing level of LGBT identity disclosure indicated that the full range of outness at work was represented: 46% reported that most colleagues knew of their LGBT identity and that it sometimes came up in conversation, 8% reported that most knew but it was seldom if ever mentioned, 22% said some knew and with those people it sometimes came up, 13% reported that some knew but it was seldom if ever mentioned, and 11% reported that few if any people at work knew of their LGBT identity. Assigning participants' occupations to primary Holland types (using the *Dictionary of Holland Occupational Codes*) (Gottfredson & Holland, 1996) revealed that participants' occupations were well distributed across Holland (1997) codes, with 10% realistic, 18% investigative, 6% artistic, 21% social, 19% enterprising, and 27% conventional.

## Item Reduction Decisions

When we initially conceptualized the development of this assessment, we wanted to create an inventory that could be completed by respondents in less than 10 or 15 minutes. Although we collected data from participants in this study for all 60 items that were originally written, we recognized that not all of these items would be retained for the final version of the inventory. Therefore, rather than begin traditional statistical analyses of the data by conducting a factor analysis of all 60 items, we first applied a series of prearranged criteria to determine whether we should retain a given item for subsequent factor analysis. Numerous psychologists and educational assessment specialists have provided rationale supporting the process of culling items based on prearranged criteria in the early stages of instrument development (e.g., Aiken, 2003; Anastasi, 1982; Diamond, 1981; Thorson & Powell, 1984).

First, because the set of original 60 items had been limited to items that we judged relevant to the construct of workplace climate and because those 60 items showed remarkable internal consistency ( $\alpha = .98$ ;  $n = 119$  due to scattered



missing data), we concluded that we had succeeded in creating a set of items that seemed to measure a single construct. Because this set of items represented our best available measure of this construct, we judged it appropriate to cull all items ( $n = 17$ ) that did not correlate with the overall set of 60 items at a level of .60 or greater (Anastasi, 1982). Next, to ensure that all items retained were items that respondents were able to understand clearly, we deleted all items ( $n = 11$ ) that were left blank by more than one respondent or that resulted in a bimodal response distribution. We then culled items ( $n = 8$ ) that (a) some respondents indicated were not relevant in their particular workplace (e.g., items concerning LGBT role models, which were not relevant to very small companies), (b) contained language or concepts that we thought might become dated soon (e.g., an item containing particular antigay slurs that might change in popularity or meaning), or (c) used complex syntax (e.g., double negatives). Finally, we culled items ( $n = 4$ ) that appeared to be quite similar to other items. In choosing which similar items to remove, we retained—whenever possible—reverse-scored items (which had through previous culling become relatively scarce) to help prevent response set bias.

The process of culling items based on these prearranged criteria resulted in 20 items (12 positively worded and 8 reverse scored) that had no discernable problems. Cronbach's alpha for this subset of 20 items was .96 ( $n = 119$ ).

We next conducted a principal factor analysis (PFA) (also called principal axis factoring) to determine whether we had indeed constructed a scale that reflected a single factor. The first eigenvalue was 11.71, and subsequent eigenvalues were 1.26, 0.87, 0.72, 0.68, 0.61, 0.57, and so on. Use of the default cutoff eigenvalue of 1.0 would suggest two factors, however a scree plot showed a clear demarcation after the first eigenvalue, with all remaining values resembling a shallow scree slope, suggesting that a single-factor solution is appropriate.

Before settling on the single-factor solution, the factor matrix with two extracted factors was examined for interpretability using varimax rotation. The final eigenvalues for the extracted factors were 11.34 and 0.90 and explained 56.7% and 4.5% of the variance, respectively. The rotated factor matrix is reported in Table 1. The two factors were not readily interpretable because most items contributed almost equally to both factors. For example, for 13 of the 20 items, the factor loadings on the two factors showed a difference of less than .25. The 3 items that loaded differentially on Factor 1 all had to do with friendly personal conversations with coworkers. For the 4 items that loaded on Factor 2, 3 of them had to do with a hostile or oppressive environment, but the 4th involved a more benign lack of awareness of LGBT issues on the part of coworkers. The only thing all 4 had in common was that they were reverse scored (negative climate) items, whereas the Factor 1 items were all positive items. In fact, for all but 3 items, if the item described a positive workplace attribute it loaded more heavily on Factor 1 and if it described a negative attribute it loaded more heavily on Factor 2. It appears that both extracted factors measure LGBT workplace climate, but one factor emphasizes the presence or absence of positive attributes



Table 1  
Varimax Rotated Factor Matrix of Lesbian, Gay, Bisexual, and  
Transgendered Climate Inventory (LGBTCI) Items

Item Number	Factor 1	Factor 2
1	.53169	.65388
2	.47911	.64051
3	.75760	.27316
4	.60481	.61272
5	.76707	.25355
6	.33893	.81706
7	.69450	.47817
8	.28360	.58307
9	.40003	.52411
10	.31709	.61622
11	.57839	.48156
12	.79839	.29866
13	.52034	.62411
14	.48591	.54189
15	.17950	.76342
16	.61154	.53861
17	.68413	.43949
18	.35108	.56536
19	.65285	.41897
20	.55153	.49281

such as friendliness, acceptance, and comfort, and the other factor relates to the presence or absence of negative conditions such as hostility, fear, and oppression.

Nevertheless, several issues suggest this scale measures a single construct: (a) The scree plot suggested a one-factor solution, (b) the vast majority of items loaded almost equally on both extracted factors, and (c) the high internal consistency of the full 20-item scale ( $\alpha = .96$ ) suggests a single construct. Because the presence of positive workplace conditions and the absence of negative conditions are both important components of a positive workplace climate for LGBT people, the use of the scale as a whole also makes both theoretical and practical sense.

RELIABILITY AND VALIDITY

The purpose of the final round of data collection was to provide data on test-retest reliability, internal consistency, and concurrent validity.

## Procedure and Participants

We mailed 178 packets of materials to the same set of cooperating researchers who distributed surveys in the earlier data collections, plus the individual volunteers from the previous round who had responded to our request for participants who identified as transgendered or who had poor workplace environments. In addition to the 20-item LGBTCI (Appendix), respondents received the Short Form of the Minnesota Satisfaction Questionnaire (MSQ-SF) (Weiss, Dawis, England, & Lofquist, 1977) and the LGB Workplace Discrimination Survey (Croteau, Anderson, DiStefano, & Chung, 1998) for the purpose of computing concurrent validity. We expected moderate correlations between the LGBTCI and these two measures because work satisfaction and workplace discrimination are related but not identical constructs (Anastasi, 1982).

We received 93 useable surveys (52%). Of these, 51% identified as female, 47% identified as male, and 2% did not specify or stated that gender was not applicable. Of the participants, 16% identified as transgendered. Respondent sexual orientations were 31% lesbian, 42% gay, 14% bisexual, 12% unspecified, and 1% heterosexual. Ages ranged from 19 to 62 with a median of 39. Of respondents, 90% identified as White, 4% multiracial, 2% African American, 2% Asian American, and 1% American Indian. Annual income ranged from \$8,000 to \$300,000 with a mean of \$53,500 ( $SD = \$34,900$ ) and a median of \$50,000. Respondents resided in 26 states, representing all regions of the country. California, Wisconsin, and Iowa contributed 17%, 16%, and 11% of the participants, respectively. Of the remaining 56%, no single state contributed more than 5% of the sample's participants. On the measure of outness at work, 47% reported that most colleagues knew of their LGBT identity and that it sometimes came up in conversation, 16% reported that most knew but it was seldom if ever mentioned, 15% said some knew and with those people it sometimes came up, 10% reported that some knew but it was seldom if ever mentioned, and 11% reported that few if any people knew of their LGBT identity. Participants' occupations were well distributed across Holland types, with 16% in realistic occupations, 19% investigative, 5% artistic, 19% social, 23% enterprising, and 17% conventional.

## Instruments

We used the MSQ-SF (Weiss et al., 1977) to assess each participant's overall satisfaction with his or her job. The MSQ-SF consists of 20 items derived from the long form of the MSQ that best represent the 20 main facets of job satisfaction (e.g., achievement, compensation, security, and variety) identified by Weiss et al. (1977). Each item is presented as a statement (e.g., "On my present job, this is how I feel about my pay and the amount of work I do") for which respondents indicate their satisfaction on a Likert scale from *very dissatisfied* to *very satisfied*. Higher total scores reflect greater levels of general job satisfaction.

Substantial data exist to support the MSQ-SF's internal consistency and test-retest reliability as well as its construct and criterion-related validity (Hirschfeld, 2000).

The LGB Workplace Discrimination Survey (Croteau et al., 1998) is a 34-item measure of self-reported experiences of workplace discrimination. Respondents indicate how many times they have been the victim of each of these 34 discriminatory acts with their current employer within the last 12 months. Response options are 0, 1, 2, or 3 or more. The 3 or more response is scored as a 3, and all item scores are summed to yield a total score. Scores can range from 0 to 102. Sample items include "I have not received promotions due to my sexual orientation," "I have found my same-sex date or partner to be unwelcome at work-related social gatherings," and "I have been verbally harassed (e.g., had derogatory names or comments directed at me) due to my sexual orientation." Reliability and validity data are not available on this instrument, but it has face validity as a self-report of frequency of LGBT-related workplace discrimination.

## Results

LGBTCI scores represented the full possible range, ranging from 20 to 80 with a mean of 54.0 ( $SD = 14.4$ ) and a median of 53. Item response means ranged from 2.0 for Item 5 to 3.4 for Item 15 (after reverse scoring) with a median of 2.7. MSQ-SF scores ranged from 40 to 100 with a mean of 74.1 ( $SD = 13.8$ ) and a median of 76. Total scores on the LGB Workplace Discrimination Survey ranged from 0 to 55 with a mean of 9.4 ( $SD = 13.6$ ) and a median of 4. (Scores on these instruments cannot of course be considered norms for LGBT employees because this was not a representative sample.)

*Internal consistency.* Cronbach's alpha (internal consistency) for this administration of the LGBTCI was .96 ( $n = 88$  due to scattered missing data). Guttman split-half reliability was .97. Corrected item total correlations (Pearson's  $r$  correlations between individual items on the LGBTCI and total score if that item were omitted) ranged from .58 for Item 15 to .88 for Item 4, with a median of .72.

*Construct validity.* The LGBTCI scores were correlated with total scores on the MSQ-SF (Weiss et al., 1977), resulting in a correlation of .58 ( $n = 84$ ;  $p < .001$ ). The LGBTCI scores correlated  $-.52$  ( $n = 85$ ;  $p < .001$ ) with the LGB Workplace Discrimination Survey (Croteau et al., 1998). Correlations in this range indicate adequate evidence of construct validity. Correlations should be "moderately high, but not too high" (Anastasi, 1982, p. 145). These moderate correlations indicate that the construct we were measuring (workplace climate) was related to but not synonymous with the construct of work satisfaction and with self-reports of workplace discrimination.

## Test-Retest Reliability

Previous data from the 60-item set were collected from January 25 to February 15, 1999. Surveys for the final data collection were sent out August 19, 1999. Thus, the test-retest interval was 6 to 7 months. There were 66 participants in the latter round of data collection who matched code names from the previous round. Of these, 11 had since changed jobs, leaving 55 matched responses on which to compute test-retest reliability. The 20 items from the 60-item set that correspond to the 20 items on the LGBTCI were totaled, and that score was correlated with the total score on the LGBTCI from the final round. The resulting correlation was .87 ( $n = 48$  due to missing data).

## DISCUSSION

Psychometric properties of the LGBTCI appear to be adequate. Factor analysis suggests that the scale is measuring a single construct. This conclusion is also supported by the instrument's excellent internal consistency ( $\alpha = .96$ ). Test-retest reliability over an interval of 6 to 7 months was also good (.87). Evidence of construct validity came in the form of moderate correlations with measures of related constructs (work satisfaction and self-reports of LGBT-related discrimination), supporting the assertion that these instruments are measuring related but not identical constructs.

In addition to evidence of psychometric soundness, the LGBTCI has several strengths due to the methodology used in its construction. The use of open-ended questions from LGBT employees from a wide variety of workplaces and regions suggests good content validity. It should for example more comprehensively represent the salient experiences of LGBT employees than will instruments constructed by modifying an existing instrument designed to measure another construct or by constructing items representing themes gleaned from existing literature.

The methodology used also responds to the criticisms Chartrand and Walsh (1999) leveled at most research on work environments. Specifically, they said that most research relied primarily on workers already in congruent environments, whereas we deliberately oversampled those in hostile environments to sample the full range of experiences. Chartrand and Walsh also complained that much research involves incomplete evaluation of relevant workplace characteristics, focusing primarily on traditional aspects such as job descriptions, tasks, and relationships. In contrast, we solicited open-ended data from employees to include the full range of salient aspects of workplace climate as defined and experienced by LGBT employees themselves.

## Limitations

One weakness of the survey construction was that although transgendered participants were solicited in the latter rounds of data collection, only lesbian, gay, and bisexual participants were solicited in the phase during which items were generated. However, 2 participants (5%) in that first phase did mention identifying as transgendered, so there was at least some contribution of qualitative data from members of the transgendered community. A second limitation is that the items on the LGBTCI ask about working conditions for “LGBT employees” despite the fact that conditions may not be identical for members of these four groups. For example, a workplace might be LGB affirmative yet still be quite hostile to transgendered employees. For this reason, we had initially planned to limit our instrument to the measurement of the experiences of LGB employees, thinking that the experiences of transgendered employees might be too different to be meaningfully included. However, when 2 participants in the first round of data collection asked us to include transgendered employees, we reconsidered and decided to risk some compromise of specificity in favor of inclusivity and thereafter expanded our population of interest to include transgendered employees.

## Scoring and Guidelines for the Use of the LGBTCI

To score the LGBTCI, users must first reverse the scoring of Items 2, 6, 8, 9, 10, 13, 15, and 18 (by subtracting each item response from 5), then total the 20 items. Total scores can range from 20 to 80. We believe that the LGBTCI's high internal consistency legitimizes interpolation of scattered missing data. Surveys with a few missing items can be scored by computing the item average from the rest of the instrument for each participant and substituting that mean for the missing items. Interpolation of scattered missing data may be particularly important with an instrument such as this one that attempts to assess the experiences of several somewhat disparate groups because members of some groups may have more difficulty responding to a few items. For example, some transgendered or bisexual respondents might find the two items regarding same-sex partners irrelevant to them. Although we expect them to respond based on their knowledge of others' experiences (as might a single gay respondent), transgendered and bisexual respondents might be more likely to leave such an item blank. If researchers exclude surveys from respondents who leave these 2 items blank, they might unwittingly selectively exclude bisexual and transgendered respondents from their analyses. We believe any risks from scattered interpolation of missing data are less serious than the risk of excluding certain subsets of respondents. Of course, individual researchers can make their own decisions on this issue. Computation of the scale mean and substitution of missing items must of course be done after reverse scoring is completed.

Users of the LGBTCI should be sure to define *workplace* in their instructions to participants (clarifying whether they are asking about the institution as a whole, the respondent's department, the respondent's immediate workgroup, or some other entity). We deliberately did not define *workplace* on the instrument itself so that researchers could define that term as appropriate for their own research purposes. However, it will be important for administrators to provide guidance to their participants as several respondents reported some difficulty responding because the climate within their immediate work group was quite different from the climate of the organization as a whole.

It should also be noted that the psychometric properties of the LGBTCI were examined using only LGBT respondents. LGBT employees are certainly in the best position to assess the LGBT climate where they work. Nevertheless, it would be convenient for researchers if a sample of employees (of all identities) could provide accurate assessments of the climate for LGBT employees. Although it may be that heterosexual respondents could provide meaningful and reasonably accurate assessments of the climate for LGBT employees, such use has not been empirically examined. Until such a study has been undertaken, only LGBT respondents' scores should be considered valid.

The LGBTCI presented here fills an important gap in the vocational literature by providing a carefully constructed instrument to measure workplace climate for LGBT employees. Unlike previous attempts to measure LGBT climate, this instrument assesses the full range of experience from very negative to very positive rather than focusing exclusively on harassment and discrimination. We hope that its presentation here will stimulate much-needed research, including (a) assessments of individual workplaces to determine whether diversity training is needed, (b) assessment of the impact of such training, (c) assessment of various occupations to provide LGBT vocational clients with valuable career information, and (d) studies of the relationships between workplace climate and such variables as occupational stress, organizational commitment, and job satisfaction.

# Appendix Lesbian, Gay, Bisexual, and Transgendered Climate Inventory (LGBT-CI)

Please rate the following items according to how well they describe the atmosphere for lesbian, gay, bisexual, and transgendered (LGBT) employees in your workplace, using the following scale.

	Doesn't Describe at All	Describes Somewhat or a Little	Describes Pretty Well	Describes Extremely Well
At my workplace . . .				
1. Lesbian, gay, bisexual, and transgendered (LGBT) employees are treated with respect.	1	2	3	4
2. LGBT employees must be secretive.	1	2	3	4
3. Coworkers are as likely to ask nice, interested questions about a same-sex relationship as they are about a heterosexual relationship.	1	2	3	4
4. LGBT people consider it a comfortable place to work.	1	2	3	4
5. Non-LGBT employees are comfortable engaging in gay-friendly humor with LGBT employees (for example, kidding them about a date).	1	2	3	4
6. The atmosphere for LGBT employees is oppressive.	1	2	3	4
7. LGBT employees feel accepted by coworkers.	1	2	3	4
8. Coworkers make comments that seem to indicate a lack of awareness of LGBT issues.	1	2	3	4
9. Employees are expected to not act "too gay."	1	2	3	4
10. LGBT employees fear job loss because of sexual orientation.	1	2	3	4
11. My immediate work group is supportive of LGBT coworkers.	1	2	3	4
12. LGBT employees are comfortable talking about their personal lives with coworkers.	1	2	3	4
13. There is pressure for LGBT employees to stay closeted (to conceal their sexual orientation or gender identity/expression).	1	2	3	4

(continued)



Appendix (continued)

	Doesn't Describe at All	Describes Somewhat or a Little	Describes Pretty Well	Describes Extremely Well
14. Employee LGBT identity does not seem to be an issue.	1	2	3	4
15. LGBT employees are met with thinly veiled hostility (for example, scornful looks or icy tone of voice).	1	2	3	4
16. The company or institution as a whole provides a supportive environment for LGBT people.	1	2	3	4
17. LGBT employees are free to be themselves.	1	2	3	4
18. LGBT people are less likely to be mentored.	1	2	3	4
19. LGBT employees feel free to display pictures of a same-sex partner.	1	2	3	4
20. The atmosphere for LGBT employees is improving.	1	2	3	4

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