

# Institutional Analysis, Assessment and Reporting

## Sense of community, stress levels, and discrepancy between ideal perceptions and actual experiences in retaining first year students Research Report 2007-04

Marcia J. Belcheir, PhD.  
Associate Director

Boise State University  
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### Abstract

*Using the responses to a self-report survey given during the first semester of college, we found that emotional stress and amount of physical illness were the best predictors of whether new students would re-enroll one year later. Neither feeling a sense of community on campus nor having experiences at BSU that failed to match with perceptions of the ideal college were significant predictors of retention.*

While there are many reasons students leave college, this study delves into the emotional/psychological side of why students may leave. These issues may be particularly important at a large metropolitan university where many students enroll because they are place-bound rather than attending because the institution was their first choice for college. Thus, they enroll in college because of the pragmatic reason of desiring an education at whatever institution is available for them without leaving their homes and jobs.

What then may cause these students to leave? One reason may be that despite the pragmatic reasons for enrolling, a disconnection may still exist between students' idealized versions of what college should be like and what they encounter when they enroll at a large metropolitan commuter institution; this disconnection may lead them to be dissatisfied with the campus environment. Another, perhaps related, reason is that new students may lack the feeling that they are a member of the campus community. This could be due to the largeness of the campus itself, the size of general education courses new students take, or the commuter nature of the student population that cause them to leave campus as soon as their classes are finished. Finally, stress is a factor for all students experiencing college for the first time, but it may be particularly difficult for the student attempting to juggle school with home and job.

This study attempts to predict the probability of new freshmen enrolling the following fall term based on their responses to a survey during their first semester. It is hypothesized that students who are re-enrolled after one year will:

- Score higher on sense of community
- Have experiences at the university that more closely match or exceed their expectations of what would occur at their ideal college
- Report less stress during their first year of college

### Methodology

#### Measuring Sense of Community on Campus

Drawing on work from community and social psychology, sociology, and political science, McMillan and Chavis (1986) propose a four-dimensional theory that they say is applicable to all types of communities. *Membership* is "the feeling that one has invested part of oneself to become a member and therefore has a right to belong" (McMillan & Chavis, 1986, p. 9). The

*Influence* dimension involves individuals' feelings of being able to influence the community and vice-versa as well as the ability of the community to influence other systems. The *Fulfillment of Needs* dimension involves the reinforcement that members feel from being part of the community. The *Shared Emotional Connection* dimension is based on common experiences and histories that the community members share.

Eighteen Items were written to fit within the four dimensions with content that was based on higher education in general and Boise State University in particular. After new full-time freshmen responded to the items using a five-point Likert scale (where 1=strongly disagree and 5=strongly agree), the responses were factor analyzed using the principal components method and Varimax rotation of all factors with eigen values greater than 1.0.

Five factors emerged, which generally conformed to McMillan and Chavis' four dimensions. The *Membership* factor included items such as "my individuality is accepted by other students" and "I feel welcomed by Boise State." The *Needs Fulfillment* factor included items such as "All the work I'm putting forth now will be worth it someday" and "I'm unsure why I'm here" (negative loading). The third factor was labeled "*Faculty Connection*" and contained a subset of the items that were written to cover MacMillan and Chavis' Shared Emotional Connection dimension. They included items such as "I feel comfortable asking questions in class" and "Faculty care if I succeed." The fourth factor was similar to MacMillan and Chavis' *Influence* factor and included items such as "I'm getting involved in activities on campus" and "I'm going to make a difference at Boise State University." The final factor included items that appeared to reflect the negative side of the Shared Emotional Connection dimension. Labeled "*Disconnection*" it included items such as "I have felt lost and alone on campus" and "At times the size of this campus seems overwhelming." A full listing of the items and their factor loadings can be found in Appendix A.

### **Measuring Discrepancy between Ideal Perceptions and Experiences**

There are several ways that the "fit" of the student to the institution can be measured. Pascarella and Terenzini (1982), for example, proposed personal variables and consensus group variables in assessing the impact of residential units and student fit on student achievement and retention. Tracey and Sherry (1984) referred the same concepts as "perceived discrepancy" and "actual discrepancy." When measuring *perceived* discrepancy, each person's ideal ratings are compared to the ratings of their personal experience. When measuring *actual* discrepancy, each person's ideal ratings are compared to the group mean. Since perceived discrepancy scores had a slightly stronger relationship with retention than actual discrepancy scores did, perceived discrepancy scores were used for this study.

For the ideal ratings students were asked "If you could shape your ideal college to fit you, what would it look like? To what extent would it have the following?" Students responded to 15 items using a four-point scale where 1="very little," 2="some," 3="quite a bit," and 4="very much." Then using the same items and response format, students were asked "Now think about your experiences at Boise State University. To what extent does it have the following?" Perceived discrepancy was calculated by subtracting the ideal rating from the actual rating. Thus, a negative perceived discrepancy score would indicate that experiences were less than their perceived ideal. A "0" difference would indicate that the actual experience matched the ideal perception, while a positive discrepancy score would indicate that experiences were better than expected compared to the ideal.

The perceived discrepancy scores were submitted to a Principal Components factor analysis followed by Varimax rotation. Four factors emerged and were labeled *Affiliation*, *Classes and Study*, *Individual Attention*, and *High School Ways*. The *Affiliation* factor included items such as

“Opportunities to get together socially with other students” and “Other students that I can form new friendships with.” The Classes and Study factor included items such as “Places on campus where it’s easy to study by myself” and “Faculty who are intellectually stimulating.” The Individual Attention factor included items such as “Small classes” and “Tutoring if I need it.” The High School Ways factor included two items: “Easy courses” and “Old friends who go to my college.” The full listing of the items and their factor loadings can be found in Appendix A. The positive loadings indicate that students whose actual experiences more closely matched or exceeded their ideal expectations had higher scores on each factor.

### Measuring Stress

To measure this area, students were asked 11 questions. Two items asked about the physical manifestation of stress. In the first item, students were asked to compare the amount they had been sick this fall (during their first year of college) to last fall (when they were not in college). They were also asked about the number of days they had to miss classes or work due to illness. The remaining items tapped into the emotional dimensions of stress by asking students how often they had experienced things like feelings that their life was out of control or lack of support from family and friends.

The 11 items were submitted to a Principal Components factor analysis using Varimax rotation. Three factors emerged: *Emotional Stress*, *Time Stress*, and *Physical Illness*. The Emotional stress factor included items such as “Depression” and “Lack of support from family and friends.” The Time Stress factor included items such as “Not enough time in the day to accomplish necessary tasks” and “Exhaustion.” The Physical Illness factors included only the two items that addressed the amount of illness that students had experienced. For each factor, students with higher factor scores reported more stress in that area. Full details can be found in Appendix A.

### Obtaining Student Responses

All fall 2005 **first-time full-time students** (N=1664) were invited to complete an on-line survey regarding their first semester experiences at Boise State University about halfway through their first semester. A total of 625 completed the survey for a response rate of 38%. Table 4 below compares some basic demographic information of the population and the respondent group. Note that the group who responded to the survey was slightly older and more likely to be female.

**Table 1. Demographics on Responders and Non-responders**

Demographic Variable	Respondents (N=625)	Non-respondents (N=1039)	Statistical Significance
Average age	19.9	19.4	.0066
Percent female	65.8%	46.0%	<.0001
Percent white non-Hispanic <sup>1</sup>	81.9%	80.8%	n.s.

The final number of students included in the analysis was 517 after 108 cases were dropped for failure to complete one or more survey items. A total of 70% of this group were re-enrolled one year later, a figure somewhat higher than the 63% reported for the class as a whole. This confirms prior research that indicates that simply responding to the survey is one indicator of

<sup>1</sup> About 8% chose not to identify their race/ethnicity so are included with the group that was NOT white non-Hispanic

continued enrollment (see RR 2005-03, *Predicting the Return of Fall 2003 First-time-in-college Students*, on the IAAR website).

### Analyzing the Data

Using SPSS, a forward stepwise logistic regression was performed where retention was the dependent variable and the five community factor scores, the four discrepancy scores, and three stress scores were the predictor variables. The probability level to enter was .05, while it was .10 to be removed after entry.

### Results

Only two variables were needed to form the best prediction of whether or not students would be retained. Emotional stress had the strongest relationship to retention and was entered first into the prediction equation. The second variable to be selected was physical stress. The relationship was modest with Cox and Snell  $R^2$  estimated at .04 and Nagelkerke  $R^2$  estimated at .06. Note that as stress levels increased, the probability of re-enrolling one year later decreased.

**Table 2. Variables selected through stepwise regression at each step**

		<b>B</b>	<b>S.E.</b>	<b>Wald</b>	<b>df</b>	<b>Sig.</b>	<b>Exp(B)</b>
<b>Step 1</b>	<b>stress_emotional</b>	<b>-.368</b>	<b>.097</b>	<b>14.308</b>	<b>1</b>	<b>.000</b>	<b>.692</b>
	<b>Constant</b>	<b>.872</b>	<b>.098</b>	<b>79.047</b>	<b>1</b>	<b>.000</b>	<b>2.392</b>
<b>Step 2</b>	<b>stress_emotional</b>	<b>-.373</b>	<b>.098</b>	<b>14.548</b>	<b>1</b>	<b>.000</b>	<b>.689</b>
	<b>stress_physical</b>	<b>-.255</b>	<b>.097</b>	<b>6.943</b>	<b>1</b>	<b>.008</b>	<b>.775</b>
	<b>Constant</b>	<b>.884</b>	<b>.099</b>	<b>79.612</b>	<b>1</b>	<b>.000</b>	<b>2.422</b>

### Discussion

Though having a sense of community and congruence between ideal and actual experiences may be important for a more satisfying academic experience, the stress experienced during the first semester was the main factor that predicted re-enrollment one year later. Emotional stress was most important and included stressors such as depression, lack of support, and feelings of incompetence. Physical stress was the second component and included two measures: the extent that students reported that they were sick compared to the prior fall term and the number of days of school and work that were missed.

This finding indicates that there may be ways to identify potential drop-outs through visits to the infirmary and the counseling center. In addition, class non-attendance could be another warning of potential drop-out status. Advisors may also want to add questions about stress levels when holding advising appointments and be ready to refer students to appropriate interventions. These recommendations assume, however, that new students know how to obtain health services and who their advisor is. Additional action may need to be taken to ensure that new students have the information necessary to access these services.

## References

- McMillan, D. W., & Chavis, D. M. (1986). Sense of community: A definition and theory. *Journal of Community Psychology, 14*, 6-23.
- Pascarella,, E. T., & Terenzini, P. T. (1982). Contextual analysis as a method for assessing residence group effects: *Journal of College Student Personnel, 23*, 108-114.
- Tracey, T. J., & Sherry, P. (1984). College student distress as a function of person-environment fit. *Journal of College Student Personnel, 25*, 436-442.

## Appendix A. Factor Analysis Results and Inter-variable Correlations

**Table A1. Items and factor loadings<sup>2</sup> for the measurement of Sense of Community**

Item	Membership	Needs Fulfillment	Faculty Connection	Influence	Disconnection
My individuality is accepted by other students	<i>.845</i>				
My individuality is accepted by faculty and staff	<i>.750</i>				
I feel welcomed by Boise State	<i>.715</i>				
All the work I'm putting forth now will be worth it someday		<i>.799</i>			
I'm unsure why I'm here		<i>-.746</i>			
I'm excited about being at BSU		<i>.592</i>			
I have enjoyed my classes		<i>.547</i>	<i>.541</i>		
I feel comfortable asking questions in class			<i>.737</i>		
Faculty care if I succeed			<i>.689</i>		
I've talked with faculty outside of class			<i>.539</i>	<i>.422</i>	
Other students seem friendly and helpful			<i>.410</i>		
I'm getting involved in activities on campus				<i>.828</i>	
I'm going to make a difference at BSU				<i>.656</i>	
I've formed bonds with other students				<i>.648</i>	
I have felt lost and alone					<i>.772</i>
At times the size of this campus seems overwhelming					<i>.730</i>
I feel uncomfortably different from other students	<i>-.451</i>				<i>.567</i>
I feel like a number here sometimes					<i>.486</i>

<sup>2</sup> Only loadings of .40 and above are included

**Table A2. Items and Factor Loadings for the Perceived Discrepancy Items**

Item	Affiliation	Classes & Study	Individual Attention	High School Ways
Opportunities to get together socially with other students	<i>.827</i>			
Other students that I can form new friendships with	<i>.791</i>			
Places on campus where it's easy to meet with others	<i>.719</i>			
Other students with whom I can study	<i>.700</i>			
Places on campus where it's easy to study by myself		<i>.684</i>		
Faculty who are intellectually stimulating		<i>.659</i>		
Faculty who want me to succeed		<i>.627</i>		
Professors that understand I have a life outside of class		<i>.620</i>		
Schedule of classes that meets my needs		<i>.506</i>		
Small classes			<i>.705</i>	
Tutoring if I need it			<i>.639</i>	
Counseling services			<i>.619</i>	
A physical arrangement so I can easily get on and off campus			<i>.493</i>	
Easy courses				<i>.741</i>
Old friends who go to my college				<i>.681</i>

**Table A3. Items and Factor Loadings for the Stress Items**

Item	Emotional Stress	Time Stress	Physical Illness
This semester, how often have you experienced: Depression	<i>.825</i>		
This semester, how often have you experienced: Lack of support from family and friends	<i>.755</i>		
This semester, how often have you experienced: Feelings of incompetence	<i>.697</i>	<i>.422</i>	
This semester, how often have you experienced: Desire to quit school	<i>.618</i>		
This semester, how often have you experienced: Feelings that my life is out of control	<i>.570</i>	<i>.552</i>	
This semester, how often have you experienced: Not enough time in the day to accomplish necessary tasks		<i>.784</i>	
This semester, how often have you experienced: Exhaustion		<i>.740</i>	
This semester, how often have you experienced: Overwhelming test anxiety		<i>.530</i>	
This semester, how often have you experienced: Feeling unsafe on campus		<i>.452</i>	
Compared to last fall, how much have you been sick?			<i>.820</i>
How many days have you missed class or work because of illness?			<i>.776</i>

**Table A4. Correlation matrix of predictor variables (n=517)**

	Needs Fulfillment	Faculty Connection	Community Influence	Community Disconnect	Emotional stress	Time stress	Physical illness	Affiliation discrep	Classes & study discrep	Indiv attention discrep	High school ways discrep
<b>Community Membership</b>	-.007	.018	-.031	-.004	-.133(**)	-.024	.074	.140(**)	.168(**)	.064	-.031
<b>Community Needs Fulfillment</b>	1	.023	.006	.031	-.348(**)	-.007	-.065	.047	.101(*)	-.001	.088(*)
<b>Community Faculty Connection</b>		1	.005	-.047	-.061	.171(**)	-.038	.061	.262(**)	-.008	.109(*)
<b>Community Influence</b>			1	-.008	-.100(*)	.005	.032	-.029	.046	.125(**)	.072
<b>Community Disconnection</b>				1	-.344(**)	.201(**)	-.038	.174(**)	.054	.172(**)	.060
<b>Emotional stress</b>					1	.005	-.017	.151(**)	.152(**)	-.089(*)	-.039
<b>Time stress</b>						1	.018	-.039	.249(**)	-.105(*)	.159(**)
<b>Physical illness</b>							1	-.062	-.058	-.025	-.033
<b>Affiliation discrepancy</b>								1	-.004	-.012	-.004
<b>Classes &amp; Study discrepancy</b>									1	-.006	-.011
<b>Individual attention discrepancy</b>										1	.008

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).