University Belongingness Scale: Measurement and Construct Verification in Indonesian Language

Triantoro Safaria
Faculty of Psychology, Ahmad Dahlan University (UAD)
Yogyakarta, Indonesia

Article Info	ABSTRACT
	Sense of belonging is the extent to which person feels attached, related and belong in organization system. If, a person feels accepted, comfortable, congruence and get recognition from an organization, this condition will motivate the person to share positive contribution to their organization. The problem with Ahmad Dahlan University is a low student sense of belonging to their university. This condition will cause negative effects for university in the future, with increasing several students' negative behaviors such as apathy, unresponsiveness, until higher students drop out. It is needed to evaluate and understand the student's sense of belongings to their university, in order to take preventive action related to a low sense of belongings of students. The aim of this study is to create and develop a sense of belongingness measurement for Ahmad Dahlan University Belongingness Scale (ADUBS), that it will be used to evaluate how high the student sense of belonging to their university. The result of exploratory factor analysis (EFA) showed two dimensions the sense of belongingness constructs that represent the sense of belongings of student to their university namely *University belongings* and *Community belongings*. The next result from confirmatory factor analysis (CFA) using structural equation modeling (SEM) confirms that measurement model of ADUBs was fitted with empirical data (Chi-square = 39.054, with p > .001, degree of freedom = 36, CMIN = 1.085, RMSEA =. 022, NFI = .918, TLI = .989, GFI= .961, and CFI= .993. **

Corresponding Author:

Triantoro Safaria
Faculty of Psychology,
Ahmad Dahlan University,
Jalan Kapas no 9 Semaki, Jogjakarta 55166, Indonesia
Email: safaria_diy@yahoo.com

1.   INTRODUCTION

One factor that contributed to students' achievement and positive behavior is how strong their sense of belongingness to university where they are studying (Light, 2001; Chin, Salisbury, Pearson, & Stollak, 1999). According to Beck and Malley (1998) psychological atmosphere in which people feel attached, connected and accepted in the classroom or campus community is an important antecedent for success experience in students' future learning. According to Beck and Malley (1998) a low sense of belongings of students, especially for those who are experiencing emotional problems (depression, feeling isolated and lonely) will increase their risk of engaging in negative activities such as high absenteeism, drop-out, low academic score or involved in drug abused (Rostoskya, et al., 2003).

A high sense of belongings will also directly benefit from university. Students who have a high sense of belongings will be actively involved in any activity sponsored by universities such as student executive board and actively become a university ambassador. They will also tend to evaluate positively the

university, more satisfied with the university, and they also show a high motivation to be active in any campus activities (Light, 2001; Chin, Salisbury, Pearson, & Stollak, 1999).

Several previous studies showed that the high sense of belongings of students toward their university had positive correlation with attendance, motivation, and academic achievement (GPA) (Anderman & Anderman, 1999; Goodenow, 1993a, 1993b; Goodenow & Grady, 1993; Furrer & Skinner, 2003). Other research suggests that belongings is positively correlated with academic self-efficacy, intrinsic motivation, the value of academic tasks, social acceptance and the quality of faculty-student relationships (Freeman et al., 2007).

Present study adapted the theoretical construct proposed by Prentice et al. (1994). They operationalized sense of belonging become two dimensions, namely: belong to the university and belonging to the group (student community) within the university. Prentice et al. (1994) adopted the theoretical concept from Karasawa (1991). Karasawa (1991) developed six items representing four items for school belongings (school attachment) and two items in the sense of belongings to the school community (attachment to people at the school). The six items were tested on 192 vocational students in Japan. The factor analysis with varimax rotation led to two factors. Karasawa then fix the six items become seven, with one additional item related to school belongings. Revised scale was then tested on 287 students at the same school.

The implementation and testing of sense of belongings have not been done before in the context and situation in Indonesia. This study is a new development that presents concept and measuring instrument that can be used as a guide for the university. The results of this study will also be a reference to other fields such as psychology, guidance and counseling, and education, with particular regard to the handling of a sense of belongingness to the student. As stated by Freeman et al. (2007) that required further study of these belongings at the University level. Freeman et al (2007) said that" little is known about the importance of the sense of belongingness for college-level students or about the conditions that might support the perceptions of belongings". According to Freeman et al. (2007) the gap of knowledge is probably due to a lack of operational measurement quality of university belongings. Furthermore, Freeman et al. (2007) noted that there are fundamental questions about" the conceptual definition of school (or university) belongs and the extent to which it represents a one-dimensional or multidimensional construct." So this study will contribute to the development of science, particularly in the fields of psychology and education for developing and verifying the belongings measurement construct in Indonesia context.

2. RESEARCH METHOD
2.1. Participants
Participant of this study were students of the Faculty of Psychology, Ahmad Dahlan University (UAD). They are a representation of all the existing semester, in order to capable of representing the population of the Faculty of Psychology. Students of this study have the following characteristics, namely: at least have attended college for 1 year, male and female and still active as a student of UAD. As many as 32.6% or 59 respondents are male students and 67.4% or 122 respondents were female students. Of this amount also showed 47% or 85 respondents were second semester student, then 13.3% or 24 respondents were four semester student, the next 24.9% or 45 respondents were sixth semester, then 11% or 20 respondents were eight semesters, and last number of 3.9% or 7 respondents were ten semester student.

From 181 students, 61 respondents, or approximately 33.7% stated that he/she is involved in one of the following student activity units (SAU) in the UAD, and 120 respondents, or 66.3% did not follow any unit of student activity (SAU). In addition, from 181 students, 64 respondents, or 35.4% said at a committee or a member of the Student Executive Board (SEB) on the faculty. While 117 respondents, or 64.6% did not become members of the SEB. Table 1 showed demographic data of students.

2.2. Questionnaire Development
Development of Ahmad Dahlan University belongings scale based on the theoretical construct proposed by Prentice et al. (1994), they operationalized two dimensions of sense of belongingness, namely: belong to the university and belongingness to the group (student community). Table 2 presented the blueprint and construct of Ahmad Dahlan University belongings scale.

Table 1. Participants demographic background

Variable	Categories	Number	Percent
Gender	*Male*	59	32.6%
	Female	122	67.4%
Semester	*II*	85	47%
	IV	24	13.3%
	VI	45	24.9%
	VII	20	11%
	X	7	3.9%
Involved in SAU	*Yes*	61	33.7%
	No	120	66.3%
Involved in SEB	*Yes*	64	35.4%
	No	117	64.6%

Table 2. Blue-print of Ahmad Dahlan University *Belongingness* scale

No	Dimension	Items
1	*University belongings*	1, 2,3,4,5,6, 11
2	*Community belongings*	7,8,9,10
	Total	11

This scale contains eleven items that are divided into two dimensions. Likert scale was used in scoring with ranged from 1, 2, 3, 4, and 5. The response varies depending on the type of item, is favorable item or not. Seven items are part of the university belongings dimension and four items are part of the community belongings dimension.

3.   RESULTS AND DISCUSSION

Bartlett's test of Sphericity and Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (KMO) was used prior to factors analysis. Bartlett's test of sphericity is a chi-square tests and the determinants of the correlation matrix to test whether the variations of the same group and the dependent variables are not interconnected, this then indicates that the factor model does not fit (null hypothesis assumes that the variables are non-collinear). If the Bartlett's test of Sphericity rejected the null hypothesis, then it means that the correlation matrix forms a unitary matrix, and this indicates that a significant correlation is present between some variables (Hair et al., 2005). KMO ratio represents the squared correlation between variables toward the squared partial correlation between variables (Field, 2005). KMO statistic varies between 0 and 1; value of 0 indicates that the factor analysis is not appropriate, while values close to 1 indicates that the correlation pattern is relatively compact, this shows that the differences are valued and indicate reliable factors (Field, 2005, p . 640). Kaiser (Hair et al, 2005) recommends a standard value for factor analysis can be done. The values of .50 as quite acceptable (barely acceptable), values from .50 to .70 being declared acceptance (mediocre), while values from .70 to. 80 is good (good), and values between .80 and .90 is very good (great), lastly the values above .90 is expressed as an incredible (superb) (Field, 2005).

The results of factor analysis will show the solution factors, based on the criteria of Cattell's scree-plot test. Items will be retained if they showed satisfactory convergent validity and discriminant validity. Convergent validity portraits that item is strongly loaded to correlated factors compared with other factors. While a construct has good discriminant validity if the first highest loading construct show greater than ≥ .15 for second highest construct (Hair et al., 2005). Some experts assert, factor loadings below .30 or .40 expressed as low, while the factor loading of .40 or more expressed as high (Morgan, Gliner, & Robert, 2005; Leech, Barrett, & Morgan, 2008). Other opinions expressed on different criteria, which the factor loading of .50 or more considered high (Hair et al., 2005).

Prior to test the construct validity of ADUBS through factor analysis and structural equation model, the internal consistency approach using Cronbach's alpha test for reliability testing was conducted. The results of Cronbach 'alpha α = .770. From these results it can be concluded that the ADUB scale have a high reliability value. It is based on the opinion of some experts that the reliability of Cronbach 'alpha must satisfy the criteria above .70 (Leech, Barrett, & Morgan, 2008). Meanwhile, the discrimination index of the item showed correlation from .330 to .588. It also shows that each of the different items met satisfactory level.

Principal axis factor analysis with varimax rotation method was conducted to examine the basic structure of eleven items Ahmad Dahlan University belongings scale. Results from the Kaiser-Meyer-Olkin (KMO) was .783, indicating that each item can be predicted by each factor and the Bartlett test showed a significant level (p = .000). This means that the variables correlated high enough to provide basic satisfactory for factor analysis testing. Using the Kaiser-Guttman retention criteria of eigenvalues over 1.0, then resulting two-factor solution for the extraction.

The first factor emerged (eigenvalue = 3.5) and accounted for approximately 31.9% of the variance. The first factor represents the university belongings construct (item1, item2, item3, item4, item5, item6, item7 and item11). While, the second factors with eigenvalue = 1.5 and accounted for approximately 13.4% which represents the community belongingness construct (item8, item9 and item10). Table 2 portrays item and loading factor, with loading under less than .30 omitted to improve construct clarity. Convergence and discriminant validity were achieved for all items, because its have a factor loading greater than .30, and also was loaded strongly on associated factor and did not correlate with factors that is not it's construct ($\geq$ .15). Table 3 portrays the results of factor analysis and loading factors.

Table 3. Factor loading for rotated factors

Items	Factor Loading		Communality
	1	2	
(item 1) Seberapa sering Anda mengakui kenyataan/fakta bahwa Anda adalah mahasiswa Universitas Ahmad Dahlan Yogyakarta (UAD)? (*How often do you acknowledge the reality / fact that you are a student of Ahmad Dahlan University Jogjakarta (UAD)?*)	.407		.260
(item 2) Seberapa akuratkah kepribadian/perilaku Anda untuk menggambarkan Anda sebagai tipikal mahasiswa UAD? (*How accurate is your personality / behavior described you as a typical of UAD student?*)	.345		.172
(item 3) Seberapa pentingkah menjadi bagian dari civitas akademika UAD bagi anda? (*How important is an UAD academic community for you?*)	.479		.267
(item 4) Seberapa senangkah perasaan Anda jika Anda digambarkan sebagai tipikal seorang mahasiswa UAD? (*How happy would you feel if you are described as typical of UAD student?*)	.748		.538
(item 5) Seberapa banggakah perasaan Anda jika Anda digambarkan sebagai typikal seorang mahasiswa UAD? (*How proud would you feel if you are described as typical of UAD student?*)	.922		.633
(item 6) Ketika anda pertama kali bertemu dengan orang lain, seberapa besar kemungkinan Anda menyebutkan bahwa Anda mahasiswa UAD? (*When you first meet with other people, how likely you mentioned that you are a student of UAD?*)	.516		.342
(item 7) Bagaimana perasaan keterikatan atau kelekatan Anda sebagai mahasiswa UAD? (*How deep are your belonging feeling to UAD as a student?*)	.472		.299
(Aitem 8) Seberapa dekat perasaan Anda dengan komunitas mahasiswa UAD lainnya? (*How close do you feel to the other UAD student community?*)		.491	.215
(item 9) Sejauhmana komunitas kawan-kawan mahasiswa UAD mempengaruhi pikiran dan perilaku Anda sehari-hari? (*To what extent is the student and the community of UAD affect your mind and your everyday behavior?*)		.634	.248
(item 10) Seberapa banyak teman dekat Anda berasal dari atau merupakan mahasiswa UAD? (*How many of your close friends are from or are students of UAD?*)		.370	.116
(item 11) Seberapa besar kebangaan Anda menjadi bagian dari salah satu Unit Kegiatan Mahasiswa di UAD? (*How big is your pride to be a part of one of the Student Activity Unit (SAU) in UAD?*)	.430		.297
Eigenvalues	3.5	1.5	
% of variance	31.9	13.4	
Bartlett's test of Sphericity	.000		
Kaiser-Meyer-Olkin measure of sampling	.783		

The results of confirmatory factor analysis (CFA) showed a satisfactory result. It can be seen from the resulting of model fit, where all of the criteria met a satisfactory score. The confirmatory factor analysis

produced a Chi-square = 39 054, with a value of p> .001, for degree of freedom = 36, Cmin = 1085 is smaller than 2, RMSEA = .022 indicate a good fit model, NFI = .918, TLI = .989, GFI = .961, and CFI = .993 all scores are above the .90 criteria it indicates the ADUB scale is empirically fit to data. Table 4 describes the results of CFA tests through structural equation model.

       Based on several tests that was conducted previously ADUB scale shows a satisfactory result. The Cronbach alpha reliability values are high. The result of construct validity through exploratory factor analysis resulted in two dimensions where it accordance with the theory of belongings from Prentice et al (1994). The result of CFA also showed that the ADUB measurement model theoretically fits with data. It could be argued that the ADUB scale meets the criteria as a good fit model empirically.

       In the present study, we tested theoretical construct proposed by Prentice et al. (1994). They divided sense of belonging become two dimensions, namely: belong to the university and belonging to the group (student community) within the university. After we examine Prentice's theory of university belongingness using exploratory factor analysis and confirmatory factor analysis, we found that Prentice's theory was empirically fit with the data. Their theory of university belongings was appropriate when applied in Indonesia context. The present study confirmed it and has a conclusion that university belongings theory was appropriate when applied in Indonesia context.

Table 4. The result of CFA test of Ahmad Dahlan University Belongingness Scale

Items	Standardized Factor Loadings	T-Values	Skewness	Kurtosis
item1	.3782	2.378	-.723	-.274
item2	.821	2.543	-.934	1.995
item3	.465	2.484	-.881	.297
item4	.911	2.683	-.923	2.015
item5	.770	2.638	-.920	1.305
item6	.512	3.011	-1.380	.953
item7	.492	3.043	-1.164	2.807
item8	.523	2.623	-.976	1.310
item9	.604	2.328	-.800	.354
item10	.341	2.523	-.495	.521
item11	.417	2.483	-.576	-.404
Fit measurement	Chi-square= 39.054, df=36	RMSEA =. 022	TLI= .989	CFI= .993
	CMIN= 1.085, p<. 001	NFI = .918	GFI= .961	*p>. 001

       The next research objective was to examine differences in the level of university belongings based on gender, semester of studying, and participation in the Student Activity Unit (SAU) or the organization's Student Executive Board (SEB). The ANOVA test showed that there was no difference in the level of belongingness among male and female student with an F (1.154) = 3706, p = .56, partial eta = .022. This suggests that gender does not have a significant influence on the level of university belongings. This study results consistent with Anderman and Anderman's study (1999), also with Somers and Gizzi's study (2001) that found no significant gender differences based on school belongings. However, several previous studies found gender had a significant effect on school belonging (MacNeely, Nonnemaker, & Blum, 2002; Sanchez, Colon, & Esparza, 2005; Galliher, Rostosky, Hughes, 2004). It can be concluded that the effect of gender on school or university belonging is inconclusive, and this results need a further investigation.

       Meanwhile, the ANOVA test also showed that students who participated in the Student Activity Unit (SAU) has higher level of university belongings than students who do not follow the activities in SAU with F (1.179) = 13 433, p = .000, partial eta = .070. This is reasonable, because the involvement of students in SAU is an indication of the high level of their attachment to the university. So the students that are actively involved in the SAU, will have a high level of belongings compared to students who do not follow any SAU activities. Other results showed that there were significant differences between students that is involved in the Student Executive Board (SEB) with a student who is not actively involved in the SEB, with F (1.179) = .972, p = .002, partial eta = .052. These results indicate that involvement in the SEB organization will increase the attachment of students to the university. Just as the involvement of SAU, the involvement in the SEB organization is also one indicator of the high level of students' belongings towards their university. This results accordance with several previous studies, among other study by Eccles and Barber, (1999), Gerber (1996), also with Mahoney and Cairns study (1997). They found extracurricular activity had a positive relationship with school belonging. The higher the student involvement in extracurricular activity. The higher the sense of school belonging they have.

While, the university belonging based on semester of studying showed a significant result. Second semester students have a higher degree of university belongings compared with the more advanced semester students (four, six, eight and ten) with F (4.176) = 4169, p = .003, and partial eta = .087. These results indicate that in the beginning students have higher belongings to UAD, compared with senior students. There is a possibility that senior student during studying in college less got maximum service, so this makes the level of attachment to UAD has declined progressively. It is probably many senior students dissatisfy with the services from faculty or university, and it directly declines the sense of belongingness to the university. If they still got unsatisfaction service from the university, then most likely they will be apathetic to the university.

4.   CONCLUSION AND RECOMMENDATION

The results indicated that the scale of Ahmad Dahlan University belongings meets high internal consistency reliability. It also meets the criteria for satisfactory construct validity. Through confirmatory analysis test it found that the measurement model of ADUB scale meets the best fit and the model shows that the measurement model fit the data empirically.

Second, the study examined the levels of belongings through ANOVA based on participants' demographic variable, such as gender, semester of studying, SAU involvement and involvement in SEB organization. First, gender has no significant differences effect on the level of university belongings. In other words, there was no difference in the level of belongingness among male and female students. Second, there is a significant difference of belongings level among the junior students with senior students, second semester student have a higher belongings level compared to the senior students (four, six, eight, and ten semesters). Third, it was also found differences in levels of belongingness among the students who participated in SAU activities and SEB, with students who did not participate. Students who participate in the activities of SAU and SEB have a higher belongings level than students who do not participate.

Based on the results above, there are two suggestions that may be mentioned here. First, the reliability test, factor analysis and structural equation model showed that Ahmad Dahlan University belongings scale is a valid and reliable measurement tool, to be used in measuring the sense of belongings of students to their university. Further research could develop this scale to describe the sense of belongings of employees (academic and non-academic) Ahmad Dahlan University. Second, based on ANOVA test, it found that senior psychology student (4-8 semester) show a lower sense of belongings than junior students. This is probably due to the senior students did not get satisfactory service from the faculty, thus it causes their sense of belongingness decline in progressively. However, this interpretation should be examined again, in a qualitative study for verification. Third, more research needs to be done to involve more samples of students from various faculties at UAD. So it can be represented and will be able to portray the real situation as a whole for students UAD. Because one of the weaknesses of this study is the use of a limited sample.

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