The Validation of the Community College Survey of Men:
An Overview of the Intrapersonal Factors in the Non-Cognitive Domain

Postsecondary scholars have sought to illuminate the experiences, perceptions, and outcomes of men of color (particularly Black men) in four-year colleges and universities (Bonner II, 2010; Cuyjet, 2006; Dancy, 2012; Davis, 1994; Flowers, 2002; Harper, 2010, 2012). However, in recent years, scholars have focused intently on improving success rates for men of color (notably Black, Latino, Native American and Southeast Asian men) in community colleges (e.g., Bonner II, 2014; Bush & Bush, 2010; Palmer & Dubord, 2013; Sáenz, Bukoski, Lui, & Rodriguez, 2013; Vasquez-Urias, 2012). Currently, only 12.0% of Black, 14.6% of Latino, and 18.7% of Native American men graduate from a community college in three-years, compared to 22.1% of White and 23.4% of Asian men (Digest of Education Statistics, 2010). This point is particularly salient given that community colleges serve as the primary pathway into postsecondary education for men of color (Bush & Bush, 2010). To address outcome disparities, many colleges have sought to employ targeted interventions (e.g., programs, policies, practices). However, many of these efforts are chronically under-resourced, necessitating that interventions be informed by inquiry to maximize the efficacy of newly established efforts (Author, 2011; Harper, 2014).

This manuscript focuses on the validation process of the Community College Survey of Men (CCSM), an instrument designed to aid community colleges in understanding challenges facing historically underserved men. In particular, this manuscript focuses on the items in the instrument's intrapersonal (non-cognitive) sub-domain, which measure students' affective response to the collegiate environment. Prior research has shown the important influence of non-

cognitive factors on student success outcomes for men of color (Moore, Madison-Colmore, & Smith, 2013); Palmer & Strayhorn, 2008; Strayhorn, 2012). These intrapersonal factors include: a) self-efficacy – students' confidence in their abilities to succeed in academic endeavors; b) degree utility – students' perception of the worthwhileness of their collegiate pursuits; c) locus of control – the extent to which students believe they have control over their academic futures; d) action control – the directed attention or focus students place on academic matters; and e) intrinsic interest – the authentic interest students have in course content (Author & Author, 2014). The CCSM and its theoretical underpinning are described in the next section.

ABOUT THE CCSM

The CCSM is an institutional-level needs assessment tool that is designed to examine factors that are predictive of male of color success in community colleges. The instrument has been distributed at 38 colleges in eight states (e.g., Arizona, Arkansas, California, Illinois, Maryland, Minnesota, Pennsylvania, Texas) who partnered with the Minority Male Community College Collaborative (M2C3). Colleges received comprehensive reports on between-group differences by race and key factors most predictive of achievement for men of color. Reports are used for establishing benchmarks and identifying areas of need. The instrument is based on findings from a litany of studies on men of color in community colleges (e.g., Mason, 1998; Hagedorn, Hampton & Maxwell, 2001; Harper, 2009: Palmer & Dubord, 2013). The CCSM is the only instrument that focuses specifically on factors relative to the success of men of color in community colleges (Author & Author, 2013). The CCSM comprehensively assesses students' perceptions and experiences based on Author and Author's (2012) Socio-Ecological Outcomes (SEO) model.

The SEO model suggests that men of color enter college influenced by their background characteristics as well as societal factors (e.g., racial prejudice, economic conditions). The model indicates that there are four essential domains that influence student success, the campus ethos domain (e.g., perceptions of belonging, validating experiences, racial-gender climate); environmental domain (e.g., familial responsibilities, employment, stressful life events), academic domain (e.g., faculty-student interaction, use of services), and non-cognitive domain (e.g., intrapersonal factors, identity). The latter, non-cognitive domain is the focus of this manuscript. Intrapersonal factors in this domain include: self-efficacy, locus of control, degree utility, action control, and intrinsic interest. The model postulates that environmental and campus ethos factors influence non-cognitive and academic factors, which in turn affect student success.

INITIAL VALIDATION PROCESSES

The CCSM was subject to a three-phase, two-year validation process. Based on a synthesis of research, the instrument was developed in the Winter of 2011. A small field test was conducted in Spring 2012 (N=10). Field test participants completed the instrument and provided feedback on the flow and intelligibility of the instrument. Face validity was pursued via a panel of lay experts composed of student affairs and community college leaders (N=64). Lay experts worked in groups of 3-4 to evaluate the instrument. The lay experts provided feedback on phraseology, terminology, and interpretability of the instrument.

The first pilot took place in Summer 2012 and Fall 2012 with two participating colleges from California and Pennsylvania (N=595). Pilot data were used to test the dimensionality and reliability of the instrument's constructs. Initial results from the non-cognitive (intrapersonal) constructs indicated that the instrument had high cross-racial/ethnic reliability (Author & Author, 2013). Subsequent analyses led to further refinement of the CCSM. In particular, the initial non-

cognitive construct was more broadly conceptualized, including scales for self-efficacy, intrinsic interest, degree utility, sense of belonging, and perceptions of the campus racial-gender climate. The researchers moved the concepts of sense of belonging and racial-gender climate to the campus ethos domain. For the purpose of brevity, intrinsic interest was eliminated from the instrument (although the scale would be re-added after further consultation with content experts). Based on results from Author and Author's (in press) on the importance of students' focused attention on academic matters, the concept of "action control" was added to the instrument.

The second pilot was conducted in Spring 2013 with eight community colleges spanning California, Arkansas, and Minnesota (N=737). Psychometric analyses of CCSM illustrated strong factor loadings and reliability, and led to small revisions (Roesch, 2013). Specifically, Roesch reported that the factor loadings were strong, indicating the following ranges: action control, .68-.91, self-efficacy, .60-.91, and degree utility were all strong, .51-.91. Moreover the scales illustrate adequate reliability at .89 for action control, .85 for self-efficacy, and .83 for degree utility. While the second pilot indicated that the three scales had strong psychometric properties, additional feedback from practitioners in the field pointed to the importance of intrinsic interest and an internal locus of control. As a result, "intrinsic interest" was added back to the instrument and new items were created to assess locus of control. The next section discusses how the instrument's psychometric properties were re-assessed.

STUDY 1: CONTENT VALIDITY

To examine the content validity of the CCSM, items from the instruments intrapersonal scales were sent to subject matter experts (SMEs). Content validation was employed to assess whether items developed to measure a given construct were indeed accurate measures (Rubio, Berg-Weger, Tebb, Lee & Rauch, 2003). SMEs all had expertise in psychosocial research on

community college student success. Assessment of the instrument's content validity from these experts was necessary to ensure the utility of this instrument for non-cognitive measure of items relevant to student affairs practice. SMEs scored each proposed scale on previously described operational definitions for each construct. Content validity scores were assessed using the content validity index (CVI) for individual items and the scale-level index (S-CVI) for each construct. The CVI represents the total proportion of items rated as valid. The score was computed by dividing ratings of "not relevant" (recoded 0) and "somewhat relevant" (also recoded 0) by those scored as "relevant" (recoded 1) and "highly relevant" (also recoded 1) (Waltz et al., 2005). Thus, CVI scores range on a scale from 0 to 1.00, with higher scores representing higher degree of content validity agreement among SMEs. A commonly employed threshold for acceptable CVI scores has been articulated by Lynn (1986) who suggested that CVI scores fall no lower than .78. Scale validity scores (S-CVI) are derived by averaging CVI scores for content areas. A higher threshold for S-CVI scores is proffered in the extant literature, necessitating S-CVI scores of .90 or higher for scale validity (Waltz et al., 2005).

<INSERT TABLE 1>

Reliability analyses for SME responses to survey items are presented in Table 1. All scales had CVI scores at .83 or above. A total of ten items had perfect scores (1.00); these scores were primarily derived from the action control, self-efficacy, degree utility, and locus of control constructs. The lowest CVI scores were concentrated in the intrinsic interest domain, ranging from .83 to .92. However, these scores exceeded Lynn's (1986) threshold of .78. All S-CVI scores were at .90 or above, the highest S-CVI scores were for self-efficacy (.98) and degree utility (.98). S-CVI scores for intrinsic interest were at .90; as such, they met the minimum level for satisfactory S-CVI scores. Thus, the instrument illustrated strong content validity.

STUDY 2: CONSTRUCT VALIDITY AND RELIABILITY

The final pilot phase conducted in Fall of 2013 included 17 community colleges from California, Arizona, Maryland, and Illinois (N=3,781). Data from this phase were employed to examine the construct validity and reliability of the instrument. Construct validity refers to the degree to which a questionnaire or test measures the intended constructs for which it was developed. Construct validity was examined through exploratory factors analysis. The reliability (or consistency of measurement of items within each construct) was assessed via Cronbach alpha (Green & Salkind, 2009). The ethnic breakdown of participants was as follows: 40% White, 5.2% Asian (non-Southeast Asian), 2.7% South East Asian (e.g., Hmong, Cambodian, Laotian), .6% South Asian (Indian, Pakistani, Sri-Lankan), .8% Pacific Islander, 2.8% Filipino, 10.0% Black, 18.4% Mexican/Mexican American, 8.9% Hispanic (non- Mexican/Mexican American), 2.1% American Indian, 1.1% Middle Eastern, 2.2% Other, and 4.8% Multiethnic.

Data were analyzed using exploratory factor analysis, an analytic technique that identifies variable groupings (factors) to explain item variation and co-variation (Green & Salkind, 2009). Using a maximum likelihood estimation procedure, analyzes examined the dimensionality of the intrapersonal items in the CCSM. Given that several scales were added to the instrument, an exploratory (as opposed to confirmatory) factor analytic approach was employed. Dimensionality of the items was assessed using scree plots and associated eigenvalues (using the one-criterion). These tests identified five components in the sharp descent path of the scree-plot with eigenvalues above one. All factors were rotated using a Varimax approach (though a Promax procedure was also employed but is not presented herein due to the commonalities of the findings). The proportion of item variance accounted for in the five factors was as follows:

Factor 1 (16.10%), Factor 2 (14.20%), Factor 3 (13.64%), Factor 4 (13.60%) and Factor 5 (12.77%). These factors accounted for 70.3% of the variable variance.

<center><INSERT TABLE 2></center>

Items rotating at .400 and above were examined for potential item-construct fit. Table 2 indicated that items intended to measure degree utility, locus of control, action control, and self-efficacy all had satisfactory loadings. Of the items intended to measure intrinsic interest, one item, "I get totally absorbed in my coursework," rotated on two factors. One factor had a loading score of .439, and was associated with items seemingly associated with action control. The item also rotated on the intended factor for intrinsic interest at .531. Given that the factor loading scores for the intrinsic interest factor was higher, this item was retained on this factor. After underlying constructs were identified, internal consistency was examined using coefficient alphas. Due to the limited sample of South Asian and Pacific Islanders, these groups were included in the exploratory factor analyses but excluded from reliability analyses. Table 3 presents reliability scores for each identified construct across male racial/ethnic groups. Across all groups, the instrument's constructs illustrated satisfactory reliability scores (>.70).

<center><INSERT TABLE 3></center>

<center>**FUTURE VALIDATION**</center>

While prior evaluation work had been conducted on the CCSM, the authors approached this study using preliminary (exploratory) procedures given that new/revised items and intended scales had been added to the instrument. The results from studies presented herein indicated that the CCSM has strong content validity, construct validity, and reliability across the intrapersonal scales. Subsequent analyses should employ advanced procedures using confirmatory factor analysis, which can aid in assessing the theorized structure of the items. Moreover, measurement

invariance procedures should also be employed to determine whether the instrument is in fact measuring the same conceptual understandings of the constructs across racial/ethnic groups. These analyses will be particularly important given that the instrument is used for both between- and with-group analyses (for racial/ethnic groups). That being said, preliminary analyses indicated that the CCSM is appropriately measuring constructs identified as influencing outcomes for men of color.

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Table 1.
Non-cognitive Domain Results

Construct	Item#	Mean	SD	CVI	S-CVI
Action Control	Action 1	3.75	0.62	0.92	-
	Action 2	3.75	0.45	1.00	-
	Action 3	3.50	0.67	0.92	-
	Action 4	3.75	0.45	1.00	0.96
Self-Efficacy	Self-Efficacy 1	3.75	0.62	0.92	-
	Self-Efficacy 2	3.75	0.45	1.00	-
	Self-Efficacy 3	3.83	0.39	1.00	-
	Self-Efficacy 4	3.92	0.29	1.00	0.98
Degree Utility	Degree Utility 1	3.58	0.67	0.92	-
	Degree Utility 2	3.92	0.29	1.00	-
	Degree Utility 3	3.92	0.29	1.00	-
	Degree Utility 4	3.92	0.29	1.00	0.98
Locus of Control	Locus 1	3.67	0.49	1.00	-
	Locus 2	3.75	0.45	1.00	-
	Locus 3	3.75	0.62	0.92	-
	Locus 4	3.75	0.62	0.92	0.96
Intrinsic Interest	Intrinsic 1	3.50	0.67	0.92	-
	Intrinsic 2	3.33	0.98	0.83	-
	Intrinsic 3	3.42	0.67	0.92	-
	Intrinsic 4	3.50	0.67	0.92	0.90

Table 2.
Factor loadings for the CCSM's Intrapersonal Factors

	Factor				
	1	2	3	4	5
1. The time I spend in school will help me achieve my personal goals.	.215	.135	.498	.240	.338
2. Attending college will provide me with financial security.	.168	.089	.734	.162	.139

3. Attending college will increase my job opportunities.	.133	.128	.812	.211	.129
4. Attending college will create a better life for me and my family.	.149	.115	.825	.192	.189
5. If I study hard enough, I'll get good grades.	.177	.165	.356	.483	.221
6. I have full control over my own academic success.	.114	.192	.190	.820	.157
7. I have the power to get good grades when I want to.	.071	.348	.224	.707	.115
8. My academic success is in my own hands.	.119	.222	.200	.803	.137
9. I am completely focused on school.	.624	.142	.198	.120	.233
10. I work as hard as I can to earn good grades in all my classes.	.880	.140	.129	.092	.166
11. I put forth my best effort in school.	.884	.160	.109	.074	.211
12. I am driven to be successful in school.	.735	.240	.219	.169	.253
13. I have the ability to excel in my coursework.	.228	.628	.160	.340	.177
14. I can understand difficult concepts.	.118	.801	.107	.155	.154
15. I can master the material in my courses.	.130	.827	.110	.222	.153
16. I am confident in my academic abilities.	.263	.720	.106	.201	.193
17. I enjoy learning from my classes.	.234	.209	.195	.186	.764
18. What I learn in class is interesting.	.217	.168	.194	.157	.802
19. I want to learn as much as I can in school.	.302	.228	.220	.165	.604
20. I get totally absorbed in my coursework.	.439	.153	.163	.091	.531

Table 3.

Intrapersonal Reliability Scores for the CCSM

	Action Control	Self-Efficacy	Degree Utility	Locus of Control	Intrinsic Interest
White	.900	.884	.875	.880	.871
Asian	.885	.925	.808	.900	.831
SE Asian	.921	.963	.914	.946	.948
Filipino	.897	.866	.895	.772	.888
Black	.903	.879	.865	.889	.854
Mexicano	.927	.904	.879	.876	.873
Hispanic	.924	.893	.835	.827	.847
American Indian	.870	.867	.921	.899	.883
Middle Eastern	.850	.852	.799	.881	.817
Other	.868	.942	.916	.907	.816
Multiethnic	.905	.878	.765	.851	.803