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ORIGINAL PAPER

A Developmental Assets Approach in East Africa: Can Swahili Measures Capture Adolescent Strengths and Supports?

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Abstract
Background Assets-based approaches are well-suited to youth living in majority world contexts, such as East Africa. However, positive psychology research with African adolescents is rare. One hindering factor is the lack of translated measures for conducting research.
Objective This study builds capacity for positive youth development research in East Africa and beyond by examining a Swahili measure of youth development that assess both internal and external strengths.
Methods We translated a well-researched and internationally used measure of assets, [Developmental Assets Profile (DAP), along with measures of self-efficacy, ethnic identity, sense of community, and community participation] into Swahili. Psychometric results for 1241 diverse Tanzanian young people were evaluated. Open-ended asset listing and focus groups provide complementary data and identify areas for further investigation.

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Results Most scales displayed promising internal consistencies and were related to each other and to socio-demographics. Moreover, the DAP predicted self-efficacy and vulnerability status. Exploratory factor analysis supported a three-factor structure of the DAP. Test–retest reliability and language equivalency scores yielded less satisfactory results. Qualitative data support the assets approach and suggests areas for consideration based on culture and context.
Conclusions The developmental assets framework and Swahili measure may be used to advance research in this understudied, yet important region. Adolescents in Africa should be included in international efforts to develop PYD theory and to understand the diverse contexts in which youth develop and contribute.

Keywords Positive youth development · Africa · Global issues · Translation · Psychometrics · Swahili

Introduction

Psychology research has consistently neglected the approximately 90% of adolescents living in majority world contexts (Arnett 2008). Adolescents in Africa are particularly overlooked in research despite the increasing importance of the region and the need for African youth to take prosocial leadership roles. African youth face numerous challenges to their health and well-being, such as poverty, illness, gender oppression, lack of quality school and employment opportunities, poor infrastructure, and environmental degradation. A ubiquitous concern in the region is "youth bulge;" meaning that youth account for more than 65% of persons in Africa compared to just over 35% of individuals in "more developed" regions (Lin 2012).

Contextual challenges, youth bulge, and the combined resulting strain on resources necessitate the cultivation of youth into citizens capable of addressing such challenges. One promising approach to working with African adolescents is a strengths-based method grounded in positive youth development (PYD) (Johnson and Johnson-Pynn 2007). PYD emphasizes the competencies, strengths, and contributions of youth, and stands in contrast to problem-focused approaches (Catalano et al. 2004; Damon 2004). PYD allows for an understanding of the *full potential* of youth to succeed in diverse contexts and counters negative societal images of youth (Catalano et al. 2004; Damon 2004; Guerra and Bradshaw 2008). Building strengths and competencies in young people and creating ecological contexts for their healthy development and prosocial participation should be a key endeavor among scholars, practitioners, and policy makers alike.

There are many approaches to understanding how young people develop optimally (see Lerner et al. 2013). One approach is the Search Institute's developmental asset framework (Benson et al. 1998), which includes a collection of internal strengths and external relationships and supports that are related to the prevention of risk behaviors, thriving, and resiliency. The assets have been shown to predict thriving (as measured by a variety of indices) across genders, ethnicities, and different socioeconomic groups in the U.S. and other countries. Research from more than 1400 studies on youth development (Scales and Leffert 2004; Scales et al. 2004) and international studies, have shown the reliability and validity of the framework (Benson et al. 2011). Recently, the assets approach has been used to guide international youth and humanitarian programming (Scales 2011, 2014; Scales et al. 2013, 2016; Shek 2006).

The assets framework (and one of its measures, the Developmental Assets Profile; DAP; Search Institute 2005) assesses external and internal assets. External assets are aspects of the environment—developmental relationships and opportunities—that promote PYD, while internal assets represent competencies, skills, and perceptions engendered throughout development (Benson et al. 1998). The assets are parsed into four external categories (support, empowerment, boundaries & expectations, and constructive use of time) and four internal categories (commitment to learning, positive values, social competencies, and positive identity). The categories were conceptually derived and are partially supported by factor analyses (Furrow and Wagener 1998 as cited in Leffert et al. 1998; Theokas et al. 2005). A factor analysis of the DAP using international data also supported the framework (Scales 2011).

Developmental assets vary across demographics. Girls report higher levels of assets in the U.S. (Leffert et al. 1998) and East African samples (Drescher et al. 2012). In U.S. samples, younger youth have reported greater assets than older youth (Leffert et al. 1998; Scales 1999). Youth with higher levels of developmental assets are less likely to skip school (Scales et al. 2005). Additionally, aspects of socioeconomic status are positively associated with developmental assets (Thompson et al. 2013).

Study Purpose

Building on previous studies with East African youth (Johnson and Johnson-Pynn 2007; Johnson-Pynn and Johnson 2005, 2010; Johnson et al. 2012, 2013), we sought to expand psychometric capacity to assess assets using Swahili translations of the DAP and related PYD measures in a diverse sample of Tanzanian youth. The DAP is a comprehensive measure that assesses personal and ecological strengths and is increasingly used in international contexts (Drescher et al. 2012; Scales 2011; Scales et al. 2013, 2015). Additional PYD constructs were chosen to represent internal (self-efficacy, ethnic identity) and external assets (community participation, sense of community). To complement the DAP internal assets, we included self-efficacy (via the General Self-Efficacy Scale, GSES) and ethnic identity (using the Multi-Ethnic Identity Measure, MEIM) as our previous work has supported the relevance of these constructs and measures in East Africa (Johnson et al. 2012). Despite promise with these PYD measures, we were searching for a more comprehensive tool that would assess multiple assets and importantly, external or ecological assets. To supplement DAP external assets chose to assess sense of community and community participation given the centrality of collective values and community in Tanzania. We believe the comprehensiveness of the DAP is important to advance research in the region and will make a unique contribution to the understanding of PYD beyond existing measures.

We selected Swahili for its broad applicability. Swahili is an official language of Tanzania, Kenya, the Democratic Republic of the Congo, and the African Union with 50–100 million speakers worldwide (Mohochi and Wairungu n.d.). We report psychometric properties of the Swahili DAP (including factor structure) and other measures in a large sample, followed by language equivalency, test–retest, and qualitative results from subsamples. We explore the ability of the DAP to predict a major PYD outcome variable (self-efficacy) over and above demographics and other PYD measures. Further, we examine the DAP's ability to predict vulnerability status.

In sum, we aim to contribute to international PYD scholarship in three ways. First, we explore whether PYD measures developed in minority world contexts (e.g., the US and Europe) will retain their psychometric properties when translated into a dissimilar

language and applied in a dissimilar context. We seek to examine multiple aspects of these properties including internal consistency, test–retest reliability, convergent validity, structural validity, criterion validity, and predictive ability. Second we explore whether the developmental assets will add incremental value in the prediction of PYD outcomes, including efficacy and vulnerability status. Finally, we seek to examine the developmental assets framework in light of East African youths' perspectives. Our purpose is to illuminate areas for theory and measurement development and to spur strengths-based research in the region and in other majority world contexts.

Hypotheses

We hypothesized that the DAP would demonstrate acceptable internal consistency (except for Constructive Use of Time; see Scales 2011) as demonstrated by Cronbach's $\alpha > .60$. We predicted the DAP would be significantly related to other PYD measures and with age, gender, income, parental education, and school attendance, providing evidence of convergent validity and similarity to findings in other cultural contexts. We predicted that the DAP would be able to significantly distinguish vulnerable from non-vulnerable youth. We hypothesized that the DAP would add incremental validity to the prediction of self-efficacy, above and beyond demographics and other PYD measures. Lastly, we expected that the DAP would predict participants' vulnerability status. We expected that the factor structure would generally reflect the assets internal and external framework, likely in the form of a two-factor structure. We hypothesized that measures would demonstrate acceptable cross-language ($r > .50$) and test–retest correlations (ICC $> .60$). We expected our qualitative data to support the assets framework in that youth would identify culturally relevant PYD examples from most, if not all, DAP Asset Categories. However, we thought the qualitative would also highlight additional contextual aspects not included in the framework that could strengthen assessment of developmental assets in East African contexts.

Methods

Participants

Participants in the survey were 1409 youth from 11 diverse regions in Tanzania. Purposive sampling included youth involved in extracurricular activities, typical schoolchildren, and vulnerable youth (e.g., street-connected youth, youth that were orphaned, youth with disabilities). Participants were excluded if they had more than six missing DAP items ($n = 114$, 12%), were older than 18, or did not report age ($n = 54$). Excluded youth reported significantly higher scores on the CPI ($M = 40.11$, $SD = 17.123$), the Social Competencies asset category ($M = 24.88$, $SD = 3.225$), and the Personal context area ($M = 25.35$, $SD = 2.927$).

Reflecting the ethnic diversity of Tanzania, over 100 different ethnicities (tribes) were reported. The most common responses were Chagga ($n = 105$, 8.5%), Massai ($n = 78$, 6.3%), and Nyakyusa ($n = 77$, 6.2%), with 20.1% ($n = 250$) of participants not answering this item. Other participant demographic information is in Table 1.

Smaller groups of participants took part in test–retest and language equivalency data collection. Test–retests were completed by youth ($n = 129$; aged 14–19) attending two

Table 1 Demographics for overall sample

Variable	Category	*N*	%
School attendance	Everyday	972	78.3
	Most days	171	13.8
	Some days	34	2.7
	Rarely	31	2.5
	Not at all	13	1.0
	Missing	20	1.6
Father education	None	60	4.8
	Primary	375	30.2
	Secondary	262	21.1
	Technical school	197	15.9
	College graduate	101	8.1
	Do not know	212	17.1
	Missing	34	2.7
Mother education	None	62	5.0
	Primary	446	35.9
	Secondary	300	24.2
	Technical school	165	13.3
	College graduate	63	5.1
	Do not know	182	14.7
	Missing	23	1.9
Economic condition	We do not have enough money to meet basic needs	412	33.2
	We usually have enough money to meet basic needs	698	56.2
	We always have enough money to meet basic needs	106	8.5
	Missing	25	2.0
Gender	Male	610	48.8
	Female	605	49.2
	Missing	26	2.1

different secondary schools. Just over half were girls and most were members of an environmental club. Forty-seven youth (aged 13–17) participated in the language equivalency test. These bilingual youth attended a boarding school. They were all girls and were members of an environmental club. Eight youth from this sample participated in a discussion about the two language versions of the DAP. For qualitative data, we held four focus groups (8–12 youth each) in which youth constructed and discussed the assets cards. That is, they wrote down in pairs or groups of three strengths/assets/qualities or supports that youth need to succeed or to develop to their best potential. Diverse participants included environmental club leaders, girls at a Maasai school, and teens at a center for street children.

Measures

Demographics

Socio-demographic factors assessed were: age, gender, school attendance, birth country, parent education, and economic condition.

Developmental Assets Profile

The Developmental Assets Profile (DAP; Search Institute2005) is a 58-item self-report measure of youth assets. Participants indicate the degree to which statements represent them (e.g., "I deal with frustration in positive ways") by selecting a choice from 0 (*not at all or rarely*) to 3 (*extremely or almost always*). Theoretically-based internal asset categories include: Commitment to Learning, Positive Values, Social Competencies, and Positive Identity. External asset categories are: Support, Empowerment, Boundaries and Expectations, and Constructive Use of Time. Items are also grouped into context areas: Personal, Social, Family, School, and Community.

Internal and External assets, Asset Category, and Context Area scores range from 0 to 30 with higher scores indicating more assets. The DAP total is the sum of Internal and External assets and ranges from 0 to 60. Cross-national studies (Scales 2011; Scales et al. 2016) indicate acceptable internal consistencies, convergent validity, and test–retest reliabilities for most DAP scales. There is also evidence of internal consistency and convergent validity in East African samples (Drescher et al. 2012; Scales et al. 2012).

General Self-Efficacy Scale

The General Self-Efficacy scale (GSES; Schwarzer and Jerusalem 1995) is a 10-item scale that assesses an individual's belief in their ability to manage new situations based on life experiences (Sherer et al. 1982). Respondents indicate their agreement with each item (e.g., "I can always manage to solve difficult problems if I try hard enough") on a Likert-type scale that ranges from 1 (*Not at all true*) to 4 (*Exactly true*). The GSES has demonstrated acceptable internal consistency, content validity, and structural validity (Scholz et al. 2002; Schwarzer and Born 1997; Schwarzer et al. 2000). Studies with Tanzanian youth have yielded acceptable internal consistencies for a Swahili GSES ($\alpha = .78$) and supported its one-factor structure (Johnson et al. 2012).

Multigroup Ethnic Identity Measure-Revised

The Multigroup Ethnic Identity Measure (MEIM; Phinney 1992) assesses ethnic identity, a person's self-concept concerning their membership in a social group and the importance of that membership (Tajfel 1981). Participants complete a free-response query to identify their ethnicity. Participants then respond to statements (e.g., "I feel a strong attachment towards my own ethnic group") on a four-point Likert-type scale: *strongly disagree* to *strongly agree*. The MEIM assesses two aspects of ethnic identity: affirmation/commitment and exploration/search, and yields a total ethnic identity score. The MEIM-Revised (MEIM-R; Phinney and Ong 2007) reduced the MEIM from 12 to 6 items. Studies with international youth using the MEIM-R have demonstrated acceptable internal consistency ($\alpha = .75$–$.78$) (Webber et al. 2013).

Community Participation Index

The community participation index (CPI) is a measure of community engagement adapted from the Evaluation of Educational Achievement Civic Education Study (see Schulz and Sibberns 2004). It measures involvement in community activities, such as student government and sports. Study participants noted their level of engagement in different activities on a four-point Likert-type scale, ranging from *not at all* to *almost every day*. Items were summed to create an index of participation.

Brief Sense of Community Scale

The Brief Sense of Community Scale (BSCS; Peterson et al. 2008) is an eight-item measure of McMillan and Chavis's (1986) four-dimension model of sense of community: needs fulfillment, group membership, influence, and emotional connection. Participants responded to statements (e.g., "I belong in this community") using five-point, Likert-type responses ranging from *strongly agree* to *strongly disagree*. The BSCS yields on overall sense of community score, as well as subscales measuring the four dimensions. A U.S. study found evidence of the structural, convergent, and discriminant validity of the BSCS (Peterson et al. 2008).

Assets Cards

During focus groups (see below), participants were asked what assets were important for youth to succeed. In small groups or pairs, youth were prompted as follows: *Think about what are the main strengths, the main positive qualities that youth need in order to develop to their full potential. That is, what are the good qualities (attitudes, values, or behaviors) that would help youth develop in a positive way, to become role models? What do they need from within themselves and from outside themselves (e.g., from their community, school or family)?* Youth created responses on cards and then discussed responses, providing details and context. Asset cards were collected for later content analysis.

Procedures

Translation of Measures

We used Brislin's (1970) back-translation method, with the initial English to Swahili translation and blind back-translation conducted by native Swahili speakers. The two English versions were evaluated for equivalence by a bilingual committee, U.S. and Tanzanian researchers, and Search Institute. Areas of discrepancy were identified and revised (see Table 2). The revised DAP was piloted with Tanzanian youth ($N = 35$).

Survey Administration

Tanzanian research assistants were administered the survey. Adolescents provided verbal assent and completed the survey packet in a group setting. Every item was read aloud to the group during administration, which took approximately 1 h. The study was approved by the Institutional Review Board at the home institution, the Tanzania Council on Science and Technology (COSTECH), and local governing councils.

Table 2 DAP sample items and translation resolutions

Item	Issue	Resolution
English: Somewhat/sometimes Swahili: Pengine	Pengine was initially back-translated as 'don't know,' 'maybe,' and 'perhaps'; Pengine can also translated as 'sometimes' and 'somewhat'	Added clarification of meaning by adding 'mara chache" ('few times') and 'kidogo' ('a little bit/small') assure the term is understood to mean a small amount/few times
English: Do my homework	The word 'homework' does not translate into Swahili, it was first back-translated with the meaning of doing household tasks; next it was revised, but back-translated as doing work at school	Revised to express doing one's school assignments at home
English: Deal with my frustrations in positive ways Swahili: Ukabili matatizo yangu kwa njia nzuri	Was back-translated as accept my problems in the best way	The wording was changed to more accurately reflect dealing with a frustration. The final back translation was 'face my challenges in the right way'
English: Neighbors who watch out for me Swahili: Majirani wanaojali maslahi yangu	'Watch out for' is an idiom and it did not translate well	We used a phrase (backtranslated as 'Neighbors who care about my interests') that expresses the same idea

Test–retest data collection took place in two schools, during students' free time. Students completed Time 2 data, at intervals of 12 and 7 days. For language equivalency testing, English and Swahili surveys were counter-balanced.

Design and Analysis

Preliminary Quantitative Analysis

Cronbach's α was computed for all measures (see Table 3). A correlation matrix was produced for all variables. Given the sample size and abundance of analyses, we chose a *p* value cut-off of .01. Correlation strengths were evaluated using Cohen's (1992) guidelines. We calculated a hierarchical logistic regression with MEIM-R and BSCS scores (step 1) and the DAP Total score (step 2) predicting youth's vulnerable versus non-vulnerable status. A hierarchical regression, with demographics (step 1), MEIM-R and BSCS scores (step 2), and the DAP Total score (step 3) predicting GSES scores was computed. Test–retest was calculated with the intra-class correlation (ICC) and language equivalency was calculated using Pearson's *r*.

Factor Analyses

We checked for multivariate outliers with Mahalanobis D^2 scores. DAP items were moderately skewed ($M = -1.2$, ranging from -1.9 to -0.4) and kurtotic ($M = 1.0$, ranging from -1.2 to 3.9), with values bunching toward the right of the distribution. Of the DAP items, 1.7% of the values were missing. Given the course 4-level response format and

Table 3 Descriptive data for all positive youth development scales

	Tanzanian study sample						U.S. Sample	
	N	α	*M*	*SD*	Min	Max	*n*	α
DAP support	1090	.71	23.36	4.802	6	30	1133	.80
DAP empowerment	1124	.61	22.63	4.984	5	30	1133	.74
DAP boundaries & expectations	1125	.78	23.74	4.640	3	30	1133	.84
DAP constructive use of time	1173	.47	21.23	5.837	0	30	1133	.56
DAP commitment to learning	1090	.67	24.78	4.167	6	30	1133	.83
DAP positive values	1010	.72	22.37	4.420	6	30	1133	.85
DAP social competencies	1104	.66	23.29	4.358	9	30	1133	.79
DAP positive identity	1138	.60	23.75	4.401	5	30	1133	.79
DAP personal	1023	.74	23.90	3.890	5	30	1133	.83
DAP social	991	.80	23.36	4.182	7	30	1133	.87
DAP family	1060	.79	23.99	4.563	1	30	1133	.87
DAP school	1058	.75	24.34	4.244	9	30	1133	.87
DAP community	1040	.78	20.73	5.034	6	30	1133	.85
DAP external	877	.88	22.74	4.117	9	30	1133	.94
DAP internal	789	.89	23.55	3.629	10	30	1133	.92
DAP total	625	.94	46.29	7.266	23	60	1133	.96
GSES	1011	.82	33.70	4.781	14	40	–	–
MEIM-R total	1050	.80	3.13	0.592	1	4	–	–
MEIM-R exploration	1089	.70	3.10	0.681	1	4	–	–
MEIM-R commitment	1099	.64	3.16	0.641	1	4	–	–
BSCS total	1075	.84	3.98	0.665	1.25	5	–	–
BSCS needs fulfillment	1098	.73	3.84	0.912	1	5	–	–
BSCS membership	1134	.62	4.17	0.760	1	5	–	–
BSCS influence	1127	.55	3.80	0.877	1	5	–	–
BSCS emotional connection	1121	.63	4.11	0.794	1	5	–	–
CPI	754	.90	35.59	14.004	16	80	–	–

n = the lower bound of the sample, which was used for α. "U.S. Sample" refers to one year data gathered during the development of the DAP (Search Institute, 2005)

DAP Developmental assets profile, *GSES* general self-efficacy scale, *MEIM-R* multigroup ethnic identity measure-revised, *BSCS* brief sense of community scale, *CPI* community participation index

the nonnormal item distributions (Rhemtulla et al. 2012), we performed the analysis using the WLSMV estimator in M*plus* 7.4 (Muthén and Muthén 1998–2012), which accounts for missing data with full-information estimation (Asparouhov and Muthén 2010). First, we explored the number of factors tenable for the data with a parallel analysis using 2000 iterations (see Brown 2015; Schmitt 2011). We used the MLR estimator, which is robust to nonnormality and accommodates missing values with full-information estimation (Muthén and Muthén 1998–2012). For the factor models, we used the exploratory structural equation modeling technique (ESEM; Asparouhov and Muthén 2010). We used oblique Geomin rotation. We assessed model fit with the following indices: the model χ^2, the root mean square error of approximation (RMSEA), and the Comparative Fit Index (CFI).

Given our large sample size, we expected significant model χ^2 values for all models. We considered RMSEA values <.08 and <.05 and CFI values >.90 and >.95 as indications of adequate and good fit, respectively (Brown 2015). We evaluated specific factor loadings using the following criteria: Primary standardized factor loadings should be (a) at or above .3 and (b) statistically significant by at least the $p < .05$ level. Good items should have cross loadings no greater than .2 and that are statistically indistinguishable from zero.

Assets Cards

After first being discussed on-site by youth participants and Tanzanian research assistants and the second author, assets cards ($n = 87$) were later reviewed and analyzed by two of the study's authors. Examples of themes identified within and outside of the developmental assets framework are presented as supplements to the quantitative results to illuminate areas of cultural or contextual specificity or generality (Ratner 2001).

Results

Descriptive statistics are in Table 3. The Total DAP, DAP External assets, DAP Internal assets, GSES, MEIM-R Total, BSCS Total, and CPI had good internal consistency ($\alpha \geq .80$). All DAP context areas had an internal consistency acceptable for research ($.80 \geq \alpha \geq .70$). The DAP Constructive Use of Time subscale and BSCS Influence subscale had unacceptable internal consistency ($\alpha < .60$) and were excluded from further analysis.

Bivariate correlations between assets variables are shown in Table 4. Most were positive and significant. However, only two DAP asset categories (Positive Values and Social Competencies) and one DAP context area (Community) correlated with CPI scores. The magnitude of the relations was generally in the small to medium range ($.50 > r \geq .10$).

Several small correlations emerged between assets and demographic variables (see Table 4). Several DAP scales and the GSES were positively correlated with age. Girls tended to have higher scores on DAP scales. School attendance was associated with higher assets scores. Some BSCS subscales and DAP scales were negatively correlated with SES and parental education.

The hierarchical regression predicting self-efficacy was significant at all three steps (see Table 5). The full model accounted for nearly one-third of variance in GSES scores ($R^2 = .30$), with the third step (DAP Total score) accounting for significant additional variance beyond previous steps (R^2 change $= .07$, F change $_{(1713)} = 73.33$, $p < .001$). DAP Total scores had the highest semi-partial correlation with GSES scores (.269).

The overall model in the hierarchical logistic regression predicting vulnerable (e.g., street-connected youth, youth that were orphaned, youth with disabilities) versus non-vulnerable (youth involved in extracurricular activities and typical schoolchildren) status of youth was significant ($\chi^2_{(3)} = 13.439$, $p = .004$; see Table 6). The DAP Total score was a significant predictor within this model ($B = -.036$, $SE\ B. = .150$, $e^B = .965$, $p = .002$). The model accounted for a relatively small amount of variance in classification (Cox & Snell $R^2 = .012$).

Table 4 Correlations between positive youth development measures

	GSES	CPI	MEIM-R			BSCS			
			Total	Explore	Commit	Total	NF	MB	EC
DAP support	.36*	.01	.40*	.35*	.36*	.31*	.26*	.23*	.25*
DAP empowerment	.33*	.06	.38*	.36*	.32*	.33*	.25*	.28*	.25*
DAP boundaries	.31*	−.02	.38*	.32*	.37*	.34*	.25*	.27*	.30*
DAP learning	.28*	−.04	.30*	.25*	.29*	.29*	.21*	.27*	.26*
DAP values	.41*	.13*	.43*	.38*	.40*	.40*	.32*	.33*	.31*
DAP social competencies	.39*	.10*	.35*	.32*	.33*	.34*	.25*	.27*	.29*
DAP positive identity	.37*	−.04	.29*	.23*	.29*	.26*	.18*	.23*	.26*
DAP personal	.37*	.00	.32*	.25*	.32*	.31*	.23*	.27*	.29*
DAP social	.42*	.03	.41*	.36*	.38*	.37*	.27*	.30*	.31*
DAP family	.39*	−.02	.36*	.31*	.34*	.29*	.23*	.23*	.25*
DAP school	.25*	.00	.34*	.29*	.33*	.31*	.22*	.27*	.27*
DAP community	.41*	.20*	.50*	.45*	.44*	.44*	.35*	.35*	.32*
DAP external	.41*	.09	.47*	.42*	.43*	.40*	.32*	.32*	.32*
DAP internal	.44*	.05	.41*	.35*	.39*	.38*	.28*	.33*	.33*
DAP total	.45*	.07	.47*	.41*	.44*	.42*	.32*	.35*	.35*
GSES		.08	.39*	.36*	.34*	.38*	.26*	.32*	.29*
CPI			.16*	.19*	.10*	.20*	.20*	.08	.16*
MEIM-R total						.46*	.37*	.37*	.35*
MEIM-R explore						.40*	.34*	.32*	.27*
MEIM-R commitment						.43*	.33*	.34*	.36*

DAP Developmental assets profile, *GSES* general self-efficacy scale, *MEIM-R* multigroup ethnic identity measure-revised, *BSCS* brief sense of community scale, *CPI* community participation index

* $p < .01$

Factor Analyses

Multivariate Outliers

Using the $p < .001$ as the cutoff for Mahalanobis' D^2, the dataset contained 150 multivariate outliers. We considered two other cutoff levels: $p < .00001$ (69 multivariate outliers) and $p < .0000001$ (36 outliers). We compared analyses using these cutoff values and the full sample. The patterns of model fit were similar, so the full sample was used.

Parallel Analysis

We examined the scree plot for DAP items and for eigenvalues of the synthetic data from the parallel analysis. The elbow appeared around the third or fourth factor. The synthetic data eigenvalues from the parallel analysis intersected with the eigenvalues from at the seventh factor, suggesting six or fewer factors might be extracted above-chance. Given the results of the parallel analysis and the scree plot elbow we examined 3-, 4-, 5-, and 6-factor

Table 5 Summary of hierarchical regression analysis for variables predicting general self-efficacy scale scores

Variable	Step 1			Step 2			Step 3		
	B	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Age	0.26	0.15	.07	0.33	0.13	.09*	0.29	0.12	.08*
School attendance	−0.58	0.27	−.07	−0.39	0.24	−.05	−0.35	0.23	−.05
SES	−0.34	0.30	−.05	−0.16	0.27	−.02	−0.17	0.26	−.02
Father education	−0.21	0.22	−.05	−0.13	0.19	−.03	−0.04	0.18	−.01
Mother education	0.05	0.25	.01	0.18	0.22	.04	0.18	0.21	.04
BSCS				1.68	0.26	.24**	1.22	0.26	.17**
MEIM-R				2.32	0.29	.30**	1.45	0.30	.18**
DAP total							0.21	0.02	.31**
R^2	.02			.22			.30		
F for change in R^2	2.41*			95.35**			73.33**		

$N = 722$. * $p < .05$; ** $p < .01$. School attendance was reverse coded so that lower values represent more frequent school attendance

DAP Developmental assets profile, *MEIM-R* multigroup ethnic identity measure-revised, *BSCS* brief sense of community scale, *SES* socioeconomic status

Table 6 Summary of logistic regression analysis for variables predicting vulnerable vs. Non-vulnerable youth

Predictor	Step 1			Step 2		
	B	*SE B*	e^B	B	*SE B*	e^B
MEIM_Total	.178	.137	1.19	.340*	.150	1.405
BSCS_Total	−.218	.118	0.80	−.122	.11	.64
DAP Total				−.036**	.06	1.22
Constant	−0.90			−0.16		
χ^2	3.661			9.778		
df	2			1		
% Vulnerable 23.0						

e^B Exponentiated *B*

* $p < .05$; ** $p < .01$

solutions. Given the eight asset categories of the DAP, we also examined an 8-factor solution.

ESEM

Model fit indices were examined for the 3-, 4-, 5-, 6-, and 8-factor solutions. All models had statistically significant χ^2 values, but also had good RMSEA and adequate to good CFI values. Model fit marginally improved as the number of factors increased and the number of participants excluded based on D^2 values increased. We concluded, there was little reason to prefer one model over the others based on model fit criteria alone.

To further evaluate the factor models, we examined their patterns of major loadings and cross-loadings. The 8-, 6-, 5-, and 4-factor solutions, had one to two factors that were poorly defined (≤ three major loadings). For the 3-factor solution, all factors were well-defined with at least 11 major loadings (see Table 7). All factor models contained

Table 7 Factor loadings for the 3-factor model of the developmental assets profile

Item	Factor			Item	Factor		
	1	2	3		1	2	3
1	**.41**	.03	−.00	30	.12	**.59**	−.15
2	**.41**	−.01	.04	31	**.37**	.18	.07
3	**.45**	−.01	.05	32	**.36**	.19	.17
4	**.52**	−.04	−.03	33	.21	**.33**	.16
5	**.71**	−.15	.06	34	−.02	**.44**	.06
6	**.42**	.12	−.01	35	.02	**.72**	−.20
7	**.28**	−.11	−.03	36	.08	**.49**	.03
8	**.41**	.19	−.05	37	.29	.14	.26
9	**.31**	.06	−.02	38	**.32**	−.01	.26
10	**.68**	−.04	.03	39	−.03	**.62**	.03
11	**.37**	.33	−.06	40	−.11	**.50**	.05
12	**.45**	−.11	.19	41	−.06	**.62**	.01
13	**.33**	.26	.03	42	.19	.08	**.38**
14	**.43**	.22	−.13	43	.19	.23	.29
15	**.49**	.25	−.05	44	.19	.03	**.47**
16	**.57**	.01	.02	45	.13	.04	**.49**
17	**.44**	.05	.11	46	−.02	.32	**.35**
18	**.54**	.11	−.02	47	.09	−.02	**.59**
19	**.58**	−.04	.05	48	−.12	.36	**.40**
20	**.54**	.09	.03	49	.07	.07	**.52**
21	**.39**	.27	.01	50	.24	−.12	**.52**
22	**.43**	.16	.03	51	.02	.27	**.32**
23	.34	**.40**	−.12	52	.11	.00	**.59**
24	.21	.28	.01	53	.17	−.17	**.65**
25	**.38**	.17	.11	54	.03	.02	**.60**
26	**.36**	.28	.03	55	−.19	**.43**	.37
27	**.31**	.21	.07	56	.03	.15	**.55**
28	.25	.25	.17	57	−.05	.15	**.55**
29	.05	**.46**	.10	58	.03	−.00	**.63**

Factor loading >.30 are bolded. $\chi^2_{(1482)} = 2877$, $p < .0001$. Root mean square error of approximation = 0.028 (90% Confidence Interval = 0.027 − 0.030). Comparative fit index = .948

numerous crossloadings and several items for which there were no major loadings. Overall, the 3-factor model showed the strongest pattern of statistically well-defined factors.

Test–Retest

Results concerning test–retest reliability of the DAP, GSES, and MEIM-R are in Table 8. ICCs were calculated between Time 1 and Time 2. ICCs were generally higher in the seven-day interval sample as compared to 12-day interval (see Table 8). Several scales demonstrated acceptable test–retest reliability (ICC > .60) at the 7-day interval.

Table 8 Test-retest reliability and language equivalency for the DAP, GSES, and MEIM-R

Scale	*n*	Equivalency	*n*	7 Day Stability	*n*	12 Day Stability
DAP positive values	44	.21	35	.25	59	.44
DAP social competencies	44	.26	35	.28	59	.40
DAP positive identity	44	.25	35	.35	59	.42
DAP empowerment	44	.37	35	.69	59	.32
DAP boundaries & expectations	44	.02	35	.70	59	.31
DAP constructive use of time	44	.39	35	.57	59	.47
DAP support	44	.47	35	.57	59	.48
DAP commitment to learning	44	.21	35	.21	59	.10
DAP personal	44	.17	35	.14	59	.44
DAP social	44	.37	35	.41	59	.39
DAP family	44	.18	35	.65	59	.45
DAP school	44	.45	35	.45	59	.37
DAP community	44	.36	35	.58	59	.49
DAP internal	44	.31	35	.28	59	.41
DAP external	44	.31	35	.79	59	.42
DAP total	44	.39	35	.63	59	.43
GSES	35	.27	35	.61	48	.52
MEIM-R total	–	–	35	.73	59	.47
MEIM-R commitment	–	–	35	.59	59	.35
MEIM-R exploration	–	–	35	.80	59	.49

Equivalency correlated using Pearson's *r*. Stability calculated with the intra-class correlation coefficient (one-way random model, single measure). The MEIM-R was not included in the language equivalency aspect of the study due to time constraints

DAP Developmental assets profile, *GSES* general self-efficacy scale, *MEIM-R* multigroup ethnic identity measure-revised

Language Equivalency

The language equivalency analysis of the DAP and GSES is in Table 8. Correlations ranged from .02 to .47. However, the focus group indicated that the two versions were largely equivalent: all participants recognized it as the same questionnaire and agreed that it asked the same concepts. Neither form was described as differing in difficulty, understandability, or time to complete. A few items were seen as different or having small grammar or conceptual issues. However, the youth stated that changes were minor and that the items could easily be stated one way or the other with the same meaning. The noted that regional variation in usage of terms and the importance of context and process (non-verbal and indirect communication) help give specificity to stated words in Swahili.

Assets Cards

See Table 9 for examples of asset cards representing DAP asset categories and context areas. Although only 87 asset cards were collected and coded some themes were found that did not fit precisely in the assets framework or overlapped across asset categories and contexts. Environmental responsibility, provision of social services, and

Table 9 Sample responses on asset cards and related codes

Code	Examples
Asset categories	
Commitment to learning	Providing education; love studying
Positive values	Being responsible; to be willing to do work
Boundaries & expectations	Good leadership from the elders; introduction of strict laws
Empowerment	Employment opportunities
Positive identity	Self-worth; confidence
Support	Seeking advice from other people; support from teachers
Social competencies	Get unity and solidarity; stop peer pressure
Constructive use of time	Pray hard
Context areas	
Personal	Stop stealing; self-awareness
School	Life skills education; love studying
Community	The government should give them support
Social	Stop peer pressure; having cooperation
Family	Advice from their parents; parental attention
Other themes	
Social services	Provision of health care; social service like hospitals, schools
Countering traditions	By avoiding local beliefs like superstitions; people should stop bad ways of tradition; people should stop female genital mutilation; people should stop polygamy
Occupational development	Entrepreneurship skills; by giving loans to run different activities
Environmental responsibility	By protecting the environment; planting trees

cultural/contextual concerns are among the responses (see Table 9). Reflecting the context of poverty in the region, all groups mentioned basic needs such as shelter, food, and water.

Discussion

Our first hypothesis was generally supported; most assets scales reached at least promising internal consistency ($\alpha > .60$) with the DAP Context areas showing higher internal consistencies than DAP Asset categories. Our second hypothesis was generally supported as PYD variables were positively correlated with each other, indicative of convergent validity. PYD variables were correlated with age, gender, and school attendance as expected, although the magnitude was small. Contrary to our expectations, SES and parental education were negatively correlated with several PYD variables, although the magnitude was small or trivial. In line with our hypotheses, results of the hierarchical regression indicated that the DAP adds incremental validity in the prediction of self-efficacy and vulnerability status. Overall, the test–retest reliability and cross-language equivalency were poor, in contrast with previous cross-national studies (Scales et al.

2015, 2016). Our focus group discussion indicated that the two language forms were similar. Further analysis of assets cards indicated that youth perspectives largely fit into the assets framework. They also identified assets, such as access to food and shelter, which may be more relevant in the region and in other low income countries (LICs).

Overall, the psychometric properties of the Swahili DAP were promising, although not as robust as previous studies with other DAP language versions. A possible factor affecting our results is that our sample was arguably less resourced than U.S. samples. For example, significant negative correlations with SES/Parental Education emerged with the DAP Internal Assets and two of the Sense of Community subscales. It may be that this group with less family resources had to develop internal resources and connections with the broader community. Alternatively, Swahili, arising from a high context culture of communication may not lend itself to precise translations from English idioms or concepts.

Other issues that may have affected the performance of DAP are related to measurement equivalence across language, such as differential item functioning, expectancy bias, response sets, and cultural distrust (Tweed and Delongis 2009). The various components of content equivalence (vocabulary, idiomatic, grammatical-syntactical, experiential, and, especially, conceptual equivalence) between the source and target language versions of the DAP should be investigated (see Brislin 1970; Cha et al. 2007; Fabri 2008; Matías-Carrelo et al. 2003). This is crucial with youth-targeted measure because the way youth interpret items and the importance of various concepts to adolescent development in local contexts varies widely in international settings (Ungar et al. 2008; Ungar and Liebenberg 2009).

These issues are particularly salient in our study because translations between Swahili and English can be complex. Throughout our translation process we discovered that there was more than one way to back-translate some items on the survey from Swahili to English. This problem of "terminological synonyms" (i.e., using more than one Swahili word for a single English word) or having a general word in Swahili to indicate the more nuanced terms in English, among other issues, is a concern in English to Swahili translations (Mwansoko 2003). An additional issue is that many of the nuances and connotations in the original English survey are difficult to capture exactly in Swahili. In Swahili, meaning is often arrived at in terms of the context of the conversation, including cues regarding the setting, tone, expressiveness, and relationship of the people involve. This is difficult to capture in a written survey, especially in Swahili, which was developed primarily as an oral language (Kithinji and Kass 2010). An illustration of these issues is the Swahili term nzuri, which is typically translated as good, but can also be used to indicate nice, beautiful, fine, safe, okay, or no problems.

The factor structure of the DAP aligned with some aspects of the assets framework, partially supporting our hypothesis. A three factor structure was most supported. The first factor is composed primarily of internal assets (22/27 items), including 11 of the 13 Personal asset category items. The first factor appears to represent *personal internal assets*. The second factor is primarily composed of items from the Positive Values asset category and the Community context area. Therefore, the second factor is comprised primarily of items measuring *positive social values and engagement*. All 15 items that comprise the third factor are external assets, including 13 items are from the Support and Boundaries and Expectations categories. The third factor, appears to represent *external supportive relationships and expectations*.

Within the qualitative data, locally relevant themes were identified that did not fit neatly into the assets framework. Themes of environmental responsibility, provision of social services, occupational development, cultural information, and knowing rights, represent important aspects of adolescent life in Tanzania that were hard to categorize.

Environmental responsibility, for example, may be considered a personal, social and/or community responsibility; it may reflect constructive use of time or goal setting. Responses reflected youths' micro-contexts, such that youth in a center for street children focused on safety/security, the need for parental love, and the need to stop abuse, while Maasai girls were likely to indicate stopping female genital mutilation and knowing one's rights. These themes are relevant to PYD in many local and global contexts, indicating the relevance of advancing PYD research universally and also within youth developmental niches (Torney-Purta and Barber 2011).

The study illustrates the tension between top and down theories and measures of PYD and those situated within a particular context. Researchers often desire measures to assess "universal" aspects of PYD. However, locating and using such measures is complex. As this study demonstrates, even a theoretically sound and empirically supported measure can leave room for improvement. Qualitative methods add important information about local context and are essential for building theories of PYD that can be utilized in a range of diverse contexts.

This study points to ways to ease the aforementioned tension. The factor structure suggests a model including personal assets, engagement, and relational support and expectations. Cross-cultural studies using the DAP might compare scores across the traditional scales and as well as these factors. Assets identified through the cards might be incorporated into existing PYD theories, expanding our understanding of what constitutes a factor like "support."

Limitations and Future Research

This study was correlational and cannot draw cause-and-effect conclusions. No data are available concerning discriminant validity. The nature of the qualitative data included only a subset of the sample, leading to under saturation of possible responses and related constructs. Despite this, it points to the importance of including multiple data types, given the emergent information relevant to research and programming within the sub-Saharan context.

Future areas for research are broad and substantial. There is need for follow-up studies with the Swahili measures. Factor analytic studies are needed to replicate the 3-factor structure and examine factor structures across languages/cultures to further increase confidence in cross-cultural comparisons. Formal testing of measurement invariance/equivalence across cultures (e.g., multigroup factor analysis) would be useful. Given the DAP's ability to predict vulnerability status, future studies in the region should examine further the DAP's predictive abilities, such as academic achievement, occupational attainment, a healthy family/interpersonal life and overall life satisfaction. Additionally, further qualitative investigation is suggested to supplement any quantitative studies and mixed methods designs are suggested. The appropriate translation of PYD measures into a range of languages along with more detailed and extensive qualitative data is an important step to building a more inclusive and contextually informed science of PYD.

Conclusions

Despite the challenges they face, our results suggest that Tanzanian youth have assets that can be mobilized to advance their communities and lives. Our study highlights the psychometric strengths and weaknesses of the Swahili DAP and other Swahili PYD measures in Tanzania. The developmental assets framework shows promise for use. Several Swahili DAP scales correlated positively with other measures of PYD, supporting the convergent and incremental validity of these scales. EFA supported a three-factor structure for the Swahili DAP. Qualitative reports supported the assets framework, and identified areas of contextual importance. Future studies should build on this work by incorporating factor analytic, qualitative, and mixed-methods studies with Tanzanian youth, as well as continue working with the DAP and PYD frameworks in other LICs and majority world contexts. We hope this study stimulates interest in an assets approach in a range of majority world contexts and specifically, in Sub-Saharan Africa. Youth in this region deserve to be included in efforts to build a global scholarship of assets approaches that are responsive to the diversity of contexts in which youth grow and develop.

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Compliance with Ethical Standards

Conflict of interest The study was funded by a Fulbright Scholarship awarded to Dr. Johnson. Dr. Scales is a Senior Fellow at the Search Institute, a non-profit social science research organization that developed and distributes the DAP. None of the other authors report potential conflicts of interest.

Ethical Approval All study procedures were approved by the second author's U.S.-based Institutional Review Board (IRB) and the Council on Science and Technology (COSTECH) in Tanzania, and were in accordance with all ethical standards for conducting research with human participants as delineated by the American Psychological Association.

Informed Consent Participants were invited to participate as part of their regular school and club activities. Informed agreement was obtained. Due to the nature of the sample population and the surveys, the need for signed parental and individual consent was waived by the IRB and COSTECH.

References

Arnett, J. J. (2008). The neglected 95%: Why American psychology needs to become less American. *American Psychologist, 63,* 602–614. doi:10.1037/0003-066X.63.7.602.

Asparouhov, T., & Muthén, B. O. (2010). *Weighted least squares estimation with missing data*. Mplus Technical Report. Los Angeles, CA: Muthén & Muthén. Retrieved from http://www.statmodel.com.

Benson, P. L., Leffert, N., Scales, P. C., & Blyth, D. A. (1998). Beyond the "village" rhetoric: Creating healthy communities for children and adolescents. *Applied Developmental Science, 2,* 138–159. doi:10.1080/10888691.2012.642771.

Benson, P. L., Scales, P. C., & Syvertsen, A. K. (2011). The contribution of the developmental assets framework to positive youth development theory and practice. In R. M. Lerner, J. V. Lerner, & J. B. Benson (Eds.), *Advances in child development and behavior: Positive youth development* (vol. 41, pp. 197–230). San Diego, CA: Elsevier Academic Press.

Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology, 1,* 185–216. doi:10.1177/135910457000100301.

Brown, T. A. (2015). *Confirmatory factor analysis for applied research* (2nd ed.). New York, NY: Guilford Press.

Catalano, R. F., Berglund, M. L., Ryan, J. A. M., Lonczak, H. S., & Hawkins, J. D. (2004). Positive youth development in the United States: Research findings on evaluations of positive youth development programs. *The Annals of the American Academy of Political and Social Science, 591,* 98–124. doi:10.1037/1522-3736.5.1.515a.

Cha, E. S., Kim, K. H., & Erlen, J. A. (2007). Translation of scales in cross-cultural research: Issues and techniques. *Journal of Advanced Nursing, 58,* 386–395. doi:10.1111/j.1365-2648.2007.04242.x.

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112,* 155–159. doi:10.1037/0033-2909.112.1.155.

Damon, W. (2004). What is positive youth development? *The Annals of the American Academy of Political and Social Science, 591,* 13–24. doi:10.1177/0002716203260092.

Drescher, C. F., Chin, E. G., Johnson, L. R., & Johnson-Pynn, J. S. (2012). Exploring developmental assets in Ugandan youth. *International Journal of Child, Youth and Family Studies, 4*(1), 500–520.

Fabri, M. (2008). Cultural adaptation and translation of assessment instruments for diverse populations: The use of the Harvard Trauma Questionnaire in Rwanda. In L. A. Suzuki & J. G. Ponterotto (Eds.), *Handbook of multicultural assessment: Clinical, psychological and educational applications* (3rd ed., pp. 195–219). San Francisco, CA: Wiley.

Furrow, J., & Wagener, L. M. (1998). *Report on psychometric analysis of Search Institute profiles of student life: Attitudes and behaviors*. Pasadena, CA: Graduate School of Psychology, Fuller Theological Seminary (Unpublished manuscript).

Guerra, N. G., & Bradshaw, C. P. (2008). Linking the prevention of problem behaviors and positive youth development: Core competencies for positive youth development and risk prevention. *New Directions in Child and Adolescent Development, 122,* 1–17. doi:10.1002/cd.225.

Institute, Search. (2005). *Developmental assets profile preliminary user manual*. Minneapolis, MN: Author.

Johnson, L. R., & Johnson-Pynn, J. S. (2007). Cultivating compassion and youth actions around the globe: A preliminary report on Jane Goodall's Roots & Shoots program. *Journal of Youth Development: Bridging Research and Practice, 2*.

Johnson, L. R., Johnson-Pynn, J. S., Lugumya, D. L., Kityo, R., & Drescher, C. F. (2013). Cultivating youth's capacity to address climate change in Uganda. *International Perspectives in Psychology: Research, Practice, Consultation, 2,* 29–44. doi:10.1037/a0031053.

Johnson, L. R., Kim, E. H., Johnson-Pynn, J. S., Schulenberg, S. E., Balagaye, H., & Lugumya, D. (2012). Ethnic identity, self-efficacy, and intercultural attitudes in East African and U.S. youth. *Journal of Adolescent Research, 27,* 256–289. doi:10.1177/0743558411412955.

Johnson-Pynn, J. S., & Johnson, L. R. (2005). Successes and challenges in East African conservation education. *The Journal of Environmental Education, 36,* 25–39.

Johnson-Pynn, J. S., & Johnson, L. R. (2010). Exploring environmental education for East African youth: Do program contexts matter? *Children, Youth and Environments, 20,* 123–151.

Kithinji, C., & Kass, N. E. (2010). Assessing the readability of non-English-language consent forms: The case of Kiswahili for research conducted in Kenya. *IRB: Ethics & Human Research, 32,* 10–15.

Leffert, N., Benson, P. L., Scales, P. C., Sharma, A. R., Drake, D. R., & Blyth, D. A. (1998). Developmental assets: Measurement and prediction of risk behaviors among adolescents. *Applied Developmental Sciences, 2,* 209–230.

Lerner, J. V., Bowers, E. P., Minor, K., Boyd, M. J., Mueller, M., Schmid, K. L., et al. (2013). Positive youth development: Processes, philosophies, and programs. In R. M. Lerner, M. Easterbrooks, J. Mistry, & I. B. Weiner (Eds.), *Handbook of psychology, vol. 6: Developmental psychology* (2nd ed., pp. 365–392). Hoboken, NJ: Wiley.

Lin, J. Y. (2012). Youth bulge: A demographic dividend or a demographic bomb in developing countries [Web log post]. Retrieved from http://blogs.worldbank.org/developmenttalk/youth-bulge-a-demographic-dividend-or-a-demographic-bomb-in-developing-countries.

Matías-Carrelo, L. E., Chávez, L. M., Negrón, G., Canino, G., Aguilar-Gaxiola, S., & Hoppe, S. (2003). The Spanish translation and cultural adaptation of five mental health outcome measures. *Culture, Medicine and Psychiatry, 27,* 291–313.

McMillan, D. W., & Chavis, D. M. (1986). Sense of community: A definition and theory. *Journal of Community Psychology, 14,* 6–23.

Mohochi, S., & Wairungu, M. (no date). Swahili. Retrieved from http://swahililanguage.stanford.edu/index.html.

Muthén, L. K., & Muthén, B. O. (1998–2012). *Mplus user's guide* (7th ed). Los Angeles, CA: Muthén & Muthén.

Mwansoko, H. J. (2003). Translation work at the Institute of Kiswahili Research, Dar es Salaam: Procedures, problems and solutions. *Babel, 49,* 327–338.

Peterson, N. A., Speer, P. W., & McMillan, D. W. (2008). Validation of a brief sense of community scale: Confirmation of the principal theory of sense of community. *Journal of Community Psychology, 36,* 61–73. doi:10.1002/jcop.20217.

Phinney, J. S. (1992). The multigroup ethnic identity measure: A new scale for use with diverse groups. *Journal of Adolescent Research, 7,* 156–176. doi:10.1177/074355489272003.

Phinney, J. S., & Ong, A. D. (2007). Conceptualization and measurement of ethnic identity: Current status and future directions. *Journal of Counseling Psychology, 54,* 271–281. doi:10.1037/0022-0167.54.3.271.

Ratner, C. (2001). Analyzing cultural-psychological themes in narrative statements. *Forum: Qualitative Social Research, 3,* Art. 17.

Rhemtulla, M., Brosseau-Liard, P. É., & Savalei, V. (2012). When can categorical variables be treated as continuous? A comparison of robust continuous and categorical SEM estimation methods under suboptimal conditions. *Psychological Methods, 17,* 354–373. doi:10.1037/a0029315.

Scales, P. C. (1999). Reducing risk and building developmental assets: Essential actions for promoting adolescent health. *Journal of School Health, 69,* 113–119.

Scales, P. C. (2011). Youth developmental assets in global perspective: Results from international adaptations of the developmental assets profile. *Child Indicators Research, 4,* 619–645. doi:10.1007/s12187-011-9112-8.

Scales, P. C. (2014). Developmental assets and the promotion of well-being in middle childhood. In A. Ben-Arieh, F. Casas, I. Frones, J. E. Korbin, & E. Jill (Eds.), *Handbook of child well-being. Theories, methods and policies in global perspective* (pp. 1649–1678). Dordrecht: Springer.

Scales, P. C., Benson, P. L., Dershem, L., Fraher, K., Makonnen, R., Nazeen, S., et al. (2013). Building developmental assets to empower adolescent girl in rural Bangladesh: Evaluation of project Kishoree Kontha. *Journal of Research on Adolescence, 23,* 171–184. doi:10.1111/j.1532-7795.2012.00805.x.

Scales, P. C., Foster, K. C., Mannes, M., Horst, M. A., Pinto, K. C., & Rutherford, A. (2005). School-business partnerships, developmental assets, and positive outcomes among urban high school students: A mixed-methods study. *Urban Education, 40,* 144–189. doi:10.1177/0042085904272746.

Scales, P. C., & Leffert, N. (2004). *Developmental assets: A synthesis of the scientific research on adolescent development* (2nd ed.). Minneapolis: Search Institute.

Scales, P. C., Roehlkepartain, E. C., & Fraher, K. (2012). *Do developmental assets make a difference in majority-world contexts? A preliminary study of the relationship between developmental assets and selected international development priorities.* Retrieved from http://www.search-institute.org/research/international-youth-development.

Scales, P. C., Roehlkepartain, E. C., & Shramko, M. (2016). Aligning youth development theory, measurement, and practice across cultures and contexts: Lessons from se of the Developmental Assets Profile. *Child Indicators Research*. doi:10.1007/s12187-016-9395-x.

Scales, P. C., Roehlkepartain, E. C., Wallace, T., Inselman, A., Stephenson, P., & Rodriguez, M. C. (2015). Assessing youth well-being in global emergency settings: A brief report on the Emergency Developmental Assets Profile. *Journal of Adolescence, 45,* 98–102.

Scales, P. C., Sesma, A., Jr., & Bolstrom, B. (2004). *Coming into their own: How developmental assets promote positive growth during middle childhood.* Minneapolis: Search Institute.

Schmitt, T. A. (2011). Current methodological considerations in exploratory and confirmatory factor analysis. *Journal of Psychoeducational Assessment, 29,* 304–321. doi:10.1177/0734282911406653.

Scholz, U., Doña, B. G., Sud, S., & Schwarzer, R. (2002). Is general self-efficacy a universal construct? Psychometric findings from 25 countries. *European Journal of Psychological Assessment, 18,* 242–251. doi:10.1027//1015-5759.18.3.242.

Schulz, W., & Sibberns, H. (Eds.). (2004). *IEA civic education study technical report*. Amsterdam: The International Association for Evaluation of Educational Achievement.

Schwarzer, R., & Born, A. (1997). Optimistic self-beliefs: Assessment of general perceived self-efficacy in thirteen cultures. *World Psychology, 3,* 177–190.

Schwarzer, R., & Jerusalem, M. (1995). Generalized self-efficacy scale. In J. Weinman, S. Wright, & M. Johnston (Eds.), *Measures in health psychology: A user's portfolio. Causal and control beliefs* (pp. 35–37). Windsor: NFER-Nelson.

Schwarzer, R., Schmitz, G. S., & Tang, C. (2000). Teacher burnout in Hong Kong and Germany: A cross-cultural validation of the Maslach Burnout Inventory. *Anxiety Stress and Coping, 13,* 309–326.

Shek, D. T. L. (2006). Conceptual framework underlying the development of a positive youth development program in Hong Kong. *International Journal of Adolescent Medicine and Health, 18,* 303–314.

Sherer, M., Maddux, J. E., Mercandante, B., Prentice-Dunn, S., Jacobs, B., & Rogers, R. W. (1982). The self-efficacy scale: Construction and validation. *Psychological Reports, 51,* 663–671. doi:10.2466/pr0.1982.51.2.663.

Tajfel, H. (1981). *Human groups and social categories*. New York: Cambridge University.

Theokas, C., Almerigi, J., Lerner, R. M., Dowling, E. M., Benson, P. L., Scales, P. C., et al. (2005). Conceptualizing and modeling individual and ecological asset components of thriving in early adolescence. *Journal of Early Adolescence, 24,* 113–143.

Thompson, B. R., Corsello, M., McReynolds, S., & Conklin-Powers, B. (2013). A longitudinal study of family socioeconomic stats (SES) variables as predictors of socio-emotional resilience among mentored youth. *Mentoring & Tutoring: Partnerships in Learning, 21,* 378–391. doi:10.1080/13611267.2013.855864.

Torney-Purta, J., & Barber, C. (2011). Fostering young people's support for participatory human rights through their developmental niches. *American Journal of Orthopsychiatry, 81,* 473–481. doi:10.1111/j.1939-0025.2011.01113.x.

Tweed, R. G., & Delongis, A. (2009). Cross-cultural resilience research on youth: Avoiding methodological hazards. In L. Liebenberg & M. Ungar (Eds.), *Researching resilience* (pp. 155–179). Toronto: University of Toronto.

Ungar, M., & Liebenberg, L. (2009). Cross-cultural consultation leading to the development of a valid measure of youth resilience: The international resilience project. *Studia Psychologica, 51,* 259–268.

Ungar, M., Liebenberg, L., Boothroyd, R., Kwong, W. M., Lee, T. Y., Leblanc, J., et al. (2008). The study of youth resilience across cultures: Lessons from a pilot study of measurement development. *Research in Human Development, 5,* 166–180. doi:10.1080/15427600802274019.

Webber, M., McKinley, E., & Hattie, J. (2013). The importance of race and ethnicity: An exploration of New Zealand Pākehā, Māori, Samoan and Chinese adolescent identity. *New Zealand Journal of Psychology, 42,* 17–28.