The Impact of Asset Ownership on the Future Orientation of Youth and Their Parents

Evidence from the YouthSave Ghana Experiment

Gina A. N. Chowa
Rainier D. Masa

University of North Carolina at Chapel Hill

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Future orientation influences a variety of desirable behaviors, but few researchers have studied the impact of economic resources on future orientation. In this study, we investigate whether and how asset ownership influences future orientation of Ghanaian youth and their parents. Results of propensity score models suggest that asset ownership has a positive effect on future orientation of youth and their parents. Ownership of household possessions, including televisions and modes of transportation, contributes to higher levels of future orientation among youth and parents, but livestock ownership has a negative effect on future orientation. Asset ownership provides individuals and households with a sense of security that allows them to think about and anticipate future events. Programs that promote accumulation of assets may help households not only increase their economic resources but also positively influence future orientation, which contributes to other economically enabling behaviors.

Key words: *assets, household possessions, livestock, transportation, future orientation, propensity score*

Future Orientation

Future orientation refers to individuals' tendency to engage in thinking about the future (Seginer, 2009) and involves expectations, hopes, and fears (Nurmi, 1991; Markus & Nurius, 1986). It also is defined as the ability to anticipate future events (McCabe & Barnett, 2000). Research has shown that adolescents engage in thinking about the future and report future-oriented goals in a variety of life domains (Massey, Gebhardt, & Garnefski, 2008; Nurmi, 1991), including education and occupation (Lanz, Rosnati, Marta, & Scabini, 2001; Seginer, 1988), social relationships (Carroll, 2002), and money and financial stability (Budhwar, Reeves, & Farrell, 2000; Cohen & Cohen, 2001).

Markus and Nurius (1986) theorize that people imagine *possible selves* (i.e., the selves an individual would like to be or is afraid of becoming) that function as incentives and disincentives for certain behaviors through the projection of desired or undesired end-states (Markus & Nurius, 1986; Oyserman & Fryberg, 2006). When individuals see themselves in a positive future state, they are less likely to form negative attitudes or engage in risky behaviors that will prevent them from achieving the *desired* end-state or lead to the *undesired* end-state. By focusing on future plans, youth may avoid engaging in behaviors that could jeopardize their future selves. While research in the United States and other developed countries (Alm, 2011; Burtless, 1999; Jacobs-Lawson & Hershey, 2005; Quinton, Pickles, Maughan, & Rutter, 1993) shows positive relationships between future orientation and behavioral outcomes, little is known about the influence of future orientation on youth and adult behaviors in developing countries, particularly in Sub-Saharan Africa (SSA).

Future orientation and well-being outcomes

Most empirical studies investigate future orientation as a precursor of behavior. Among youth, positive future orientation is related to academic achievement (Adelabu, 2007), and youth who are highly oriented toward the future—as measured by future planning—demonstrate lower incidences

of misconduct (Chen & Vazsonyi, 2013; Quinton et al., 1993), higher rates of intention to use condoms (Bryan, Kagee, & Broaddus, 2006), and higher perceived academic self-efficacy (Kerpelman, Eryigit, & Stephens, 2008). Youth with higher levels of future orientation also are less likely to engage in drug and alcohol abuse, unsafe sexual practices (Peters et al., 2005; Robbins & Bryan, 2004; Somers & Gizzi, 2001), and violent behaviors over time (Stoddard, Zimmerman, & Bauermeister, 2011). Future orientation also can mitigate the effects of traumatic events and the stigma of depression and other mental health issues (Wang et al., 2012; Zhang et al., 2009). For adults, higher future orientation also is associated with lower suicidal ideation and suicide attempts (Hirsch et al., 2006) and improved health through regular exercise (Kahana, Kahana, & Zhang, 2005).

In addition to positive health and educational outcomes, higher levels of future orientation are associated with desirable financial and economic outcomes that include saving among youth (Webley & Nyhus, 2006) and work motivation (Seijts, 1998), pursuit of higher education (Peetsma, 2000), and retirement planning (Jacobs-Lawson & Hershey, 2005; Jacobs-Lawson, Hershey, & Neukam, 2004) among adults. Conversely, indifference toward the future results in lower educational attainment, greater risk of experiencing economic hardships (Alm, 2011), and aggression (Bushman, Giancola, Parrott, & Roth, 2012).

Most studies show that future orientation is influenced mainly by psychological or personality traits (e.g., conscientiousness and emotional stability) (Hershey & Mowen, 2000), social norms regarding the perception of time (Jones, 1988), and perceived proximity to death (Carstensen, 2006). Fewer investigations examine the potential influence of economic resources (e.g., asset ownership) on future orientation. From theoretical and applied perspectives, examining the extent to which economic resources impact the future orientation of parents and their children will help researchers and policymakers understand the effects of interventions and programs aimed at increasing income, consumption, and asset ownership. Positive future orientation that could result from improved economic circumstances may lead to other desirable outcomes (e.g., improved health conditions, higher educational attainment, and financial stability). Examining the relationship between economic resources and future orientation also may help us understand external variables—particularly economic resources—that shape personality development. To address gaps in current knowledge, this study aims to examine the effect of economic resources—particularly asset ownership—on the future orientation of youth and their parents. It also is one of only a few studies that examines the impact of economic resources on future orientation in a developing country.

Asset ownership and future orientation

Sherraden (1991) suggests that accumulation of assets has positive effects on well-being and future orientation. The theory of assets effects proposes that asset ownership provides individuals and households with a sense of security that allows them to plan for and create an image of the future (Sherraden, 1991). The theory also suggests that asset accumulation shapes opportunity structures— such as access to additional tangible and nontangible resources that can be used to generate positive returns—which allows individuals to engage in future thinking. Empirical evidence suggests that participation in asset-building programs increases future orientation among adults and youth (Ansong, Chowa, & Grinstein-Weiss, 2013; Scanlon & Adams, 2009). Research also shows that programs for increasing economic opportunities among low-income households have positive effects on youth's future orientation (McLoyd, Kaplan, Purtell, & Huston, 2011).

Higher income and educational levels also predict longer future orientations (Padawer, Jacobs-Lawson, Hershey, & Thomas, 2007), but asset ownership may be a more appropriate measure of economic resources than income. Unlike income, assets are accumulated and held by families over time. Because of the longer perspective of time associated with it, asset ownership may have a more fundamental link to future orientation than income. This study uses asset ownership as the main explanatory economic variable of interest.

Method

Data and sample

YouthSave is a five-year, longitudinal study that investigates the use of savings accounts as a tool for youth development and financial inclusion in four developing countries. Savings accounts are offered by local financial institutions, and local researchers are assessing their performance and participants' developmental outcomes. Although YouthSave is being implemented in four countries, the data in this study are taken from the Ghana Experiment, a cluster randomized study of 6,252 youth in 100 schools randomly selected from eight of Ghana's 10 regions. Fifty schools were assigned to the treatment condition, and another 50 schools were assigned to the control condition. Sixty students were selected randomly from each school with oversampling to take attrition into account. The baseline sample consists of 6,252 youth and 3,083 parents.

Baseline data were collected in May and June 2011, and follow-up data collection is scheduled for 2014. Data include youth's educational, health, psychosocial, and financial outcomes and youth and parent demographics and socioeconomic characteristics, including ownership of different assets. This study uses a subset of the YouthSave Ghana Experiment baseline data. Because characteristics of parents predict household asset ownership, we include only 3,083 youth whose parents also were interviewed at baseline. Missing parent covariates further reduced the final sample to 3,068 youth and their parents.

Measures

Dependent variables

The two dependent variables are youth future orientation and parent future orientation. Youth future orientation is a continuous variable measured by a 12-item, 11-point, Likert-type scale ranging from 0 (*strongly disagree*) to 10 (*strongly agree*). The youth future orientation scale was adapted from the School Success Profile Survey, an assessment tool developed in the United States for promoting academic performance (Bowen, Rose, & Bowen, 2005). Parent future orientation is a continuous variable measured using a 12-item, 11-point, Likert-type scale ranging from 0 (*not at all like me*) to 10 (*very much like me*). Parent future orientation was derived from the Consideration of Future Consequences (CFC) Scale (Strathman, Gleicher, Boninger, & Edwards, 1994), which measures the extent to which people consider distant versus immediate consequences.

Covariates of asset ownership in Sub-Saharan Africa (SSA)

Based on theory and prior research, predictors of household asset ownership in SSA include the head of household's age, gender, marital status, education level, and employment status. Other important predictors include household income and number of economic dependents in the

household. In SSA, women own fewer assets than men (Deere & Doss, 2006; LeBeau, Iipinge, & Conteh, 2004), and the ability to accumulate assets is governed by norms that historically have favored men (Fafchamps & Quisumbing, 2005). In developing countries, education affects asset ownership by improving a household's ability to adapt to changing employment patterns and labor market demands (Schultz, 1989). Marital status also affects asset accumulation (Grinstein-Weiss et al., 2011; Wilmoth & Koso, 2002) because pooled resources may provide a buffer against financial crises and allow married couples to accumulate assets over time. Finally, as proposed by neoclassical economic theories, differences in asset ownership can be attributed to variation in age and number of economic dependents in the household (Friedman, 1957; Modigliani & Ando, 1957).

Dichotomous variables include gender (coded as 1 for male or 0 for female), educational level (coded as 1 for primary education or higher or 0 for no formal education), marital status (coded as 1 for married or 0 for not married), and employment status (coded as 1 for formally employed or 0 for not formally employed). Age is a continuous variable measured in years. Household income is a continuous variable defined as the household's total monthly income from full- or part-time work, rental properties, and pension or remittances. The number of economic dependents in the household also is a continuous variable measured as the number of individuals ages 14 and younger who rely on the head of household for food, shelter, clothing, and other basic needs.

Asset ownership (variable of interest)

We classified assets as one of the following: household possessions, livestock, and transportation-related. By using these distinct categories—rather than combining all assets into an index—we are able to examine which types of assets influence future orientation of youth and their parents.

A dichotomous variable for ownership of household possessions is coded as 1 for youth whose family owns at least one household possession (i.e., television, refrigerator, electric iron, electric or gas stove, and kerosene stove) or 0 if they own none. Those who reported that their households owned no possessions were assigned to comparison group. Because of the potential influence of television—particularly television shows and advertisements—in creating future images of one's self, we also examine separately the impact of television on future orientation. In other words, among the five household possessions, televisions seem to have the most obvious impact on future orientation. An additional dichotomous variable for television ownership is coded as 1 if a youth's family owns at least one television or 0 if they own none.

Another dichotomous variable for livestock ownership is coded as 1 if a youth's family owns at least one type of livestock (i.e., goats, pigs, cows, sheep, donkey, and chickens) or 0 if they own none. Finally, a dichotomous variable for transportation-related asset ownership is coded as 1 if a youth's family owns at least one mode of transportation (i.e., canoe or boat, bicycle, motorcycle, and vehicles such as cars and trucks) or 0 if they own none.

Data analysis

We used propensity score analysis to (a) correct for the effects of selection bias based on available covariates and (b) provide a more rigorous estimate of treatment effects. In other words, this study tests a potential causal relationship, conditional on observed covariates, between asset ownership and future orientation of youth and their parents. Because of selection bias in observational data,

propensity score analysis is a more rigorous statistical strategy for estimating treatment effects than a conventional regression or regression-type model (Berk, 2004; Guo & Fraser, 2010). This study employs matching estimators (Abadie & Imbens, 2002, 2006) and propensity score weighting (Hirano & Imbens, 2001; Rosenbaum, 1987) to estimate the effect of asset ownership on future orientation.

Matching estimators

To assess the effect of asset ownership on future orientation, we used matching estimators to link a treated case to a control (or vice versa) based on the seven observed parental covariates of asset ownership: age, gender, marital status, education level, employment type, income, and number of economic dependents. Matching estimators uses a vector norm to calculate distances on the observed covariates between a treated case and each of its potential control cases, which serves as the counterfactual for the treated case (Abadie & Imbens, 2002, 2006). We used bias-corrected matching to remove bias caused by the three continuous-level covariates: age, income, and number of dependents. It is impossible to conduct exact matching when continuous covariates are present because the estimator will have a bias term that corresponds to matching discrepancies (Abadie & Imbens, 2002). In our study, we used the same set of matching variables as the independent variables for the regression adjustment in the bias correction process. Following the recommendation of Abadie et al. (2004), we chose four matches per observation in the analysis. Further, regression of the dependent variables on the seven matching variables plus the four binary treatment variables indicates that our data did not meet the homoscedastic assumption. Results of the Breusch-Pagan and Cook-Weisberg tests of heteroscedasticity show that at least one of the observed covariates is statistically significant ($p < .05$) and indicate that the conditional variance of the outcome variables is not constant across levels of independent variables. We used the robust variance estimator to correct for the violation of homoscedasticity and the same number of matches (i.e., four) in the second matching stage to run the robust variance estimator.

Propensity score weighting

Because each propensity score model requires different assumptions and findings are sensitive to different data situations, the robustness of results should be tested. We conducted an additional statistical method as sensitivity analysis strategy to show that the final findings are robust and consistent with estimates from different statistical procedures. We used propensity score weighting to cross-validate the findings of matching estimators. Unlike other propensity score models, propensity score weighting is done without matching. Propensity score weighting involves the development of weights based on estimated propensity scores, which can be used in multivariate analysis. Details about this method—including its limitations—can be found in Rosenbaum (1987), Hirano and Imbens (2001), and Guo and Fraser (2010).

Factor analysis

In addition to propensity score analysis, we applied factor analysis to determine the factor structure of both instruments used to measure future orientation. We used exploratory factor analysis (EFA) to explore the nature of the dimensions of the latent construct—youth future orientation—and examine how scale items relate to dimensions. We followed best practices in EFA (Costello & Osborne, 2005). We used principal axis factoring as the factor analysis extraction method and

retained all factors with eigenvalues greater than 1.0. We used Promax as the (oblique) rotation method and a minimum factor loading of .40 as a guideline for considering an item to be part of a factor. We used confirmatory factor analysis (CFA) to test stated hypotheses regarding the nature of the dimensions of latent variables—youth and parent future orientation—and how the scale items relate to the dimensions. For youth future orientation, we conducted CFA to verify the factor structure obtained from EFA. For parent future orientation, we conducted CFA to test hypothesized dimensions of the latent construct based on previous validation studies of the scale (Hevey et al., 2010; Petrocelli, 2003; Strathman et al., 1994).

Confirmation of the factor structure is critical because the scales used to measure future orientation were originally developed, tested, and validated with samples in the US and have never been validated in a sample of Ghanaian youth and their parents. Before examining the relationship between asset ownership and future orientation, we want to demonstrate that (a) our data support the hypothesized dimensions of future orientation and (b) observed items in the each scale are adequate indicators of the proposed latent factors. Maximum likelihood estimator was chosen as the estimation procedure for all CFA models. The fit indices used to evaluate goodness of model fit included chi-square, root mean square error of approximation (RMSEA), comparative fit index (CFI), Tucker-Lewis index (TLI), and standardized root mean square residual (SRMR). For chi-square, a value resulting in a nonsignificant p-value (p > .05) is considered a good fit (Bollen, 1989; Kaplan, 2009). However, because obtaining a nonsignificant $\chi 2$ value is difficult given the large sample size of our study, we also used RMSEA, CFI, TLI, and SRMR to determine whether our data met established criteria for fit. Cutoff criteria for the other fit indices include (a) a value between 0.05 and 0.08 for RMSEA (Browne & Cudeck, 1993), (b) a value of $\geq$ 0.95 for CFI and TLI (Hu & Bentler, 1999), and (c) a value of $\leq$ 0.07 for SRMR (Yu, 2002). We used SPSS version 19 to perform EFA (IBM Corporation, 2010), Mplus 7.0 software to perform CFA (Muthén & Muthén, 2012), and Stata version 11 to perform propensity score analysis (StataCorp LP, 2009).

Results

Descriptive statistics

Table 1 presents descriptive statistics for the sample. The study sample of youth includes equal percentages of boys and girls. Nearly four in 10 are in grade level six, three in 10 are in junior high school (JHS) levels one and two, and the average age is 15 years. The study sample of parents includes more mothers (69%) than fathers (31%). The average age of parents is 45. Twenty-six percent of parents have no formal education, and 77% are married. Average monthly income is 131 USD. On average, youth reported high orientation toward a successful life (M = 52.14) and scored low on the construct, "uncertainty of the future" (M = 5.98).[1] These results suggest youth have positive orientation toward the future. Parents, on average, also reported above-average future orientation or consideration of future consequences (M = 50.62).[2] Regarding asset ownership, 80% of families own at least one of the five household possessions (i.e., television, refrigerator, electric iron, electric or gas stove, and kerosene stove), but only 70% own at least one television. Sixty-four

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[1] The maximum score for the subscale *orientation toward a successful life* is 60, and the maximum score for the subscale *uncertainty of the future* is 50.

[2] The maximum score for the parents' *consideration of future consequences* scale is 80.

percent of families own at least one type of livestock, and 51% own at least one mode of transportation.

Table 1. Descriptive Statistics and Bivariate Analysis Results

Variables	% or M (SD)	Youth		Parent
		Orientation toward success	Uncertainty of future	Consideration of future consequences
Dependent variables				
Youth orientation toward success	52.14 (6.92)	-	-	-
Youth uncertainty of future	5.98 (7.45)	-	-	-
Parent consideration of future consequences	50.62 (14.90)	-	-	-
Independent variables				
Youth characteristics				
Gender (female)	50%	-0.46	0.16	0.44
Age	15.14 (1.93)	-0.07	0.28*	-0.59*
Grade level (primary level 6)				
JHS1	32%	0.05	0.17	-0.76
JHS2	31%	0.96*	-0.42	0.42
Parent and household characteristics				
Gender (female)	31%	0.61*	-0.10	0.59
Age	44.77 (9.57)	-0.01	0.02	0.01
Education (no formal education)	74%	0.55*	-0.18	0.59
Marital status (not married)	78%	0.31	-0.52	-0.12
Employment status (informally employed)	12%	0.67	-0.50	1.15
Income (in USD)[a]	131.07 (199.95)	0.33*	-0.04	0.34
Number of economic dependents	2.70 (1.84)	0.01	-0.04	0.11
Explanatory variables of interest				
Own household possessions (none)	80%	1.22*	-1.03*	0.38
Own television (none)	70%	1.21*	-1.10*	1.00
Own livestock (none)	64%	-0.31	0.42	-1.75*
Own transportation (none)	51%	0.43	-0.10	-0.10
Number of youth	3,068			
Number of parents	3,068			

*$p < .05$.

[a]The exchange rate used is 1 Ghanaian cedi (GHS) = 0.66 USD, approximately the rate when the baseline survey was conducted. We transformed income using inverse hyperbolic sine transformation.

%, percentage distribution for categorical variables; *M (SD),* mean (standard deviation) for continuous variables.

Note: The reference group is shown in parentheses for a categorical variable.

Factor analysis results

Youth future orientation

Factor analysis of the youth future orientation scale occurred in two phases. First, we conducted EFA to eliminate items that did not load on the underlying construct of future orientation. EFA results suggest that a two-factor solution provides the best fit to our data and accounts for 48% of the variance. Six items loaded in Factor 1 (*orientation toward a successful life*), and five items loaded in Factor 2, (*uncertainty of the future*). One item did not load satisfactorily in Factor 1 (loading = -.13) or Factor 2 (loading = .28). Of the six items in Factor 1, factor loadings range from .46–.73, and of the four items in Factor 2, factor loadings ranged from .51–.65.

Second, we conducted CFA to cross-validate the factor structure obtained from EFA and provide a stronger construct validity test of the hypothesized factor structure. In all CFA procedures, all hypothesized factor loadings—except for one loading per factor—were freed. All paths from latent error terms to observed indicators were fixed at 1.0. The latent factors were allowed to correlate freely. We specified and tested two competing measurement models.[3] The primary model was the two-factor structure based on EFA, and the alternative model was a one-factor solution. Results indicate that the two-factor solution pattern based on EFA results has more acceptable fit to our data ($\chi2[53]$ = 1255.36, p < .001, RMSEA = 0.06, CFI = 0.93, TLI = 0.92; SRMR = 0.04) contrasted with one-factor solution ($\chi2[54]$ = 5,519.38, p < .001, RMSEA = 0.13, CFI = 0.69, TLI = 0.62; SRMR = 0.10). Consistent with EFA results, one item (*I see no connection between success in school and success in life*) has low factor loading and low R^2 in the one-factor model (λ = .03, R^2 = .001) and the two-factor model (λ = .21, R^2 = .04). When we conducted the 2-factor model without the low loading and low R^2 item, model fit remained the same ($\chi2[43]$ = 1117.76, p < .001, RMSEA = 0.06, CFI = 0.94, TLI = 0.92, SRMR = 0.04).[4] When we compared the two nonnested models, the CFA model with one fewer observed variable has smaller AIC and BIC values contrasted with the CFA model with all 12 observed items. Smaller AIC and BIC values indicate better fit. All CFA loadings are statistically significant and greater than .40 (loadings on Factor 1 range from .48 to .72, and loadings on Factor 2 range from .56 to .64). R^2 values range from .23 to .52.

Based on EFA and CFA results, we deleted one item and retained the two-factor solution, with the factor orientation toward a successful life having six items and the factor uncertainty of the future having five items. We used these two distinct dimensions of youth future orientation as separate dependent variables in our examination of the impact of asset ownership. We measured them by summing all the items in each respective factor. Higher scores on the orientation toward success subscale and lower scores on the uncertainty of the future subscale indicate positive future orientation.

Parent future orientation

For parent future orientation, we conducted only CFA because prior studies tested the factor structure of the CFC scale. We conducted CFA to determine if the hypothesized factor structures of

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[3] For the primary CFA model, we tested a 2-factor solution in which each factor (1 and 2) included six observed indicators. The "low" loading item based on EFA results was included in Factor 2 because it loaded higher on Factor 2 (.28) contrasted with Factor 1 (-.13).

[4] For this model, Factor 1 included six observed indicators, and Factor 2 included five observed items.

CFC perform adequately for our sample. We specified and tested three competing models. The first is a one-factor solution based on validation studies conducted by the developer of the scale (Strathman et al., 1994) and other more recent studies (Hevey et al., 2010). The second model is a two-factor solution proposed by Petrocelli (2003), with Factor 1 having eight items and Factor 2 having four items. The third model is a short eight-item, one-factor version of the scale also proposed by Petrocelli (2003).

CFA results suggest that the one-factor, eight-item short version of CFC scale has the most acceptable fit to our data ($\chi2[20] = 1715.75$, $p < .001$, RMSEA = 0.12, CFI = 0.79, TLI = 0.71, SRMR = 0.06) contrasted with a one-factor model ($\chi2[54] = 3851.38$, $p < .001$, RMSEA = 0.12, CFI = 0.64, TLI = 0.56, SRMR = 0.09) or a two-factor solution ($\chi2[53] = 2810.27$, $p < .001$, RMSEA = 0.11, CFI = 0.74, TLI = 0.67, SRMR = 0.07). Nonetheless, the model fit of the third model (i.e., the eight-item, short version) remains below the recommended cutoff criteria. We identified the possible source of poor fit by examining modification indices. Consistent with prior studies (Hevey et al., 2010) and based on the modification indices, we allowed two correlated errors in the third model. Results suggest that the model has reasonable fit to our data ($\chi2[18] = 533.38$, $p < .001$, RMSEA = 0.08, CFI = 0.94, TLI = 0.90, SRMR = 0.04), and all CFA loadings are statistically significant. Based on CFA results, we used the eight-item, short version of CFC as our measure of parent future orientation. We measured the one-dimensional measure of parent future orientation by summing all items in the scale. Higher scores on the CFC scale indicate positive future orientation (see Table 1).

Matching estimators

Household possessions

Table 2 shows the estimated effects of different types of asset ownership on youth and parent future orientation. Results indicate that, on average, assets have positive effects on future orientation of youth and their parents. Contrasted with youth from families that do not own household possessions, those from families that own at least one of the five household possessions are more future oriented, scoring 1.35 points higher on the orientation toward success subscale 1.12 points lower on the uncertainty of the future subscale. Both treatment effects are statistically significant ($p < .01$). Similarly, parents who own household possessions scored 1.23 points higher on the consideration of future consequences scale than parents who do not own household possessions. Higher scores on the CFC scale indicate more future orientation, particularly in greater focus on future consequences of current behaviors. Although the treatment effect for parents' future orientation is not statistically significant, it suggests that asset ownership has a positive impact, which is consistent with Sherraden's (1991) theoretical propositions.

Table 2. Estimated Average Treatment Effects (Effects of Asset Ownership) on Youth and Parent Future Orientation Using Bias-Corrected Matching with Robust Variance Estimators

	Average treatment effect (SE)		
	Youth future orientation		Parent future orientation
Asset ownership variable	Orientation toward success	Uncertainty of the future	Consideration of future consequences
Household possessions	1.35 (0.388)***	-1.12 (0.374)**	1.23 (0.915)
Television	1.15 (0.323)***	-1.05 (0.323)**	1.09 (0.659)†
Livestock	-0.13 (0.292)	0.31 (0.308)	-1.78 (0.602)**
Mode of transportation	0.53 (0.277)†	-0.06 (0.294)	0.04 (0.570)

†$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$, two-tailed test
SE, standard error

Television

As stated in the Methods section of this study, television shows have a fundamental role in creating images of the future self. We examined the impact of television ownership on future orientation of Ghanaian youth and their parents, and results suggest a positive effect. Contrasted with youth from families who do not own a television, those from families that own a television scored 1.15 points higher on the orientation toward success subscale and 1.05 points lower on the uncertainty of the future subscale. As with the ownership of household possessions, both treatment effects on youth future orientation are statistically significant ($p < .05$). Parents who own a television scored 1.09 higher on the CFC scale than parents who do not a television. The treatment effect for parent future orientation showed a statistical trend ($p < .10$).

Transportation

Ownership of a mode of transportation also has a positive impact on future orientation. Contrasted with youth whose families own no form of transportation, youth from families that own at least one form of transportation have more orientation toward success and less uncertainty of the future. Similarly, parents who own at least one mode of transportation consider future consequences more than parents who own no mode of transportation. However, the magnitude of the effects is lower than that of the other types of assets. Further, none of the treatment effects of ownership of transportation asset demonstrate statistical significance. Nonetheless, ownership of this type of asset indicates positive direction of asset-ownership effects.

Livestock

Unlike ownership of household possessions and modes of transportation, ownership of livestock has a negative effect on future orientation. Contrasted with youth whose families own no livestock, those whose families own at least one type scored lower on the orientation toward success subscale and higher on the uncertainty of the future subscale. However, none of the treatment effects on youth future orientation are statistically significant ($p > .05$). Further, parents who own livestock scored 1.78 points lower on the consideration of future consequences scale than parents who do not own livestock. This finding suggests that parents who own livestock are more concerned about immediate consequences of behaviors rather than future outcomes of their actions.

Propensity score weighting

Table 3 presents results of regression analysis of future orientation using propensity score weighting, which supports the findings based on matching estimators. Contrasted with their peers from families without household possessions, youth from families that own household possessions scored 1.12 points higher on the orientation toward success subscale and nearly one point lower on the uncertainty of the future subscale. Similarly, parents with household possessions scored higher on the CFC scale than parents with no household possessions. However, only the effect on youth future orientation is statistically significant ($p < .01$). Ownership of television and mode of transportation also have a positive impact on future orientation of youth and their parents. Contrasted with youth from families that own no television, youth from families with a television scored 1.13 points higher on the orientation toward future subscale and nearly one point lower on the uncertainty of the future subscale The treatment effects of television ownership on youth future orientation are statistically significant ($p < .05$), while none of the treatment effects of mode of transportation ownership are statistically significant for youth or parents ($p < .05$). The positive effect of television ownership on parents' future orientation shows a statistical trend ($p < .10$).

Table 3. Regression Analysis of Youth and Parent Future Orientation with Propensity Score Weighting

Asset ownership variable	Estimated regression coefficient (robust SE)		
	Youth future orientation		Parent future orientation
	Orientation toward success	Uncertainty of the future	Consideration of future consequences
Household possessions	1.12 (0.35)**	-0.96 (0.34)**	0.45 (0.73)
Television	1.13 (0.30)***	-0.96 (0.30)**	0.99 (0.61)†
Livestock	-0.23 (0.27)	0.31 (0.27)	-1.67 (0.58)**
Mode of transportation	0.37 (0.26)	-0.07 (0.28)	-0.06 (0.56)

†$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$, two-tailed test
SE, standard error

Consistent with results based on matching estimators, livestock ownership has negative effect on future orientation of youth and their parents. Contrasted with parents who own no livestock, parents who own livestock scored nearly two points lower on the CFC scale. The negative effect of livestock ownership is statistically significant for parent future orientation but not youth. However, the negative impact suggests that this type of asset ownership contributes to higher uncertainty of the future and lower orientation toward a successful life among Ghanaian youth. Overall, the magnitudes of regression coefficients from propensity score weighting are similar to the magnitudes of treatment effects obtained using matching estimators. Further, the observed direction of relationships between asset ownership and future orientation are the same in both propensity score models. The consistency of our findings suggests that our results may be robust.

Discussion

Measurement of future orientation

Because future orientation generally is measured using multiple item scales, the importance of establishing the construct validity of such scales is important for increasing reliability of findings. Construct validation becomes more important when using scales that were developed in the US and validated with US populations. We adapted scales developed in the US to measure future orientation of Ghanaian youth and their parents. Our results suggest consistency with hypothesized factor structures of future orientation scales and differences in factor patterns from those established in previous studies. For instance, our data do not support a one-factor solution to youth future orientation. Instead, factor analysis results suggest that the scale we used to measure youth future orientation is best represented by a two-factor solution: orientation toward a successful life and uncertainty of the future. If we had not performed factor analysis, we would have used a one-dimensional youth future orientation construct that, based on statistical evidence, is not represented in our data. Failure to accurately define the factor structure of the youth future orientation construct in our study may have led to inaccurate findings about the impact of asset ownership on future orientation of Ghanaian youth. Similarly, if we had not confirmed the factor structure of the adapted CFC scale, we would have assumed that the original 12-item scale—rather than the eight-item, short version we used—is an accurate measurement of the future time perspective of Ghanaian parents. Without factor analysis, we would not have been able to determine if the adapted scales performed adequately for a population not included in previous validation studies of the future orientation scales. In sum, factor analysis allowed adequate measurement of the construct—future orientation—among Ghanaian youth and their parents before we proceeded with substantive analysis or testing of the hypothesized relationship between it and asset ownership.

Asset ownership and future orientation

In general, our results suggest that asset ownership has a positive impact on future orientation of Ghanaian youth and their parents. Results from matching estimators and propensity score weighting indicate statistically significant effects of household possession, television, and livestock ownership on future orientation for youth and their parents. The consistency of findings—based on two propensity score models—suggests that the effect of asset ownership on future orientation is robust.

More importantly, our findings suggest that the impact of asset ownership on future orientation depends on the type of asset. By classifying asset ownership into four discrete categories—household possessions, televisions, mode of transportation, and livestock—we find substantial differences in the magnitude and direction of effects and level of statistical significance. Ownership of household possessions, televisions, and modes of transportation has positive effects on future orientation of youth and their parents. Youth from families with these types of assets reported more orientation toward success and less uncertainty of the future, while their parents reported having greater focus on future consequences of current behaviors and being less likely to satisfy only immediate needs.

Findings are consistent with Sherraden's (1991) propositions about the effect of asset accumulation on future orientation. In general, asset ownership provides youth and their parents with a sense of security that allows them to plan for and create an image of the future. Asset ownership also shapes

opportunity structures, which allows individuals to think about or anticipate future events. However, only the effects of household possession and television ownership on youth future orientation are statistically significant. Of the five household possessions considered, only television ownership has a statistically significant positive effect on parent future orientation. The positive effect of mode of transportation ownership is not statistically significant for youth or parents. Also, the magnitude of the effect of mode of transportation ownership is smaller than that of household possession and television ownership.

The positive effect of television ownership may be caused by more than just the economic security associated with having assets. Television provides entertainment and news through shows and advertisements and may contribute to people's ability to form ideas or create images of the future. Media broaden people's imaginations, provide role models, and allow viewers to learn about places they have never seen and people they have not met. In other words, knowledge obtained from watching television may explain the positive effect of ownership on future orientation.

In contrast, our findings indicate that livestock ownership has a negative effect on future orientation of youth and their parents. In families with livestock, youth have less orientation toward success and more uncertainty of the future, and parents are less focused on future consequences and more likely to satisfy immediate needs. However, only the effect on parent future orientation is statistically significant. The negative effect of livestock ownership on future orientation may be explained by how individuals and families accumulate assets or the hierarchy of asset accumulation in Ghana. Lower income individuals and families tend to buy livestock before accumulating other types of assets (e.g., household possessions, modes of transportation, and others) (Krishna, 2011). The preference for livestock may be influenced by the desire to purchase assets that generate income and increase economic resources or the location of residence. According to YouthSave Ghana Experiment baseline data, families from more urban regions (e.g., Greater Accra and Ashanti) are less likely to own livestock than families from other more rural regions (Chowa et al., 2012). It is possible that families that own livestock are poorer than families that do not own livestock, and their financial situation may not allow them to think about or anticipate future events. Livestock-owning families may be more concerned with immediate issues such as having enough food.

The negative effect of livestock ownership on youth future orientation may be explained by how youth perceive agriculture work and livestock raising. Agriculture-related work may be considered less prestigious or desirable by youth who may want to work in formal, nonagricultural industries. Although the majority of employment opportunities in Africa and other developing countries are in agriculture, many youth desire to work in nonagricultural industries (Balwanz, 2012), particularly after completing their education (Kritzinger, 2002). Youth from families with livestock may perceive that their options are limited and their opportunities consist only of agriculture-related jobs.

Our study contributes to an emerging body of knowledge about the impact of economic resources on future orientation of individuals and families. Although personality traits may be relatively stable over time, individuals and families might experience events that influence the extent to which they think about and anticipate future events. For instance, those that accumulate assets may be able to think ahead and plan for future events, instead of being concerned solely with immediate issues. The main difference between this study and previous research is our use of assets—instead of income— as a measure of economic circumstances. Income may not always be the most reliable and appropriate indicator of economic status, especially in many parts of the developing world where

income can be seasonal and irregular. At baseline data collection, more than 80% of parents reported working in the informal sector—characterized by seasonal and irregular income—and only 12% of parents were receiving regular salaries or wages. This disproportionate number may indicate that using income as a measure of economic resource would provide an inaccurate and unreliable picture of household economic status. Conversely, asset ownership provides a more accurate portrait of economic circumstances because assets are what households accumulate over time and reflect a longer time perspective than income.

Limitations

Although this study uses propensity score analysis in an attempt to control statistically for the effects of parental socioeconomic status and other observed covariates that could influence ownership of different types of assets and future orientation, propensity score cannot conclusively rule out unmeasured or unobserved variables that may be central to the treatment effects. Propensity score fails to correct for selection bias that results from the presence of unobserved variables. If the matching process omits important covariates that predict ownership of assets in Ghana, the study findings may be prone to error.

Also, we investigated the effects of a limited number of assets (i.e., household possessions, televisions, livestock, and modes of transportation) on future orientation. Although the types of assets accounted for in the study are appropriate in the Ghanaian context, we may have omitted other types of assets that also may influence future orientation of youth and their parents.

Another limitation is the use of cross-sectional data, which cannot definitively establish the direction of the relationship or causality. Once follow-up data are collected, we will be able to address issues of reverse causality and potential confounding that may undermine the results of our studies. Finally, although we conducted factor analysis to establish construct validity of future orientation scales, we measured future orientation using self-reports from youth and their parents. Self-report measures tend to be susceptible to biases, including the desire of respondents to give socially desirable or acceptable answers.

Conclusions

Although many studies investigate the effects of asset ownership on a range of outcomes—including economic, educational, and health—few studies examine the role of asset ownership in individuals' ability to engage in future thinking or anticipate future events. To our knowledge, this study is the first to examine the impact of asset ownership on psychosocial outcomes—specifically future orientation—in Ghana. It expands what we know about the effects of asset ownership and goes beyond examining the more common outcomes. Our study presents evidence that the effect of asset ownership on future orientation is a function of the type of asset owned. In general, asset ownership has a positive effect on future orientation of youth and their parents. Because future orientation is related to other desirable outcomes (e.g., work motivation, saving, planning for the future, and pursuit of higher education), our findings have important implications for programs or efforts to provide individuals with opportunities to accumulate assets. Asset development programs not only allow individuals and families to save and build assets but also—and more importantly—influence individuals and families to think about and anticipate future events, which contributes to other economically enabling behaviors.

References

Abadie, A., Drukker, D., Herr, J. L., & Imbens, G. W. (2004). Implementing matching estimators for average treatment effects in Stata. *Stata Journal, 4*, 290–311.

Abadie, A., & Imbens, G. W. (2002). *Simple and bias-corrected matching estimators for average treatment effects* (NBER Technical Working Paper 283). Cambridge, MA: National Bureau of Economic Research.

Abadie, A., & Imbens, G. W. (2006). Large sample properties of matching estimators for average treatment effects. *Econometrica, 74*, 235–267.

Adelabu, D. H. (2007). Time perspective and school membership as correlates to academic achievements among African American adolescents. *Adolescence, 42*(167), 525–538.

Alm, S. (2011). The worried, the competitive and the indifferent–Approaches to the future in youth, their structural roots and outcomes in adult life. *Futures, 43*(5), 552–562.

Ansong, D., Chowa, G. A. N, &, Grinstein-Weiss, M. (2013). Future orientation as a mediator between assets and perceived household economic stability: A structural equation modeling approach. *Social Work Research, 37*(2), 147–158.

Balwanz, D. (2012). Youth skills development, informal employment and the enabling environment in Kenya: Trends and tensions. *Journal of International Cooperation in Education, 15*(2), 69–91.

Berk, R. A. (2004). *Regression analysis: A constructive critique.* Thousand Oaks, CA: Sage.

Bollen, K. A. (1989). *Structural equations with latent variables.* New York: John Wiley & Sons.

Bowen, G. L., Rose, R. A., & Bowen, N. K. (2005). *The reliability and validity of the School Success Profile.* Philadelphia, PA: Xlibris Press.

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136–162). Newbury Park, CA: Sage.

Bryan, A., Kagee, A., & Broaddus, M. R. (2006). Condom use among South African adolescents: Developing and testing theoretical models of intentions and behavior. *AIDS and Behavior, 10*(4), 387–397.

Budhwar, L., Reeves, D., & Farrell, P. (2000). Life goals as a function of social class and child rearing practices in India. *International Journal of Intercultural Relations, 24*, 227–245.

Burtless, G. (1999). An economic view of retirement. In H. J. Aaron (Ed.), *Behavioral dimensions of retirement* (pp. 7–42). Washington, D.C.: Brookings Institution Press.

Bushman, B. J., Giancola, P. R., Parrott, D. J., & Roth, R. M. (2012). Failure to consider future consequences increases the effects of alcohol on aggression. *Journal of Experimental Social Psychology, 48*(2), 591–595.

Carroll, A. (2002). At-risk and not at-risk adolescent girls in single-sex and mixed-sex school settings: An examination of their goals and reputations. *Westminster Studies in Education, 25*, 147–162.

Carstensen, L. L. (2006). The influence of a sense of time on human development. *Science, 312*, 1913–1915.

Chen, P., & Vazsonyi, A. T. (2013). Future orientation, school contexts, and problem behaviors: A multilevel study. *Journal of Youth and Adolescence, 42*, 67–81.

Chowa, G., Ansong, D., Masa, R., Despard, M., Osei-Akoto, I., … Sherraden, M. (2012). *Youth and saving in Ghana: A baseline report from the YouthSave Ghana Experiment.* St. Louis, MO: Washington University, Center for Social Development. Retrieved from http://csd.wustl.edu/Publications/Documents/Ghana_Baseline_Report_FINAL.pdf

Cohen, P., & Cohen, J. (2001). Life values and mental health in adolescence. In P. Schmuck & K. M. Sheldon (Eds.), *Life goals and well-being: Toward a positive psychology of human striving* (pp. 167–181). Gottingen: Hogrefe and Huber Publishers.

Costello, A. B., & Osborne, J. W. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research & Evaluation, 10*(7), 1–9.

Deere, C. D., & Doss, C. (2006). The gender asset gap: What do we know and why does it matter? *Feminist Economics, 12*(1–2), 1–50.

Fafchamps, M., & Quisumbing, A. (2005). Assets at marriage in rural Ethiopia. *Journal of Development Economics, 77*(1), 1–25.

Friedman, M. (1957). *A theory of consumption function.* Princeton, NJ: Princeton University Press.

Grinstein-Weiss, M., Charles, P., Guo, S., Manturuk, K., & Key, C. (2011). The effect of marital status on home ownership among low-income households. *Social Service Review, 85*(3), 475–503.

Guo, S., & Fraser, M. W. (2010). *Propensity score analysis: Statistical methods and applications.* Thousand Oaks, CA: Sage.

Hershey, D. A., & Mowen, J. C. (2000). Psychological determinants of financial preparedness for retirement. *The Gerontologist, 40*(6), 687–697.

Hevey, D., Pertl, M., Thomas, K., Maher, L., Craig, A., & Ni Chuinneagain, S. (2010). Consideration of future consequences scales: Confirmatory factory analysis. *Personality and Individual Differences, 48*, 654–657.

Hirano, K., & Imbens, G. W. (2001). Estimation of causal effects using propensity score weighting: An application to data on right heart catheterization. *Health Services and Outcomes Research, 2*, 259–278.

Hirsch, J. K., Duberstein, P. R., Conner, K. R., Heisel, M. J., Beckman, A., Franus, N., & Conwell, Y. (2006). Future orientation and suicide ideation and attempts in depressed adults ages 50 and over. *American Journal of Geriatric Psychiatry, 14*(9), 752–757.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1–55.

IBM Corporation. (2010). *IBM SPSS statistics for Windows, version 19.0.* Armonk, NY: Author.

Jacobs-Lawson, J. M., & Hershey, D. A. (2005). Influence of future time perspective, financial knowledge, and financial risk tolerance on retirement saving behaviors. *Financial Services Review, 14*(4), 331–344.

Jacobs-Lawson, J. M., Hershey, D. A., & Neukam, A. (2004). Gender differences in factors that influence time spent planning for retirement. *Journal of Women & Aging, 16*(3–4), 55–69.

Jones, J. M. (1988). Cultural differences in temporal perspectives: Instrumental and expressive behaviors in time. In J. E. McGrath (Ed.), *The social psychology of time: New perspectives* (pp. 21–38). Newbury, CA: Sage.

Kahana, E., Kahana, B., & Zhang, J. (2005). Motivational antecedents of preventive proactivity in late life: Linking future orientation and exercise. *Motivation and Emotion, 29*(4), 438–459.

Kaplan, D. (2009). *Structural equation modeling: Foundations and extension* (2nd ed.). Thousand Oaks, CA: Sage.

Kerpelman, J. L., Eryigit, S., & Stephens, C. J. (2008). African American adolescents' future education orientation: Associations with self-efficacy, ethnic identity, and perceived parental support. *Journal of Youth and Adolescence, 37*(8), 997–1008.

Krishna, A. (2011). *One illness away: Why people become poor and how they escape poverty.* New York, NY: Oxford University Press.

Kritzinger, A. (2002). Rural youth and risk society future perceptions and life chances of teenage girls on South African farms. *Youth & Society, 33*(4), 545–572.

Lanz, M., Rosnati, R., Marta, E., & Scabini, E. (2001). Adolescents' future: A comparison of young people's and their parents' views. In J.-E. Nurmi (Ed.), *Navigating through adolescence: European perspectives* (pp.169–198). New York, NY: Routledge Falmer.

LeBeau, D., Iipinge, E., & Conteh, M. (2004). *Women's property rights and inheritance rights in Namibia.* Windhoek, Namibia: Pollination Publishers.

Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist, 41*(9), 954–969.

Massey, E. K., Gebhardt, W. A., & Garnefski, N. (2008). Adolescent goal content and pursuit: A review of the literature from the past 16 years. *Developmental Review, 28*, 421–460.

McCabe, K. M., & Barnett, D. (2000). The relation between familial factors and the future orientation of urban, African American sixth graders. *Journal of Child and Family Studies, 9,* 491-508. doi:10.1023/A:1009474926880

McLoyd, V. C., Kaplan, R., Purtell, K. M., & Huston, A. C. (2011). Assessing the effects of a work-based anti-poverty program on youth's future orientation and employment experiences. *Child Development, 82*, 113–132.

Modigliani, F., & Ando, A. K. (1957). Tests of the life cycle hypothesis of saving. *Bulletin of the Oxford Institute of Statistics, 19*, 99–124.

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

Nurmi, J.-E. (1991). How do adolescents see their future? A review of the development of future orientation and planning. *Developmental Review, 11*, 1–59.

Oyserman, D., & Fryberg, S. A. (2006). The possible selves of diverse adolescents: Content and function across gender, race, and national origin. In C. Dunkel & J. Kerpelman (Eds.), *Possible selves: Theory, research, and application* (pp. 17–39). Huntington, NY: Nova.

Padawer, E. A., Jacobs-Lawson, J. M., Hershey, D. A., & Thomas, D. G. (2007). Demographic indicators as predictors of future time perspective. *Current Psychology, 26,* 102–108.

Peetsma, T. T. (2000). Future time perspective as a predictor of school investment. *Scandinavian Journal of Educational Research, 44*(2), 177–192.

Peters, R. J., Tortolero, S. R., Johnson, R. J., Addy, R. C., Markham, C. M., Escobar-Chaves, S. L., …Yacoubian, G. S., Jr. (2005). The relationship between future orientation and street substance use among Texas alternative school students. *American Journal on Addictions, 14*, 478–485. doi:10.1080/10550490500247206.

Petrocelli, J. V. (2003). Factor validation of the consideration of future consequences scale: Evidence for a short-version. *Journal of Social Psychology, 143*(4), 405–413.

Quinton, D., Pickles, A., Maughan, B., & Rutter, M. (1993). Partners, peers, and pathways: Assortative pairing and continuities in conduct disorder. *Development and Psychopathology, 5*(4), 763–783. doi:10.1017/S0954579400006271

Robbins, R. N., & Bryan. A. (2004). Relationships between future orientation, impulsive sensation seeking, and risk behavior among adjudicated adolescents. *Journal of Adolescent Research, 19*, 428–445. doi:10.1177/0743558403258860

Rosenbaum, P. (1987). Model-based direct adjustment. *Journal of the American Statistical Association, 82*, 387–394.

Scanlon, E., & Adams, D. (2009). Do assets affect well-being? Perceptions of youth in a matched savings program. *Journal of Social Service Research, 35*(1), 33–46.

Schultz, T. P. (1989). *Benefits of educating women* (Background series paper). Washington, DC: World Bank, Department of Population and Human Resources.

Seginer, R. (1988). Social milieu and future-orientation: The case of kibbutz vs. urban adolescents. *International Journal of Behavioral Development, 11*, 247–273.

Seginer, R. (2009). *Future orientation: Developmental and ecological perspectives*. New York, NY: Springer Science.

Seijts, G. H. (1998). The importance of future time perspective in theories of work motivation. *Journal of Psychology: Interdisciplinary and Applied, 132*(2), 154–168.

Sherraden, M. (1991). *Assets and the poor: A new American welfare policy*. Armonk: M. E. Sharpe, Inc.

Somers, C. L., & Gizzi, T. J. (2001). Predicting adolescents' risky behaviors: The influence of future orientation, school involvement, and school attachment. *Adolescent and Family Health, 21*, 3–11.

StataCorp LP. (2009). *Stata statistical software: Release 11*. College Station, TX: Author.

Stoddard, S. A., Zimmerman, M. A., & Bauermeister, J. A. (2011). Thinking about the future as a way to succeed in the present: A longitudinal study of future orientation and violent behaviors among African American youth. *American Journal of Community Psychology, 48*(3–4), 238–246.

Strathman, A., Gleicher, F., Boninger, D. S., & Edwards, C. S. (1994). The consideration of future consequences: Weighting immediate and distant outcomes of behavior. *Journal of Personality and Social Psychology, 66*(4), 742–752.

Wang, B., Li, X., Barnett, D., Zhao, G., Zhao, J., & Stanton, B. (2012). Risk and protective factors for depression symptoms among children affected by HIV/AIDS in rural China: A structural equation modeling analysis. *Social Science & Medicine, 74*(9), 1435–1443.

Webley, P., & Nyhus, E. K. (2006). Parents' influence on children's future orientation and saving. *Journal of Economic Psychology, 27*(1), 140–164.

Wilmoth, J., & Koso, G. (2002). Does marital history matter? Marital status and wealth outcomes among preretirement adults. *Journal of Marriage and Family, 64*, 254–268.

Yu, C.-Y. (2002). *Evaluation of model fit indices for latent variable models with categorical and continuous outcomes*. Unpublished dissertation. Retrieved from Mplus website: http://www.statmodel.com/download/Yudissertation.pdf

Zhang, J., Zhao, G., Li, X., Hong, Y., Fang, X., Barnett, D., …Zhang, L. (2009). Positive future orientation as a mediator between traumatic events and mental health among children affected by HIV/AIDS in rural China. *AIDS Care: Psychological and Socio-medical Aspects of AIDS/HIV, 21*(12), 1508–1516.