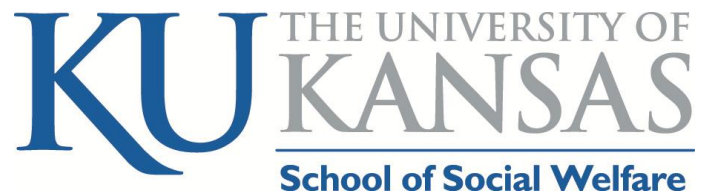




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# Parental Asset Accumulation Trajectories and Children's College Outcomes

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# Parental Asset Accumulation Trajectories and Children's College Outcomes

*The effects of parental assets on children's educational outcomes have mainly been explored from the perspective of asset holdings. However, the process of asset accumulation may also have effects. While asset-based policies are predicated on the premise of asset accumulation, little is known about the effects of different asset accumulation trajectories. This study attempts to fill this gap. The results indicate that youths born into households that had asset holdings significantly higher than zero have better college outcomes compared to youths born into households with lower levels of net worth that did not increase significantly over time. However, when lower-wealth households experience significant asset accumulation over time, youths from these households have similar educational outcomes as youths from wealthier households. Finally, the results indicate that the effects of assets are partially or fully mediated by the mother's educational expectations. Implications for asset-based policy are discussed.*

**Key words:** *assets effect; asset accumulation; college outcomes; asset-based policies; asset trajectories*

In recent years, social policies around the world have shifted from a traditional social welfare/social security model of income support to a model of social investment and wealth creation (Giddens, 2000; Sherraden, 2002). Policymakers have also demonstrated increased interest in assets as an intervention tool to increase the welfare of children and families. A number of asset-based policies aimed at enhancing the developmental outcomes of children, especially those from lower-income families, have been implemented or proposed (Loke & Sherraden, 2009). These policies are generally targeted at increasing the human capital of children. However, the development and implementation of asset-based interventions and policies have outpaced theoretical and empirical developments in the asset approach.

Much of the earlier empirical work on asset-based interventions has focused on the technical aspects of implementation rather than on theoretical development and testing (Midgley, 2003). While there is a growing body of research that supports the association between assets and children's educational outcomes (e.g. Boehm & Schlottmann, 1999; Conley, 2001; Kim & Sherraden, 2011; Nam & Huang, 2009; Zhan & Sherraden, 2011), a large proportion of this research is based on cross-sectional studies rather than longitudinal designs. Moreover, the majority of these studies examine the association of assets held at a single time point on children's outcomes at a later time. Information about the mediating pathways of the effects of assets is also scarce. Consequently, a number of theoretical questions have not yet been adequately addressed, leaving asset-building policies with thin theoretical and empirical support. Further development of the empirical and theoretical knowledge base is critical in informing asset-based policies aimed at helping families accumulate assets for investment and developmental purposes.

It is suggested that assets could be experienced in a number of dimensions, such as possession, the process of accumulation, and consumption (Paxton, 2001). While studies have suggested that higher asset holdings are associated with better child outcomes, there is a dearth of research on whether an increase in family financial assets, not just asset holdings, is positively associated with better children's outcomes. In addition, little information is available on whether the different asset

accumulation trajectories are associated with different educational outcomes for children. For example, would an increasing growth trajectory in family assets be associated with better outcomes compared to those with relatively flat growth trajectories among children from less economically advantaged households? And how would these children compare to those with higher initial asset holdings, irrespective of subsequent asset growth trajectories? These examples reveal a gap in research on the effects of assets on children's outcomes from a dynamic perspective; that is, whether increases in assets over time lead to improvement in child outcomes, especially for those from families with lower initial asset levels. This study attempts to address this gap by examining if asset trajectories reflecting increases over time are associated with better child educational outcomes as has been found for cross-sectional measures of asset possession.

While the theory of asset effects suggests that assets lead to positive social, economic, and psychological welfare outcomes, it does not specify the mechanisms by which the effects of assets are played out. Previous research has not generally focused on possible mechanisms but on demonstrating the independent effects of assets beyond income. Consequently, little is known about the possible pathways by which an increase in assets leads to improvement in child outcomes. Shobe and Page-Adams (2001) have suggested that the asset effect is mediated by one's future orientation. Earlier research also has suggested that the effects of parental wealth may be mediated by higher parental expectations of their children's educational outcomes (Zhan, 2006; Zhan & Sherraden, 2003), or by children having higher aspirations for their own education (Destin & Oyserman, 2009; Elliott, 2009). It is not known if these mediated pathways are the same for the different asset trajectories. This study extends this line of inquiry with a longitudinal design to explore potential mediating pathways between assets and children's educational outcomes across the different asset trajectories.

In order to better inform practice and policy, more research is needed to empirically test, support, and refine the theoretical propositions of the theory of welfare based on assets. This is especially so with regard to if and how the process of accumulating assets improves child outcomes. This, after all, forms the basis of many of the asset-building policies that have been proposed or implemented. In addition, there is a need to identify the possible mechanisms through which the asset effect plays out. These issues have important policy implications and impinge on the ability to formulate asset-building policies that maximize asset effects while optimizing the use of scarce resources.

### **Asset Accumulation Trajectory Classes**

Assets, and asset accumulation trajectories in particular, are reasonable indicators of a household's socioeconomic status as they reflect the accumulation of resources over time in addition to current financial holdings. The recent availability of longitudinal wealth data in surveys such as the NLSY79 and PSID has spurred interest among researchers on the predictors, covariates, and effects of wealth accumulation over time. However, this line of inquiry is still in its nascent stages. Much of existing wealth research has focused on either the very rich or the elderly, and most has utilized cross-sectional data or pooled longitudinal data. Relatively little is known about the wealth accumulation process for young adults and beginning families (Zagorsky, 1999), especially regarding asset growth trajectories.

Using data from the National Longitudinal Survey of Youth (NLSY79) and the associated NLSY79 Child and Young Adult (NLSY79-CYA) supplement, Loke (2009) estimated the asset accumulation

trajectories of 991 households with 1036 children born in the years 1986 and 1987, based on a household's total net worth measured from 1987 to 2000. Socio-economic background characteristics of the household and of the mother were added as either time-varying or time-invariant covariates in the growth mixture model (GMM) analyses. The time-varying covariates in the model, measured from 1987 to 2000, are total net family income and the marital and employment status of the mother in the household, while the race and age of the mother in 1986, the human capital of parents, and the number of children in the household in 2000 are included as time-invariant covariates in the model (see Figure 1).

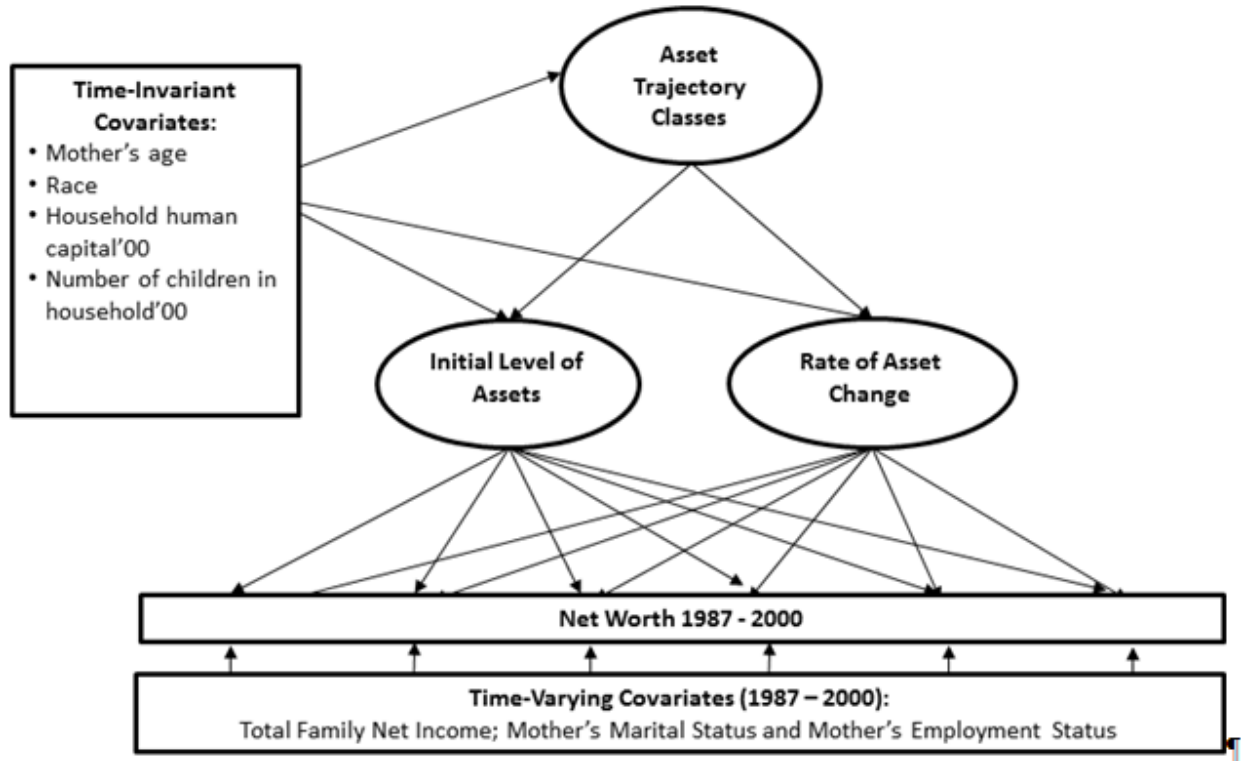


Figure 1. Growth Mixture Model to estimate asset accumulation trajectory classes

The results of the GMM analyses indicate that a four-class solution fits the data best. Two general growth trends are observed from the four classes that have been identified through the growth mixture model. The first is a relatively stable trend with non-significant latent growth factors, and the second is a trend reflecting significant growth trends in the rates of asset accumulation. There are also two clusters of initial asset values, one with initial asset levels that are not significantly different from zero, and the second with initial levels that are significantly higher than zero. With different initial levels of assets and rates of change, the four asset trajectory classes can be described as Low and Stable (LS), with a lower initial asset levels that are not significantly different from zero and with a non-significant stable rate of growth; Low and Accumulating (LA), with initial asset levels that are also not significantly different from zero but with a significant rate of accumulation; High and Stable (HS), with the initial levels of assets that are significantly higher than zero but with a relatively non-significant stable growth trend; and High and Accumulating (HA), with initial levels of assets significantly higher than zero and with a significant rate of asset growth over time. In terms of

class memberships, 77.8% of children belong to the LS class, 4.3% to the LA class, 11.9% to the HS class, and 6.1% to the HA class. The observed net worth values for the four classes is shown in Figure 2.

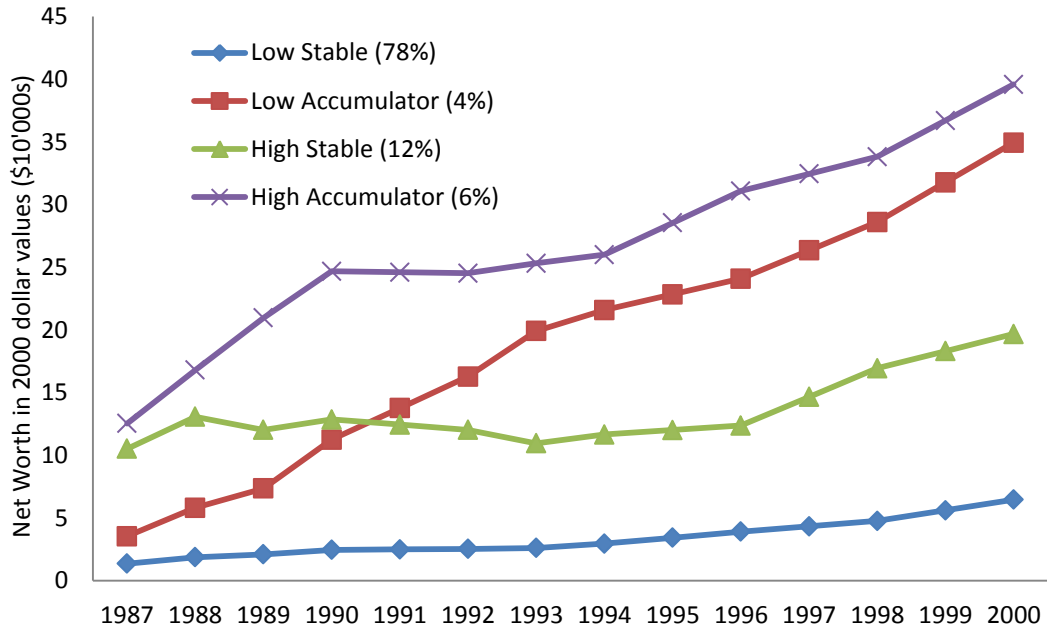


Figure 2. Asset accumulation trajectory classes from the growth mixture model

## Methods

### Data and sample

Data from the National Longitudinal Survey of Youth (NLSY79) and the associated NLSY79 Child and Young Adult (NLSY79-CYA) supplement was used for this study. In addition, the study uses the same sample that Loke (2009) used to estimate the asset accumulation trajectory classes mentioned earlier. To adjust for the non-independence of observations for children belonging to the same household, the children were clustered by their mother's unique identifier. Custom weights for children generated online at the National Longitudinal Surveys' website ([http://www.nlsinfo.org/web-investigator/custom\\_weights.php](http://www.nlsinfo.org/web-investigator/custom_weights.php)) were also used.

### Measures

#### *Assets*

As this study uses the same datasets and tracks the same households and youths as the study by Loke (2009), the asset accumulation trajectory class membership estimated in that study will be used in the current study. The four asset accumulation trajectory classes have been described previously, and are the low and stable (LS) class; the low and accumulating (LA) class; the high and stable (HS) class, and the high and accumulating (HA) class.

#### *College outcomes*

College attendance and college graduation are the two outcomes used in this study. College attendance is a dichotomous variable indicating whether the youth had completed at least one year of college by 2010, while college graduation measures whether the youth had completed at least a bachelor's degree by 2010.

#### *Mediating variables*

Mothers' and youth's own educational expectations are included in the study as possible mediating variables. Mothers' educational expectations for their children are estimated as a latent variable predicted from their responses on how far they think their children will go in school, measured in 1996 and 1998. Youth's educational expectations were measured in 2000, when youths were 13 or 14 years old. This ordinal variable ranged from 1, indicating expectations of less than high school attainment, to 5 indicating that the youth expected to complete more than four years of college.

#### *Control variables*

Several socio-demographic factors such as the gender, age (23 vs 24 years old) and race of the youths were included in the models as control variables. Race was dummy coded, with non-Hispanic/non-Black used as the reference group in the analyses.

## Results

### Sample profile

The final sample consisted of 761 youths who were born in either 1986 or 1987, and who had valid data on college attendance and graduation in the year 2010. Of these youths, 7.5% were Hispanic, 15.1% percent were Black, and 77.4% were identified as non-Hispanic / non-Black. The mean age of the sample was 23.5 years, and 48.1% were male.

Bivariate analyses of the college outcomes by asset accumulation trajectory class indicate that the proportion of youths within each class attending college increased as the net worth of the household increase. Of youths from LS households, slightly over half attended college by 2010. This increased to 85.4% for HA youths. As for graduating from a 4-year college, a higher proportion of youths belonging to trajectory classes that experienced significant growth in assets over time (i.e., LA and HA) graduated from college compared to youths from trajectory classes that did not experience significant asset growth (i.e., LS and HS) (see Table 1).

Table 1. College outcomes by asset accumulation trajectory classes

	College attendance (%)	4-yr college graduation (%)
Low and stable asset accumulation trajectory class	53.1	14.4
Low and accumulating asset accumulation trajectory class	81.7	50.0
High and stable asset accumulation trajectory class	83.4	35.5
High and accumulating asset accumulation trajectory class	85.4	48.1

### College Attendance

The results of the path analysis, with youths from the LS asset accumulation trajectory class as the reference, indicate that youths' college attendance was significantly and directly associated with membership in the different asset accumulation trajectory classes, mother's educational expectations for their children, and youth's gender. A positive association between youth's expectations for their own educational outcomes and college attendance was also present, with the relationship approaching statistical significance at  $p = .08$ . In addition, no racial effects were seen when asset accumulation trajectories and other factors in the models were controlled for (see Figure 3).

For youths from households with net assets that were significantly higher than zero around the time of their birth (HA, HS), compared to youths from the LS asset accumulation trajectory class, the relationship between asset trajectories and college attendance was partially mediated by their mother's educational expectations. However for youths from the LA asset accumulation trajectory class, the relationship between assets and college attendance may have been fully mediated by their mother's educational expectations for them. The educational expectations held by youth when they were younger did not mediate the relationship between asset accumulation and college attendance.

Overall, controlling for all other factors in the model, youths from the HS asset accumulation trajectory class had 3.3 times the odds of attending college compared to LS youths, while youths



from the HA asset trajectory class had 3.9 times the odds compared to LS youths. Mothers of youths from HS and HA households also had significantly higher expectations for their children's educational outcomes compared to LS youths. Mothers of youths from the LA households also had higher educational expectations for their children compared to mothers from LS households, and this relationship approached significance at  $p = .07$ . No statistically significant associations were observed between asset accumulation and youth's own educational expectations for themselves.

Interestingly, when the path model was rerun with youths from the LA households as the reference group, the results indicated that youths from HS ( $b = .611$ , n.s.) and HA ( $b = .785$ , n.s.) households were statistically similar to youths from the LA households with respect to the direct effects of assets on college attendance. In addition, educational expectations of mothers from HS ( $b = -.018$ , n.s.) and HA ( $b = .014$ , n.s.) households were statistically similar to those from LA households as well. Further analysis using youths from the HA households as the reference group indicated that membership in the HS asset trajectory class had the same effect as being in the HA class on mother's educational expectations ( $b = -.04$ , n.s.) and college attendance ( $b = -.17$ , n.s.).

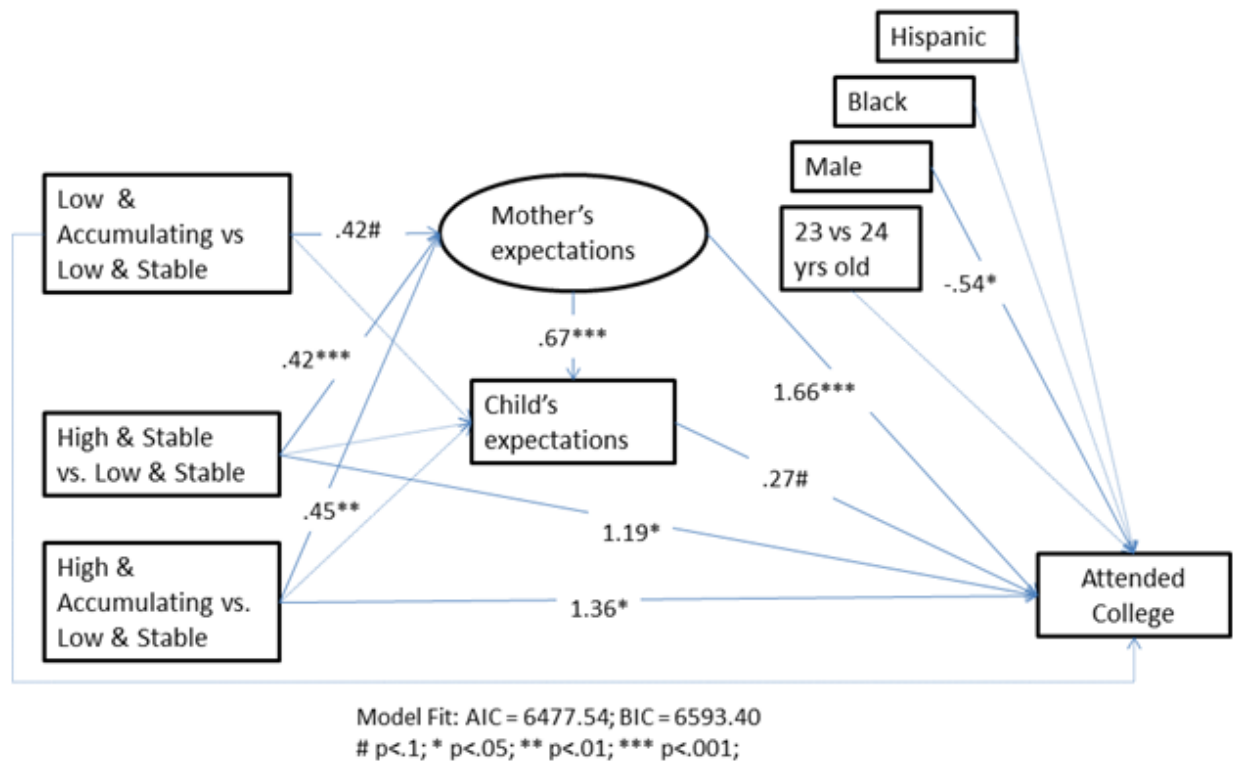


Figure 3. Path analysis for college attendance

### College Graduation

Similar to the results for college attendance, the path analysis model for college graduation, with the LS asset accumulation trajectory class as the reference group, indicated that there were significant

direct effects of asset accumulation and mother's educational expectations, gender, and being Black compared to being non-Hispanic/non-Black, on college graduation. Again, youth's educational expectations for themselves as children was positively related to college graduation, but only approached statistical significance at  $p = .09$  (see Figure 4).

Comparing HA youths and LS youths showed that the effects of asset accumulation were both direct and partially mediated by mother's educational expectations. Youths from the HA trajectory class had 2.9 times the odds of graduating from college compared to youths from the LS class. In addition, they tended to have mothers with higher expectations for their educational outcomes compared to the LS youths.

As for youths from the high and stable (HS) asset trajectory class, the effects of asset accumulation on college graduation were fully mediated by mother's educational expectations, with no direct effects seen. Youths from this class also had mothers with higher educational expectations for them compared to youths from LS households. For youths from LA households, the effects of asset accumulation on college graduation also appear to be fully mediated by mother's educational expectations, with the relationship approaching statistical significance at  $p = .07$ .

Consistent with prior research, the results indicated a gender effect, with males having .57 times the odds ( $p < 0.5$ ) of graduating from college compared to females, controlling for the other factors in the model. The data further suggested a racial effect, with Black youths having .35 times the odds ( $p < .01$ ) compared to non-Black/non-Hispanic youths of graduating from college by the time they are 23 or 24 years old. Hispanic youths, however, had similar odds of graduating from college compared to non-Black/non-Hispanic youths.

When the path analysis model was rerun using the LA asset accumulation trajectory class as the reference group, the results indicated that youths from the LA trajectory class had similar outcomes as their counterparts from the HS and HA asset accumulation trajectory classes. In terms of college graduation, no statistical differences were observed between HA and LA youths ( $b = .26$ , n.s.) and between HS and LA youths ( $b = -.31$ , n.s.). Mothers of youths from the HA class ( $b = .012$ , n.s.) and the HS class ( $b = -.013$ , n.s.) also had similar educational expectations for their children compared to mothers of youth from the LA class. Additional analysis using youths from the HA households as the reference group indicated that HS youths were statistically similar to their HA counterparts in terms of the effects on mother's educational expectations ( $b = -.02$ , n.s.) and college graduation ( $b = -.57$ , n.s.).

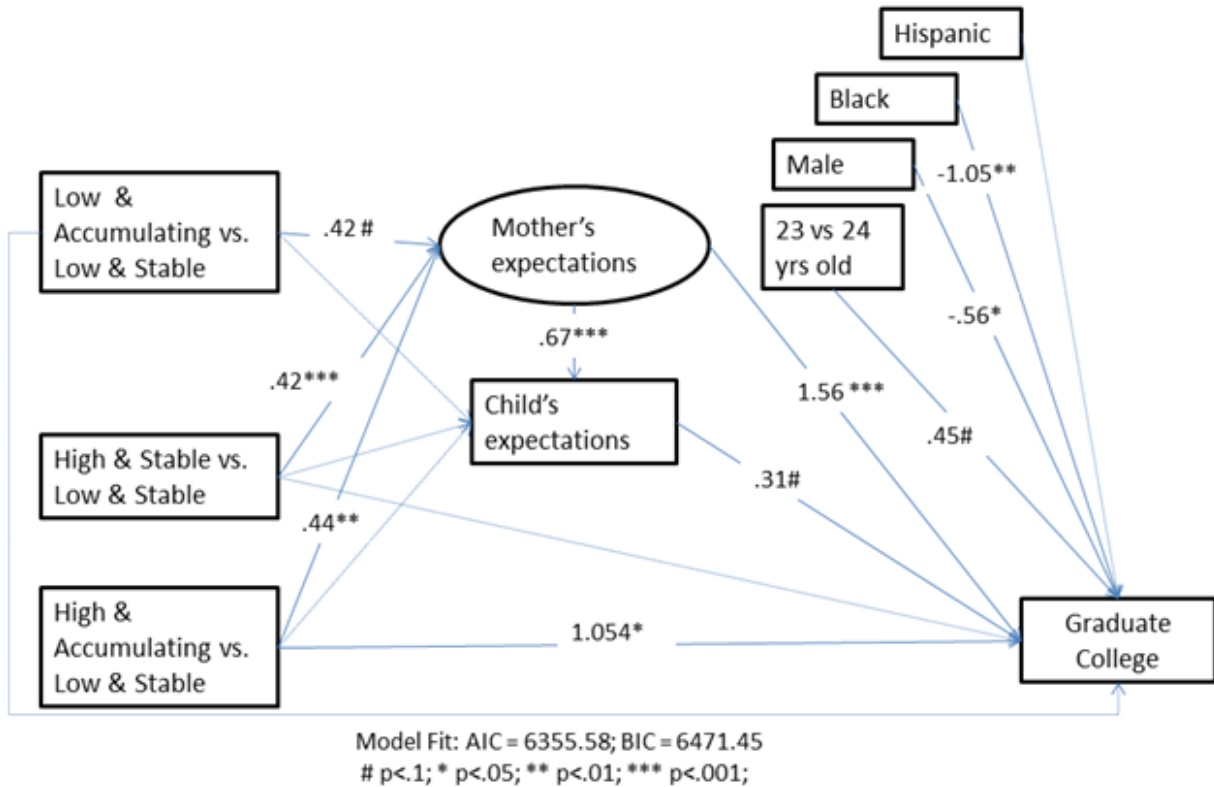


Figure 4. Path analysis for college graduation

### Discussion

Will Paxton (2001) suggests that asset effects may be experienced in the dimensions of accumulation, possession, and consumption, and that these experiences need to be unpacked to fully explicate the effects of assets. This study lends support to Paxton’s postulation that the different asset experiences may have different effects. While an association between assets and college outcomes is found, the relationship may be different depending on the experience of asset accumulation or possession.

Prior research has found a positive association between household assets and college attendance (Conley, 2001; Destin, 2009; Kim & Sherraden, 2011; Williams Shanks & Destin, 2009), and between parental assets and college graduation (Conley, 1999, 2001; Kim & Sherraden, 2011; Nam & Huang, 2009; Zhan & Sherraden, 2009, 2011). Consistent with prior research, this study similarly finds that youths from households that either experienced a significant accumulation of assets over time or had assets that were significantly higher than zero around the time of their birth have significantly higher odds of attending or graduating from college, compared to youths from households that did not have assets that were significantly higher than zero around the time of their birth and did not experience significant asset accumulation over time.

However, in the case of college attendance, the direct effects of assets are noted only for youths from households that had assets that were significantly higher than zero around the time of their birth (HA and HS classes). Similarly, for college graduation, the direct effects of assets are noted only for youths from HA class households that had significant asset holdings to begin with, and also experienced significant asset accumulation over time. Youths from households with higher asset holdings at around birth, regardless of subsequent experience of asset accumulation or lack thereof, also had similar outcomes with each other. These findings suggest the direct effects of assets on college outcomes may be explained more by the experience of asset possession rather than of accumulation, with the effects seen only when comparing youths from higher net worth families to those from households with lower net worth. In addition, the findings suggest that there may be a threshold level for assets, below which the direct and independent effects are not evidenced. This is consistent with the findings of Zhan and Sherraden (2003) and Bynner (2001) who postulate that some threshold would need to be exceeded before the effects of assets could be seen.

Results of this study also suggest that the experience of asset accumulation has distinct effects on college outcomes, in addition to the experience of asset possession. The data indicate that having higher asset holdings during childhood by itself is insufficient for the direct effects of assets to be evidenced with regard to college graduation. Rather, it is in the experience of both having higher asset holdings, and experiencing a significant accumulation of assets over time, that the direct effects of assets are seen. In addition, youths from households that initially had asset holdings that were not significantly higher than zero around the time of their birth, but which experienced significant asset accumulation over the course of their childhoods, had statistically similar outcomes compared to youths from higher net worth households. Consistent with Loke and Sacco (2011), the findings suggest that the experience of asset accumulation has effects distinct from asset possession. In addition, the experience of asset accumulation places youths from low asset households on the same trajectories as those from high asset households. Studies examining assets, therefore, need to consider the various dimensions of the asset experience, in particular the experience of accumulation, in their conceptualization.

The effects of assets are also mediated, either partially or fully, by mother's expectations for their children's educational outcomes. This is also consistent with prior research (e.g. Grinstein-Weiss, Yeo, Irish, & Zhan, 2009; Zhan & Sherraden, 2003). Of interest is the finding that the effects of assets are fully mediated by mother's expectations for youths from the LA asset accumulation trajectory class, when compared to youths from the LS class, in terms of both college attendance and college graduation. If the effects of assets for youths from lower wealth families operate mainly through increasing mothers' expectations for their educational outcomes, it is worth considering whether there are other more cost-effective ways of similarly raising parental expectations without requiring them to experience a significant growth in asset holdings.

It is also interesting to note that this study did not find significant associations between parental assets and youths' own educational expectations as children. This is contrary to other studies that find an association between assets and children's own expectations (e.g. Kim & Sherraden, 2011). It is plausible that the association between assets and children's educational expectations is fully explained by the mother's expectations, which significantly predict children's own educational expectations. Kim and Sherraden (2011) do not include mother's educational expectations in their model, and hence do not account for the influence of mother's expectations on the association between assets and children's expectations. It is also plausible that no significant associations are

found between assets and children's expectations because the youths may not have been directly engaged in the asset experience of their parents. In our study, parental assets were tracked around the time of the child's birth until the child was around age 13. It is not unreasonable to assume that most of these youths would not have actively participated in their family's financial affairs, at least not until their teen years. As such, these youths may have limited asset experiences if they have any asset experiences at all. There is a growing body of research showing the positive effects of assets on children's educational expectations when children are actively engaged in the asset experience (e.g. Elliott, 2009; Elliott, Sherraden, Johnson, Johnson, & Peterson, 2007). Therefore, asset-building policies that seek to improve outcomes for children, such as Children's Savings Accounts, need to consider how to actively engage children in the asset experience.

This study has several limitations. First, the findings are based on survey data rather than on experimental data. As such, a number of important variables are not included in the models, and alternative explanations cannot be ruled out. In addition, the models were based on factors that were measured during the youths' childhood, and more proximal factors that may have impacted college outcomes were not included in the analyses. Finally, while the sample size of 761 youths may appear reasonable, the eventual sizes of the LA and HA classes ended up being quite small as they represented only between 4% and 6% of the sample. As such, the conclusions of this study should be approached with caution.

### Conclusion

The findings from this study add to the growing body of evidence supporting the positive effects of parental assets on children's college outcomes. More importantly, this study examines the effects of assets from a dynamic perspective, and demonstrates the differential effects of membership in different asset accumulation trajectories. In so doing, it unpacks the effects of the asset experiences of both asset possession and asset accumulation.

Youths from households that had asset holdings significantly higher than zero around the time of their birth have better outcomes compared to youths from households that did not start out with high asset holdings and did not experience significant asset accumulation over time. More importantly, when households experience significant asset accumulation, even when they start off with asset holdings that are not significantly higher than zero, the youths from these households can have similar outcomes as other youths from high net worth households. This suggests that asset-building policies, such as Children's Savings Accounts, can be promising interventions to improve children's outcomes.

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