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Household assets, academic expectations, and academic performance among Ghanaian junior high school students: Investigating mediation

David Ansong [a,*], Gina A. Chowa [a], Michael Sherraden [b]

[a] University of North Carolina at Chapel Hill, 325 Pittsboro Street, CB #3550, Chapel Hill, NC, 27599 USA
[b] Washington University in St. Louis, One Brookings Drive, Campus Box 1196, St. Louis, MO 63130 USA

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ABSTRACT

The potential relevance of households' asset ownership in promoting academic success of children has spurred empirical investigation into the relationship between assets and academic performance. However, current research has mostly ignored the diverse pathways by which asset ownership may be connected to academic performance. This study focuses on one of these largely ignored pathways by examining how parents' and youth's expectations may intervene in the relationship between household asset ownership and the academic performance of junior high school students in Ghana. Using the asset-effect framework as a theoretical guide, the study uses observational data and multilevel structural equation modeling to address the aims of the study. Results show that at the 95% confidence level, there is no direct relationship between household asset ownership and academic performance but compelling evidence that assets are associated indirectly with academic performance through youth's academic expectations. A group invariance test also finds no statistically significant gender difference in the mediational role of youth's expectations. Policy initiatives ought to reflect the many ways that asset ownership affects students' academic success. Teachers should be trained to not only teach course content but also help improve students' academic expectations and psychological well-being.

1. Introduction

For many in Ghana, progressing beyond junior high school (JHS) is critical to future socioeconomic well-being. Yet, successful transition from JHS to senior high school (SHS) requires that students obtain sufficient subject grades. However, many JHS graduates do not gain admission into SHS because of poor academic performance (Ajayi, 2012; Ansong, 2013). In 2010, nearly 51% who wrote the Basic Education Certificate Examination (BECE), the national standardized exit exams for JHS pupils, failed to qualify for admission into SHSs and technical institutes (Essel, 2011). A growing body of empirical evidence suggests that household asset ownership is among the key multilevel determinants of academic performance (Chowa, Masa, Wretman, & Ansong, 2013), but there are significant research gaps.

Much of what we know about the connection between household asset ownership and educational outcomes is derived from studies undertaken in developed countries and other African countries. Findings suggest that assets—owned mostly by parents—are positively associated with children's grades (Elliott & Beverly, 2010; Kim, 2010; Loke & Sacco, 2011). One primary association is that assets allow people to afford education services such as after-school classes and school supplies, but we do not fully understand the empirical connection in Ghana.

Researchers have competing explanations for the mediational role of psychological factors between household asset ownership and educational outcomes. One hypothesis is that access to assets can lead to positive educational expectations, which may in turn motivate students to focus on their academic work to perform well in school. However, the hypothesized indirect mechanisms by which asset ownership is associated with academic performance in Ghana are less clear, primarily because of limited empirical support. In the Ghanaian context and across most of sub-Saharan Africa, it is not clear whether parents' and youth's educational expectations fully or partially mediate the relationships between household asset ownership and academic performance, and whether these possible direct and indirect relationships significantly differ for girls and boys (Elliott, Choi, Destin, & Kim, 2011). We also do not know the direction or magnitude of the relationships, especially when we take into account contextual factors at multiple levels including the household and school levels. Empirical support for such mediational mechanisms will clarify the processes that underlie the nature of the relationship between household asset ownership and youth's academic performance.

To address the above research gaps and provide clarity on the possible mediational role of parents' and youth's expectations in the relationship between household asset ownership and academic performance, this paper uses data from a random sample of Ghanaian JHS students and their parents. First, it uses a multilevel framework to examine whether the hypothesized unmediated (i.e., direct) and mediated

* Corresponding author. Tel.: +1 919 843 7510.
E-mail address: ansong@email.unc.edu (D. Ansong).

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(i.e., indirect) relationships exist in the Ghanaian context, taking into account personal, household, and school characteristics. Next, the paper tests whether the significant relationships vary by gender. Findings could inform practitioners and policymakers on how economic empowerment and asset ownership among low-income families may create educational advantage for Ghanaian youth and their households. Particularly, results can guide efforts to reverse the lagging academic performance at the JHS level, one of the major barriers to educational progression in Ghana.

2. Theoretical underpinning

The asset-effect framework undergirds the connection between household asset ownership and academic performance and asserts that asset ownership can have short-term, long-term, direct, and indirect impacts on educational outcomes. This framework, originally championed by Michael Sherraden in the early 1990s, hypothesizes that—in addition to affecting consumption—asset ownership has important effects on several domains of individuals' and families' economic, psychological, social, and educational well-being (Sherraden, 1991). Subsequent development of the original conceptualization of direct asset effects suggests that asset ownership also has indirect effects (Ansong, Chowa, & Grinstein-Weiss, 2013). The logic of the indirect asset-effect framework is that owning assets may change people's thinking and behavior, which may affect how students perform in school, for example. This is known as the expectation pathway. Most people, including students and their parents, have hopes, goals, and plans for the future. Those with positive expectations anticipate better opportunities in the future, which forms the basis for goal setting, planning, and behaving in ways that optimize goal attainment (Christy-McMullin, Shobe, & Wills, 2009; Seginer, 2009).

Motivation for positive expectations often is stimulated by individuals' interactions with their environments (Seginer, 2009). People have sophisticated cognitive abilities that allow them to respond to stimuli. They can reconstruct past and current events and imagine likely future outcomes of their actions (Taylor & Pham, 1996), which is reflected in their expectations for and worries about the future. Depending on how young people's experiences and social contexts influence their thoughts, they may develop fears or hopes that affect how they behave and plan for the future. For instance, the fear of not transitioning from JHS to SHS because of financial costs might lead a young person to give up on schooling altogether. Conversely, a young person with financial security through personal or family assets may be more optimistic about the future and able to think about how to take advantage of available resources.

The direction of the expectation pathway could be negative or positive. When parents invest substantial economic resources into their children's education, they expect their children to perform well. Children who are aware of their parents' educational expectations may be motivated to work harder in school to fulfill their wishes. On the other hand, those who feel overly pressured to perform may be inclined to rebel against what they perceive as unrealistic expectations and incessant pressure. Such rebellion could negatively affect their academic performance (Akhtar & Aziz, 2011).

Stimuli that influence thoughts and behaviors vary in intensity, frequency, duration, number of sources, and type (Hutchison, 2008; Sundstrom, Bell, Busby, & Asmus, 1996), which means that different levels, sources, and types of assets and expectations could have varying effects on behavior. Hutchison (2008) explains that an overload or deprivation of environmental stimuli (household economic resources and parents' expectations, in this case) can have negative influences on human behavior.

The asset-effect theoretical perspective and expectation pathway offer logical explanations for how asset ownership can influence academic outcomes, but the key question in this study is whether empirical evidence in the Ghanaian context support these theories. We offer and test two potential pathways—direct and indirect (via educational expectations)—to explain the link between asset ownership and academic performance. Fig. 1 shows a direct pathway (*Path c*) from household asset ownership to academic performance, which captures the idea that asset accumulation leads to educational advantage by increasing individuals' control over educational resources (Bouman, 1995; Elliott, 2011). For instance, students can use household savings to pay for tuition, extra classes or lessons, examination fees, and transportation to school, all of which have direct influence on students' school performance (Kimuyu, 1999). Elliott, Choi, Destin, and Kim (2011), Elliott, Chowa, and Loke (2011) observe that the indirect "linking mechanisms" that connect household asset ownership to academic performance are missing from most studies. Based on prior theorization and empirical studies, this study suggests the existence of an indirect pathway from assets to academic performance through parents' and youth's expectations (*Path a* and *Path b*). This study suggests that household asset ownership will result in higher parental and youth expectations, which in turn will motivate youth to take their education seriously and behave in ways that improve their performance in school.

It is important to note that these hypothesized relationships exist in a multilevel framework because individual students grow up and interact within dual contexts: their households and schools. This means that, besides the influence of individual preferences for and dispositions toward their academic performance, other factors at the household and school levels may exert influence on their expectations and resulting academic performance. Therefore, the direct and indirect associations between household asset ownership and academic performance should be conceptualized from a multilevel perspective. The advantage of using a multilevel approach in this study is that the hypothesized relationships can be tested while taking into account contextual influences that may be overlooked by other statistical approaches (Chowa, Ansong, & Despard, 2014).

2.1. Data and study design

This study is a cross-sectional analysis of baseline data from the ongoing YouthSave Ghana Experiment led by the Center for Social Development at Washington University in St. Louis. The YouthSave Ghana Experiment a large social experiment testing the long-term impacts of youth savings accounts on educational, psychosocial, health, and financial capability outcomes and household financial well-being. The original YouthSave sample of 6252 sixth to eighth graders were randomly selected from a random sample of 100 basic schools across all but two regions—Upper East and Upper West—of Ghana. The two regions were excluded from the study because the financial institution partner for the project did not operate in those regions. For the current study, the data used for analysis were limited to a subsample of 4576 students whose parents were successfully interviewed at baseline. It was necessary to use this subsample because variables on household and parent characteristics (e.g., parents' expectations and household asset ownership) which are central to the current study, were obtained through parent interviews. Data on personal and household characteristics were collected through interviewer administered surveys. The in-country research partner, the Institute for Statistical, Social, and Economic Research (ISSER) at the University of Ghana, recruited and trained university graduates to conduct the baseline field interviews in 2011. ISSER researchers supervised all interviews. Additionally, data on students' math and English Language subject scores were obtained directly from head teachers of participating schools. All data collection instruments were pilot tested and revised multiple times before the field interviews.

2.2. Measures

2.2.1. Endogenous variables

The two endogenous variables are youth's overall math and English scores during an academic term. Students' performances in math and