My research agenda explores the impact of both K-12 and higher education policies on student outcomes and their spillover effects on parental labor supply and household income. Specifically, I focus on the effects of admission policies in primary schools and universities. I study a wide range of student outcomes, including academic achievement, socio-emotional skills, mental health, decision-making, labor market outcomes, and marriage market outcomes. I primarily employ reduced-form empirical methods to answer these questions. In particular, I utilize policy changes as quasi-experimental variations to estimate the causal effects of these programs, leveraging unique institutional settings and data in both developing and developed countries.

K-12

My dissertation centers on a critical component of primary school admission policies, the eligible age for enrollment in primary school, and examines a unique school-starting age (SSA) reform in China during the 1980s and 1990s. This reform, implemented in the 1980s and 1990s, lowered the age requirement for primary school entry from age seven to age six while maintaining the birth date cutoff for enrolling in the current academic year and required duration of schooling unchanged. To the best of my knowledge, I am the first to evaluation the overall impact of this SSA reform.

The first chapter of my dissertation, **"The Shifting Timelines: School Starting and Leaving Ages in China in the 1980s,"** establishes the presence of the first stage effects of the SSA reform by documenting the change in school-starting age distribution in response to the reform. According to the Office of Information Disclosure at the National Bureau of Statistics of China, there is no official data available on school starting age or age requirements for school entry. To address this, I thoroughly review decades of education regulations to identify the treatment margin. Utilizing data from the 1982 and 1990 censuses, China Family Panel Studies 2010, and China Health and Nutrition Surveys from 1989 and 1993 for estimation, I construct three distinct proxies, which are alternative methods for estimating school starting age distribution. I document the similarities and differences between each proxy and discuss the limitations and contributions of each approach. My findings indicate that the SSA reform substantially increased the fraction of children who started school at age six and reduced the fraction of those who started school after age seven. This change in school starting age is unlikely driven by trends in early enrollments.

In the second chapter of my dissertation, **"Early School Access and Educational Attainment: Evidence from China's School Starting Age Reform (Job Market Paper),"** I estimate the causal effects of the reform on educational attainment by exploiting the staggered adoption of this unique education reform. Using Chinese 2005 census microdata and implementing the heterogeneity-robust difference-in-differences by Callaway and Sant'Anna (2021), I find that the SSA reform increased high school enrollment by 5.5 percentage points and high school graduation by 5.3 percentage points. Heterogeneity analyses reveal more pronounced effects for students with better pre-primary education resources but little differences by gender or birth month. Additional analysis suggests a potential mechanism is through dynamic complementarity of early skills increased long-term human capital accumulation.

This paper presents the first causal estimates of the school starting age effects on educational attainment. Prior literature estimates the effects of school starting age using variations in birth dates relative to school entry cutoff dates. This estimation strategy cannot distinguish the effects of starting school at a younger age and the peer effects of being relatively younger than classmates.

Through estimating the program effect of the unique education reform in China, I isolate the school starting age effects and show that the early start of formal schooling increased human capital accumulation, holding peer effects and the duration of compulsory schooling constant. The finding of this paper challenges the conventional wisdom that all children benefit from a later school start, manifested in parents' decisions to hold their children back from on-time enrollment.

Moreover, additional analysis of this paper suggests the SSA effects may persist into later adulthood. Future collaborative work with Ze Song (Associate Professor, Nankai University, School of Economics) will delve into **the effects of SSA reform on later adulthood outcomes**, including college enrollment, employment, earnings, occupation and industry choice, marriage, and fertility, using the restricted-use Chinese 2010 and 2015 census microdata.

Another future project will examine **the effects of SSA reform on parental labor supply and household income**. Given the limited access to preschools and formal childcare centers in China in the 1980s, a younger school starting age might serve the purpose of childcare: schools provided children supervision of teachers and purposefully designed daily routines for children. Reducing childcare duty for women has been viewed as an avenue for promoting female labor supply. Existing studies center around urban working moms in developed countries and suggest the effect of childcare on parental labor supply is context-dependent. This forthcoming project fills in the gap by looking at historical China with over 70 percent rural population. Leveraging the detailed non-wage income and wealth data collected by the China Household Income Project rural survey, including the value of the farm, the total amount of cultivated land, quantity and value of various crops, and the value of agricultural machinery, I am able to overcome the challenges of measuring parental labor supply in rural settings and provide novel evidence of parental labor response to childcare in developing countries.

In the forthcoming project with Estelle (Hyewon) Shin (Ph.D. Candidate, UC Davis, Department of Economics), we look at the other element of the primary school admission policies, the cutoff date. In particular, this project seeks to examine the impact of an education reform in South Korea that shifted the cutoff date from March 1st to January 1st. We focus on understudied yet extremely important student outcomes that go beyond test scores and attainment. These encompass aspects such as self-esteem, social skills, learning habits, aggression, and depression. This study represents the first exploration of **how a change in cutoff date affects social-emotional skills and mental health**. This study represents the first exploration of how a change in cutoff date affects social-emotional skills and mental health. We plan to employ a difference-in-difference design, utilizing data from the Korea Children and Youth Panel Survey 2010 and 2018. Our analysis will involve a comparison between students who entered school before and after the implementation of the policy reform. Our treatment group is students born in January and February, as they are directly affected compared to students born in other months. This empirical strategy identifies the differential treatment effect between the directly affected children and the indirectly affected children. Additionally, the data set includes information regarding students' physical development, such as height, weight, and the onset of puberty, which will enhance our understanding of how relative age at school entry impacts the development of children's social-emotional skills.

Higher Education

Another focus of my research agenda centers around university admissions policies. In particular, in the series of forthcoming joint projects with Isaac Ahimbisibwe (Ph.D. Candidate, UC Davis, Agricultural and Resource Economics), we plan to explore rich student-level proprietary data in Uganda, including linked college entrance exam test scores, college application school and major choices, admission results, and college test scores, to answer various questions addressing inequality in university admissions.

The first set of projects focuses on decisions made during the application process. In our ongoing project, we aim to identify errors and suboptimal strategies in applications, examining their correlation with students' socioeconomic status. In Uganda, students are required to submit an ordered list of six majors to the university during the application. The admission decision is determined by the ranking of entrance exam test scores, the order of the listed majors, and other prerequisites. Specifically, university admission follows a procedure where the entire list of six majors for a student with a higher rank is considered before moving on to the next student. Students are admitted to the first major on their list that hasn't met the admission quota and fulfills all prerequisites. It's crucial to note that students will only be admitted to majors they've listed on their application. Once admitted, students are assigned to a specific major, and changing it post-enrollment is binding and challenging. Our study documents various types of errors and suboptimal strategies related to the order of majors, including listing fewer than six majors, reporting incorrect major codes, listing a major without meeting the prerequisites, and ranking less competitive majors before more competitive ones. These errors and suboptimal strategies hurt a student's chances of admission into a highly selective university, potentially leading to long-term negative consequences in the future. We plan to understand if the prevalence of these errors and suboptimal strategies are correlated with demographics and high school characteristics and how these mistakes affect the chance of being admitted.

The second series of projects aims to tackle the inequality observed in admission outcomes between students from prestigious and regular high schools. Specifically, one project will focus on examining an admission policy change that introduced an additional requirement for students applying to the law major. Before the policy change, law majors were only required to submit entrance exam scores similar to other majors. Subsequent to the policy alteration, applicants to the law major were mandated to submit scores from an additional specialized exam, akin to the LSAT in the United States, alongside their regular entrance exam scores. Our objective is to investigate whether this additional requirement widens or narrows the disparity between students hailing from prestigious high schools and those from less prestigious ones.