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The Explanatory Role Of Reproductive Planning On Single Mothers' Demographic Trends And Financial Outcomes

Kenzie Yezzi

THE EXPLANATORY ROLE OF REPRODUCTIVE PLANNING
ON SINGLE MOTHERS' DEMOGRAPHIC TRENDS
AND FINANCIAL OUTCOMES

by

McKenzie Therese Yezzi
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This thesis, submitted by McKenzie Therese Yezzi in partial fulfillment of the requirements for the Degree of Master of Science in Applied Economics from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

_____
Daniel Biederman, Chairperson

_____
David Flynn, Committee Member

_____
Prodosh Simlai, Committee Member

This thesis is being submitted by the appointed advisory committee as having met all the requirements of the School of Graduate Studies at the University of North Dakota and is hereby approved.

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Grant McGimpsey
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_____
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McKenzie Yezzi
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ABSTRACT

Academic studies of single-mother poverty to date largely focused on presenting and analyzing the correlation between single-mother poverty incidence and variables such as maternal age, education and employment. The previous literature strongly demonstrated that younger maternal age, lower education levels and reduced income are positively correlated with single mother status compared to married mothers (Bitler & Waller, 2008; Minnotte, 2012). Since previous studies have also shown that younger maternal age, lower educational attainment and weaker employment history greatly increase the risk of poverty among single mothers (Zhan & Pandey, 2004) I seek to further examine which background phenomena may be driving these trends in age, education and employment observed among many single mothers – particularly because not all single mothers fit this demographic profile and not all, or even most, single mothers are poor.

With this paper I hypothesize that the ability, or lack thereof, to maximize upon reproductive planning opportunities may help explain the younger maternal age, lower educational attainment, and weaker employment history trends that ultimately serve to create unfavorable financial outcomes to single mothers. By analyzing these demographic trends as a function and product of reproductive planning opportunities and frontiers, I hope to provide greater context and insight into how and why single mothers experience poverty, beyond a simple demographic profile.

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INTRODUCTION

The rising prevalence of single mothers and single-mother headed households in the United States represents one of America's most important and defining demographic trends of recent years. For all the public discourse surrounding aging baby boomers and Latino immigrants, single mothers have emerged as one of the fastest growing populations of the late 20th and early 21st centuries (U.S. Census Bureau, 2010). While the growing number of single mothers certainly seems to signal a variety of social and cultural changes unfolding throughout American society, it also carries profound economic and political implications that are still yet to be fully realized. Meanwhile, the academic community has responded to the rapid acceleration of single motherhood as a demographic trend by generating a body of research dedicated to examining the various economic considerations single mothers and their families raise.

Though single-mother headed households represented just 10% of all family households in the U.S. in 1959, forty years later single-mother headed households had grown to account for 25% of all family arrangements in the United States (U.S. Census Bureau, 2000). 38% of all births in the 12 months preceding the 2010 Census were to single women, defined by the U.S. Census Bureau as women that were unmarried, separated, or had an absent spouse. Moreover, recent studies and estimates claimed that as many as 50% of all American children will spend at least a portion of their childhood in a single-parent household. (Porterfield, 2001, p. 1302).

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Clearly, the composition of the American family changed dramatically over the last several decades, and so far with no indication that this trend will halt or reverse back to its previous levels in the future.

This observed shift towards previously unconventional family arrangements – specifically, single-mother headed households increasingly operating in the place of married, two-parent families – is historically unprecedented in the United States. However, the purpose of this paper is not to hypothesize the different factors responsible for driving the increased uptick in single mothers. Rather, with this paper I seek to examine the various different economic outcomes for single mothers and their families and posit an analytical argument and corresponding empirical model that successfully describe how and why so many single mothers fall into poverty. I believe a gap in the current literature exists in terms of examining how women become single mothers and how some of them become poor congruently, which I hope to address with this paper.

Single-Mother Poverty in America

The topic of single motherhood attracts a great deal of attention, both among the general public and also within the public policy and academic realms, particularly because single-mother families have been widely shown to experience poverty at an alarmingly high rate. Of the 10 million households led by single mothers with children aged 18 or younger in the United States in 2010, almost 29% of them were considered impoverished, according to Edin and Kissane (2010) in their decade review of poverty in the United States (U.S. Census Bureau, 2010). Moreover, the poverty rate among single mothers has proven to be very volatile and highly sensitive to market, labor, and government program changes, such that the poverty rate can often fluctuate by 10 percentage points or more (Card & Blank, 2008).

In comparison, the poverty rate among the general American population was just 13.2% during the height of the recent recession, and typically has hovered around 8-10% over the last few decades (Edin & Kissane, 2010, p. 461). As such, single mothers and their children not only represent one of the fastest growing populations in the United States, but also one of the most financially vulnerable. The economic outcomes of single mothers and their families have taken on a national importance due partly to the sheer number of families involved, as policymakers and public agencies must now evaluate how best to support a growing population that has never before approached this size or magnitude. Additionally, the new prevalence of single-mother families – whether the trend continues to rise or merely holds steady at its current level – is of national importance because it involves, and almost certainly will continue to involve, broader economic ramifications for society at large that demand further study and discussion.[1]

Reducing and controlling the poverty rate among single mothers has thus grown into a national priority both in light of the 10 million single mothers it affects, as well as their children, but also for the greater health of the economy at large. For any subset of the population to demonstrate such high poverty rates would demand that their unique strains and challenges be addressed, both for their sake as well as for the health of the economy as a whole. For instance, impoverished single mothers have shown to be more likely to depend on government safety nets including food stamps and temporary assistance, Medicaid, and child care and housing subsidies than married and non-poor single mothers (Albelda, 2011). Moreover, single-mother poverty takes on an additional importance to our nation and its future because it also involves child poverty in so many cases.

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[1] Specifically, the potential ramifications of a rising number of impoverished single mothers and their households. Not all, or even most, single mothers are poor and women become single mothers through a variety of different channels. However, the economic implications of impoverished single mothers remain a very real and serious area of concern.

Limitations of Current Literature on the Subject of Single-Mother Poverty

Unsurprisingly, this topic has spurred a substantial amount of research aimed at examining and explaining the high poverty rate experienced among single mothers. Future policy will need to address complex challenges, including exploring answers to issues such as:

1. *What resources, strategies and actions could be utilized to measurably improve the economic circumstances of single mothers and their families?*

2. *Which factors are responsible for driving the rising number of single mothers in the first place, and are there points for intervention?*

3. *Which factors, processes or systems work to create circumstances of impoverishment amongst roughly 30% of all single mothers?*

Studying which methods of assistance or resources most improve single mothers' financial outcomes is both logical and worthwhile, because this support can then be implemented to ameliorate the economic situations of women who have already become single mothers (Q1). It is also a valuable analysis to examine which factors help explain the rising prevalence of single mothers, because there may be opportunities to avert circumstances which lead to women raising their children without a partner (Q2).[2]

However, question 3 will act as the focus of this paper on the basis that isolating and identifying which factors and conditions impact and shape the various financial outcomes to single mothers, impoverishment being one of them, will offer the most direct information as to what causes single-mother poverty, and in turn, what can be done about it. I see this as the preliminary and most fundamental step to understanding, and hopefully eradicating, single-

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[2] This is not to say that women should not or cannot raise children without a partner, or that some women do not intentionally elect to become single mothers, but rather that there may be ways to reduce single motherhood that was either unplanned, unwanted or unprepared for, as defined by the women themselves.

mother poverty in the future – yet despite widespread research on the topic, there are still many areas of single-mother poverty that have yet to be adequately explored.

Most of the current literature examining single-mother poverty can be categorized as falling into one of two general camps: the first examines single-mother poverty in regards to an isolated and specific interaction, and the second describes single-mother poverty in a more schematic way, using demographic profiles as the narrative. In looking at the first style of single-mother poverty study, it is easy to see that a significant amount of government and academic attention has been dedicated to the field of single-mother poverty and the breadth of research is impressively wide as a result. These studies have examined single-mother poverty with respect to a multitude of different variables, including, but not limited to, the following: the family and personal backgrounds of women who become single mothers, social and cultural attitudes about sex and intimacy, reproductive rights, abortion, contraception and abstinence education, the role of welfare and other public services such as housing, vocational training, child care subsidies, temporary assistance, food stamps, etc., the role of extended family support networks, the effect of part-time work and underemployment among single mothers, racial, geographic and religious differences among women who become single mothers, and many others.

These studies essentially take the form of "Single-Mother Poverty and _____". They offer valuable insights into specific aspects of single motherhood – for instance, they can help illuminate the relationship between child support receipts and poverty status as a single mother, or access to affordable child care and poverty status as a single mother, or the effect of public assistance on single mothers' financial outcomes, and so on. Previous studies have, in fact, demonstrated that all of the above variables are correlated to some degree to the economic outcomes single mothers experience (Bitler & Waller, 2008; Tekin, 2007; Danziger, 2010).

However, while it is worthwhile to understand specific interactions between key variables and the economic statuses of single mothers and their families, these studies are limited in the analysis they can offer regarding single-mother poverty by the very definition of their restricted scope of work, and as such leave many questions unanswered. Such studies can reveal and describe the relationship between single mothers' financial statuses and the variable(s) of interest, but they cannot put forward a more complete or encompassing framework that works to describe the full process that causes 30% of all single mothers and their households to experience poverty.

The other main genre of single-mother poverty study currently published seeks to describe the economic statuses of single mothers in a more comprehensive way. Most of these studies have turned to demographic trends and profiles as the proposed narrative and solution to understanding single-mother poverty. Multiple studies have shown that younger maternal age, lower educational attainment, poor employment history and reduced income are associated with higher poverty risk among single mothers. The same studies also found that, on average, single mothers were younger, less educated, lower-income and had a weaker employment history than married mothers (Zhan & Pandey, 2004; Bitler & Waller, 2008; Minnotte, 2012; Takada, 2011).

Such studies have used key demographic information to predict the economic outcomes single mothers will experience. They have the benefit of approaching single-mother poverty from a big picture perspective – rather than analyzing the isolated effect of a variable of interest on single mothers' financial statuses, they instead seek to describe the cumulative outcome a single mother's background will have on her eventual financial position. The analysis is logical, intuitive and well-supported by the sheer number of studies describing similar findings.

However, this approach fails to offer any information that is specific to the unique mechanisms and interactions at work in single motherhood. We could apply this same logic (younger age, less education, poor employment background, reduced income) to any subset of the population and find that it is associated with a higher risk of poverty. None of these risk factors are exclusive to single mothers so much as they have the potential to affect all people in many imaginable situations. Yet we know that single mothers face a unique poverty experience based on evidence that their poverty rate is meaningfully different from the national average – in fact, typically hovering around 3x the national average (Edin & Kissane, 2010). This implies that there are specific interactions and considerations at work regarding single-mother poverty above and beyond the common indicators for poverty.

As such, I find the demographic approach of other studies to have limited value when it comes to explaining and understanding single-mother poverty. While it may accurately predict which single mothers are more vulnerable to poverty, it fails to offer information or insight as to why these demographic trends exist among single mothers, where these trends originate, what they may reveal, and the meaning therein.

Statement of Purpose

The objective of this paper is to propose an original solution to the question, "Which circumstances and processes are responsible for the nearly 30% poverty rate among single mothers?" in order to contribute new and valuable insights to the existing research surrounding single-mother poverty. I believe the format and design of some currently published studies, which examine single-mother poverty as a function of an isolated independent variable(s), be it the role of contraception, welfare, child care, race, geography, minimum-wage employment, etc., have limitations in their ability to describe the poverty epidemic among single mothers. The

narrow focus of these studies by very definition excludes other variables – which other authors may then show in different studies, using different datasets with different observations and during different timeframes, are *also* relevant when examining single-mother poverty. There is no way to aggregate the findings of every independent study, each focusing on a different set of variables, into a comprehensive model that describes the complete process of single-mother poverty. It becomes a confusing and ultimately impossible process to interpret all the different interactions highlighted by these studies together in order to explain the economic outcomes of single mothers as one cohesive process.

Secondly, the more schematic approach to describing single-mother poverty using demographic information and profiles, while useful in appropriately describing the economic outcomes single mothers are likely to experience based on key demographic variables, lacks additional insight into the unique parameters and constraints at work in single motherhood. This approach is able to predict which single mothers are most vulnerable to poverty in the same way that it could be used to predict how anyone would be more likely to experience poverty. It fails to speak to the interaction of these demographic trends with the process of single motherhood – including why these trends exist, where they come from, what they reveal about the factors and conditions unique and inherent to the single-mother experience, and the potential interpretation and meaning they may reveal.

These perceived shortcomings in the current literature inspired me to work towards a framework that could accommodate and make sense of the myriad of appropriate variables related to single-mother poverty, that could cover and apply to every single mother, regardless of their "type", and that relayed information more specific and insightful to the single-mother experience than standalone demographic information. Studies designed around very targeted and

select independent variable(s) put forward findings that can only apply to single mothers for whom those variables exist; moreover, studies that are designed in this way cannot describe by themselves, in a complete and comprehensive manner, how the many relevant variables to single-mother poverty, when combined, impact economic outcomes to single mothers as a whole. Introducing a more schematic and conceptual approach to understanding and interpreting single-mother poverty could potentially bridge these issues. Although the demographic approach utilized by previous studies is the first step in the right direction in terms of describing single-mother poverty in a more comprehensive way, it still leaves a great deal of work to be done in terms of providing information and insight that is specific and intrinsic to the process of single motherhood.

In response to this, I sought to develop and present an argument based around a process that is common to all single mothers and that manages to encapsulate much of the other relevant information related to single motherhood (as such addressing the issues raised by the first style of single-mother study):

> I argue that the planning status surrounding the pregnancy can be used to explain and understand the personal financial planning level in place at the time of single motherhood, which in turn dictates and shapes the financial situation a woman will initially face as a single mother.

Reproductive planning refers simply to whether the pregnancy was planned or reasonably expected, and represents a variable and process that is common and applicable to all possible types of mothers, while financial planning refers to the many steps and decisions a person makes as a broader part of their financial self-determination – including their age, education, income, employment, and more at the time of single motherhood. In this way, my framework also addresses the shortfalls of the second type of study because it uses planning processes to provide

additional context, insight and meaning to the demographic trends observed among poor single mothers.

Reproductive planning may appear like a simplistic approach to understanding and interpreting single-mother poverty, but the simplicity of the concept helps facilitate interpretation that is both intuitive and applicable to all observations (n = number of single mothers). The structure of the framework also allows it to be flexible, adaptive and thorough. The model does involve several assumptions, as well as careful and specific definitions, which will be outlined later. I believe the conceptual foundation and practical structure of this framework offer several main strengths that previous studies lack:

1) Reproductive planning, and my argument about its role on financial planning – which serves as another way of understanding and interpreting the demographic information presented among individuals – acts as a comprehensive description of single-mother poverty. Other studies face the limitation of being unable to describe the complete process of single-mother poverty by virtue of their design, which examines the impact of only certain, selected independent variable(s) on single mothers' financial outcomes. For every variable included, others are omitted, which prohibits a true, complete description of single-mother poverty. However, the design of reproductive and financial planning as conditions relevant to single mothers' economic outcomes is such that the majority of perspective variables could fall under either umbrella and be understood as a function of either process.

2) The analysis can be applied to all single mothers, whether teen, single mothers by choice, unplanned, divorced, widowed, etc. because reproductive planning and financial planning are two processes common to all single mothers, regardless of their "type", unlike many

of the variables included in other studies, which may only apply to certain subsets of single mothers. This design will allow for complete cross-comparison and illuminate how different single mothers encounter different financial outcomes that are traceable back to common, shared processes. In fact, examining differences between various "types" of mothers and the reproductive and financial planning processes they show, as well as their eventual financial outcomes, may provide valuable information for policy implications down the road.

3) The variables and findings of other studies can be interpreted and understood through the proposed framework of reproductive and financial planning, which could enhance the interpretation, implications and potential policy applications of these findings. Understanding maternal age, education level, employment status or income, for example, through the lens of financial planning – rather than as simple demographic information – could provide different insight or direction into the study of single-mother poverty than what these variables can offer on their own.

Examining the demographic trends observed among poor single mothers (i.e. younger maternal age, lower education levels, poor employment background, reduced income) through the lens of joint systemic processes like reproductive and financial planning allow these trends to be interpreted and understood as operating as a function of these underlying planning processes. My approach does not necessarily challenge or dispute the findings of previous studies in terms of how key demographic information is related to single mothers' financial outcomes, so much as contextualize those findings through a broader conceptual argument specific to the phenomena of single-mother poverty, with the hope of advancing better and more useful interpretations as a result.

Standalone demographic variables and my analysis on reproductive planning, as such, may relay and impart much of the same information in terms of which single mothers are most likely to experience poverty – in some ways, these findings will not be new. However, if proven, this relationship would support my very argument that the demographic variables and trends related to single-mother poverty already studied in other literature are indicative of planning processes at work, and that these planning processes can provide additional and enhanced meaning and insight into previous findings regarding single-mother poverty. It is my hope that reframing the various factors and variables related to single-mother poverty as acting within the broader mechanism of planning processes will provide a richer interpretation and intuition to the role and relationship of these variables with single-mother poverty, and that this new line of thinking will lend itself to the development of better, more effective solutions for single mothers.

LITERATURE REVIEW

As already noted, previous studies of single-mother poverty have sought to describe single mothers' financial outcomes using one of two main approaches. The first has focused on investigating the supplementary role of various outside and isolated factors on single mothers' financial situations, including variables like WIC or welfare use, access to paid maternity leave, the role of health care, extended family support networks, child support receipts, flexible work schedules, affordable child care, and other periphery variables.

The structure of these studies reveal how certain variables impact single mothers' financial statuses, positively or negatively. However, they do not describe the foundation of single mothers' cumulative financial outcomes, so much as how those outcomes respond to specific variables. If you think of the simple equation of a line of form $Y = m(x) + b$, where b represents the baseline, "intercept" value of single mothers' financial positions, these studies examine variables that function as m, or the slope of the line – meaning that these variables are not necessarily intrinsic to the initial economic statuses of single mothers, but rather can act upon that financial position in either direction.

With this paper, I seek to examine the core processes and factors inherent in determining single mothers' financial realities, rather than studying the role of outside, secondary variables acting on that financial position. For this reason, said studies structured around examining the effect of welfare, child support, child care, housing policies, or any other isolated variable on single-mother poverty are not truly useful for the purpose of this conversation. However, the

second tier of studies focused on describing the "intercept" or original, baseline financial position of single mothers through demographic profiles serves as the best launching point and basis for comparison with my own argument, which introduces the role of reproductive planning to the analysis.

Said studies have mostly approached the analysis of single mothers' economic positions by examining core information related to single mothers themselves, namely through demographic variables (Zhan & Pandey, 2004; Bitler & Waller, 2008). This approach, rather than examining the impact of periphery factors, which may impact or affect a single mother's financial situation but do not dictate it, is intended to describe the key processes that influence single mothers' financial outcomes. The aforementioned studies have largely approached their examination of single-mother poverty through the lens of demographic variables like maternal age, educational attainment, employment history and income level to predict and explain how single mothers experience poverty.

Demographic Approach to Describing Single-Mother Poverty

For instance, using data from the 1993 Panel Study of Income Dynamics, Zhan and Pandey (2004) found that single parents with at least some postsecondary education benefited from higher annual incomes and demonstrated a reduced likelihood of experiencing poverty compared to single mothers with a high school education or less. They also found that single parents with higher educational levels utilized and received fewer welfare benefits than their less educated counterparts (Zhan & Pandey, 2004, p. 667). While 70% of single mothers with less than a high school education level were categorized as impoverished, just 11% of single mothers with a four-year college degree or higher fell below the poverty measure (Zhan & Pandey, 2004, p. 668).

Single mothers with a four-year degree or higher, as such, experienced a poverty rate not markedly different from the national average, at least in 1993. This is a profound finding in that it suggests that single motherhood in and of itself may not act as an automatic risk factor for poverty, considering educated single mothers fared quite similarly to the general American population. Rather, single motherhood without strong financial planning (in the form of sufficient education levels) clearly demonstrated a very strong preponderance for poverty status. The markedly different poverty experiences of college-educated single mothers compared to single mothers with less than a high school education seem to support the argument that the act of planning and controlling for variables related to an individual's financial position (i.e. age, education level, employment status, income, etc.) can help explain and describe the different economic outcomes observed among single mothers. However, Zhan and Pandey do not tread this far in their analysis.

Zhan and Pandey make the connection that postsecondary education seems to result in increased wages, which then lowers the risk of experiencing poverty per family; for instance, they comment that single mothers with postsecondary education were less likely to experience poverty on account of enjoying higher wages, house values and child support receipts than less educated single mothers (Zhan & Pandey, 2004, p. 668). However, they do so without then postulating as to which mechanisms or processes determine and cause single mothers to fall into one educational bucket over another. While it is technically accurate to find that postsecondary education partially describes economic outcomes to single mothers, Zhan and Pandey do not elaborate as to which processes may be responsible for single mothers' education levels, or what that information reveals about a single mother's history, current position and outlook.

Zhan and Pandey in effect say, "Single mothers face favorable or poor economic outcomes based partially on their education level." The same could be said of virtually anyone. However, they do not further question why and how some single mothers fall into the post-secondary education bucket while others fall into the less than high school education bucket, among others. This issue does not deserve to be skipped over, particularly when single mothers have proven to be demonstrably skewed in lower education levels compared to married mothers (Bitler & Waller, 2008). I argue that this line of thinking needs to be expanded to, "Single mothers demonstrate varying educational levels, which ultimately contribute to their eventual financial status, partially as a result of their individual reproductive planning experience" in order to truly understand single-mother poverty.

My concern is that identifying the variables that impact single mothers' economic outcomes without bringing to light the underlying processes which inform and affect said variables leads to an incomplete understanding of single-mother poverty. Any person, in any situation, with less education is likely to face inferior financial outcomes – and so without some additional context provided as to which factors potentially impact and affect women's education levels at the time of single motherhood, we stand to lose information that is specific to the process of single motherhood. My argument presents reproductive planning and its relationship with a mother's financial planning level at the time of single motherhood as a way of understanding how single mothers' demographic information contributes to their economic outcome, such that rather than leaving postsecondary education as a standalone variable, whose only interpretation is its effect on wages, a single mother's education level and related financial status is understood as a component of the reproductive planning reality she faced upon entering single motherhood.

Bitler and Waller (2008), using a study group of 3,103 individuals, also found marked educational differences among married and single mothers. In fact, the education levels of married and single mothers were near inverses of each other – while 40 percent of single mothers had less than a high school education, only 15 percent of married mothers lacked a high-school level education. And although 38 percent of married mothers in the study had an earned bachelor's degree, a mere 3 percent of single mothers had completed a bachelor's degree (Bitler & Waller, 2008, p. 196). Married and single mothers also demonstrated diverging trends in maternal age, as 65 percent of single mothers fell under the age of 24, compared to just 21 percent of married mothers within the same age cohort. 50 percent of married mothers were 30 years or older with just 15 percent of single mothers being over the age 30 (Bitler & Waller, 2008, p. 196).

Although Bitler and Waller observed statistically significant differences among married and single mothers regarding maternal age and educational attainment, which ultimately contributed to the women's respective financial outcomes, they did not further explore which mechanisms could be at work driving these diverging trends. While it is intuitive to understand how single mothers with less education and younger maternal age would be more likely to face unfavorable financial conditions, Bitler and Waller do not continue forward with *why* single mothers may be relatively younger and less educated than married mothers. It is not an inaccurate finding to state that single mothers' relative financial vulnerability compared to married mothers is partly due to reduced educational attainment and younger maternal age, but it is somewhat incomplete without an understanding of where those discrepancies originate and what they reveal about the frontiers single mothers face.

Our understanding of high single-mother poverty incidence is further confirmed by K.L. Minnotte's (2012) research demonstrating the skewed distribution of single mothers within low income brackets. Using data from the 2002 National Study of the Changing Workforce, Minnotte found that 69 percent of all single mothers earned an annual income of less than $40,000, and 40 percent of single mothers earned less than $23,000 (Minnotte, 2012, p. 102). While only 10 percent of single mothers commanded an income above $60,000, only 9 percent of partnered parent families earned less than $23,000. Moreover, 53 percent of partnered parents had a cumulative family income of $60,000 or more—approximately 26 percent of them making over $90,000. Only 2 percent of single mothers reached an income level of $90,000 or higher (Minnotte, 2012, p. 102).

Minnotte observed these diverging income trends among single and partnered parent families without further examining how and why single mothers experience such deflated income levels compared to partnered families. Aside from the obvious income earning potential of a dual income family (which not all partnered families represent), Katherine Malone found in her study, "Perceptions of Well-Being Among American Women in Diverse Families" (2010), that the average unmarried female householder earned a median income of $31,818 in 2006, while a married woman's median income in the same year was $69,716 (Malone, 2010, p. 69). However, Malone did not elaborate beyond these summary statistics as to which processes may be responsible for the vast income discrepancies observed among single and married mothers. Certainly, reduced income generation among single mothers would impact their poverty incidence, yet no suggested explanation is put forth to describe which factors create these divergent income conditions among single versus married mothers.

Additionally, in spite of the above trends regarding poor income attainment, Minnotte found that single mothers on average actually worked more than a full-time schedule, averaging 44.76 hours per week, while married partners worked a combined 46.19 hours weekly (Minnotte, 2012, p. 102). As such, single mothers worked essentially the same hours as two people within a marriage, and yet still experienced the income discrepancies described above. Clearly, at least in this sample, the gap in income generation between single versus partnered parents was driven by the rate of pay rather than the hours worked. Other studies (Takada, 2011; Albelda, 2011) have sought to describe employment obstacles that negatively impact single mothers, yet further explanation is necessary to describe why these obstacles apply to single mothers, but not married mothers, or to some single mothers, but not others.

Shinobu Takada's study "Factors Determining the Employment of Single Mothers" (2011) also substantiated that the overwhelming majority of single mothers work to support their families. He found that 84.5 percent of single mothers are employed, either part-time or full-time, with just 13.5 percent of single mothers being unemployed (Takada, 2011, p. 111). This high rate of single-mother employment reveals that the issue goes beyond just employing mothers to securing employment of a quality level capable of generating a respectable annual income. The principle challenge single mothers appeared to face in this study was breaking into full-time, well-paid permanent positions: of the encouraging 84.5 percent of employed single mothers, more than half (46.3 percent) were working in either part-time or temporary jobs (Takada, 2011, p. 113).

Takada's analysis treads further in terms of moving beyond merely presenting the different employment statuses of single mothers, to positing which factors and conditions could be responsible for the varying employment levels of these women. For instance, he notes that

temporary and part-time work, in addition to child care issues, squeeze single mothers' ability to maximize their employment as a source of self-sufficiency (Takada, 2011, p. 113). However, there is no proposed explanation as to why some single mothers experience these challenges and others do not, or why single and married mothers demonstrate different trends in employment, even when controlling for child care. If single mothers are facing observable challenges in employment, it would be worthwhile to examine what separates single mothers who struggle with temporary and underemployment from those who do not in order to further understand the mechanisms at work.

Limitations to Demographic Profiles in Describing Single-Mother Poverty

Several shortcomings in the current literature surrounding single-mother poverty inspired me to introduce and put forward an argument designed to function on a more comprehensive and specific level as an alternative approach to describing single-mother poverty. One issue with the current state of the literature regarding single-mother poverty is that many of these studies are designed to observe and describe the specific impact of certain variables on single mothers' financial statuses. It is both useful and valuable to understand how single mothers' financial situations respond to and interact with key variables, be it welfare policies, access to child and health care, child support receipts, etc. However, while this approach may demonstrate how single mothers' economic outcomes respond to these variables, it cannot describe which processes form and shape single mothers' economic experiences from the outset. Studies of this nature are answering a different and narrower question entirely.

Studies do exist that have tried to explain which factors and processes cause single mothers to experience high levels of poverty from a more schematic perspective, rather than merely examining the reaction of single mothers' financial positions to a specific variable, but

they, too, present their own weaknesses. Most of the studies in this genre have attempted to predict and describe how single mothers experience poverty through the lens of demographic information about single mothers. They have largely examined variables like maternal age, education level, employment history and income level in predicting and explaining how single mothers experience poverty.

I do not dispute the findings or accuracy of these studies in that it appears true from multiple datasets and data analyses that younger maternal age, lower education and income levels, and poor employment history are correlated with disadvantageous financial outcomes to single mothers. I believe these studies are accurately predicting which single mothers will be affected by poverty when they regress using independent demographic variables. Yet while the relationship between the demographic trends observed among many single mothers and their ensuing financial outcomes is not incorrect, it is *incomplete* as a narrative in terms of understanding how and why single mothers demonstrate these demographic trends, and what these trends reveal about the unique factors and constraints at play within single motherhood.

Describing the often-noted demographic trends among single mothers without attempting to contextualize them through the mechanisms and interactions that may be driving them undermines the usefulness and effectiveness of the analysis. In fact, presenting these demographic trends among poor single mothers (younger maternal age, lower education and income levels, poor employment history) without exploring the processes responsible for these observable trends renders the analysis vulnerable to reductive and misleading interpretations. When studies show that single mothers are more likely to experience poverty because they are relatively younger, with less education, a weaker employment history and reduced income compared to married mothers, without hypothesizing as to why these divergences exist, *it implies*

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that single mothers are poor because of who they are, and not because of the potential processes at play.

Such studies offer the conclusion that single mothers experience an elevated poverty risk because of their age, educational background, employment status and income level without further examining why these demographic patterns exist. In addition, this analysis offers virtually no information specific to the processes and factors uniquely at work related to single motherhood. Anyone, in any situation, who is relatively younger, with less education, a weak employment history and reduced income will be more likely to experience an unfavorable financial situation. This analysis lacks the kind of specificity related to the distinctive interactions at work surrounding single motherhood to make its findings regarding single mother's economic outcomes as insightful or meaningful as desirable.

Many studies of this nature also compare single mothers to married mothers when examining the various demographic variables and their relationship to financial outcomes, which is a somewhat nonsensical starting point. By definition, the decision points and frontiers of married mothers and single mothers will be different because they are two completely different landscapes. When it comes to single versus married motherhood, we cannot be sure that age, education, employment, etc. play the same role in predicting single versus married mother's economic situations because their tracks represent different decision points and frontiers. Examining the differences and discrepancies between poor and non-poor single mothers would provide a much more fruitful conversation, since they share a common traceable process.

Ultimately, relying on demographic variables and demographic variables alone to explain which single mothers are most vulnerable to poverty leaves a lot to be desired in the way of insight and interpretation. While this approach may appropriately predict the financial statuses of

single mothers on the basis of these variables, it fails to further question where these demographic trends originate and what they may mean and reveal in terms of how some women, but not others, become both single mothers and poor congruently. When we say that single mothers who experience poverty are likely to be younger, with less education and income, and a faulty employment history to rest on, we leave the question only half-answered. The true test would be to then question which processes and functions operate behind these demographic trends among poor single mothers in order to fully understand how financial outcomes to single mothers develop, evolve and form. The second part of this question represents the purpose of the argument and model furthered in this paper.

SCOPE AND ASSUMPTIONS

The topic of single motherhood is expansive and wide-ranging, yet also possesses many unique nuances and specificities that serve as launching points for more detailed and targeted studies within the broader topic. Before fully introducing my argument, it is necessary to clearly define both the scope of this paper as related to the greater subject of single-mother poverty, as well as some key assumptions of the framework, for the sake of clarity and convenience throughout.

1) My argument regarding the relationship between reproductive planning and single mothers' observable demographic characteristics (which are understood in this paper as representative of their financial planning level and ultimately help determine their economic outcome) is best applied to never-partnered single mothers.[3] The model can accommodate a diverse population of single mothers, including all ages, races and ethnicities, sexualities, religious backgrounds, education levels, employment backgrounds, income levels, political leanings, geographies, pregnancy statuses and more. This flexibility in the model is what allows for such complete cross-comparison between single mothers, which is one of the model's greatest strengths over other analyses.

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[3] "Never-partnered" refers to single mothers who are not divorced, legally separated, widowed or part of a non-married but co-habiting couple, now or previously. Never-partnered refers to single mothers who were either always single, or in a casual or temporary relationship that quickly dissolved.

a. Divorced, separated and widowed single mothers, however, experience economic outcomes that are likely not grounded and rooted in reproductive and financial planning processes above others. Rather, their financial situations are probably most closely tied to their previous financial position when partnered, combined with the unfolding changes to their financial status upon the dissolution of the relationship. Although the concept of financial planning still has some merit in describing economic outcomes to divorced, separated or widowed mothers in acting as a marker for financial preparedness for single motherhood, never-partnered single mothers represent the best fit for this model and will be the focus of this paper.

2) The framework proposed in this paper is intended to describe only the initial baseline economic statuses women encounter as single mothers. I argue that reproductive planning interacts with the demographic variables/financial planning level a single mother demonstrates at the time of motherhood, and that the financial planning in place at this time has a predictive relationship with a woman's original financial situation as a single mother. However, individuals' financial situations can and do change based on a wide variety of exogenous factors over time. This framework is not meant to explain, then, the evolving financial situations of single mothers over the course of many years or decades, but rather the original, baseline economic outcome from which she begins as a single mother.

3) Previous studies have examined the role of variables like child care, family support networks, government assistance, etc. on single mothers' financial positions, all of which act upon a woman's financial position at some later point after becoming a

single mother. However, these factors do not describe which conditions are responsible for single mothers' direct economic outcomes so much as how a single mother's financial position is impacted, positively or negatively, in response to any one of these variables. The interactions of these variables are supplementary to the baseline economic outcomes single mothers inherit as a result of reproductive and financial planning and so are beyond the scope of this paper.

4) Throughout this paper, single mothers will be compared against other single mothers when examining various and diverging financial outcomes. Many earlier studies have previously attempted to isolate and identify differences between single and married mothers (Bitler & Waller, 2008; Malone, 2010; Minnotte, 2012) in order to explain economic trends observed within the single mother population. However, married mothers do not represent a good benchmark for comparison because their economic situations involve dynamics that are foreign and unrelated to the processes relevant to single mothers. It is a much more straightforward, and ultimately valuable, analysis to instead compare single mothers against other single mothers, who inherently share a common situation with the same implications, in order to isolate and analyze the observed differences between single mothers who experience different economic outcomes {i.e. since 30% of single mothers fell under the poverty line in 2009, it follows that 70% of single mothers were above the poverty line (Edin & Kissane, 2010)}. The key to understanding the different economic outcomes to single mothers lies in identifying and tracking the observable differences among single mothers and their respective experiences.

5) Child-rearing is inherently expensive. Any parent, operating in any family arrangement or structure, will indubitably face additional expenses compared to their childless peers in the form of various child-related costs. However, because parenthood is endogenous to this model, the mere fact of having a child will not be treated as a poverty-related factor on the basis that, by definition, single motherhood necessarily involves all the relevant financial burdens and considerations associated with child-rearing.

   a. In harmony with this line of thinking, having multiple children will operate in much the same way in terms of additional expenses and monetary responsibilities to parents. Although having multiple children ineludibly increases the financial obligations to parents, the effect of having multiple children is not explicitly examined in this paper as it represents a periphery or secondary factor distinct from a single mother's initial, baseline financial position that could be layered into the analysis at a subsequent point.

6) This paper specifically examines and reflects on the financial situations of single mothers, rather than all single parents, because of the magnitude and importance of the growing demographic trend of single mothers as compared to all single parents in general (including men). Additionally, single mothers likely face unique economic experiences and decision points and demonstrate reactive behaviors to these experiences as a population that warrant study outside the larger body of all single parents.

REPRODUCTIVE AND FINANCIAL PLANNING AS ACTORS ON SINGLE MOTHERS' ECONOMIC OUTCOMES

Throughout the course of this paper, we have discussed extensively how previous studies have shown core demographic variables to interact with the economic outcomes single mothers face. I believe this analysis alone fails to address the unique nuances at play surrounding single motherhood, at least above and beyond how these demographic variables would impact any person's financial outcome in a multitude of different situations. I argue that while the demographic variables a single mother exhibits do possess a strong predictive relationship to her economic outcome, understanding those demographic variables as operating as both a function of reproductive and financial planning provides additional and enhanced meaning and insight into the different economic statuses single mothers experience.

Demographic Variables as a Product of Financial Planning

The first step in this argument's logic flow is to frame the different demographic characteristics single mothers display as a representation of the preferences and choices made related to each individual's unique financial planning level. Age, educational level, employment background and income are frequently treated almost as character traits – they are used merely to identify or describe an individual. However, these demographic variables can be understood and interpreted as observable markers for an individual's financial planning level considering that people actively and deliberately control for and optimize their age, education level, employment status and income in accordance with their unique preferences as they meet important economic

choices throughout their lifetime. Under this line of thinking, demographic characteristics are not random or merely descriptive variables, then, but actually impart meaning as they speak to the way individuals attempt to control these demographic variables as part of financially planning their lives.

In the context of this paper, the concept of "financial planning" refers to the ability and tendency of individuals to control for their age, education level, employment status and income in conjunction with each individual's approach towards making personal economic decisions. The idea that individuals deliberately choose, control and plan for economic events throughout their lifetime in accordance with their unique and varying preferences is supported by other theories including intertemporal choice, the life-cycle hypothesis and the permanent income hypothesis. Neoclassical economic theory assumes that individuals are rational beings who make choices such that utility is maximized within the constraints the individual faces. Within the specific context of motherhood, traditional economic theory thus dictates that women will choose and control for whichever combination of their age, education level, employment status and income best advantages them when planning for children.

Consider that raising a child is both a sizable and long-term expense in terms of both income as well as time, and that meeting hefty, permanent expenses requires careful cost-benefit analysis and suitable planning in order to be able to take on such expenses responsibly. In accordance with macroeconomic and consumption theory, we assume most people strive for confidence in their ability to meet permanent and long-term expenses based on both their current financial position and their future expectations. It consequently stands to reason that many people attempt to plan for children in advance in order to satisfactorily prepare for the costs of child-rearing.

Individuals ideally prepare for children and their costs by optimally controlling several variables that will impact their ability to support children. These variables may include their age, education level and employment status, which all interact to help develop a cumulative income level. These variables also relay social norms in terms of what is deemed an "acceptable" or "normal" age or education level to have children. The mere existence and development of these social norms further reveal that financial stability when planning for children is considered desirable on a society-wide level. It is not random that people's 20s and 30s are widely considered the family years in the United States. And while ideas of the ideal age, education level and income level to have children may vary between different religious, racial, ethnic, socioeconomic and regional backgrounds, there probably exists a stronger consensus on which age, education and income levels are seen as *not* socially acceptable or desirable for child-rearing.

The variables of age and education in the context of financial planning essentially serve the same function in that they help to communicate a certain expectation of the stability and resources that an individual will possess at his or her disposal at that time. In general, there is a positive correlation between age and income because as people grow older, they typically develop skills and human capital that earn them the opportunity to move into better-compensated positions. Of course, there are exceptions and some young people earn more than their older counterparts, but in general this age-income scheme rewards people as they get older and gain more work experience. Likewise, rises in education level have been widely shown to create corresponding increases in income.

Career status and security is another primary concern for people considering parenthood. Few people in the United States have the means to live and support a household without relying

on income from employment. However, simply being employed in and of itself is often not sufficient to support children. For most people, employment must also be full-time in order to maintain a certain standard of living (Takada, 2011). As such, many people will delay child-rearing until they have settled into a stable and secure career and developed enough work experience to move beyond entry-level work.

We can therefore understand individuals' ages, education and employment levels as strategies through which individuals control for their income-earning potential as part of the planning and preparation process for child-rearing. These demographic variables later act as the observable and measurable factors that contribute to single mothers' economic outcomes. It follows, then, that when we observe demographic information about single mothers, we are also observing each woman's individual financial planning platform in terms of the frontier she faces based on her self-selected age, education, employment and income.

In cases where a woman specifically planned for pregnancy or single motherhood, this rationale means she also selected for her age, education, employment and income level at that time. In cases where a woman did not specifically plan for pregnancy or single motherhood, her age, education level, employment status and income may demonstrate the general financial planning level in place in her life at that time, but not necessarily reflect the financial planning strategies she would have undertaken in conjunction with deliberate reproductive choices. It also reveals that single mothers with unplanned pregnancies decided to continue the pregnancy aware of the age, education, employment and income background they faced at the time of pregnancy.

As an example, an individual's financial planning level could take the following hypothetical form, where the demographic variables of maternal age, education level and

employment history are controlled and selected pursuant to that individual's preferences regarding preparedness for child-rearing:

30 years of age + 4 years collegiate education +8 years full-time employment

In the case of planned pregnancy or planned single motherhood, these values would represent the conditions necessary to reach an income and stability level conducive to child-rearing according to that individual's preferences. Keep in mind that no individual can exactly control when they will become pregnant, despite their best efforts, and that pregnancies can occur later than desired as well. An infinite number of potential financial planning levels exist, as individuals can vary greatly in their personal preferences regarding maternal age, education, employment and income when planning for child-raising. The above values are merely arbitrary as a hypothetical example. In the event of unplanned pregnancy or unplanned single motherhood, these values would represent a woman's current and ongoing position in life, rather than her attempt to set these values according to her preferences specifically geared towards child-rearing.

When we examine demographic variables as indicative of financial planning processes, it becomes evident why married mothers typically demonstrate trends of being older, better educated, better employed and higher-income than single mothers. The process of marriage in the United States is closely aligned with very similar planning frontiers as those related to child-rearing. Much like planning for child-rearing, getting married typically involves a planning process surrounding the age and financial stability people hope to attain prior to marrying. In this way, most married mothers have likely already undergone a form of financial planning that closely mirrors the planning process associated with child-rearing as a part of the leadup to pursuing marriage, which improves their likelihood of a favorable financial planning level when family planning.

It is, however, important to note that economic theory has its limitations in describing the actions and motivations of real people, and that individuals can also make decisions that are wildly different from one another when facing the same situations. As such, while the role of financial planning when planning for child-rearing is rooted in logic as well as utility and macroeconomic theory, and is supported by observable day-to-day behaviors, it will not be practiced similarly by all people, nor will it always be practiced rationally or optimally. Individuals will demonstrate varying ideas of optimal financial planning prior to child-rearing and some will buke the laidout assumptions made about age, education and employment. That being said, understanding demographic variables as demonstrative of the way individuals control and prepare for child-rearing, rather than as simple character traits, provides us greater understanding in the interaction between these demographic variables and the economic outcomes single mothers face.

Financial Planning and Time

Financial planning allows individuals to control and select for their age, education level, employment status and income in conjunction with their personal preferences towards child-rearing. As already noted, financial planning has the capacity to vary in its form and its effectiveness subject to each individual's preferences and utility optimization. We assume in accordance with neoclassic economic theory that individuals seek and value financial stability, however, and have described the ways in which age, education and employment can be controlled to account for greater financial security. Beyond individuals' unique preferences, the form and relative successfulness of financial planning is next most impacted by time, in two distinct ways.

Financial planning operates both as a function of time and prior history in the following way: planning frontiers are shaped both by the variability of factors over time as well as the starting conditions or history of those factors. For instance, a single mother's financial planning level would consist of the starting values of her planning process (her current age, education level, employment background and income at the time of single motherhood) and the variability of those variables during the timeframe of pregnancy. It requires time to stage age, education, employment, and income at their ideal starting values. Financial planning therefore yields the most successful results when a) the variables themselves already exist in favorable conditions and b) it is practiced within a sufficient time frame for significant results to be realized. The role of timing in creating individuals' financial planning levels is of particular importance to the process of single motherhood.

These financial planning strategies regarding age, education and employment are truly fragile to unplanned pregnancy. Unexpected pregnancy undermines any potential gains to income-earning potential and financial stability garnered through age, education, or career status that exceed a nine month (or less, depending on the timing of discovery of pregnancy) time scheme. Unplanned pregnancies strip women of the ability to use planning processes to control for their age, education, or income because they are unable to plan for this occurrence due to the unanticipated nature of the pregnancy.

For instance, nine months is generally not enough time to complete a high school, undergraduate or graduate degree, although progress towards that end can certainly be initiated and certain certification programs may be accomplished within that time frame (Takada, 2011). Age is beyond all individuals' control, and the ability to change or improve employment will vary greatly situationally and individual to individual. Single mothers are thus likely constrained

to the age, education and income-earning potential they experience at the time of the discovery of pregnancy, as they will likely lack the necessary time to respond to the financial realities of single motherhood as a result of the unpredictable nature and short timeframe of unplanned pregnancy.

Reproductive Planning

Now that we have defined and described how individuals use financial planning to prepare for child-rearing, we next examine how reproductive planning interacts with financial planning to help shape and predict single mothers' economic outcomes. It is especially important to examine the interaction between reproductive planning and financial planning in the form of controlling for ideal demographic values given nearly 50 percent of all pregnancies in the U.S. were unplanned in 2001 (Bitler & Waller, 2008). That rate was even higher for women who met any of the following criteria: being unmarried, between the ages of 18-24 years old, with less than a high school education, or of a minority racial group (Bitler & Waller, 2008). As such, the women most likely to experience unexpected pregnancies were also those who stood to face the greatest challenges in meeting the resource and income demands of having children.

A woman must be able to simultaneously control her reproductive planning in conjunction with financial planning in order for the strategy of financial planning to have any merit on her economic outcome. Without the ability to control or plan for pregnancy or single motherhood, women are likely to forfeit the benefits of financial planning based on their inability to maximize its value in concurrence with an unplanned pregnancy or separation. **Table 1,** below, illustrates how the various statuses of reproductive and financial planning associated with different routes to motherhood aggregate to develop an overall economic outcome.

Table 1
Reproductive and Financial Planning's Impact on Economic Outcomes

Ranking of Financial Stability	Mother's Financial Planning	Circumstances of Pregnancy	Cumulative Impact on Economic Outcome
Married mothers	+	+/-	+
Single mothers by choice	+	+	+
Divorced mothers	+	+/-	+/-
Unexpected single mothers	+/-	-	-

As discussed during our literature review, married mothers typically fall into older age brackets and hold more college degrees than single mothers. I reason this is because married women have likely already considered and selected their age, education and employment status during the process of preparing for marriage, and although deciding to get married does not exactly replicate the decision-making frontier of deciding to have a baby, it involves certain similarities that transition well towards child-rearing decisions. Married and divorced mothers have a positive advantage in terms of the strength of their financial planning level because planning for marriage allows them to make choices about their age, education, employment level and income-earning potential prior to having children. The advantage married, divorced and single mothers by choice share in improved financial planning levels is represented by the **(+)** sign.

Like married women, women who deliberately set out to raise children on their own have also had the opportunity to control for their age, education and career status. For this very reason, not having a partner to assist in supporting the child financially is not the same source of difficulty for women who choose to become single mothers as it is for single women who face unexpected pregnancies. I expect women who decide to embark upon single parenthood have necessarily controlled for their single income during their decision-making process of having a

child. Furthermore, women who intentionally become single mothers (ex. surrogacy, adoption, IVF, etc.) are not at jeopardy for unexpected motherhood; quite the opposite, these women have specifically planned to become mothers. In this way, they are not disadvantaged per se by their single status because it was accounted for as part of their economic frontier.

In comparison, single women who do not expect to become pregnant may not have had the opportunity to optimize their financial planning to reach an income-earning potential high enough to compensate for not having a supporting partner. Being single is more financially damaging in this situation because it was not a deliberate and planned for event. Reproductive planning thus takes on additional importance in explaining single mothers' financial outcomes when an unplanned pregnancy may prevent her from controlling for a more ideal age, education level or income status. If these demographic variables which help inform a single mother's economic status are not already in a condition conducive to child-rearing, the time constraints of an unexpected pregnancy may make it impossible for women to dramatically improve their income-earning potential. This challenge illustrates the dual components of both the starting conditions of financial planning factors and the short-term variability of those factors within the concept of financial planning.

Beyond the starting values of the variables, financial planning opportunities are also impacted by "wiggle room"—how much a variable can change from its starting value within a given timeframe. Based on the inflexibility of a short timeframe, it is possible that a woman's financial circumstances will not be able to be changed or improved significantly from their original condition after discovery of an unplanned pregnancy. For instance, there is no variability in terms of age because there is no way to slow or accelerate the speed of aging. If a woman becomes pregnant when she is 24 years old, there is no way for her to change that starting value.

Education and employment, in comparison, are more flexible and may offer more opportunities to vary their starting values in a short time span.

Single women may make efforts to improve their educational or employment status in response to an unplanned pregnancy, but they will still face challenges. In terms of career status, it may not be possible to attain a promotion or reach a career level capable of supporting children within a nine month time window (Takada, 2011). Women may switch careers to seek out higher wages, improved benefits or full-time employment status, yet their success will largely be limited by their experience and educational background, which they may not be able to significantly alter within nine months. Moreover, if the value of the job is not enough to compensate for the daycare necessary to allow work, the challenges to single mothers will become even more extreme (Takada, 2011).

Having to change employment status quickly to respond to the pressures of single motherhood can actually have a negative impact on women and their income, according to Takada (2011). Because the unpredictability of single motherhood dictates a certain level of urgency in altering the employment frontier, women frequently fall into less ideal jobs because they lack the time to secure superior employment. As Takada (2011) states, "because some of the single mothers had been unemployed, but then wound up in a position where they had no choice but to find work, the variables that are ordinarily highly capable of explaining wages, such as academic background and number of years of experience, cannot explain wages in this case." In Takada's study, many women accepted jobs below their income-earning potential based on their work or educational background simply to gain the security of having a job at all as a result of the stresses and time constraints of unplanned single motherhood.

The inability to maximize upon reproductive planning opportunities undermines the benefits typically offered by financial planning by putting the financial planning level a woman would normally seek to control for in limbo. Although observable demographic variables like age, education, employment and income may most directly impact the economic outcomes single mothers face, it is the ability or lack thereof to take advantage of reproductive planning opportunities which establishes what age, education and employment status women will experience when they become mothers. In the face of unplanned pregnancy or unplanned single motherhood, women may not have the opportunity to control their financial planning schemes in a way that is most conducive to meeting the burdens of single motherhood.

Understanding the demographic trends previous studies have identified among single mothers, including younger maternal age, lower educational attainment, poor employment history and reduced income, as demonstrative of women's financial and reproductive planning processes provides greater insight into why and how single mothers experience poverty. Aside from observing that single mothers experience a higher poverty incidence as a result of these demographic risk factors for financial vulnerability, this approach allows us to understand what further information these demographic trends impart about the joint processes of reproductive and financial planning. If we can demonstrate not only that key demographic variables are correlated with specific economic outcomes, but that the values of these demographic variables are associated with different reproductive planning opportunities, we develop a heightened understanding of the meaning of observable demographic trends among single mothers.

REGRESSION

With this analysis, I sought to examine the relationship between reproductive planning and single mothers' demographic trends in order to test my argument that the demographic trends which serve to partially explain single mothers' economic outcomes are related to and partly explained by the reproductive planning realities single mothers face.

I utilized data from The National Survey of Family Growth (NSFG), a national survey led and administered by the National Center for Health Statistics (NCHS) under the Centers for Disease Control and Prevention (CDC). In 2002, the sixth cycle of the NSFG was released and included information collected from a nationally representative sample of 7,643 women aged 15-44 regarding such topics as family planning, pregnancy history, contraception use, sexual activity, partnership status and history, and more. The women were interviewed in-person by trained staff using a computer-assisted interview questionnaire between March 2002 and March 2003.

The purpose of my data analysis was to identify and examine the relationship, if any, between reproductive planning and the demographic variables which impact the financial outcomes experienced by single mothers and their families. I hypothesized that the reproductive planning statuses surrounding the pregnancies would correspond with certain demographic patterns which were associated with positive or negative economic outcomes to single mothers. In this way, single mothers' financial situations could be partially understood as a result of the reproductive planning scenario they experienced interacting with their demographic

characteristics. I hypothesized that unplanned and unwanted pregnancies would be positively

correlated to younger maternal age, lower educational attainment and poor employment

background compared to planned pregnancies. The null hypothesis in this paper, then, is that the

planning status of the pregnancy demonstrated no obvious relationship to the demographic

variables observed among single mothers.

Data Modelling

The NSFG offered various measures of respondents' financial situations, including their

income from wages/salaries, income from other sources such as self-employment, Social

Security, disability, retirement, etc., as well as total combined family income in 2001. I elected to

define and measure the financial situations of the women in my sample, which acted as my

dependent y variable, as their percentage of the poverty line because their stated total family

income was not directly organized alongside information regarding household size. The

percentage of poverty level was reported using six categories, each encompassing a 99

percentage point interval relative to the poverty level, as replicated below:

000-099	000-99 PERCENT OF POVERTY LEVEL
100-199	100-199 PERCENT OF POVERTY LEVEL
200-299	200-299 PERCENT OF POVERTY LEVEL
300-399	300-399 PERCENT OF POVERTY LEVEL
400-499	400-499 PERCENT OF POVERTY LEVEL
500	500 PERCENT OF POVERTY LEVEL OR GREATER

The National Survey's data file was organized by every pregnancy reported by the 7,643

women surveyed, such that my observations were all pregnancies to the surveyed women. The

survey group of 7,643 women reported a total of 13,593 pregnancies, such that in my dataset n =

13,593. It was necessary to restrict the dataset in the following ways:

1) I restricted the data to first pregnancies only because women with multiple pregnancies would be counted multiple times otherwise, skewing the results. In addition, as this paper is not concerned with the effect of multiple children, it is sufficient to examine women's economic outcomes with respect to their first child only.

2) I further restricted the data to first pregnancies that resulted in live birth, in this way removing pregnancies that ended in miscarriage or abortion, as my interest was in the economic outcomes of single mothers and not the economic outcomes of all women who experienced a pregnancy, regardless of ending. Though the NSFG collected detailed information from each woman regarding her pregnancy history, it was important to look solely at women who had given birth following a pregnancy in order to successfully identify women who could potentially be single mothers.

3) Lastly, I only looked at first pregnancies that resulted in live births to women who reported themselves as single. Single, in this context, was defined as women who were divorced, separated, widowed, or never married and not currently co-habiting. This allowed me to remove married and partnered mothers from the sample, who would have been included in the analysis of economic outcomes otherwise.

I first ran an OLS regression regressing the dependent poverty variable on the common demographic variables (age, education, and employment) utilized in other studies in order to establish their explanatory relationship with the dependent y variable. (I also ran a regression using only pregnancy planning measures as independent variables and another using both demographic and reproductive planning variables jointly as independent regressors to experiment with the best-fitting model). I then examined the correlations between these demographic

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variables and the various measures of pregnancy planning using ANOVA and the Chi-square

tests.

Table 2
Variables of Interest

Name	Variable	As Measured	As Asked in Survey
Poverty Level Income	POVERTY	0-500% of poverty level	N/A
Maternal Age at Interview	AGER	From 15-44 years	N/A
Maternal Educational Attainment	EDUCAT	9th grade – 7+ years of college/grad school	What is your highest completed year of schooling?
Maternal Employment Status	LABORFOR	Working full-time, part-time, temp, not working but looking for work, stay-at-home, school, and other	Asked to categorize themselves according to the employment status that currently best described them
Stopped Birth Control	STOPDUSE	Yes, No, Refused, Don't Know	Before you became pregnant, had you stopped using all methods of birth control?
Reason no Birth Control	WHYSTOPD	Yes, No, Don't Know	Did you stop using birth control because you wanted to become pregnant?
Wanted a Baby	WANTBOLD	Yes, No, Not Sure, Refused, Don't Know	Before you became pregnant, had you wanted a(another) baby at any time in the future?
Timing of Pregnancy	TIMINGOK	Too Soon, Right Time, Later, Didn't Care, N/A, Refused, Don't Know	Would you say you became pregnant too son, at about the right time, or later than you wanted?
Wanted Pregnancy with Partner	WTFPART1	Definitely yes, Probably yes, Probably no, Definitely no, Don't Know	Before you became pregnant, did you wnt to have a(another) baby with that partner?
Happiness of Pregnancy	FEELINPG	1-10 with 1 = very unhappy and 10 = very happy	Which number best describes how you felt when you found out you were pregnant?
Trying for Pregnancy	TRYSCALE	0-10 with 0 = trying avoid pregnancy and 10 = trying for pregnancy	How much were you trying to either get or avoid pregnancy on a scale of 0-10?

Wantedness of Pregnancy	WANTSCAL	0-10 with 0 = want avoid pregnancy and 10 = want pregnancy	On a scale of 0-10, how would you rate you wanted or didn't want a pregnancy right before you got pregnant?

RESULTS

After limiting the data to first pregnancies resulting in live birth to single mothers, I was left with 1,488 observations. I regressed the poverty level income on the independent variables of maternal age, educational attainment and employment status.

Table 3
Output of Demographic Regression

Variable	Coefficient	Standard Error	T-value	P>|t|	Confidence Interval
Age	1.899	0.44	4.29	0.000	1.03 2.76
Education	17.74	1.27	12.01	0.000	14.85 20.64
Working Part-time	-51.76	9.95	-5.20	0.000	-71.29 -32.23
Working Temporary	-33.14	15.38	-2.15	0.031	-63.31 -2.97
Working Maternity Leave	-75.91	34.93	-2.17	0.030	-144.45 -7.37
Looking for work	-49.88	13.06	-3.82	0.000	-75.51 -24.24
School	-96.57	28.57	-3.37	0.001	-152.81 -40.34
Caring for Family	-48.44	20.03	-2.42	0.016	-87.73 -9.14
Constant	-77.82	22.01	-3.54	0.000	-120.99 -34.64

The regression revealed an R-squared value of 0.2084 and adjusted R-squared value of 0.2031, indicating the absence of extraneous predictors in the model. Age, education and employment status were all shown to be statistically significant at the 5% level. Maternal age demonstrated a coefficient of 1.89, such that every additional year added to age resulted in a 1.89

increase in the percentage of poverty level. Education revealed an even stronger coefficient of 17.75, indicating that each additional grade level achieved increased the percentage of poverty level by 17.75. As single mothers' labor force participation was organized as a categorical variable, the coefficients revealed the impact on poverty level income for mothers in full-time employment v. part-time employment v. temporary employment, and so on. The coefficients were all strongly negative; for instance, the average difference in poverty level between women working full-time compared to women working part-time was -51.76 and the average difference in poverty level between women working part-time compared to women working temporary positions was -33.14. Every iteration moving away from full-time employment revealed a shrinking effect on the percentage of poverty level.

These results are consistent with the findings of other studies that examine the role of demographic variables on single mothers' economic outcomes, as well as intuition and common sense. Higher maternal age and educational attainment were positively related to higher levels above poverty income. Single mothers in part-time or temporary work, or who were unemployed, in school, or stay-at-home mothers, all demonstrated lower values against the poverty line compared to full-time working mothers.

After establishing the relationship between maternal age, education and employment status and single mothers' economic positions relative to the poverty line, I next attempted to identify an association, if any, between reproductive planning measures and the demographic variables observed among single mothers. Because my reproductive planning variables were all categorical in nature, I utilized the Chi-square test to examine if there was a relationship between the categorical reproductive planning variables and single mothers' employment status, which was also categorical in nature. I used one-way ANOVA to examine whether maternal age and

education levels, both continuous variables, differed based on reproductive planning measures that were categorical in nature.

Table 4
P Values of Chi-2 and ANOVA Tests

Variable	Age	Education	Labor Force Status
STOPDUSE	0.0273	0.7339	0.635
WHYSTOPD	0.0000	0.0052	0.462
WANTBOLD	0.2058	0.0383	0.294
TIMINGOK	0.040	0.2838	0.960
WTFPART1	0.2013	0.2057	0.861
FEELINPG	0.0102	0.8086	0.259
TRYSCALE	0.0519	0.3733	0.902
WANTSCAL	0.0000	0.6249	0.691

None of the reproductive planning variables demonstrated a statistically significant relationship with single mothers' employment statuses. However, this variable was reported as the current employment status of the women surveyed, as no information was collected and available regarding the employment status of the women contemporaneous to their pregnancy. As such, these results reveal, perhaps unsurprisingly, that were was no demonstrable relationship between the planning status of pregnancy and the current employment status of the single mother, some time later.

However, maternal age and education showed statistically significant differences for several reproductive planning variables, indicating that women with different reproductive planning experiences had statistically different mean values of maternal age and education. In order to determine which specific reproductive experiences differed from one another in terms of mean maternal age and education level, I created pairwise comparisons results using the Tukey post hoc test.

Table 5
Tukey Effect post hoc test for Maternal Age and Education

Variable	Coefficient	Std. Error	Tukey t-value	Tukey P>|t|	Tukey Confidence Interval
Age					
STOPDUSE NO vs YES	-1.17	0.43	-2.67	0.021	-2.20 -0.14
WHYSTOPD NO vs YES	-3.11	0.55	-5.61	0.000	-4.19 -2.02
TIMINGOK Right time vs. Too soon	4.03	0.41	9.64	0.000	2.89 5.18
TIMINGOK Later vs. Too soon	3.94	0.97	4.03	0.001	1.26 6.61
FEELINPG 10 vs 5	3.93	1.10	3.57	0.016	0.40 7.46
WANTSCAL 10 vs 0	6.90	1.10	6.27	0.000	3.32 10.49
WANTSCAL 10 vs 3	6.51	1.76	3.68	0.013	0.76 12.25
Education					
WHYSTOPD NO vs YES	-0.52	0.18	-2.80	0.005	-0.88 -0.15
WANTBOLD NO vs YES	-0.47	0.15	-3.13	0.016	-0.88 -0.05

I have reported above only the results that were significant at the 5% level. I found there was a statistically significant difference in the mean maternal age between women who had not stopped using birth control prior to their pregnancy and those who had. Women who had not stopped their birth control method prior to becoming pregnant were 1.17 years younger on average than women who had stopped using birth control. The fact that women who deliberately stopped birth control prior to becoming pregnant were, on average, older than women who did not stop their birth control method prior to pregnancy seems to demonstrate the joint ideas of reproductive and financial planning controlling for age.

I also found a statistically significant difference in mean maternal age between women who had not stopped using birth control prior to their pregnancy because they wanted a baby and women who had stopped using birth control prior to their pregnancy due to a reported desire to have a baby. Women who did not stop birth control due to a desire to have a baby were, on average, 3.11 years younger than women who stopped birth control because they wanted to have a baby. This finding supports the idea that single mothers who did not intend or desire to become pregnant, as measured by their reported reasons for stopping birth control, were younger than those mothers who desired to have a baby on account of different reproductive planning experiences.

Below is a summary of the remaining findings:

- Women who said their pregnancy came at the right time vs. those who said it came too soon (unplanned/unexpected) were older on average by 4.03 years
- Women who said their pregnancy came later than wanted vs. those who said it came too soon (unplanned/unexpected) were older on average by 3.94 years
- Women who rated themselves a 10 on a scale of 1-10 in happiness to be pregnant were 3.93 years older than women who rated themselves as only a 5
- Women who said they wanted to get pregnant, rating themselves a 10 on a scale of 1-10, were on average 6.9 years older than women who said they wanted to avoid getting pregnant, rating themselves a 0 on the same scale.
    - Women who rated themselves a 10 in wanting to get pregnant were also 6.51 years older on average than women who rated themselves as a 3
- Women who had stopped using birth control prior to their pregnancy because they did not want a baby had a half-grade less education (-0.52) than women who had stopped using birth control prior to their pregnancy due to their desire to have a baby

- Women who said they did not want to have a(nother) baby at some point in the future had a half-grade less education (-0.47) on average compared to women who said they did want to have a(nother) baby at some point in the future

Keep in mind that all of the above women were single women who had experienced a live birth describing the thoughts and plans they held contemporaneous to their pregnancies. These differences in maternal age and education level depending upon the various reproductive experiences of women were statistically significant, meaning that the different reproductive experiences examined above demonstrated a real relationship to the average age or education level of the mother. I found that single women who indicated some type of desire or planning for pregnancy in the form of stopping birth control, their happiness level to be pregnant, desire to have another baby, etc. were older and had higher education levels than single women who had also given birth, but not reported the same feelings and behaviors toward welcoming or expecting a pregnancy. These findings seem to support my argument about the impact of reproductive planning opportunities on the demographic variables which have been shown to predict single mothers' economic outcomes.

Over all, my regression analysis demonstrated that the key demographic variables of maternal age, education level and employment status demonstrated statistically significant relationships with single mothers' economic outcomes that met expectations both in terms of directionality and magnitude. I utilized Chi-square and ANOVA tests to determine the association between reproductive planning variables and demographic variables, and found significant associations did exist for certain reproductive planning measures and maternal age and education. Turning to pairwise comparisons using the Tukey effects test, I was able to determine which reproductive planning experiences resulted in statistically different mean values of maternal age and education. The results supported my hypothesis regarding the relationship

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between planned vs. unplanned pregnancies and the demographic values of maternal age and education.

DISCUSSION

The data analysis performed for this paper appears to support the argument that reproductive planning opportunities can be used to understand the age and education values single mothers demonstrate. When reproductive planning was present, using a variety of measures, single mothers tended to be older and better educated compared to single mothers who had not appeared to welcome or expect a pregnancy.

The basis of this paper was to argue that the demographic variables and trends observed among single mothers, particularly poor single mothers, relayed greater information and meaning related to the specific processes at work surrounding single motherhood than previous literature had explored. In understanding not just that the values of demographic variables are correlated to different economic outcomes to single mothers, but that those demographic variables are indicative of financial planning processes that are sensitive to reproductive planning opportunities, we expand our understanding of how some single mothers experience poverty while others do not.

Individuals use financial planning, consciously or not, to develop an age, education level and employment status that suit their preferences as they plan and prepare for large economic decisions, including child-rearing. It is expected that individuals aspire to a degree of financial stability, partially dictated and determined by these demographic variables, in conjunction with the economic decisions they make. Reproductive planning has the potential to be implemented simultaneously to financial planning such that reproductive decisions are made in concurrence

and agreement with financial planning frontiers. However, the inability to take advantage of reproductive planning opportunities carries the capacity to undermine the benefits of financial planning by preventing individuals from making financial planning choices that are best suited to child-rearing.

Knowing 50% of all pregnancies in the United States were unplanned in 2001 (Bitler & Waller, 2008), further emphasizes just how important the interaction between reproductive and financial planning is. When individuals are unable to ideally control their financial planning level alongside their reproductive experiences, they are more likely to experience unfavorable economic outcomes. The relationship between reproductive planning and financial planning lends itself to several policy implications – mainly, that women must be able to fully utilize reproductive planning opportunities in order to adequately develop and prepare their financial planning levels, which are a function of their age, education level and employment status.

My data analysis showed that single mothers who demonstrated several different measures of reproductive planning were older and better educated on average than single mothers who had not appeared to anticipate or welcome a pregnancy at that time. As such, improving women's ability to plan reproductively could enable them to more completely control their financial planning level and, ultimately, their financial outcome. Access to birth control, abortion rights, woman-friendly health care, sexual education and other solutions that improve women's control over their reproductive choices all stand to benefit women and single mothers in their ability to maximize financial planning in conjunction with reproductive planning.

This approach to understanding single-mother poverty thus draws our attention and focus to the importance of reproductive planning and its role on the financial planning levels single mothers experience. Previous studies highlighting only the demographic trends observed among single mothers, in comparison, have indicated that raising the average maternal age, education level and employment

background of single mothers could improve economic outcomes to single mothers, but have lacked the ability to point to the role of reproductive planning as both a challenge and potential solution to single mothers. I hope that my analysis on reproductive planning and its relationship to single mothers' observable demographic variables provides greater insight into the importance of reproductive planning in contributing to the financial outcomes single mothers experience, and in turn can be used to support and guide policy provisions related to single-mother poverty.

It ought to be noted that financial planning (age, education, employment) is not a perfect, or the only, way of describing single mothers' financial outcomes, and that individuals may exhibit reproductive and financial planning decisions that defy our assumptions regarding rationality in accordance with neoclassical economic theory. Individuals frequently make non-optimal decisions for a variety of reasons, such as lack of information or foresight. The discount rate is one such economic concept that highlights how lack of foresight and future planning can distort people's decision frontiers. A higher discount rate reflects a stronger resistance to sacrificing current consumption in order to protect future consumption. In this way, a person may make decisions that negatively impact their future consumption based on the way they value their present consumption (Chesson et. al, 2006).

Harrell Chesson, Jami Leichliter and others examined the relationship between adolescents' discount rates and their willingness to engage in "risky" sexual behaviors, such as multiple partners, non-monogamous sexual relationships, STD history and unplanned pregnancies. Chesson and Leichliter (2006) found that higher discount rates were significantly associated with past and current pregnancy. The authors explained these results as stemming from the strong emphasis teenagers and young adults typically place on attaining immediate gratification (Chesson et al., 2006). High adolescent discount rates make teenagers more likely to engage in sexually risky behavior, like a higher number of sexual partners or participating in

unprotected sex. As such, high discount rates help explain the association between unplanned pregnancy, younger maternal age and single-mother status.

Additionally, low-income people will always continue to have children, regardless of our understanding of financial planning. Although the concept of financial planning may lead us to expect that people who are not financially prepared for children will seek to delay child-rearing until a degree of financial stability is reached, in practice this assumption would mean impoverished people would never deliberately have children, an assumption that is demonstrably untrue. Furthermore, although we assume that individuals seek financial stability in conjunction with child-rearing, women who experienced unplanned pregnancies and displayed poor financial planning levels at the same time who became single mothers illustrate that their utility from having a child under these conditions was higher than that of the alternatives of abortion or adoption. Lastly, our use of reproductive planning measures in understanding and interpreting demographic variables can be compromised because individuals can be misleading or dishonest when questioned retrospectively about the planning status of a pregnancy, much as they can be about abortion reporting as well.

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