MEASURING HOPE: AN EMPIRICAL APPROACH WITH VALIDATION IN RURAL MYANMAR

By

Jeffrey R. Bloem

A THESIS

Submitted to Michigan State University in partial fulfillment of the requirements for the degree of

Agricultural, Food, and Resource Economics-Master of Science

ABSTRACT

MEASURING HOPE: AN EMPIRICAL APPROACH WITH VALIDATION IN RURAL MYANMAR

By

Jeffrey R. Bloem

Development economists have recently begun considering the role of hope in determining various observed behaviors relating to both production and consumption decisions of the poor. Although several papers have examined how the concepts of hope and aspirations may fit into existing economic theories, empirical studies have yet to validate a reliable approach to measure hope. This paper seeks to fill this gap by adapting an empirical approach to measure hope, developed by psychologists, to the context of rural Myanmar. In this paper, a detailed description of the survey instruments of this measurement approach is presented along with several validity tests. These tests include: An investigation of construct validity, which examines how educational attainment, gender, and age correlate with hope and aspirations. A factor analysis testing for conceptual validity, which examines how hope relates to several related, but distinct, concepts such as self-efficacy and locus of control. And an examination of empirical validity by testing how measurements of hope correlate with perceptions of household welfare and the provision of basic necessities. This study finds that, with sufficient effort adapting survey instruments to a local context, the measurement approach developed by psychologists performs relatively well in rural Myanmar. Although future research could make various improvements, this study provides the necessary foundation for viable and reliable empirical measurements of hope in developing countries.

Dedicated to Mom and Dad.

ACKNOWLEDGEMENTS

To my academic and thesis advisor, Duncan Boughton, thank you for your support, suggestions, and insights throughout the process of this project. Thank you for the opportunity to explore this topic and learn from multiple trips to Myanmar. My time at Michigan State University was made special due to your guidance.

To my thesis committee members, Duncan Boughton, Lindon Robison, and Richard Lucas thank you for meaningful and insightful office chats and for your comments on this paper.

Thank you to the United States Agency for International Development (USAID) for generous funding provided through the Feed the Future Innovation Lab for Food Security Policy (FSP) at Michigan State University in support of this project.

To all those who helped make this project a reality through carrying out fieldwork in rural Myanmar. Specifically, thanks to those working in coordination with the Center for Economic and Social Development (CESD) by performing open-ended interviews and conducting a household survey. Heartfelt appreciation goes to the contribution of Ellen Payongayong who offered feedback and expert guidance in survey design. A special thanks goes to Kyan Htoo who managed the training of enumerators and the implementation of the 'Hope Survey' in Mon State, Myanmar. A sincere thanks goes the tireless work of several members of CESD including (but not limited to) Aung Hein, Khun Moe Htun, Aye Mya Thinzar, A Myint Zu, and Lu Min Lwin for excellent work pre-testing, translating, and sensitizing the survey to the context of rural Myanmar. A special thanks goes to the excellent team of enumerators who sat through hours of in person household surveys.

Finally, thanks to all those who have supported me and spent hours instructing me during my time at Michigan State University, including (but not limited to): Scott Loveridge, Nicole Mason, Saweda Liverpool-Tasie, David Ortega, Songqing Jin, Andrew Dillon, Mark Skidmore, David Schweikardt, Soren Anderson, Lindon Robison, Richard Horan, and Scott Swinton.

PREFACE

"The real tragedy of the poor is the poverty of their aspirations." - *Adam Smith, 18th Century Moral Philosopher and Economist*

"Everything that is done in the world is done by hope. No husbandman would sow one grain of corn, if he hoped not it would grow up and become seed; no bachelor would marry a wife, if he hoped not to have children; no merchant or tradesman would set himself to work, if he did not hope to reap benefit thereby. How much more, then, does hope urge us on to everlasting life and salvation?" - *Martin Luther, 15th Century Theologian*

"For, when you are approaching poverty, you make one discovery which outweighs some of the others. You discover boredom and mean complications and the beginnings of huger, but you also discover the great redeeming feature of poverty: the fact that it annihilates the future. Within certain limits, it is actually true that the less money you have, the less you worry. When you have a hundred frances in the world you are liable to the most craven panics. When you have only three frances you are quite indifferent; for three frances will feed you till to-morrow, and you cannot think further than that. You are bored, but you are not afraid. You think vaguely, "I shall be starving in a day or two—shocking, isn't it?" And then the mind wanders to other topics. A bread and margarine diet does, to some extent, provide its own anodyne." - *George Orwell, in "Down and Out in Paris and London"*

"What is happening in Liberia is but a microcosm of the transformation that is sweeping across many countries. Dictators are being replaced by democracy. Authoritarianism is giving way to accountability. Economic stagnation is turning into resurgence. And most important, despair is being replaced by hope—hope that people can live in peace with their neighbors, that parents can provide for their families, that children can go to school and receive decent health care, and that people can speak their minds without fear." - *Ellen Johnson Sirleaf, Current President of Liberia*¹

¹ As quoted by Steven Radelet in "The Great Surge: The Ascent of the Developing World" (2015) Simon & Schuster. New York, NY.

TABLE	OF	CONTENTS
-------	----	-----------------

LIST OF TABLES	vii
LIST OF FIGURES	viii
SECTION 1: INTRODUCTION 1.1 Some Definitions 1.2 The Study Site: Mon State, Myanmar	1 3 5
SECTION 2: A REVIEW OF THE LITERATURE 2.1 Theoretical Literature 2.2 Empirical Literature	9 10 18
 SECTION 3: DESIGNING A MEASUREMENT OF ASPIRATIONAL HOPE 3.1 Data 3.2 Survey Design 3.2.a. Survey Instruments 3.2.b. Visual Scale 3.3 Summary Statistics 3.3.a. Aspirations 3.3.b. Hope Scale 3.3.c. Self-Efficacy 3.3.d. Locus of Control 	22 22 23 24 26 28 28 30 35 36
SECTION 4: TESTING FOR VALIDITY OF THE MEASUREMENT OF HOPE 4.1 Construct Validity 4.2 Conceptual Validity 4.3 Empirical Validity	39 40 44 47
 SECTION 5: DISCUSSION 5.1 Measurement Issues 5.1.a. Issues with the Original Aspirations Module 5.1.b. Factors of Bias 5.2 Priorities for Future Research 5.2.a. Validating Interpersonal Comparability 5.2.b. Identifying Poverty Traps 5.2.c. Establishing Causality 5.3. Policy Implications for Myanmar's Rural Transformation 5.3.a. Investments in Rural Infrastructure 5.3.b. Adoption of Modern Agricultural Technologies 5.3.c. Government Agricultural Agencies 5.3.d. Investments in Rural Education Systems 	52 52 55 57 57 59 60 62 62 63 65 67
SECTION 6: CONCLUSION	69
APPENDIX	71
BIBLIOGRAPHY	80

LIST OF TABLES

Table 1: Aspirations – Summary Statistics (continuous variables)	29
Table 2: Aspirations – Summary Statistics (discrete variables)	30
Table 3: Components of the Hope Scale 1	31
Table 4: Hope Scale Classifications	31
Table 5: Integrated Hope Classifications	33
Table 6: Self-Efficacy – Summary Statistics	35
Table 7: Components of Locus of Control Scale 1	37
Table 8: Determinants of Aspirations	41
Table 9: Determinants of the "Aspirations Gap"	42
Table 10: Determinants of Hope (Agency and Pathways)	44
Table 11: Factor Analysis (Polychoric Correlation Matrix)	46
Table 12: Perceived Household Welfare and Hope (Agency and Pathways)	48
Table 13: Perception of Basic Needs and Hope (Agency and Pathways)	49
Table 14: Robustness Check for Table 10, Determinants of Hope	74
Table 15: Robustness Check for Table 12, Perceived Household Welfare and Hope	75
Table 16: Robustness Check for Table 13, Perception of Basic Needs and Hope	76

LIST OF FIGURES

Figure 1: Histogram of the Agency Sub-Score	72
Figure 2: Histogram of the Pathways Sub-Score	72
Figure 3: Histogram of the Total Hope Score	73

SECTION 1: INTRODUCTION

In recent years the topic of aspirations has generated excitement and intrigue among empirical development economists. As a relatively new potential causal mechanism for escaping poverty, much is to be studied and understood. Many have pointed out that for most of its short history, development economics has primarily focused on relieving the *external* constraints of the poor (Glewwe et al. 2014; Lybbert and Wydick 2016). The emerging literature on aspirations is part of a larger trend to expand the possibilities of what truly binds the economic and social progress of individuals, households, and societies. Development economists are now considering the existence, and even the primacy, of *internal* constraints the poor may face (Banerjee and Mullainathan 2010; Basu 2011; Kaboski et al. 2014; Dupas and Robinson 2011; Haushofer and Fehr 2014; Jantti et al. 2014; Karlan et al. 2014; Mani et al. 2013; and Yoshikawa et al. 2012).

A demonstration of the growing appreciation of this perspective can be found in a widely celebrated randomized evaluation performed across six countries by Banerjee et al. (2015) published in the journal *Science*. In speculating about the specific mechanisms driving their results, the authors conclude: "Perhaps this program worked by making beneficiaries feel that they mattered, that the rest of society cared about them, that with this initial help they now had some control over their future wellbeing, and therefore, the future could become better". There are many concepts packed into this short statement. Having "*control over the future*" indicates some level of personal agency. Thinking that "*the future could be better*" points to an expansion of aspirations and feelings of optimism. Possessing a feeling "*that they mattered*" and "*that the rest of society cared about them*" communicates a sense of belonging, a boost of self-esteem, and a strengthening of voice through the social contract. One way of synthesizing what the authors are saying here is that, perhaps this program worked because it caused participants to have hope in a better future.

Without empirical tools to measure hope, however, Banerjee et al. (2015) are only able to rule out as many other potential mechanisms as possible and speculate as to the specific role of hope. Indeed,

Banerjee et al. (2015) agree, when stating: "A much more detailed psychological measurement would be necessary to fully understand this result and its underlying mechanisms".

Empirical research in psychology in the 1960s and 1970s made the first attempts at quantifying a measure of hope (Gottschalk 1974). Charles Snyder, a social psychologist, built upon this early work throughout his career and eventually developed and validated three different hope scales¹ (Snyder 1994). Much, if not all, of this work developing an empirical measurement technique for hope was carried out among university students and in clinical settings in the United States and Europe. Despite the recent interest in hope as a potential causal mechanism of poverty reduction, little to no research has been done to develop, test, and validate an empirical approach of measuring hope amongst the rural poor in developing countries.

This paper seeks to fill this gap in knowledge by presenting survey design methods along with empirical measurements of aspirational hope in rural Mon State, Myanmar. To do this a unique questionnaire was designed and administered through a household survey that aims to measure aspirations, hope, self-efficacy, and locus of control. In this survey aspirations are measured across several key dimensions² and integrated with a contextualized version of the hope scale developed by Snyder (1994, 2002). This measurement approach is then run through a series of validation tests that seeks to answer the question: is this measurement approach effectively measuring hope and only hope? To do this several procedures are presented. First, an analysis of the determinants of aspirations and hope is presented. This test examines how hope and aspirations correlate with expected covariates such as age, gender, and educational attainment. Second, the hope measurement is compared with two similar, yet distinct, concepts: self-efficacy (Bernard, Dercon, and Taffesse 2011) and locus of control (Rotter 1966). Third, the hope measurement is compared with welfare perceptions data, both broadly speaking and along specific dimensions of welfare such as food, clothing, housing, health, and education.

¹ One intended for children and two intended for adults, one being more reliable over several weeks and the other being more malleable to the present mood of the individual.

² Using a method based on that of Bernard and Taffesse (2014).

The remainder of this paper is organized as follows: Section 1 concludes with a conceptual discussion about the definition of hope and introduces the study site of Mon State, Myanmar. Section 2 reviews the emerging theoretical and empirical literature on hope and aspirations in development economics. Section 3 describes the design of the various survey instruments included in the questionnaire used to collect data for this study. Section 4 presents empirical analysis that provides evidence supporting the validation of the measurement approach employed in this paper. Section 5 offers a discussion on the measurement approach, lays out some priorities for future research, and presents some policy implications for the development of rural Mon State, Myanmar. Finally, section 6 concludes the paper.

1.1 Some Definitions

Before diving too far into the details on measuring hope, it is important to properly define what we mean when we talk about hope. The concept of hope is closely related to several well-known concepts in the academic disciplines of both psychology and economics. In psychology, concepts such as optimism, self-efficacy, self-esteem, and locus of control are closely related but distinct from the concept of hope. In economics, concepts such as subjective expectations, risk aversion, reference dependent utility, and discount rates are, again, closely related but distinct from the concept of hope (see Lybbert and Wydick 2016).

According to many psychologists, hope is anchored by meaningful and desired future goals, commonly referred to as aspirations, which provide mental reference points or targets in the future and lay a foundation for action in the present (Snyder 2002; Snyder, Cheavens, and Sympson 1997). Without the necessary cognitive and physical means to reach these goals, however, simply having aspirations can be futile (Snyder 1994; Snyder et al. 1991). Hope also necessitates that an individual is able to adequately visualize pathways, a causal chain of behaviors linking present actions to future outcomes (Snyder 2002). Finally, hope requires that an individual possess sufficient personal agency to motivate progress along these pathways. Therefore, in this paper hope is defined as a function of aspirations, agency, and pathways (Snyder 1994, 2002; Lybbert and Wydick 2016).

While developing an economic model of hope, Lybbert and Wydick (2016) make the useful distinction between "aspirational hope" and "wishful hope", where the difference lies in the meaning of the word hope in the phrases "hope *to*…" and "hope *that*…". Aspirational hope includes some sort of perceived agency over events in the future—"I hope *to* install irrigation", while wishful hope possess little to no agency over the future—"I hope *that* it rains". Under the definition used in this paper, hope differs from optimism and self-esteem in that the later concepts may include both aspirational and wishful hope. Being optimistic about the future, or having high self-esteem, is agnostic about an individual's agency over the future.

The concepts of locus of control and self-efficacy are well established in psychology (Bandura 1977; Rotter 1954, 1966), but again differ slightly from our concept of hope. Both self-efficacy and locus of control focus on the perceived capabilities of an individual to achieve some sort of goal. Snyder (2002) makes a distinction between these two concepts by highlighting the difference of the use of the words "*can*" and "*will*". Self-efficacy and having an internal locus of control refer to the perceived ability to do something—"I *can* exercise tomorrow", whereas hope refers to the intention to act—"I *will* exercise tomorrow". Although the concepts of hope, locus of control, and self-efficacy are each distinct from each other, they all are relatively close in meaning and could represent similar perspectives of the future.

The well-known economic concept of risk aversion has some parallels to aspirational hope; however, the presence of some unattained aspiration may complicate the typical practice of generally measuring an individual's risk coefficient and defining individuals broadly as existing somewhere on the spectrum between risk averse and risk loving. Aspirations can be thought to create a reference point in the utility function, however among some psychologists the concept of hope is a bit more nuanced. Conventional theories of reference-dependent utility suggests that loss averse behavior is generated in outcomes just below the reference point with perceived gains in outcomes just above the reference point (Kahneman and Tversky 1979). Hope differs in that there is a degree of resilience implicit among individuals who possess aspirational hope as, "it is more difficult to disappoint a hope than an

expectation" (Miceli and Castelfranchi 2010). This is also where hope diverges from the concept of subjective expectations³.

1.2 The Study Site: Mon State, Myanmar

Modern-day Myanmar presents an interesting and unique setting to develop an approach to empirically measure hope. After nearly five decades steeped in civil wars, economic mismanagement, and authoritarian military rule, Myanmar has entered a period of relative peace and broad political and economic reforms. This study takes place specifically in Mon State, a coastal region in lower Myanmar with close proximity to Thailand. Mon State is primarily home to those with Mon ethnicity⁴, who have their own unique history of political oppression and marginalization.

Beginning in 1824 and ending in 1948 the land area now known as Myanmar was colonized by Great Britain with noteworthy resentment by the local Burmese and other ethnic groups⁵. Upon gaining independence, Burma established a bicameral parliament and held multi-party elections in 1952, 1956, and 1960. In March of 1962 a military coup halted whatever progress had taken place since independence. After the coup, the military government controlled much of the economic production within the country and made violent attempts to suppress any protests to their authoritarian rule.

A common explanation for Burma's decline from one of the most prosperous countries in Southeast Asia to becoming one of the least developed countries on earth is the flawed ideology of the military run government. Some suggest that these flaws are more accurately understood as artifacts of the political institutions and social norms installed by the British colonialists (Brown 2013). One of the notable present-day consequences of this economic mismanagement is the extremely poor quality of Myanmar's educational system, particularly in the rural areas of the nation. In a household survey of rural Mon State, Myanmar respondents were asked about the relative adequacy of wellbeing along five

³ See Delavande, Gine, and McKenzie (2011) for a summary of the literature on measurements of subjective expectations in developing countries.

⁴ While the Mon are the ethnic majority in Mon State, the population is relatively ethnically diverse with Bamar (Burmese), Karen, and Pa-O ethnicities also being represented.

⁵ See "Shooting an Elephant", a short story by George Orwell.

dimensions, and of these dimensions education was reported to be the least adequate by a very large margin (CESD *forthcoming*).

In 1988 pro-democracy demonstrations throughout Burma lead to the killing of thousands, yet another military coup, and the formation of the State Law and Order Restoration Council (The Council). A year later, as part of a plan to regain public support, The Council completed plans to hold the first multi-party election in over 30 years. Although the National League for Democracy (NLD), led by opposition leader and Nobel Peace Prize Laureate Aung San Suu Kyi, won over 80% of the seats in Parliament, the military government refused to cede ruling power. Furthermore, most of the elected parliamentarians were arrested and imprisoned while Aung San Suu Kyi, herself, was placed under house arrest for the next fifteen years.

Meanwhile in Mon State, the Mon sought to become independent from Burma. Refusing secession, the Burmese army violently enforced their rule over the Mon people, sparking a civil war. Resistance to the ruling military regime continued in Mon State until 1995 when a cease-fire was agreed to between Mon separatists and the central government.

In 2008 a new constitution was published establishing a vision for the country to become a "flourishing democracy". As part of this new constitution the country was re-named 'Myanmar' and plans were made for an election to be held in 2010. In this election the military-affiliated Union Solidarity and Development Party claimed a highly disputed victory. Since the election the government, under the leadership of President Thein Sein, has set course on a number of broad political and economic reforms. Drastic measures have taken place to make the political process more democratic and representative with an economy that is more market-oriented and decentralized.

In 2015 Myanmar's first "free and fair" multi-party general elections were held resulting in the landslide victory of Aung San Suu Kyi's NLD in the Parliament. In March of 2016, the NLD majority parliament voted to elect Htin Kyaw as the next President of Myanmar. Htin Kyaw is a long-time friend and ally to Aung San Suu Kyi, who is—in theory—expected to hold increased political power under the

new administration⁶. It is, however, yet to be seen what the role of the military will be in the political sphere moving forward and if Myanmar will remain fixed on this newfound trajectory toward economic decentralization and representative democracy.

Considering this history it may be unsurprising to find that many living in Myanmar over the past five decades have experienced despair due to authoritarian rule, social marginalization, and diminished human agency. As the political and economic landscape within Myanmar slowly changes, questions remain: is this despair truly being replaced by hope? Are all within the country feeling the psychological dividends of this top-down transformation? Or are there specific stratifications within the population that are being left behind?

These questions are not unique to Myanmar, as Ghatak, Ghosh, and Kotwal (2014) observe about the past decade in India:

[2004-2013 was] a period during which growth accelerated, Indians started saving and investing more, the economy opened up, foreign investment came rushing in, poverty declined sharply and building of infrastructure gathered pace . . . [But a] period of fast growth in a poor country can put significant stress on the system which it must cope with. Growth can also unleash powerful aspirations as well as frustrations, and political parties who can tap into these emotions reap the benefits.⁷

If the next decade for Myanmar looks at all like the past decade for India, many would consider this to be a success. As the economy opens up bringing with it accelerated growth, increased foreign investment, large investments in infrastructure, and a sharp decline in poverty on average; will these advancements unleash powerful aspirations or vast frustration? Will the dividends of peace, security, and democracy include the farmers, fishermen, entrepreneurs, and families in the rural areas or will the impacts be contained to the rapidly developing urban areas?

Myanmar's history, coupled with recent trends in development economics, motivates the objective of this research. In recent years an increasing number of development economists have become interested in understanding the dynamics of hope and aspirations as it relates to the behavior of the poor.

⁶ At the time of writing this paper, the Htin Kyaw administration has passed a new law conferring Aung San Suu Kyi to be Myanmar's "State Counselor"—a political position similar to that of a Prime Minister.

⁷ As quoted by Genicot and Ray (2015).

Many expect that an increased understanding of these dynamics will lead to more informed and bettertargeted development initiatives. A crucial first step in developing a better understanding of hope and aspirations, however, is to be able to measure it in a reliable, viable, and accepted manner. The task of this research is to begin the inquiry of how to effectively measure hope amongst the rural poor in developing countries using household surveys.

SECTION 2: A REVIEW OF THE LITERATURE

The concept of hope has historically been a concept left to philosophers, theologians, and musicians; development economists have begun to theorize on how hope influences human behavior (Duflo 2012; Lybbert and Wydick 2016). Recent research in development economics and psychology has suggested that living in poverty may have specific psychological consequences that may stall, or even prevent, a future escape from poverty (Haushofer and Fehr 2014; Schilbach, Schoffeld, and Mullainathan 2016). One increasingly popular theory of the psychology of poverty suggests that poverty causes stress that "taxes the cognitive bandwidth" of the human brain (Mullainathan and Shafir 2013). In this manner, poverty itself is found to impede cognitive functions (Mani et al. 2013). Thus, the environment in which poverty exists is increasingly understood as being associated with a reduction in risk-taking behavior, an increase of discount rates on future payoffs, and at times a general aversion to taking-up seemingly obvious welfare-enhancing investment or technologies (Goldstein and Udry, 2008; Duflo, Kremer, and Robinson, 2008; Miguel and Kremer, 2004).

One of the emerging explanations for this phenomena comes from social psychology and suggests that the external constraints that the poor face on a regular basis influences the internal logic governing the decision making process (Rotter, Chance, and Phares, 1972; Bandura, 1971; Fishbein and Ajzen, 1975). As described by Bernard, Dercon, and Taffesse (2011), if an individual perceives that she has little ability to influence her future wellbeing (i.e. low hope, self-efficacy, or external locus of control), she may have—or she may perceive—little incentive to invest in better wellbeing in the future. Consequently, this view of the future may influence her decision making process in regards to various opportunities or technologies that are available to her and she may refrain from exploiting these opportunities.

Psychologists began the rigorous academic study of the role of hope in human development in the late 1950s (Menninger 1959). Unfortunately, there is not an analog field within the discipline of psychology to that of international development economics within the discipline of economics. Due to

this realty, the majority of the important research in psychology is performed in university settings and clinics within the United States and Europe. Nevertheless, development professionals with backgrounds ranging from economics to anthropology, who are intrigued by the insights of cognitive science, are applying psychological research in diverse contexts across the developing world.

2.1 Theoretical Literature

The first to rigorously apply the psychological insights of goal-setting, aspiration formation, and hope to the academic field of international development studies was the anthropologist Arjun Appadurai (2004), whose essay "The Capacity to Aspire" has become a classic in this literature. His essay lays the foundation for economists to consider the formation of aspirations, defined as context-specific and culturally determined cognitive pictures of the good life. Appadurai writes (Ibid pp. 67-68):

Aspirations are never simply individual (as the language of wants and choices inclines us to think). They are always formed in interaction and in the thick of social life. [...] Aspirations to the good life tend to quickly dissolve into more densely local ideas about marriage, work, leisure, convenience, respectability, friendship, health, and virtue. More narrow still, these intermediate norms often stay beneath the surface and emerge only as specific wants and choices: for this piece of land or that, for that marriage connection or another one, for this job in the bureaucracy as opposed to that job overseas, for this pair of shoes over that pair of trousers. This last, most immediate, visible inventory of wants has often led students of consumption and of poverty to lose sight of the intermediate and higher order normative contexts within which these wants are gestated and brought into view. And thus decontextualized, they are usually downloaded to the individual and offloaded to the science of calculation and the market—economics.

Appadurai goes on to argue, "the relatively rich and powerful invariably have greater capacity to aspire" (Ibid pp. 68). If aspirations are embedded and nurtured by culture through observation and experience, then poverty itself diminishes the circumstances in which aspirations are developed. The poor lack the capacity to aspire, not because they are unable to dream or hope, but because by lacking material resources the poor are less able to experiment, explore, and iterate with their aspirations for the future through personal experiences and observation. Thus, "in strengthening the capacity to aspire, conceived as a cultural capacity, especially among the poor, the future-oriented logic of development could find a natural ally, and the poor could find the resources required to contest and alter the conditions of their own poverty" (Ibid pp. 59).

Said differently, and in terms Albert Hirschman's (1970) popular concepts, the key question is: How can the capability of the poor be strengthened to have and to cultivate "voice", since "exit"—in the form of revolt or apathy—is often not a desirable solution for the world's poor and "loyalty" is often inadequate (Ibid pp. 63).

The development economist Debraj Ray (2006) builds upon this view of the individual established by Appadurai (2004) and develops three ideas that have become central in the study of aspirations. The first is the '*aspirations window*', which defines the boundaries in which an individual forms his or her aspirations. The aspirations window is filled with "similar others", perhaps best understood in the statistical sense where individuals are matching themselves with others based on as many observable characteristics as possible. The second is the '*aspirations gap*', which is defined as the difference between an individual's aspired standard of living and their present standard of living. The aspirations gap is, at least theoretically, how aspirations inspire effort in future-oriented behavior. Too narrow of a gap and the benefits are too small of a reward and too wide a gap the effort required to achieve the benefits is too large. Somewhere, in between too narrow and too wide, there is an optimal aspirations gap that encourages effort in future-oriented behavior. Thus, if an individual's aspirations window doesn't include socially mobile others, or if an individual's aspirations gap is too narrow or too wide, then an individual may suffer from what Ray calls '*aspirations failure*'. Aspirations failure can take two forms: first, "aspirations fatalism" or having too narrow an aspirations gap and second, "aspirations frustration" or having too wide an aspirations gap.

Ray has built upon this initial work by considering the relationship between aspirations and wealth inequality within an economy (Genicot and Ray 2014). Here, an inter-temporal model is developed, in line with the theory of Appadurai (2004), in which aspirations are endogenous to economic outcomes, and economic outcomes are also endogenous to aspirations. Rather than assuming aspirations to be a choice variable for the individual, aspirations are determined by experiences and observation through history and culture. While optimal aspirations may theoretically exist, they may rarely be

recognized in reality, especially among societies that have been marginalized or experience some form of oppression.

Several other studies also examine the relationship between wealth inequality and aspirations, with diverging conclusions (Stark 2006; Corneo and Jeanne 2001; Bogliacino and Ortoleva 2013). These studies, along with Mookherjee et al. (2010), primarily focus on macroeconomic issues. Research more recently has focused on modeling microeconomic behavior related to aspirations and hope (Dalton, Ghosal, and Mani 2016; Lybbert and Wydick 2016). In the remainder of this subsection, these two microeconomic models are reviewed in detail.

The economists Patricio Dalton, Sayantan Ghosal, and Anandi Mani (2016) develop a model of aspirations failure that shows, in the spirit of Appadurai (2004) that "poverty curtails a poor person's *capacity to aspire*". Their model builds a utility framework consisting of three additive components: a benefit function, a value function, and a cost function. Formally, the model is defined as:

$$u(e,g,\theta) = b(\theta) + v\left(\frac{\theta - g}{\theta}\right) - c(\theta)$$

Where *e* is effort, *g* is a goal or aspiration, and θ represents wealth. This model is subject to the following assumptions: The benefit function, $b(\theta)$, is continuously differentiable, strictly increasing, and strictly concave over final wealth, θ . The value function, $v(\cdot)$, represents a reference-dependent utility function where the aspiration, or goal, affects the satisfaction an individual receives from achieving a final wealth level, θ . One possible shape of this value function is that of the familiar Kahneman and Tversky (1979) value function, which is convex over losses and concave over gains. Finally, the cost function, $c(\theta)$, is continuously differentiable, strictly increasing and convex in effort to achieve final wealth, θ .

Next, two rather straightforward assumptions are made. First, it is assumed that the poor face greater resource constraints—in the form of less access to credit, information, or social networks—than the rich. Second, it is assumed that aspirations are equal to the expected level of final wealth. These two assumptions can be made formal by defining both aspirations and final wealth as proportional to initial

wealth: $g = \theta = f(e, \theta_0) = (1 + e)\theta_0$. This latter assumption is motivated by the views of the ethnographer Jay MacLoad (1995) who states, "aspirations reflect an individual's view of his or her own chances for getting ahead".

The Dalton-Ghosal-Mani model contrasts two types of people: a "rational decision-maker" who internalizes the impact effort has on aspirations and maximizes payoffs by jointly choosing effort and aspirations, with a "behavioral decision-maker" who does not fully internalize how effort shapes aspirations. Formally, a rational decision-maker is defined as:

$$\hat{e} \in argmax \ s(e, \theta_0) = u(e, f(e, \theta_0), f(e, \theta_0))$$

and

$$\hat{g} = f(\hat{e}, \theta_o)$$

A rational solution to this maximization problem then is $s(e, \theta_0) = b(f(e, \theta_0)) + v(0) - c(e)$. Notice that for the rational decision-maker the value function, $v(\cdot)$, becomes irrelevant to the maximization problem. This is because it is assumed that everyone can achieve his or her final wealth aspirations⁸. This solution shows that a poor rational decision-maker will choose lower effort and wealth aspirations than a richer rational decision maker. This is primarily driven by the fact that, in the model, the poorer a person is the lower the marginal productivity of their effort is in producing wealth.

There is very little empirical evidence that people actually internalize the relationship between effort and aspirations. In fact, there is considerable evidence of the opposite, where aspirations are taken to be fixed (Easterlin 2001; Knight and Gunatilaka 2008). A behavioral decision-maker aligns more with the observed reality where effort is chosen and aspirations are considered to be fixed. Formally, a behavioral decision-maker is defined as choosing e and leaving g as given:

$$\max \tilde{u}(e, g, \theta_0) = u(e, g, f(e, \theta_0))$$

A behavioral solution to this maximization problem suggests that effort and aspirations are compliments, formally $e^* \in e(g^*, \theta_0)$ and $g^* \in f(e^*, \theta_0)$. Therefore, higher aspirations are motivations

⁸ In this assumption Dalton, Ghosal, and Mani assume away the possibility of "aspirations frustration".

for increased effort and lower aspirations provide less motivation for increasing effort. Multiple studies have also found this result empirically (Heath et al. 1999; Abeler et al. 2011; Field et al. 2009).

Although effort and aspirations are considered to be consistent with each other, a behavioral decision-maker is assumed to take aspirations as given. If the given aspirations level happens to not equate with the rational level of aspirations, then there is a possibility that the individual will become "internally constrained", meaning the individual is subject to "aspirations failure".

The Dalton-Ghosal-Mani model concludes by contrasting two types of poverty traps: a standard poverty trap and a behavioral poverty trap. In a standard poverty trap, wealth levels are so low that the small benefits in wealth caused by greater effort are outweighed by the relatively high cost of effort⁹. To best assist an individual, or a household, caught in a standard poverty trap effective policies strive to reduce the effort required to accumulate wealth. A behavioral poverty trap implies a low marginal productivity of effort causing a poor individual to optimally choose a low level of effort. This low level of effort influences a low aspiration for future wealth which then influences even lower level of effort, and a vicious cycle of chronic poverty. In the presence of a behavioral poverty trap, the model suggests that effective policies will aim to augment aspirations. In summary, the Dalton-Ghosal-Mani model shows how the poor can suffer from aspirations failure simply due to the circumstances of poverty itself.

Although the Dalton-Ghosal-Mani model is instructive in understanding how poverty can create psychological constraints to development and wealth accumulation, it does so by abstracting from a central insight in both the theoretical literature on aspirations and the psychological literature on hope. By focusing primarily on aspirations it distances itself from the rich and mature theory of hope as a function of aspirations, agency, and pathways (Snyder 1994). First, the Dalton-Ghosal-Mani model assumes away the possibility of aspirations frustration or the situation where the aspirations gap is too wide to motivate action. This is an important omission as it ignores a situation that is both a theoretical possibility (Ray 2006) and seems to be empirically observed as well (Ross 2016). Second, the Dalton-Ghosal-Mani model frequently uses the idea of marginal productivity of effort—a close synonym to agency—that is assumed

⁹ Or are outweighed by losses (see Barrett and Carter 2013 and Barrett, Garg, and McBride 2016)

to be lower for the poor than for the rich, but never discuss the concept of pathways. This is an important critique for a couple reasons. As Snyder (1994, 2002) carefully articulates, a necessary element of hope is that an individual is able to adequately visualize a pathway that links present actions to future outcomes. In the absence of this element, even in the presence of near-optimal aspirations and high levels of agency, the individual may not necessarily engage in future-oriented behaviors. Additionally, important in the psychology literature is the idea that true agency and pathways may not necessarily equal perceived agency and pathways. Self-efficacy, or an individual's belief in his or her own agency, may in fact be lower than an individual's own true agency. Finally, Sen (1999) developed the idea of "internalized constraints" in which individual's perceive the constraints on their pathways out of poverty to be more binding than the truly are.

These shortcomings are accounted for by the economists Travis Lybbert and Bruce Wydick (2016) who build on the insights of Appadurai (2004), Ray (2006), and Snyder (1994, 2002) to develop a theoretical model of the economics of hope. The Lybbert-Wydick model of hope consists of three components: an aspirations-dependent utility function and two production functions, one representing agency and the other representing pathways. The model demonstrates how each of the three elements of hope could determine an individual's effort in future-oriented behavior. The model is applied to understand how the dynamics of hope may shape the impact of different types of development policies, programs, and interventions.

The Lybbert-Wydick model relates aspirations to utility by creating a utility function with a reference point, *A*, that satisfies the following four properties. First, marginal utility is higher below the reference point than above the reference point. Second, marginal utility is increasing in outcomes below the reference point and decreasing in outcomes above the reference point. Third, as aspirations become more important to utility, gains in utility become a function of realized aspirations. Fourth, utility is increasing with higher realized aspirations. Satisfying these four properties yields the following utility function:

$$u = A \left(\frac{Y}{A}\right)^{(1/1-\alpha)} \cdot 1(y < A) + A \left(\frac{Y}{A}\right)^{(1-\alpha)} \cdot 1(Y \ge A)$$

In this utility function, when aspirations do not influence utility (α =0), the function reduces to *u* = *Y* and becomes linear. At the other extreme, when utility is simply a function of realized aspirations (α =1), the function reduces to *u* = *A*, and becomes piecewise linear with a step at *A*. When aspirations depend on aspirations along with other variables, the shape of the utility function resembles that of a Kahneman and Tversky (1979) value function with the aspiration, *A*, representing the reference point. At these intermediate values of α the shape of the aspirations-dependent utility function encourages risk-loving behavior at outcomes below the reference point, *A*, and risk-averse behavior once the reference point is reached.

Lybbert and Wydick (2016) model both agency and avenues in the classic framework of a production function. Agency can be thought of as the marginal productivity of an individual's effort, e_t , at time *t* in producing outcome Y_{t+1} at time t+1. Realized outcomes are also determined by some random shock, ε_{t+1} , at time t+1. Therefore agency can be modeled as follows:

$$Y_{t+1} = \pi_1 e_t + \pi_2 \varepsilon_{t+1}$$

Avenues can be thought as similar to agency with the addition of a binding constraint on outcomes at the point \overline{Y} . Beyond this constraint the marginal productivity of effort falls to zero.

$$E[Y_{t+1}] = \begin{cases} \pi_1 e_t & \text{if } e_t < \bar{e} \\ \bar{Y} & \text{if } e_t \ge \bar{e} \end{cases}$$

The goal of the Lybbert-Wydick model is to show how these elements of hope influence economic behavior through an expected utility framework. In order to make this a solvable constrained optimization problem, a cost of effort is introduced. Here it is assumed that effort is costly in utility terms at an increasing rate according to the function $c(e_t)$ where $c'(e_t)>0$, $c''(e_t)>0$, and c(0)=0. The agent then maximizes the following objective function subject to the two production functions and the aspirationdependent utility function.

$$\max_{e_{t}} U_{t+1} = E[u_{t+1}] - c(e_{t})$$

An important aspect of the psychology literature is that an individual's *true* agency and pathways need not exactly equal an individual's *perception* of agency and pathways. Self-efficacy is an individual's perception of their agency, the marginal productivity of their effort in achieving some outcome. A person with low self-efficacy will likewise possess an external locus of control, meaning they believe that future outcomes are primarily influenced by factors external to themselves. Similarly, Sen's concept of "internalized constraints" align well with the possibility that perceived pathways are more restrictive than true pathways (Sen 1999).

The Lybbert-Wydick model can be extended to encompass these under-perceptions of *true* agency and pathways. Here, perceived agency and pathways are parameterized by $\tilde{\pi}$ and \tilde{Y} , respectively, where $\tilde{\pi}$ and \tilde{Y} are defined as:

$$\tilde{\pi} = \begin{cases} \pi & \text{if } e_t < e^0\\ \rho_\pi \pi & \text{if } e_t \ge e^0 \end{cases}$$
$$\tilde{Y} = \rho_{\overline{Y}} \overline{Y}$$

With these added parameters, effort up to level e^0 is known by the individual to have a marginal productivity of π . Beyond point e^0 true marginal productivity, or agency, is π ` with the parameter ρ_{π} weighting true agency so that it equals an individual's perception of agency. Similarly, \overline{Y} represents true constraints on pathways, and $\rho_{\overline{Y}}$ weights true constraints on pathways, to equal an individual's perception of constraints. Lybbert and Wydick (2016) give the following example to illustrate how low self-efficacy and internalized constraints may influence behavior:

A young girl perceives that employment as an engineer is unavailable to women, so she reduces her effort in schooling. This internalization of constraints on pathways (low $\rho_{\overline{Y}}$) is distinct, however, from a case in which low self-efficacy causes her to falsely believe that she is not capable of sustaining the grades needed for the degree (low ρ_{π}). Either low $\rho_{\overline{Y}}$ or low ρ_{π} may constitute a poverty trap because the effort needed to ascertain what might be genuine constraints lie off the equilibrium path.

By applying the psychology literature on hope, which demonstrates the necessary but not sufficient role of aspirations in motivating future-oriented behavior, the Lybbert-Wydick model encapsulates the theoretically rich framework for understanding the complex dynamics of hope in human development. Although the model includes many of the nuances of the psychological study of hope, the model does abstract from reality in several key ways. First, the model assumes general risk neutrality. Second, the aspirations-dependent utility function implies some sort of loss aversion, although some psychologists contend a disappointed hope does not carry with it a sense of loss (Miceli and Castelfranchi 2010). Third, as stated by Lybbert and Wydick (2016), this model assumes that aspirations are shaped by social observations and experiences rather being a choice variable that can be optimized. The ability of an individual to choose aspirations and internalize how aspirations determine effort is a key component of the Dalton-Ghosal-Mani model that isn't included in the Lybbert-Wydick model.

2.2 Empirical Literature

In West Bengal, India, Beaman et al. (2012) present findings from a policy experiment that required a random selection of villages to elect a woman as their village leader. The authors find that in villages with a female leader the gender gap in educational and occupational aspirations of both parents and adolescents is dramatically reduced. Additionally, this rise in educational and occupational aspirations for girls is accompanied by girls pulling even to boys in educational attainment and reducing the amount of time adolescent girls spend on household activities. Beaman et al. (2012) measure aspirations by asking parents and adolescents directly about desired educational attainment, desired age of marriage, preferred occupation at the age of 25, and on becoming a leader in the village. Total aspirations are measured by calculating a standardized average across each aspiration variable.

In studying the impacts of a cash transfer program in Nicaragua, Macours and Vakis (2014) find results similar to that found in Beaman et al. (2012). Most notably, social interactions and the presence of role models significantly increase the effects of the cash transfer on household welfare. Through utilizing a unique two-stage randomized experimental strategy these effects are facilitated by changes in aspirations rather than some sort of social learning mechanism or spillover effects. Similar to Beaman et al. (2012), aspirations were measured by asking respondents directly about their goals for the future.

Although both Beaman et al. (2012) and Macours and Vakis (2014) are both widely regarded as convincing demonstrations of the importance of aspirations, collecting data on agency and pathways

could provide additional explanatory power and policy prescriptions to each study. The results from these studies are interesting to consider when using the theoretical framework developed by Lybbert and Wydick (2016). Specifically, through what mechanism do role models actually drive improved educational outcomes of girls (in Beaman et al 2012) and increased impacts from cash transfers (in Macours and Vakis 2014)? Is it by increasing the aspirations, by reducing perceived constraints on pathways toward already established aspirations, by improving the perceived personal agency of treated individuals, or some combinations of these factors? By only collecting data on aspirations and by assuming away the possibility of aspirations frustration Beaman et al. (2012) and Macours and Vakis (2014) are not able to speak to these important details.

These shortcomings are partially addressed in a widely celebrated study by Bernard et al. (2014), who implement an experiment that studies how much a policy intervention can change aspirations. The authors developed a documentary-style video that told the stories of individuals who had come from very humble levels of livelihood and had found a way to improve their standard of living. Important themes of these documentaries were hard work, dedication, and investing in the future. Bernard et al. (2014) found that viewing the documentary caused viewers to increase their aspirations for their children's educational attainment. The effects of viewing these documentaries on various future-oriented economic behaviors were also studied. The authors observe an increase in household savings, in demand for micro-loans, and in the number of children enrolled in school as well as education expenditures. In this study aspirations were measured by asking respondents directly, similar to the method used in Beaman et al. (2014), with a slight change regarding how an aspirations aggregate measurement was calculated. A more complete explanation of the measurement technique is explained in Bernard and Taffesse (2014) and will be highlighted in the following section.

Although it is remarkable that measurable impacts can accrue due to a relatively light and inexpensive intervention (i.e. just showing documentary videos), an important caveat begs attention. Aspirations are reduced in the presence of poverty as a welfare improving mechanism, because there is likely disutility in thinking about a "gloomy future" (Laajaj 2015). Designing an intervention that

increases aspirations without any sort of structural change to the local environment may actually end up making the poor psychologically worse off. The model developed by Lybbert and Wydick (2016) shows that simply increasing aspirations without influencing agency or pathways can have a detrimental effect on net expected utility and on future-oriented economic behaviors. Bernard et al. (2014) does measure the psychological concepts of locus of control and self-efficacy, which satisfies the "agency" constraint, but do not measure anything resembling pathways or what Sen (1999) calls "internalized constraints".

Finally, in an evaluation of Compassion International's Child Sponsorship Program Wydick, Glewwe, and Rutledge (2013) find that being sponsored as a child causes large and positive impacts on outcomes in adulthood such as improved schooling attainment, higher paying employment, an increased likelihood of becoming a civic leader, and higher income and asset levels. In a follow-up investigation on what is driving these impacts, Glewwe, Ross, and Wydick (2014) implement an experiment with children from Indonesia and find that child sponsorship significantly increases hopefulness, self-esteem, and happiness.

In this study the objective is to measure the effects of child sponsorship on children themselves. Therefore, a creative data collection approach is needed. To do this, the authors measure outcome variables by having the children draw a picture of themselves in the rain. This method follows a mature literature in psychology that finds correlations between characteristics of children's self-portraits and psychological attributes (Koppitz 1968, Klepsch and Logie 1982, Thomas and Silk 1990, and Furth 2002).

Most of the empirical literature in development economics focus specifically on measuring aspirations and its correlates, rather than building off of the psychology literature on hope, defined as a function of aspirations, agency, and avenues. The key question, when analyzing aspirations and measuring its relationship with future-oriented economic behavior, is: what defines good aspirations? Ray (2006) developed the idea of the aspirations gap, where an optimal aspiration gap lies somewhere between too low and too high. Holding aspirations can serve two outcomes: incentivizing effort or frustrating effort (Genicot and Ray 2015). In psychological literature on goal setting, the idea that goals

that lie ahead, but not too far ahead, provide the best incentives is widely accepted (Berger and Pope 2011; Goux, Gurgand, and Maurin 2014; Heath et al. 1999; and Lockwood and Kunda 1997). Although this concept is theoretically clear, it is empirically ambiguous. When researchers ask people about their aspirations, what differentiates an aspiration that motivates and an aspiration that frustrates? In answering this question research over the past half-decade in the academic field of positive psychology (Snyder 1994, 2002) and the recent work of Lybbert and Wydick (2016) is instructive. A "good" aspiration is positive and is coupled with perceived agency, or self-efficacy, and several perceived pathways toward aspiration achievement. It is in accounting for these three elements that hope can truly be measured. In the following section the survey instruments used in Mon State, Myanmar to measure these three elements of hope are described in detail.

SECTION 3: DESIGNING A MEASUREMENT OF ASPIRATIONAL HOPE

3.1 Data

Primary data for this study was collected in two waves of household surveys in Mon State, Myanmar. The first wave was the Mon State Rural Household Livelihoods (MSRHL) survey conducted in May of 2015 by the Center for Economic and Social Development (CESD) with the support of Michigan State University (MSU) and the International Food Policy Resource Institute (IFPRI)¹⁰. This survey consisted of a full income module, a full consumption module, and several modules on agricultural activities. The MSRHL survey is representative of rural Mon State and includes roughly 1,627 households in 143 enumeration areas.

Initial drafts of the MSRHL survey included a module designed to measure aspirations. Despite initial excitement about the module, after just a couple days of pre-testing the module quickly become many of the enumerator's least favorite modules in the MSRHL survey. Eventually the enumerators unanimously voted to drop the aspirations module from the MSRHL survey¹¹.

With many of the researchers still interested in investigating dynamics of hope and aspirations in rural Myanmar, effort was taken to recreate the aspirations module into its own dedicated household survey. Time was spent conducting open-ended qualitative interviews in order to understand some of the common dimensions in which the majority of the study population aspired and hoped. These open-ended interviews often began with the discussion starter: "Tell me about a time in which [you/your family/your community] was happy." After some dialogue, interviews would shift to discuss: "What are some things that would make [you/your family/your community] happy in the future", as a method for qualitatively eliciting what were some commonly held aspirations in Mon State, Myanmar. Interviews were conducted with those who seemed relatively well off and those who seemed relatively poor, those who owned land and those who were landless, and also with both men and women. After these open-ended interviews,

¹⁰ The survey was funded by USAID Burma through the Food Security Policy Project.

¹¹ More explanation and reflection on the reported issues with the initial aspirations module will be discussed in section 5.

discussions with local collaborators at CESD, and several weeks of pre-testing, a second household survey wave—the Hope Survey—was developed and eventually conducted in March 2016. The Hope Survey is also representative of rural Mon State but includes 503 households in 48 enumeration areas.

3.2 Survey Design

Although insights from the open-ended qualitative interviews are admittedly anecdotal, these discussions inspired and shaped the design of the quantitative Hope Survey. For example, one particularly poor family said they were happy when everyone in their family has had enough to eat in a day. When asked how often this occurred, the head of the household responded, "About twice a week". When asked what would make his family happy in the future he responded, "Last year someone gave us \$100 US, we hope that this happens again". This correspondence left a considerable impression on the interview team for several reasons: first, due to the reported reality that members of their family go hungry more days than not, and second, due to the extremely modest responses to what has made their family happy and what would make their family happy in the future. Furthermore, this discussion demonstrates why aspirations are a necessary but not sufficient element of hope. This poor family's aspiration was for someone else to do something for them—it was a "hope *that…*"—devoid of personal agency.

The Hope Survey consisted of four instruments all first developed in other settings but adapted to the local context of rural Myanmar. Careful work went into translating the survey instruments and verifying that the concepts imbedded in the survey were interpreted correctly. This point about contextualizing these survey instruments cannot be stressed enough. While aspirations and hope may play an important role in seemingly all cultures, what these aspirations and hopes specifically entail may be quite different across cultures. As stated by Appadurai (2004),

Aspirations about the good life, about health and happiness, exist in all societies. Yet a Buddhist picture of the good life lies at some distance from an Islamic one. Equally, a poor Tamil peasant woman's view of the good life may be as distant from that of a cosmopolitan woman from Delhi, as from that of an equally poor woman from Tanzania. But in every case, aspirations to the good life are part of some sort of system of ideas which locates them in a larger map of local ideas and beliefs about: life and death, the nature of worldly possessions, the significance of material assets over social relations, the relative illusion of social permanence for a society, the value of peace or warfare.

3.2.a. Survey Instruments

The four instruments, included in the appendix, provide instruction in measuring hope as a function of aspirations, agency, and pathways. The primary measurement of aspirational hope combines a measurement of aspirations with the hope scale (Snyder 1994, 2002). This measurement approach is validated, in part, by comparing outcomes with measurements of concepts that are similar yet distinct from the concept of aspirational hope. These include a survey instrument measuring the concept of self-efficacy (Bernard, Dercon, and Taffesse 2011), and a scale that measures the psychological concept of locus of control (Rotter 1966). These measurements of similar yet distinct concepts allow for the question: is this measurement of hope and measuring only hope or are other concepts included in some way? This question, along with several other questions related to the validity of this measurement approach is presented in the following section.

The aspirations instrument asked questions about aspirations directly, similar to the methods of Beaman et al. (2012), Macours and Vakis (2014), and Bernard et al. (2014). Specifically, this instrument follows the measurement approach described in Bernard and Taffesse (2014), where a set of four questions is used to measure the aspirations gap along each particular dimension:

- (A) What is the maximum level of [dimension k] that one can have in your current neighborhood?
- (B) What is the minimum level of [dimension k] that one can have in your current neighborhood?
- (C) What is the level of [dimension k] that you have at present?
- (D) What is the level of [dimension k] that you would like to achieve in your life?

Bernard and Taffesse (2014) go on to discuss methods for calculating a unit-less aspirations index by aggregating aspirations¹². The one key difference between the Hope Survey and the method developed in Bernard and Taffesse (2014) is the Hope Survey did not include the framing questions, represented by questions A and B above. Bernard and Taffesse (2014) state that these framing questions help to reduce any sort of anchoring effect stemming by responses from previous questions. In pre-testing, however, enumerators reported that these questions made respondents uncomfortable. For reasons such as

¹² In short, this is done by subtracting the mean and dividing by the standard deviation of the aspirations gap within each dimension. See Bernard and Taffesse (2014) for more details.

government taxation, risk of robbery, or simple hesitation to speak poorly about their neighbors most respondents did not feel comfortable pointing out the best and worse households in the village along any dimension of life. In the Hope Survey, the aspirations instrument included questions about education and occupation of the respondent and the children of the respondent, residential and agricultural landholdings of the household, housing structure characteristics, remittances, donations, and earned income. The aspirations gap is measured by asking about the respondent's current level and desired level of each dimension. A unit-less aspirations index is calculated by using the continuous variables included in the aspirations module of the Hope Survey.

Hope—defined by being a function of aspirations, agency, and avenues—represents an individual who has clear goals, is actively expending effort in pursuit of these goals, and isn't discouraged when circumstances diminish the likelihood of their success. An individual with this so-called aspirational hope is a self-starter, is highly motivated, and has stronger non-cognitive skills such as 'grit' (Heckman and Kautz 2012, Heckman et al. 2006). The hope scale is an instrument developed by Snyder (1994, 2002) and found to be a very reliable assessment of hope among respondents from universities in the United States and Europe. It consists of six Likert-scale statements, three that map to an 'agency' sub-score and three that map to a 'pathways' sub-score. In their working paper Lybbert and Wydick (2016) suggest the hope scale as a measurement tool to test their theory of the economics of hope. While this scale has been through many tests and experiments in a controlled lab setting with university students from the United States and Europe, there is little existing knowledge about how well the hope scale translates to a setting such as rural Myanmar. The Hope Survey was designed to test the validity of the hope scale by including two other survey instruments that measure similar yet distinct concepts.

Self-efficacy is a concept that is concerned with an individual's perceived ability to act and influence future desired outcomes (Bandura 1977). For example, a rural farmer may believe that weeding their field on a regular basis will improve agricultural yields but not believe that he is capable of adequately performing this task. An individual who has low self-efficacy can be characterized as someone who relies more on the influence of stochastic error than their own effort in driving future desired

outcomes. The self-efficacy instrument, used in the Hope Survey, largely follows from the method used by Bernard, Dercon, and Taffesse (2011) in their work in Ethiopia. This instrument aims to elicit how the respondent primarily believes future events occur, through their own effort or some other factor outside of their control. This instrument consists of three questions, each asking the respondent to choose which of two statements they *most agree with*. Question one is: (1) "Each person is primarily responsible for his/her success or failure in life". (2) "One's success or failure in life is a matter of his/her destiny". Question two is similar but aims to capture the concept of luck, which is related but distinct from the concept of destiny. Question three, which is not included by Bernard, Dercon, and Taffesse (2011), was developed through discussions with the researchers from CESD and aims to capture the role of powerful others in determining the future.

Locus of control refers to an individual's belief about the relative location of the primary factor of influence over future desired outcomes (Rotter 1966). An individual can possess varying degrees of an *internal* or *external* locus of control. Where an individual with an *internal* locus of control believes that their own efforts and actions primarily influence their own future and an individual with an *external* locus of control believes that their own efforts and actions primarily influenced by fate, luck, or stochastic error¹³. The final section of the Hope Survey includes the locus of control instrument adapted from the scale initially developed by Rotter (1966). The locus of control instrument was designed in a similar fashion to the method of Caliendo et al. (2015) in selecting ten statements from the full index of statements listed in Rotter (1966). This allows for the creation of two calculations of locus of control; one that is stricter than the other and takes seriously the notion that internal and external locus of control may be mutually exclusive beliefs among individuals.

3.2.b. Visual Scale

One of the initial problems we encountered while pre-testing these survey instruments was the ability of enumerators to explain the Likert scale to respondents, as it often took a considerable amount of

¹³ Interesting research carried out in developed countries has emerged in the past two decades linking locus of control with various economic outcomes, such as: job performance (Judge and Bono 2001), occupational choice (Heckman, Stixrud, and Urzua 2006), and the job search strategies of the unemployed (Caliendo et al. (2015).

time and often resulted in many rounds of clarifying questions between the enumerator and the respondent. Additionally, even after this lengthy explanation many enumerators reported concern that even respondents who stated they understood the Likert scale did not really understand how to use it to provide accurate answers. This was an important problem to solve as both the hope scale and the locus of control scale rely heavily on Likert scales in eliciting responses. In searching for a solution to this problem we eventually began using a visual scale, numbered 0 through 10, as an aid associated with the hope scale and locus of control scale survey instruments.

Typical Likert scales include a range of five or seven options. We settled, however, on using a scale that ranged from zero through ten, where a response of zero would indicate that the respondent views the statement as being totally false and a response of ten would indicate that the respondent views the statement as being totally true. Numbers in between zero and ten would indicate that the respondent views the statement as being some level of not-quite false or not-quite true. The fact that our scale ranges from zero to ten provides an added benefit in that it easily converts to percentage terms. Enumerators used a bottle cap or a pen cap as a marker for respondents to move along the visual scale to report their responses.

One of the disadvantages of leaning heavily on a visual scale is in the case when a respondent is visually impaired. This occurred twice during data collection. In the first instance, the respondent was almost blind and couldn't make out the color gradation in the scale. The enumerator then thought of using a stone at either end of the scale and explained what each represented. The enumerator then asked the respondent to choose points at each stone or between the stones to represent his answers. In a second instance, the respondent was completely blind and at some point he asked his 11-year old son to answer for him. The enumerator was not sure what to do as data collection protocol restricts interviews of children under the age of eighteen. This observation was ultimately dropped from the dataset.

Before responses to the Hope Scale and locus of control scale began, and after the enumerator provided careful instructions, several practice questions were presented to the respondent. The key point in these practice questions is for the respondent to feel comfortable providing an answer at any point on

the scale as there was some concern that some respondents would, for some reason or another, feel uncomfortable answering at either the low end or the high end of the scale. First, enumerators asked respondents to remember when the respondent felt the most tired in the life, and pegged that to be a ten on the scale. Next, enumerators asked respondents to remember when they were not tired at all, and pegged that to be a zero on the scale. Then, reminding the respondent to remember those occasions, the enumerator asked the respondent to rate how tired they felt: (1) before going to bed last night, (2) upon waking up this morning, (3) after doing [some laborious task], (4) after doing [not as laborious a task], and (5) after walking to town. Several other practice questions were prepared and included if necessary to ensure the respondent felt comfortable using the visual scale.

3.3 Summary Statistics

Before several tests for validity are performed on this approach to measure hope, it is instructive to take a careful look at the basic summary statistics generated by the survey instruments included in the Hope Survey. This subsection presents these summary statistics by reporting the central tendencies of the questions within each of the four survey instruments. Additionally, some very basic analysis is performed on these summary statistics. The data on aspirations are presented first, followed by each of the three approaches measuring agency, pathways, self-efficacy, and locus of control.

3.3.a. Aspirations

Aspirations were measured by following the example developed by Bernard and Taffesse (2014), in which aspirations are elicited by asking about them directly. Data on aspirations were collected for both continuous and discrete variables and these data are presented in table 1 and table 2, respectively.

Continuous variables, shown in table 1, include education both of the respondent and of the respondent's children, agricultural land holdings, remittances, donations, and income. Clearly, on average respondents are aspiring along these few dimensions as the mean of each of the aspired levels are substantially greater than the mean of each of the current levels. Additionally, there seems to be a fair amount of variation in aspirations along most of these dimensions. In each case, other than aspirations for children's education, the standard deviation around the mean is larger when the respondent is aspiring
compared to when the respondent is reporting their current levefl. In regards to aspirations for children's

education it seems that most respondents want their child, regardless of gender, to complete roughly 12

years of schooling.

Table 1: Aspirations – Summary Statistics (continuous variables)					
	Mean	Std. Dev.	Obs.		
Education ¹					
Own Current Level	4.60	3.43	503		
Own Aspired Level	5.41	5.72	503		
Oldest Son Current Level	5.24	3.60	357		
Oldest Son Aspired Level	11.40	2.94	366		
Oldest Daughter Current Level	5.57	3.70	369		
Oldest Daughter Aspired Level	11.64	2.72	378		
Land ²					
Agricultural Land Currently Owned	3.16	5.72	503		
Agricultural Land Aspired to Own	9.51	14.99	503		
Remittances ³					
Current Remittances (per month)	55,926	114,384	503		
Aspired Remittances (per month)	154,930	285,483	503		
Donations ⁴					
Current Donations (per month)	5,145	9,484	503		
Aspired Donations (per month)	27,463	97,433	503		
Income ⁵					
Current Income (per month)	257,302	398,353	503		
Aspired Income (per month)	686,349	1,269,162	502		

Notes: ¹Represents indicate years of schooling, with kindergarten=1, grade 1=2, etc. ²Land area presented in acres. ^{3,4,5}All monetary figures presented in Myanmar Kyat. At the time of this analysis 1 Myanmar Kyat = 0.00085 USD.

A unit-less z-score is created through the following method, detailed in Bernard and Taffesse (2014), by aggregating the continuous aspirations variables. Let g_i^k be an individual *i*'s aspiration gap for dimension *k* and let *K* be the total number of dimensions included in the aspirations index. The aspirations index is thus calculated in the following manner, where μ^k represents the sample mean and σ^k represents the sample standard deviation of dimension *k*.

Aspirations Index =
$$\frac{1}{K} \sum_{k} \frac{g_{i}^{k} - \mu^{k}}{\sigma^{k}}$$

Bernard and Taffesse (2014) add a weight to each of the k dimensions, but this procedure was excluded from the Hope Survey to reduce the amount of time spent on the aspirations module and allocate

more time to the other survey instruments. This aspirations index is eventually added to the data collected from the hope scale to create an integrated measurement of aspirational hope.

Discrete variables, shown in table 2, include desired occupation both of the respondent themselves and the respondent's children as well as the physical characteristics of the respondent's household. Here, the modal response is reported to demonstrate central tendencies of respondents. When analyzing these discrete variables, it is difficult to draw many conclusions. In some cases, as in regards to one's own occupation, the modal response changes—in this case away from agriculture. In some cases the modal response becomes stronger, as in regards to roof material—in this case most people already have iron sheet roofing but an even larger share of the sample population aspires to have iron sheet roofing. Finally in some cases the modal response becomes weaker, as in regards to floor material—in this case most people already have wooden floors but a smaller share of the sample aspires to have wooden floors.

Table 2: Aspirations – Summary Sta	tistics (discrete variables)
------------------------------------	------------------------------

	Mode	Count	Obs.	Share
Occupation				
Own Current Occupation	Agriculture	120	503	23.86%
Own Aspired Occupation	Business Owner	225	503	44.73%
Housing				
Current Wall Material	Wood	224	503	44.53%
Aspired Wall Material	Brick	306	503	60.83%
Current Roof Material	Iron	308	503	61.23%
Aspired Roof Material	Iron	473	503	94.04%
Current Floor Material	Wood	384	503	76.34%
Aspired Floor Material	Wood	311	503	61.83%
Current Number of Floors	1	405	503	80.52%
Aspired Number of Floors	2	258	503	51.29%

Notes: The questionnaire included questions regarding aspirations for the occupation of the respondent's children. The model response, however, was "I don't know".

3.3.b. Hope Scale

The hope scale developed by Snyder (1994, 2002) consists of six statements, which a respondent then uses a visual Likert scale to report the degree to which they agree or disagree with the statement. The mean responses for each of the six statements are included in table 3. Most of the responses were concentrated between four and eight. It should be noted, however, that each statement had a minimum response of zero and a maximum responses of ten. The hope scale is designed to generate a total hope score and two sub-scores, one pertaining to the concept of agency and the other pertaining to the concept of pathways. Table 3 reports how each of these scores are calculated. Table 3: Components of the Hope Scale

	Mean	Std. Dev.	Obs.
COMPONENTS OF HOPE SCALE			
Q_1 : If I were to find myself in a jam, I could think of many ways to get out of it.	6.21	2.89	503
Q_2 : At the present time, I am energetically pursuing my goals.	8.04	2.32	503
Q_3 : There are lots of ways around any problem I am facing right now.	6.42	2.93	503
Q_4 : Right now, I see myself as being pretty successful.	4.48	2.69	503
\mathbf{Q}_{5} : I can think of many ways to reach my current goals.	6.62	2.76	502
\mathbf{Q}_6 : At this time, I am meeting the goals that I have set for myself.	6.89	2.75	503
AGGREGATED HOPE SCORES			
Agency sub-score $[(Q_2+Q_4+Q_6)/3]$	6.47	1.74	503
Pathways sub-score $[(Q_1+Q_3+Q_5)/3]$	6.42	2.18	502
Hope total-score [(Q ₁ +Q ₂ +Q ₃ +Q ₄ +Q ₅ +Q ₆) / 6]	6.45	1.69	502

Notes: Each question, and each aggregated score, has a minimum of 0 and a maximum of 10.

While summarizing his career in academic research in his book, *The Psychology of Hope*, C.R. Snyder (1994) characterizes four stylized classifications of people according to their responses within the hope scale. The shares of the sample population that fall into each of these four stylized classifications "Low Hope", "Lack of Waypower", "Lack of Willpower", and "High Hope" along with how each category is defined are shown in table 4 below.

Table 4: Hope Scale Classifications

Table 4. Hope Scale Classification	13	
	Full Sample	
Low Hope	13.12%	
(Agency \leq 5, Pathways \leq 5)		
Lack of Waypower	16.50%	
(Agency $>$ 5, Pathways \leq 5)		
Lack of Willpower	9.34%	
$(Agency \le 5, Pathways > 5)$		
High Hope	61.03%	
(Agency > 5, Pathways > 5)		

Notes:

A "Low Hope" individual is classified as such due to reporting both agency and pathways subscores less than or equal to five. Snyder points out that "Low Hope" individuals are often characterized as possessing little sense of action for how to achieve their goals and are at risk of being caught in a cycle that may be characterized as depression. Furthermore, such a negative outlook can be intensified when individuals lack clearly defined aspirations or goals in the future, a situation that will be discussed when the Hope Scale is aggregated with aspirations data in the following subsection. In the sample of individuals surveyed in rural Mon State, Myanmar roughly 13% can be classified as being "Low Hope".

An individual characterized as "Lacking Waypower" is classified as such due to reporting an agency sub-score of greater than five and a pathways sub-score of less than or equal to five. Snyder

suggests that individuals who lack waypower may be constrained by struggling to think of successful ways to achieve their goals. Often frustration sets in as the individual feels capable of achieving specific goals, but routinely falls short due to a deficiency in what Snyder calls "waypower thinking". In many instances if individuals experience low waypower over a sustained amount of time, they also may lose their sense of willpower. In the Mon State sample roughly 16% can be classified as "Lacking Waypower".

Conversely, an individual characterized as "Lacking Willpower" is classified as such due to reporting an agency sub-score less than or equal to five and a pathways sub-score of greater than five. Snyder states that many who lack willpower just seem to be going through the motions and possess feelings of dependency on others in order to achieve their goals. Similar to those who lack way power, lacking willpower over a sustained amount of time may lead to an individual losing their sense of waypower. In the sample of the population in Mon State roughly 10% are classified as "Lacking Willpower".

Finally, individuals are characterized as "High Hope" if they report both agency and pathways sub-score greater than 5. Snyder writes that "High Hope" people are active in their thinking and almost always believe that various options are available to them in achieving their goals. "High Hope" people often continually consider their goals and are constantly thinking about ways to attain them. In the Mon State sample roughly 60% can be classified as "High Hope" individuals.

In regards to these classifications, a brief note begs attention to prevent a crucial misunderstanding. When individuals are characterized as "Low Hope" or "Lacking Willpower" or "Lacking Waypower" these are not intrinsic attributes. Rather these characterizations are due to the psychological consequences of the realities facing poor men and women with limited opportunities for themselves. Make no mistake; each individual has the intrinsic ability to dream, aspire, and hope. Psychologists have long argued, however, that an individual's perspective on life is often heavily influenced by their own social circumstances and, in turn, the psychological consequences of this reality prohibits an individual from gaining the full benefits of their ability to dream, aspire, and hope.



Next, these four stylized classifications are combined with the unit-less aspirations gap index. In performing this procedure a measure of aspirational hope, along with several other stylized classifications, are generated for the sample population within rural Mon State, Myanmar. For the purposes of generating this integrated hope measurement, the aspirations gap index is cut in half. This effectively differentiates those with an above average aspirations gap and those with a below average aspirations gap.

These aggregated classifications of the integrated hope measurement, presented in table 5, provide a couple of rough characterizations that will be analyzed later in this paper, and should be studied further in the future. First, 33% of the sample population from rural Mon State, Myanmar is classified as having aspirational hope. In order for someone to be characterized as having aspirational hope, in the way we've measured and calculated the concept, an individual must simultaneously have a relatively large aspirations gap—defined as the difference between current levels and aspired levels of education, land holdings, remittances, donations, and income—and score high on both the agency and pathways subscales of the hope scale. Therefore, an individual need not be economically well off in order to be included in the aspirational hope category. In fact—as a preview of the results discussed later in this paper—the more well-off a respondent, particularly in regards to educational attainment, the smaller the aspirations gap tends to be. People with aspirational hope are people who hold not only an optimistic view that the future will be better but also a belief in their own ability to influence desirable outcomes in the future.

Second, roughly 28% of the sample population from rural Mon State, Myanmar is classified as having low aspiration hope. In order for someone to have low aspiration hope, an individual must simultaneously have a relatively small aspirations gap—again defined as the difference between current levels and aspired levels of education, land holdings, remittances, donations, and income—and score high on both the agency and pathways sub-scores of the hope scale. An important distinction of people characterized by low aspiration hope seems to be that rather than reducing their perceptions of self-esteem or self-efficacy, they simply have reduced their aspirations. This observation seems to be in line with Ray (2006) and Snyder's (2002) theory of aspirations and hope: that in the face of undesirable future outcomes (i.e. the perceived inability to achieve one's aspirations) individuals reduce their aspirations as a means to improve their own psychological wellbeing. Therefore, people with low aspirational hope don't have a very optimistic view of the future in terms of what can and will be achieved, but instead of becoming depressed or psychologically distressed, these individuals have simply reduced their aspirations or goals for the future. In this manner, when achievements are inevitably not obtained in the future, this disappointment is, in reality, not disappointing at all because these optimistic outcomes have been put out of the mind.

A couple brief notes should be discussed in considering and drawing policy implications from observations from table 5. First, these characterizations are primarily driven by largely arbitrary cut-off points in the hope scale and the aspirations gap index. In tables 4 and 5 "high" and "low" scores generated by the hope scale are defined as being above and below a score of 5, respectively. Thus, roughly 60% of the sample population is characterized as having "high" hope in table 4, and the same share of the population fall into just two categories in table 5. Therefore, the relative shares of the sample population within each of the categories in tables 4 and 5 are rather sensitive to the designated cut point. In the present analysis the cut point was designated to be 5 as this is the median possible response, but the cut point could be increased or decreased resulting in a larger or smaller share of the population to be categorized as lacking a necessary element of hope.

Second, although the specific shares of the sample population categorized as lacking hope may be rather sensitive and malleable to several arbitrary computational choices, it is interesting to note that there is a sufficient amount of heterogeneity in both the hope scale and the aspirations gap index. This suggests that making policy decisions without taking into account how the social and psychological environment influences an individual's perspective on the future may lead to ineffective and perhaps even faulty policies. This may be so because policymakers may implicitly assume that everyone possesses aspirational hope. From the data collected in the present study, however, not only may this assumption fail to hold for the entire sample population, but also it may fail to hold for the majority of the population. *3.3.c. Self-Efficacy*

Self-efficacy is the concept that may be best described as the perceived agency. Given this clear conceptual link between self-efficacy and hope, a survey instrument measuring self-efficacy was included the Hope Survey questionnaire for purposes of providing evidence to validate the integrated hope measurement. The self-efficacy survey instrument is very similar to that used by Bernard, Dercon, and Taffesse (2011) in Ethiopia. The Hope Survey included the same first two questions contrasting destiny and luck with own effort, but also included a question that contrasted the influence of powerful others with own effort¹⁴.

	Full Sample
Question 1: My future is driven by	
Destiny	71.77%
My own effort	28.23%
Question 2: My future is driven by	
Luck	41.15%
My own effort	58.64%
Question 3: My future is driven by	
Power others	13.72%
My own effort	86.28%

Table 6: Self-Efficacy – Summary Statistics

Notes:

In Ethiopia, the responses to the first two questions of this survey instrument were quite consistent. 31% of the Ethiopia sample stated that "One's success or failure in life is a matter of his/her destiny", while 32% agreed that "To be successful, one needs to be lucky". These results contrast quite

¹⁴ This idea comes from established work in psychology in measuring concepts such as locus of control (Levenson 1981; Rotter 1966).

dramatically with the results from Mon State, Myanmar. As shown in table 6, almost 72% of the sample agreed that, "One's success or failure in life is a matter of his/her destiny", while only about 40% of the sample stated that, "To be successful, one needs to be lucky". Additionally, even fewer—14% of the sample—believed that, "One becomes successful due to connections with powerful others".

These summary statistics require a couple brief notes. First, although in Ethiopia the concepts of destiny and luck overlap and correlate quite closely, it seems that these two ideas are relatively distinct in the context of Myanmar. This outcome may be driven by religious beliefs, as Myanmar is a predominantly Buddhist country and suggest some cultural sensitivity of this survey instrument. While luck may refer to the randomness of outcomes, the idea of destiny refers to outcomes being driven by factors outside of one's control but that are not at all random. Second, although the majority of the sample considers own effort to be more important than connections with powerful others, it is difficult to draw any sort of inference from this outcome. This result could signify that connections with powerful others are not generally important. Or it could suggest a general lack of trust among those in rural Mon State of those who hold powerful positions. Either explanation is possible and it is impossible to disentangle this result.

3.3.d. Locus of Control

Locus of control is measured by using ten separate items from the scale developed by Rotter (1966). The more external an individual's locus of control is, the more they believe that what happens in life is beyond their control. Conversely the more internal an individual's locus of control is, the more they believe that future events in life are within their control. According to many psychologists, those with a more internal locus of control are more likely to set higher goals or aspirations, persevere in difficult situations, and ultimately are more likely to achieve successful outcomes (Stauser, Ketz and Keim 2002).

This survey instrument was constructed using five positive statements and five negative statements. When the respondent agrees with a positive statement this indicates that the individual has a more internal locus of control. Conversely, when the respondent agrees with a negative statement this indicates a more external locus of control. Specifically, statements 1, 5, 6, 8, and 10 are positive

statements and are included in the internal index and statements 2, 3, 4, 7, and 9 are negative statements and are included in the external index. Table 7 presents the means and standard deviations for each of the statements included in the locus of control survey instrument. A full locus of control index can be created to perform basic descriptive analysis with data from this survey instrument. In table 7, LOC 1 simply takes the full index and categorizes all those with a greater than median score as having an internal locus of control and those with a less than median score to have an external locus of control. This calculation suggests that roughly 73% of the population in Mon State, Myanmar has an internal locus of control.

	Mean	Std. Dev.	Obs.
COMPONENTS OF LOCUS OF CONTROL SCALE			
$\mathbf{Q}_{\mathbf{i}}$: How my life takes course is entirely dependent on me.	7.35	2.65	503
Q_2 : Compared to others, I have not achieved what I deserved.	6.02	2.69	503
Q_3 : What one achieves is, in the first instance, a question of destiny and luck.	6.19	2.74	502
Q_4 : I often experience that others make decisions about my life.	4.20	3.19	503
Q_5 : Success is gained through hard work.	7.85	2.20	502
Q_6 : When I make plans, I am certain that I can make them work.	7.33	2.48	503
Q_7 : The possibilities I have in life are dependent on social circumstances.	6.52	2.60	503
\mathbf{Q}_{8} : What happens to me is my own doing.	7.00	2.76	502
Q_9 : Getting a good job depends mainly on being in the right place at the right time.	8.01	2.14	499
\mathbf{Q}_{10} : A citizen plays a role in making decisions about the future of the government.	6.34	3.23	496
AGGREGATED LOCUS OF CONTROL INDICES			
Internal Index [(Q ₁ +Q ₅ +Q ₆ +Q ₈ +Q ₁₀)/5]	7.18	1.59	494
External Index [Q ₂ +Q ₃ +Q ₄ +Q ₇ +Q ₉)/5]	6.18	1.39	497
Full Index [(Q ₁ +Q ₅ +Q ₆ +Q ₈ +Q ₁₀ +R(Q ₂ +Q ₃ +Q ₄ +Q ₇ +Q ₉))/10]	5.49	0.83	490
LOCUS OF CONTROL INDICATORS			
LOC Indicator 1 (full index > median)	0.73		503
LOC Indicator 2, strict internal (internal index > 5 & external index < 5)	0.11		503
LOC Indicator 3, strict external (internal index < 5 & external index > 5)	0.03		503

Notes: Each question, and each aggregated score, has a minimum of 0 and a maximum of 10.

Table 7: Components of Locus of Control Scale

This basic descriptive statistic may be conceptually problematic, as the concepts of an internal locus of control and an external locus of control may, in fact, be mutually exclusive (Caliendo et al. 2015). This being the case it may be problematic if an individual scores highly on both the internal locus of control index and the external locus of control index. This conceptual problem is corrected by following the analytical calculations from Caliendo et al. (2015), who create a second locus of control indicator. This second calculation takes seriously the idea that the concepts of internal and external locus of control are mutually exclusive of each other. LOC 2 and LOC 3 represent these calculations. In essence, this second calculation excludes individuals whose responses suggest that they have both an internal and external locus of control. In table 7, it will be noticed that in this more strict calculation,

roughly 85% of the population drops out of the sample due to having seemingly contradictory responses. This suggests that many of the respondents were reporting highly contradictory answers to the questions in this survey instrument. A possible factor driving these contradictory answers could be the fact that the locus of control survey instrument was the last instrument in the Hope Survey and the respondents were tired after a relatively cognitively taxing survey. Future research should explore how survey fatigue impacts the reliability of psychometric survey instruments in developing countries. Regardless, the conceptual weaknesses of LOC 1 should be kept in mind when comparing these results with the scores generated by the hope scale.

SECTION 4: TESTING FOR VALIDITY OF THE MEASUREMENT OF HOPE

Measurements of attitudinal indicators, particularly those that are as opaque as hope, have historically raised a fair amount of skepticism among economists. Issues leading to measurement error may lead to important challenges particularly when attitudinal measurements are used in econometric analyses (Bertrand and Mullainathan 2001). Given the recent interest among economists to understand the underlying mechanisms relating specific attitudes with economic behavior—as discussed earlier in this paper—a growing literature has formed that examines the validity of attitudinal data (Manski 2004). With sufficient care and effort spent on the design of such survey instruments, worthwhile and relevant empirical analysis can be undertaken using attitudinal data. This paper now focuses on examining whether the measurement approach is effectively measuring hope and only hope.

In this section, this measurement approach is run through a series of validity tests. These validity tests included three broad analytical investigations. First, construct validity of both the aspirations measurement and the hope scale measurements is tested. This simple test investigates how expected determinants of aspirations and hope—namely education, gender, and age—correlate with each of the measurements. Second, conceptual validity of the hope scale is tested. This test examines how the measurements from the hope scale correlate with the measurements of self-efficacy and locus of control—two psychological concepts thought to be similar, yet distinct, from that of hope. A final investigation seeks to understand how measurements of hope relate to measurements of perceptions of wellbeing.

Ordinary least squares (OLS) regressions are used throughout this section for several reasons. First, the dependent variables in this section, the aspirations z-scores and the scores produced by the hope scale, are continuous variables. The aspirations variables are continuous because only the continuous aspirations variables are used in this analysis and the discrete variables are omitted. The scores from the hope scale are generated as continuous variable because when the scores are calculated, by averaging responses to the six questions, a respondent may have a score that is not an integer, but is bounded

between 0 and 10. Second, the latent variable the hope scale is trying to measure is theoretically continuous, as individuals are not simply "hopeless" or "hopeful"; rather individuals exist on a continuum either between or at these extremes. Third, as shown in figures 1 through 3 in the appendix, a very low proportion of the sampled population have scores that are close to the bounds of 0 or 10. For all these reasons, plus the added benefit of ease of interpreting coefficients, OLS regression is the preferred econometric specification. Of course, the data could be transformed in a way to work with a logit or probit it model. For the purposes of a robustness check on this analysis, logit regressions are presented in the appendix. This robustness check largely confirms the results of the OLS regression analysis, albeit typically with less statistical significance.

4.1. Construct Validity

The first analytical investigation tests the construct validity of both aspirations and hope. In essence, this test investigates to what extent do aspirations and hope correlate with expected determinants. The analysis in this subsection follows the methodology performed by Bernard and Taffesse (2014) in validating an approach to measure aspirations in Ethiopia. Thus, independent variables included in this analysis of construct validity include education, gender, and age. It is important to note that all of the correlations presented in this subsection are not to be interpreted as causal effects.

The education attainment variable is broken down into several dummy variables that signify the attainment of various levels of education. The first level represents attaining less than five years of primary school. The second level represents completing almost, but not, all of primary school. The third level represents completing primary school, but not completing intermediate schooling—9th grade in Myanmar's education system. The fourth level represents completing at least 10th grade and perhaps more years of schooling, such as attaining a tertiary education. This method for representing education attainment allows for the understanding of threshold effects or any sort of nonlinearities in the relationship between education and aspirations or hope. Gender is simply represented as a dummy variable where the value 1 represents the male gender. Finally, age is simply reported as the age of the

respondent¹⁵. For matters of clarity, this test of construct validity is run on the measures of aspirations and hope separately.

Table 6: Deteri	minants of A	spirations						
	(1) Own	(2) Son	(3) Daughter	(4) Agricultura	(5) Remittance	(6) Donations	(7) Income	(8) Aspiration
	Educatio	Educatio	Educatio	l Land	s	Aspiratio	Aspiratio	s Index
	n	n	n	Aspiration	Aspiration	'n	'n	
	Aspiratio	Aspiratio	Aspiratio					
	n	n	n					
Education:								
Primary	0.1245	0.4242***	0.4583**	0.0325	-0.1272	0.0207	0.0505	0.1111*
$(up to 4^{th})$	(0.1284)	(0.1473)	(0.1934)	(0.1136)	(0.1315)	(0.0580)	(0.1264)	(0.0650)
Primary	0.1910	0.5603***	0.6018***	0.0135	-0.0597	0.2457*	0.1356	0.2039***
$(4^{th} and 5^{th})$	(0.1448)	(0.1607)	(0.1715)	(0.1249)	(0.1239)	(0.1410)	(0.1512)	(0.0637)
Intermediat	0.3489**	0.6543***	0.7004***	-0.0608	-0.1993	-0.0049	0.1036	0.1654**
$e^{(6^{th}-9^{th})}$	(0.1546)	(0.1950)	(0.1791)	(0.1803)	(0.1459)	(0.0636)	(0.1530)	(0.0719)
Secondary	0.3811**	0.6988***	0.8098***	0.1082	-0.3318*	0.0586	0.1346	0.1932**
$(10^{th} - up)$	(0.1734)	(0.2016)	(0.1619)	(0.2124)	(0.1163)	(0.1030)	(0.1455)	(0.0738)
Gender: Male	-0.0330	0.1542	0.1208	0.2370**	0.0347	-0.0575	0.2116*	0.0894*
	(0.1078)	(0.1103)	(0.1362)	(0.1126)	(0.0741)	(0.0662)	(0.1172)	(0.0473)
Age	-0.0082	-0.0052	-0.0043	-0.0020	0.0069**	-0.0030	-0.0022	-0.0019
-	(0.0027)	(0.0049)	(0.0039)	(0.0029)	(0.0028)	(0.0045)	(0.0021)	(0.0014)
Obs.	465	342	351	465	462	465	464	462

Table 8: Determinants of Aspirations

Notes: Reported are coefficients from OLS estimates. Standard errors in parenthesis. ***P<0.01, **P<0.05, *P<0.1. Robust standard errors are clustered at the enumeration area level.

Although the main thrust of this analysis is not to validate the measurement of aspirations, it is worthwhile to briefly comment on how the approach to measure aspirations developed by Bernard and Taffesse (2014) replicates in a different context. The results for the construct validity test of aspirations are presented in table 8. Separate regressions examine how each dimension in which aspirations are measured relate to expected determinants. Although aspirations are measured across several different dimensions in the present study compared to the study implemented by Bernard and Taffesse (2014) in Ethiopia¹⁶, similar findings persist in the context of Myanmar. Similar to the analysis of Bernard and Taffesse (2014) it is found that higher aspirations are generally associated with individuals who have higher educational levels and are male. In particular, being a male is most statistically associated with land and income aspirations, which perhaps speaks to the role men typically play in the family.

¹⁵ The square of age was included in alternative regression specifications, but was not found to be significantly different from zero in all cases.

 $^{^{16}}$ In their research in Ethiopia Bernard and Taffesse (2014) measure aspirations across income, assets, education, and social status.

Additionally, there is little statistical evidence of a relationship between age and aspirations, even when the square of age was included. Finally, the relationship between respondent education attainment and aspirations for children's education level is particularly strong, even when disaggregated by gender.

A similar method of analysis investigates these same expected determinants on the aspirations gap, rather than absolute aspirations. Table 9 presents results from an identical OLS regression specification, except the dependent variable represents the aspirations gap. In this sense, the left hand side variable of each of the regressions represents the difference between each individual's current standard of living and their aspired standard of living (Ray 2006). Separate regressions are run across each dimension and on an aggregated index variable. Although this sort of analysis is not included in Bernard and Taffesse (2014), comparing the results reported in table 8 with the results reported in table 9 provides interesting insights into the formation of aspirations and the aspirations gap.

	(1) Own	(2) Agricultural	(3) Remittances	(4) Donations	(5) Income	(6) Aspiration
	Education	Land Asp.	Aspiration	Aspiration	Aspiration	Gap Index
	Asp. Gap	Gap	Gap	Gap	Gap	
Education:						
Primary	-0.1039	-0.0574	-0.1517	0.0366	0.0685	-0.0491
$(up to 4^{th})$	(0.1059)	(0.1288)	(0.1321)	(0.0567)	(0.1308)	(0.0468)
Primary	-0.3254**	0.0299	-0.0719	0.2669*	0.0449	-0.0110
$(4^{th} and 5^{th})$	(0.1246)	(0.1270)	(0.1248)	(0.1410)	(0.1378)	(0.0602)
Intermediate	-0.5119***	-0.0972	-0.2440*	-0.0310	0.0515	-0.1669**
$(6^{th} - 9^{th})$	(0.1511)	(0.1527)	(0.1341)	(0.0642)	(0.1402)	(0.0677)
Secondary	-0.9604***	0.1104	-0.3622***	0.0554	0.0645	-0.2196**
$(10^{\text{th}} - \text{up})$	(0.1722)	(0.2199)	(0.0943)	(0.0974)	(0.1610)	(0.0831)
Gender: Male	0.0097	0.1446	0.0782	-0.0545	0.1888	0.0822
	(0.09963)	(0.1172)	(0.0821)	(0.0654)	(0.1153)	(0.0552)
Age	-0.0074***	-0.035	0.0050**	-0.0032	-0.0019	-0.0023
	(0.0026)	(0.0030)	(0.0024)	(0.0045)	(0.0023)	(0.0015)
Obs.	465	465	462	465	464	462

 Table 9: Determinants of the "Aspirations Gap"

Notes: Reported are coefficients from OLS estimates. Standard errors in parenthesis. ***P<0.01, **P<0.05, *P<0.1. Robust standard errors are clustered at the enumeration area level.

The most noticeable insight from table 9¹⁷ is that as an individual's educational attainment increases the educational aspirations gap decreases, and these results are statistically significant at the 5% and 1% levels. Comparing this result highlights that, in absolute terms, educational aspirations increase

¹⁷ It should be noted that the aspiration gap variables for one's children are omitted from table 9. This is done to avoid confusion, because it is not clear what to expect about how one's own educational attainment would affect the aspirations gap of one's children who are likely currently in school. Additionally, when this regression is run the coefficients were not particularly meaningful.

along with increased educational attainment, but the aspirations gap for education decreases with increased educational attainment. This result aligns well with expectations of the formation of the aspirations gap, namely that as an individual achieves higher outcomes along a given dimension, the gap between their current and aspired outcomes shrinks.

Several other, less statistically significant, insights deserve brief comments. First, it seems that as educational outcomes increase aspirations for remittances decrease both in absolute terms and in terms of the aspirations gap. This may suggest that with increased educational outcomes individual's aspire to a more self-sufficient life that is not as dependent on others sending money for their own livelihood. Second, aspirations for income are higher, both in absolute terms and in terms of the aspirations gap, for men compared to women. Additionally, in absolute terms, men seem to aspire for more agricultural land than women. This distinction vanishes when the aspirations gap for agricultural land is investigated. This may be due to the reality that it is commonly understood that men control more agricultural land than women in rural Myanmar. Both of these findings align with the theoretical work of Appadurai (2004) and Ray (2006), namely that aspirations increase with the expansion of an individual's ability to visualize and observe improved outcomes of their peers. Finally, there is very little evidence that suggest any sort of meaningful relationship between age and aspirations, both in absolute terms and in terms of the gap, even when the square of age was investigated. Although there is a statistically significant relationship between age and aspirations for remittances, the effect sizes of these relationships are hardly practically or economically significant.

The final test of construct validity is to run the same process on the measurements generated by the hope scale. The results of this test, presented in table 10, provide three basic insights. First, scores generated by the hope scale seem to increase slightly as education outcomes increase. This is particularly so up until an individual achieves the level of intermediate education and then slightly levels off in the level of secondary education. Second, males generate higher scores on the hope scale than women. This perhaps signifies the larger variety of options available to men to achieve a sufficient livelihood compared to women in Myanmar and due to cultural norms as women may be more focused on the household

activities. Third, there is little evidence of an age relationship with the hope scale scores. Even in alternative specifications where the square of age is included, there was no evidence to suggest an inverted U-shape relationship between age and the scores from the hope scale. This finding is in line with the reality that the relationship between age and hope may be nonlinear in important ways. Coupled with a similar result of a lack of a meaningful relationship between age and aspirations, much more work should be engaged on the topic of how age relates to attitudinal variables or on the potential life cycle of hope and aspirations.

TADIE TU: DETERMINANTS OF HODE (Agency and Fallways)	Table 10:	Determinants	of Hone (Agen	cv and Pathwavs)
--	-----------	--------------	---------------	------------------

	(1)	(2)	(3)
	Agency	Pathways	Full Hope
	Sub-scale	Sub-scale	Scale
Education:			
Primary	0.2805	0.2119	0.2465
$(up to 4^{th})$	(0.2384)	(0.2819)	(0.2306)
Primary	0.3544	0.5348**	0.4497**
$(4^{th} and 5^{th})$	(0.2557)	(0.2609)	(0.2165)
Intermediate	0.6353**	0.5064*	0.5713**
$(6^{th} - 9^{th})$	(0.2487)	(0.2662)	(0.2281)
Secondary	0.0246	0.3453	0.1857
$(10^{th} - up)$	(0.2423)	(0.3400)	(0.2210)
Gender: male	0.2328	0.4348*	0.3317*
	(0.1821)	(0.2439)	(0.1843)
Age	-0.0030	-0.0054	-0.0041
-	(0.0074)	(0.0079)	(0.0067)
Obs.	465	464	464

Notes: Reported are coefficients from OLS estimates. Standard errors in parenthesis. ***P<0.01, **P<0.05, *P<0.1. Robust standard errors are clustered at the enumeration area level.

Taken together, the results shown in tables 8 through 10, suggest that the measurements of aspirations and hope generally hold up to what is expected. Namely, as is emphasized by Appadurai (2004) and Ray (2006), hope and aspirations tend to expand as an individual's aspirations window expands. What this means is that with increased levels of education and with the greater opportunities afforded to men in Myanmar comes both greater aspirations for the future, and also an improved perception that these aspirations can be achieved.

4.2. Conceptual Validity

The second analytical investigation examines how the measurements generated by the hope scale (Snyder 1994, 2002) correlate with other similar, yet distinct, concepts. This conceptual validation is motivated by a number of recent empirical studies that measure concepts similar to hope (Bernard et al.

2011; Caliendo et al. 2015; Macourse and Vakis 2009). The indicators included in these studies may be positively related to the various components of hope, but it remains to be seen to what degree these concepts are correlated in the real world. Furthermore, an important aspect of any measurement validation exercise includes an understanding of the specificity of a given approach. Thus, in this subsection the following question is investigated: Is this measurement of hope only measuring hope, or are other concepts included in some way?

One of the simplest ways to understand to what degree different variables correlate is to perform a factor analysis using Pearson's correlation matrix. This method, however, assumes that the variables under consideration are continuous. This assumption is violated for a number of the variables generated by the survey instruments in the Hope Survey. One solution to this problem is to run polychoric and polyserial correlations due to their flexibility to the specific characteristics of each included variable (Lee, Poon, and Bentler 1995)¹⁸.

Table 11 presents a matrix with polychoric and polyserial correlations on the following sets of variables. First, the agency and pathways sub-scores from the hope scale (Snyder 1994, 2002) are included in the correlation matrix, which are represented as continuous variables. Second, the variables representing the primacy of destiny, luck, or relationships with powerful others (Bernard, Dercon, and Taffesse 2011) are also included. These variables are represented by binary dummy variables and take the value of 1 when the respondent indicates that destiny, luck, or relationships with powerful others—respectively—are more important in influencing their own future than their own effort. Third, the full index from the locus of control scale (Rotter 1996) is included, which is a continuous variable bounded between 1 and 10 with larger scores signifying a more internal locus of control of the respondent. For matters of performing this conceptual validity test, this full index variable is preferred over both of the

¹⁸ When using the polychoric command in Stata, not all correlations are necessarily polychoric. It is only when both variables have less than ten observed values that a polychoric correlation is calculated. When one variable has less than ten observed values and one variable has more than ten observed values (i.e. one variable is continuous and one variable is categorical) a polyserial correlation is calculated. Finally if both variables have more than ten observed values a Pearson's correlation is calculated.

stricter locus of control indicators, because it is a continuous variable and because roughly 85% of the sample ends up being excluded by the stricter locus of control indicators.

Table II: F	actor Analy	sis (Polychol	ric Correla	tion Matri	X)	
	Agency (HS)	Pathways (HS)	Destiny (SE)	Luck (SE)	Others (SE)	LoC Index
Agency	1					
(HS)						
Pathways	0.4788	1				
(HS)						
Destiny	0.0411	-0.0904	1			
(SE)						
Luck	-0.0478	-0.0781	0.5870	1		
(SE)						
Other	-0.0706	-0.1159	0.1272	0.2190	1	
(SE)						
LoC	0.2306	0.1652	-0.0996	-0.2349	-0.0481	1
Index						
Mada						

Table 11: Factor Analysis (Polychoric Correlation Matrix)

Notes:

Several observations on the correlations presented in table 11 should be highlighted as they provide insight on the conceptual validity of this approach to measurement hope. First, the agency and pathways sub-scores generated by the hope scale have a moderately positive relationship with each other. This sort of relationship confirms the conceptual framework developed by Snyder (1994) in that although the concepts of agency and pathways are distinct there may be some degree of positive correlation between the two concepts. Second, both agency and pathways have a weak positive relationship with the full locus of control index. Although these relationships are relatively weak, this again is expected based on the work of Snyder (1994) who suggests that having higher agency and pathways sub-scores may indicate a more internal locus of control among individuals. Finally, it is noted that the agency and pathways sub-scores both have roughly non-existent relationships with the dummy variables generated by the self-efficacy survey instrument. This may suggest that the concepts captured by the self-efficacy measurements are more profoundly distinct than the concepts embedded in hope.

It bears mentioning that the self-efficacy measurements are all positively related to each other to some degree. A belief in the primacy of luck has a moderately positive relationship with a belief in the primacy of destiny and a weakly positive relationship with a belief in the primacy of relationships with powerful others. Additionally, a belief in the primacy of luck is negatively related with the full locus of control index. This full locus of control index has a negligible relationship with beliefs both in the

primacy of destiny and of relationships with powerful others. As previously noted, the concept of destiny may carry important cultural or religious connotations in the context of Myanmar and it is difficult to tease out how to exactly interpret a disbelief in the primacy of relationships with powerful others.

Taken together, this empirical investigation suggests that this measurement approach is conceptually valid, at least among the concepts measured by the Hope Survey. Although very few of the relationships between these variables are all that strong, the correlations recorded in table 11 seem to run in the direction in which existing theory and expectations imply. Thus, it is generally recognized that these measurements align with previous work that defines how these concepts relate to each other.

4.3. Empirical Validity

The third analytical investigation examines how the hope measurement is associated with variables collected during the MSRHL survey. This test of empirical validity looks at how the measurements of hope, generated by the hope scale, correlate with welfare perceptions. It is important to note at the outset of this sub-section, that all of the correlations presented here are not to be interpreted as causal effects. This sub-section, however, does provide useful information for future research that seeks to identify the causal relationships between hope, aspirations, and meaningful economic behaviors. Indeed it is understanding the causal mechanisms between concepts such as hope, poverty, and other indicators of economic development that motivate this work to validate an approach to measure hope.

The MSRHL survey dedicated an entire module to recording welfare perceptions of respondents both in regards to the household generally and in regards to the provision of several important basic necessities. For the present purposes, these data provide important insights that speak to the empirical validity of the approach to measure hope developed in this study. Table 12 presents the results of a number of simple OLS regressions between the elements measured in the hope scale and perceived household welfare.

The three panels in table 12 present results from simple OLS regressions between the scores generated from the hope scale and perceived household welfare at the present situation (panel A), perceived household welfare compared to neighbors (panel B), and the perceived improvement of

household welfare over the past year (panel C). Broadly speaking it is worth noting that each of the coefficients relating to less desirable independent variables—such as the present situation being "not good", the household being "worse" off than neighbors, or the household feeling "worsened" over the past year—are all negative. This suggests that less desirable welfare perceptions are associated with lower scores generated by the hope scale. This finding is in line with expectations as scores generated by the hope scale. This finding is own experiences and their own perception of their own wellbeing.

Table 12. Tererveu mousenoiu	able 12: I creeived Household Wehare and Hope (Agency and Fathways)			
	(1)	(2)	(3)	
	Agency	Pathways	Full Hope	
	Sub-scale	Sub-scale	Scale	
(A) Present Situation:				
"Good"	0.2979	0.0248	0.1584	
[N=135]	(0.1963)	(0.2284)	(0.1775)	
"Not Good"	-0.4190**	-0.4500*	-0.4375**	
[N=194]	(0.1810)	(0.2424)	(0.1798)	
Obs.	480	479	479	
(B) Compared to Neighbors:				
"Better"	1.1160***	0.7251*	0.9186***	
[N=25]	(0.2529)	(0.3826)	(0.2783)	
"Worse"	-0.5646***	-0.3159	-0.4422**	
[N=142]	(0.1824)	(0.2390)	(0.1786)	
Obs.	480	479	479	
(C) In the past year:				
"Improved"	-0.1519	0.3073	0.0752	
[N=97]	(0.1964)	(0.2972)	(0.2021)	
"Worsened"	-0.3264*	-0.0043	-0.1678	
[N=128]	(0.1897)	(0.2527)	(0.1961)	
Obs.	477	476	476	

 Table 12: Perceived Household Welfare and Hope (Agency and Pathways)

Notes: Reported are coefficients from OLS estimates. Standard errors in parenthesis. ***P<0.01, **P<0.05, *P<0.1. Robust standard errors are clustered at the enumeration area level.

More specifically, perceived welfare compared to neighbors seems to provide the strongest insights. Particularly along the agency sub-scale, but also along the pathways sub-scale, the perception that an individual's household is doing better than surrounding neighbors is associated with higher scores in the hope scale roughly of a magnitude of 1 point on the visual zero through ten Likert scale. Conversely, the perception that an individual's household is doing worse than surrounding neighbors is associated with lower scores in the hope scale roughly of a magnitude of half a point on the Likert scale. Although the magnitudes of these associations are not deterministic in any sort of practical manner, and some perceptions data is noisier than others, it is interesting to note the consistency in the association between various welfare perceptions and scores on the hope scale.

A similar analysis is carried out next on the perception of the adequacy of the provision of several basic necessities and their relation to the scores generated from the hope scale. Table 13 presents results for food consumption (panel A), housing (panel B), clothing (panel C), health care (panel D), and education (panel E). Again, each of the coefficients relating to the perception of relative inadequacy of the provision of some basic necessity are negative. Furthermore, all but one of the coefficients relating to the perception of the more than adequate provision are positive. Clearly, from these results, it seems that individuals who perceive a relative inadequacy of provision of some basic necessity are associated with individuals with lower scores on the hope scale.

Table 13: Perception of Basic Needs and Hope (Agency and Pathways)				
	(1)	(2)	(3)	
	Agency	Pathways	Full Hope	
	Sub-scale	Sub-scale	Scale	
(A) Food Consumption:				
"More than Adequate"	0.4086	0.1561	0.2809	
[N=32]	(0.3403)	(0.3435)	(0.2973)	
"Less than Adequate"	-0.4723*	-0.3770	-0.4261	
[N= 55]	(0.2614)	(0.4026)	(0.3022)	
Obs.	478	477	477	
(B) Housing:				
"More than Adequate"	0.6084**	0.3057	0.4554	
[N=43]	(0.2961)	(0.3310)	(0.2877)	
"Less than Adequate"	-0.2758	-0.1733	-0.2262	
N=102	(0.1732)	(0.2593)	(0.1881)	
Obs.	480	479	479	
(C) Clothing:				
"More than Adequate"	0.2059	0.4281	0.3155	
[N=49]	(0.2480)	(0.3329)	(0.2580)	
"Less than Adequate"	-0.6461**	-0.3472	-0.4982	
[N=55]	(0.2934)	(0.3990)	(0.3076)	
Obs.	480	479	479	
(D) Health Care:				
"More than Adequate"	0.4985*	0.1897	0.3425	
[N=36]	(0.2926)	(0.3446)	(0.2576)	
"Less than Adequate"	-0.6917***	-0.7377**	-0.7163***	
[N=70]	(0.2394)	(0.3641)	(0.2629)	
Obs.	478	477	477	
(E) Education:				
"More than Adequate"	-0.1484	0.2251	0.0358	
[N=28]	(0.3533)	(0.4377)	(0.3330)	
"Less than Adequate"	-0.5226***	-0.4029	-0.4653**	
[N=184]	(0.1849)	(0.2546)	(0.1962)	
Obs.	477	476	476	

Notes: Reported are coefficients from OLS estimates. Standard errors in parenthesis. ***P<0.01, **P<0.05, *P<0.1. Robust standard errors are clustered at the enumeration area level.

Here again, the magnitudes of these associations are not overwhelming by any means, at approximately half a point on the visual zero through ten Likert scale. It is again worth noting the consistency of these results across a variety of different basic necessities. This note bears an important caveat, that the share of the overall sample that self-reported either a "more than adequate" or "less than adequate" provision of basic needs is typically relatively small. The majority of the sample population, roughly in the neighborhood of 70% to 80%, reported a perception of "adequate" provision of basic needs. Thus these results demonstrate the associations of welfare perception as the extremes. A final observation is that in panels A, B, C, and E it is always the agency sub-scale that is statistically significant. One hypothesis explaining this observation is that food, housing, clothing, and education can all be relatively easily obtained with higher income in Mon State, whereas in the rural areas of Mon State quality health care is inaccessible to even the relatively well-off.

Taken together this empirical validity provides supporting, although inconclusive, evidence that this data can be used in empirical studies. The results demonstrated by the simple analysis performed in this sub-section seem to align with what was expected, namely, that the perception of less wellbeing or worse welfare is associated with a lower score on the hope scale. More work should be undertaken in the future to examine how this approach to measure hope correlates with changes in real wellbeing, such as asset dynamics and stochastic economic shocks that substantially impact household consumption.

Overall these validity tests find that this measurement approach may provide a solid foundation for future research to improve upon. Broadly speaking, the results from these tests suggest that the approach developed by psychologists to measure hope, most notably Snyder (1994, 2002), holds up remarkably well when administered with a household survey in a context of a rural developing country. This is not to suggest that contextualizing this survey instrument was at all simple or straightforward. Sufficient care and effort was needed in designing the survey instruments, pretesting the questionnaire, and training enumerators. This study shows that with sufficient time and effort dedicated to preparing the data collection project, a validated approach to measure hope is possible to implement and include in future survey work in other developing countries. There are, however, numerous issues to discuss relating

to measurement error, challenges with cultural sensitivities, and interpersonal comparability. These topics are discussed in detail in the following section.

SECTION 5: DISCUSSION

This section provides a discussion of three important topics. First, measurement issues are presented and discussed. These include details as to why the initial aspirations module failed when included as part of the initial comprehensive MSRHL survey. Additionally, several uncontrollable factors of bias are presented and discussed as they relate to the interpretation of the present analysis and future empirical work. Second, several priorities for future research are highlighted. These include improving the interpretational comparability of the measurement generated by the hope scale, exploring how these measurements compare with more established methods for identifying poverty traps, and establishing methods for identifying causal relationships between hope and various outcomes of interest. Third and finally, several policy implications are presented specifically as they relate to rural development strategy in Mon State, Myanmar.

5.1 Measurement Issues

As with any survey-based measurement approach there are a number of measurement issues to discuss. First, an update is discussed on the usability of the aspirations instrument designed and tested in Bernard and Taffesse (2014). As was noted earlier, the present study was born out of the seeming failure to contextualize and append a module measuring aspirations on the MSRHL survey. On this topic a list of reasons why that initial approach failed are summarized with a brief discussion on how each of these issues was addressed when designing the Hope Survey. Second, several factors of bias are raised and discussed in the context of the data collected by the Hope Survey.

5.1.a. Issues with the Original Aspirations Module

Previous work by Bernard and Taffesse (2014) in Ethiopia provided detailed information in regards to measuring aspirations and tested the usability, reliability, validity, and replicability of the survey instrument. In regards to usability, Bernard and Taffesse (2014) reported, "Overall, 10-15 minutes were necessary to answer these questions, allowing for the use of such questions within broader surveys [...] Thus, the usability of the designed instrument into standard household survey does not seem to pose

any major issue". The experience appending the proposed survey instrument into the MSRHL survey provides at least an important qualification regarding sufficient contextualization of the survey instrument and perhaps a counterexample to the claim of general usability of the aspirations survey instrument as part of a longer and more detailed household survey.

After the enumerators for the MSRHL survey unanimously voted to drop the aspirations module from the survey, a short report highlighted some of the problems associated with the aspirations survey instrument. The following is a brief list of some of the issues with the initial aspirations module and how these issues were addressed when creating the Hope Survey.

1. <u>Confusion with hypotheticals</u>. In the initial aspirations module, respondents seemed to become confused by the notion of "wishing to achieve" some aspiration level, particularly in regards to income and assets. Many would refuse to provide an exact number and instead respondents spent time explaining their lack of prospects for the future without explicitly providing a direct answer. To address this issue, time and effort was spent performing qualitative interviews, prior to constructing the Hope Survey, with the purpose of understanding what would be some more appropriate dimensions to ask about in the remade survey. We found that if we asked about more discrete or tangible dimensions of life, respondents could answer actually quite easily.

2. <u>Buddhist cultural sensitivity</u>. It initially appeared that the broad culture in Myanmar generally discourages expressing one's own aspirations to material wealth. This may be related to an ethic embedded within Buddhism, which encourages leading a humble life. The concern was that even if respondents do have such aspirations; they might not feel comfortable expressing them within the context of a household survey. Again the time and effort spent performing qualitative interviews seemed to suspend this concern. When speaking openly with individuals in the rural areas of Mon State, it became quite clear that many actually speak quite freely and openly about their hopes and dreams for the future. The take-away from this experience was to keep in mind cultural sensitivities, but that individuals were generally comfortable describing their hopes for the future.

3. Seemingly irrelevant questions. The initial aspirations module asked questions about the same four dimensions regardless of the circumstances of the individual. This created situations where seemingly irrelevant questions were asked. For example, asking an elderly person about how much more education they would like to achieve or asking about agricultural landholdings even if the respondent was not a farmer. This proved to be more of an issue of enumerator training than anything else. While some questions may seem irrelevant, we are typically interested in understanding if an adult does possess desires to continue or complete his or her education from earlier in life. Questions were added that seemed more relevant for adults, for example asking about their aspirations for the children's futures. Furthermore, simply because someone's current occupation or income earning activity isn't farming, does not mean that this person does not aspire to become a farmer in the future. So, while some questions may seem irrelevant, with careful training of enumerators the relevance of these questions may be able to be explained.

4. <u>Time concerns</u>. Due to many of the reasons already mentioned, those responding to the initial aspirations module would often take a considerable amount of time discussing and answering the questions. This resulted in an average response time for the initial aspirations module to be greater than 20 minutes. This issue is a real concern for two reasons. First, and most clearly, adding a module that takes over 20 minutes to complete to an already lengthy standard LSMS-style household survey can be prohibitive. Second, as noted in the next paragraph, the aspirations module and related psychometric survey instruments are relatively cognitively taxing on the respondent. There may be benefit in including these type of survey instruments as follow-up surveys that can be completed in a shorter amount of time.

5. <u>Respondent discomfort</u>. Although the aspirations module typically worked quite well with relatively well-to-do respondents, some of those less well-off appeared to be made very upset or distressed by the question regarding aspirations. Asking about hope can be very emotionally distressing for those who feel hopeless. Again, this is a real concern; the last thing any researcher wants to do is make respondents worse off because of participating in some household survey. Here again, the time and effort of performing qualitative interviews paid off in allowing the Hope Survey to include questions that were

more sensitive to the culture and the dire living situations of some who live in rural Mon State. This issue also highlights the potential primacy of the idea of hope and aspirations in forming poverty reduction and development policies and programs. Hope and aspirations seem to strike a deeper and more meaningful cord with respondents than, say, information on how many productive assets they own or their daily consumption of food.

6. Enumerator uneasiness. Primarily due to the discomfort exhibited by respondents, explained above, enumerators quickly reported feeling uneasy administering the aspirations module of the questionnaire. Due to this uneasiness and the growing lack of support from local collaborators, the quality of the data collected by the initial aspirations module became at risk of becoming compromised. This issue was addressed by taking time to explain the purpose of collecting data on hope and aspirations when the research team and enumerators were trained. This effort in training seemed to pay off as by the end of the data collection, the following observation was made: At the end of the debrief project leaders asked the 20 enumerators—9 male and 11 female and all college grads or seniors—whether they had actively set goals for themselves before working on the Hope Survey. Project leaders were surprised to observe that while eight out of nine male enumerators had set goals for themselves only three out of eleven female enumerators had explicitly done so. After the survey all of the enumerators said they realized the importance of goal setting¹⁹. Explanations for the change in thinking centered on an increased awareness gained through the survey of the need to set goals to achieve a high income and avoid poverty. Additionally, the enumerators commented that they thought that introducing the concept of goal setting needs to happen very early in education, perhaps at elementary level, but that was not happening in the current educational system in Myanmar.

5.1.b. Factors of Bias

Several factors of bias in the data deserve mention and a brief discussion. First, readers informed of up-to-date news in Myanmar will be quick to point out that data collection for this study almost exactly

¹⁹ Some of this may have been a peer effect, but most of the enumerators answered the question very quickly thereby suggesting that there was a real change in their thinking from before working on the survey.

coincided with the election of Myanmar's newest and current president. This happens to be a historic moment for citizens of Myanmar for several reasons. Htin Kyaw is the first president without a military background since 1962. Nobel Peace Prize winner Aung San Suu Kyi, who has been a champion for social and economic reform in Myanmar for several decades, now has more power and influence than ever before. Finally, and perhaps most importantly, the previous military affiliated government—at least in theory—transferred power to the new regime in late March 2016. All this coupled with the fact that data collection took place in early March 2016 presents a concern that respondents may report being biased toward hopefulness or perhaps are in some way generally more hopeful than they typically are under normal occasions. Unfortunately, it will be difficult to evaluate or correct for this potential source of bias from the data we have collected. In our defense, however, one could make a case for the presence of this bias even if the data was collected with the initial MSRHL survey in May of 2015 as many were already speculating, and indeed hoping, for a victory for a Suu Kyi lead NLD government.

A second form of bias that may be present in this data is social desirability bias. This is a common form of bias in any type of survey work. Responses are correctly understood as reported responses and should not be confused with what may be actually true. This being the case, respondents may often be biased toward whatever is socially desirable. Measurements of hope and aspirations must be taken at the word of the respondent and therefore may be biased; it would seem, generally toward hopefulness. This bias is partially addressed, although with unknown success, in the design of the survey. Rather than design the Likert scale with the seemingly socially desirable answer at ten for all the statements, some statements were worded such that the seemingly socially desirable answer was at zero. Of course, this doesn't prevent social desirability bias but it does require a bit of thinking on the part of the respondent.

The final form of bias that will be discussed is a bias that stems from the reality that different respondents may hold different conceptualizations when using the Likert scale. In this sense, a ten on our visual scale for one respondent may exactly equal an eight on the visual scale for someone else. This generates problems and bias when it comes to interpersonal comparisons of the data. Although this bias

almost certainly exists in our data, it is impossible to know to what degree. Several strategies exist for correcting for this incomparability bias. Being one of the pioneering studies on developing and testing an empirical measure of hope in rural development setting and due to the issues relating to cognitive stress and timing none of these strategies are employed in this study. These strategies should be considered in future work aiming to improve upon the approach presented in this paper. These strategies are discussed in the following subsection.

5.2 Priorities for Future Research

This paper presents the first, and rather basic, attempt to validate an approach to measure hope in a rural development setting. Future work is necessary to improve upon the interpersonal comparability of data generated by this measurement approach, verify the potential use of this measurement approach in identifying poverty traps, and investigate actual causal relationships between economic outcomes and hope rather than simply examining correlations. Each of these three priorities for future work are discussed in detail in the paragraphs in this section.

5.2.a Validating Interpersonal Comparability

Due to the relative sophistication of the concept of hope the issue of interpersonal comparability must be addressed in future work. This issue arises when survey respondents understand the 'same' concept in vastly different ways (Brady 1985). Often this is driven by the case when researchers aim to measure a concept that they are able to carefully and narrowly define themselves, but is defined widely or perhaps even in relative terms—among the general population. Amartya Sen (2002) provides a vivid example of this reality from survey work on perceptions of health in India:

The state of Kerala has the highest levels of literacy... and longevity... in India. But it also has, by a very wide margin, the highest rate of reported morbidity among all Indian states... At the other extreme, states with low longevity, with woeful medical and educational facilities, such as Bihar, have the lowest rates of reported morbidity in India. Indeed, the lowness of reported morbidity runs almost fully in the opposite direction to life expectancy, in interstate comparisons... In other words, the most common measure of the health of populations is negatively correlated with actual health.

Measuring reality on the basis of the perceptions of respondents can provide results that are extremely different than the empirical reality and can be very misleading without any sort of

methodological validity check. In the current study, and in line with a fairly serious tradition in survey design, this situation is partially addressed by taking care in crafting and asking survey questions in a clear manner. Indeed the fact that the survey instrument used in this study didn't simply ask, "How hopeful are you?" potentially reduces the amount of, so-called "differential item functioning" or incomparability in the data. Instead, respondents were asked to respond, through use of a visual scale, the level of their agreement or disagreement to a battery of statements pertaining to the concept of hope. Furthermore, the use of a visual scale and practice questions were included in the survey design to ameliorate the inevitable incomparability of individual responses within the data. It would be potentially misleading, however, to suggest that the data collected in this study is perfectly comparable across individuals. Future work should examine various methods for testing how well this measurement approach generates comparable data and seek to improve upon this basic approach.

One worthwhile method to consider in future work is the use of anchoring vignettes (King and Wand 2006; King et al. 2004; Kahneman, Schkade, and Sunstein 1998; Martin, Campanelli, and Fay 1991; Rossi and Nock 1983). This method directly measures the incomparability of responses within a survey and then, using these measurements, the researcher can reasonably correct for the incomparability between individuals using relatively straightforward recode commands (King et al. 2004). The basics of the anchoring vignettes method are as follows. The respondent is first asked to give a self-assessment of [some sophisticated concept] and answers using a Likert scale, typically ranging from 'strongly disagree' to 'strongly agree'. Next, several—usually five to seven—hypothetical vignettes are presented to the respondent. Written to take place in the cultural context of the respondent, these vignettes are designed to fall on an ordered Likert scale from least to most [whatever sophisticated concept is being measured]. Responses are then "corrected" by recognizing where the respondent places themself relative to the other hypothetical vignettes²⁰.

The use of anchoring vignettes was left out of the present study due to concerns with survey length and the cognitive tax it would levy on the respondents. It should be remembered that frustration

 $^{^{20}}$ More detailed instructions and examples can be found at http://GKing.Harvard.edu/vign/.

among respondents due to survey length and the difficulty of psychometric survey instruments were key reasons why the original aspirations module was dropped from the MSRHL survey. Still, a worthwhile research topic would be to investigate how much an approach using anchoring vignettes would add to the validity of data collected measuring aspirational hope.

5.2.b. Identifying Poverty Traps

Amartya Sen, in his well-known capabilities framework, perhaps is the closest any economist has come to articulating the insights from the psychology literature on hope (Sen 1999; 1992). Sen argued that authentic development occurs with, and ends with, the expansion of human agency, defined as the freedom to shape and pursue meaningful goals. Although Sen never explicitly mentions 'hope', in a series of lectures in 2012, Esther Duflo employed Sen's (1999) framework to articulate hope as having both intrinsic and instrumental value in the design of poverty reduction policies and programs. In concluding her lecture, Duflo stated, "A little bit of hope and some reassurance that an individual's objectives are within reach can act as a powerful incentive. On the contrary, hopelessness, pessimism, and stress put tremendous pressure both on the will to try something and on the resources available to do so".

It is slowly becoming clear that it is at least theoretically possible that poverty itself can possess self-reinforcing dynamics vis-à-vis a psychological mechanism, as the expectation of future poverty perhaps exacerbates present-day poverty. This reality can create vicious cycles of persistent and multigenerational poverty as well as result in fatalistic behavior among the poor around the world (Dalton, Ghosal, and Mani 2016; Bernard et al. 2014; Ray 2006).

Most economic measurements of poverty suffer from being inherently backward looking—telling us precisely who was poor when the data was collected. Important for public policy, however, is an understanding of who will be poor in the future. Microeconomic research on dynamic asset-based poverty analysis has made great strides in correcting for this weakness by making an empirical distinction between 'the chronic poor' and 'the stochastic poor' (Barrett and Carter, 2006; Adato et al. 2006). This dynamic asset-based approach requires detailed panel data on both household assets and household consumption, which makes the necessary data for this analysis both costly to collect and difficult to come

by. Furthermore, any researcher performing the dynamic asset-based approach must come up with a solution to the "dimensionality problem" with assets (Carter and Barrett, 2013).

With the necessary set of tools for measuring hope, as developed and discussed in this paper, a psychological approach to understand who will remain poor in the future may present an imperfect, but cost-effective and worthwhile, alternative to dynamic asset-based approaches. By understanding how people formulate goals for the future, how people perceive their own well-being in the future, and how people expect future events to be determined, researchers may be able to provide useful information for better targeting poverty reduction programs and better designing poverty reduction policies. Future work should consider comparing the measurement of hope developed in this paper with established dynamic asset-based poverty measurements.

In addition to comparing hope measurements with established techniques for identifying poverty traps, including hope measures in various randomized control trials may allow for new lessons regarding viable mechanisms for escaping poverty. For example, say an agricultural input subsidy program is found to increase agricultural yields. What is the actual mechanism at play here? Is the program "working" because it reduces input costs for farmers? Or is the program "working" because it encouraged them, strengthened the social contract, and reinforced the idea that the future could be better? Perhaps both are at play in some more complicated manner. Future work with field experiments could provide interesting and instructive insights into the dynamics of the escape from poverty.

5.2.c. Establishing Causality

The March 12, 2016 edition of *The Economist* magazine featured an article²¹ about some of the recent trends in African agricultural development. The article began by introducing Jean Pierre Nzabahimana, a "lean" and "muscular" farmer from rural Rwanda. After harvesting a bumper crop of maize, which has allowed Mr. Nzabahimana to be able to afford meat twice a month, the article said the following: "Although he remains poor by any measure, he has entered the class of poor dreamers. Perhaps he will build a shop in the village, he says. Hopefully one of his four children will become a driver or a

²¹ "A Green Evolution" *The Economist*, March 12, 2016.

mechanic". In just these two sentences there are at least three concepts worthy of further consideration. First, experiencing a "good" harvest causes Mr. Nzabahimana the ability to dream, or to hope in a better future. Second, entering the "class of the poor dreamers" causes Mr. Nzabahimana to achieve other "good" outcomes—aspiring to build a shop in the village or for one of his children to become a driver or a mechanic. Third, there is at least a conceptual distinction between "the poor" and "the poor dreamers". These are all interesting and perhaps even intriguing concepts to consider, but until researchers are able to estimate the causal dynamics of hope, these concepts will remain unverified.

The estimation of causal effects is, perhaps, the areas where economists have the most to contribute in the interdisciplinary study of hope. Psychologists have produced many studies highlighting clear indications of correlations between hope and a list of other outcomes. The challenge, however, lies in the strong potential of endogeniety in any study that seeks to disentangle causal effects of hope. This is particularly due to the socially determined nature of preferences and economic behavior that theoretical models of hope and aspirations build upon. Despite these challenges economists possess the empirical tools to potentially examine and identify the causal dynamics of hope.

One of the studies that, perhaps, approaches closest to providing some insight as to the causal impact of aspirations on future-oriented behavior is research conducted in rural Ethiopia which designed an experiment in which the treatment group viewed aspirational documentaries (Bernard et al. 2014). In performing this experiment Bernard et al. make an exciting case for the ability to exogenously induce aspirations²². Although the effects were relatively small, it should be noted that treatment was relatively light. This suggests that perhaps aspirations could act as a multiplier of sorts in that when aspirations are expanded in association of some other project or policy effects are amplified. Of course, all of these exciting policy implications rest on future researcher's ability to identify causal effects of hope and aspirations on economic and social outcomes.

 $^{^{22}}$ This research is discussed in greater detail in the literature of this paper.

5.3 Policy Implications for Myanmar's Rural Transformation

In April of 2016 the International Monetary Fund (IMF) released its projections of the fasted growing economies in the world. Myanmar topped the list with an expected GDP growth rate of 8.6% (IMF, 2016). This tremendous figure raises several key questions. Most notably, how will this improvement in Myanmar's economic performance translate into wellbeing for those throughout the nation of Myanmar? More specifically, will this trend of swift economic growth, if it continues, include most within the country and reduce income inequality or will it exclude and exacerbate inequality? For those concerned with the transformation of Myanmar's rural areas, these are questions with important answers. Although insights from this survey are not able to answer these questions sufficiently, there are several insights that may provide worthwhile content for consideration.

As stated at the outset of this paper, there is a trend within the profession of development economics to consider the importance, and even the primacy, of internal constraints when analyzing and designing development initiatives. Although this idea has become quite popular among academics and within development policy circles, it is a bit more challenging for policymakers to implement. Furthermore, the idea to 'bring hope to the poor' is a common thread among many development NGOs. Although the idea has intuitive appeal, it is less clear what the characteristics of such policies actually include.

5.3.a. Investments in Rural Infrastructure

Investments made in rural infrastructure can be designed in a variety of ways that spur outcomes through the mechanism of hope and aspirations. For example infrastructure investments that reduce the cost of transportation such as extending quality roads and bridges into rural areas will allow those who live in rural areas to travel outside of their village more often. This may effectively expand the aspirations window of those in rural areas and, perhaps, lead to an augmentation of aspirations. A similar story could be told about investments in infrastructure though communications technologies. The proliferation and the increased use of mobile/3G coverage throughout rural areas could, likewise, expand the aspirations window and the aspirations level of individuals who reside in rural areas.

In line with the theoretical work of Lybbert and Wydick (2016) and preliminary empirical tests (Ross 2016), simply augmenting aspirations may not be sufficient for the poor to break the cycle of poverty. Thus, rural development policies would do well to aim not only to augment aspirations, but also to encourage high levels of agency and pathways. To fulfill these goals, rural infrastructure investment that increase the ability of rural farmers to engage in markets, either in rural areas or closer to urban centers, may diminish a farmer's misperception of internalized constraints. This would effectively loosen some of the perceived binding constraints on the future outcomes of rural communities. In a similar vein, increased ability to install modern agricultural input technologies, such as modernized irrigation systems, may reduce a farmer's perception of the binding constraints, or pathways, leading toward their goals. Specifically inducing the adoption of irrigation technologies will make farmers less reliant on rainfall and may engender an increased perception of individual agency over their own future.

5.3.b. Adoption of Modern Agricultural Technologies

The adoption of agricultural technologies is a classic topic in the field of development economics (Griliches 1957), and is a natural topic in which to apply psychologically enhanced development policies. Classic barriers to the adoption of technology include externalities (Duflo and Udry 2004), property ownership (Goldstein and Udry 2008), credit markets (Karlan et al. 2012), insurance and risk preferences (Liu 2008), and information asymmetries (Foster and Rosenzweig 1995). Although these are almost certainly important factors to consider in the context of rural Myanmar, particularly land ownership and credit markets, psychological factors are not to be neglected. As suggested²³ by the psychologist Albert Bandura, who's work on self-efficacy is cited in this paper: "Failure to address the psychosocial determinants of human behavior is often the weakest link in social policy initiatives. Simply providing ready access to resources does not mean that people will take advantage of them" (The Psychologist, 2009). Applying Lybbert and Wydick's theoretical model of hope provides conceptual insights into the need to also consider psychological factors of technology adoption.

²³ Spoken in a lecture to the British Psychological Society, as sited by Dalton, Ghosal, and Mani (2016).

The Lybbert-Wydick model presents these dynamics through the lens of an expected utility framework. In the model, an economic agent is trying to maximize net expected utility subject to an aspirations dependent utility function as well as production functions that model agency and pathways. This model can be made applicable to the topic of technology adoption through the following adaptation. A farmer adopts a technology if net expected utility, at time t+1, from effort, at time t, of technology, N, is greater than net expected utility, at time t+1, from effort, at time t, of using the previous technology, O. Formally, a farmer chooses to adopt a technology if:

$$E[u_{N,t+1}] - c(e_{N,t}) > E[u_{O,t+1}] - c(e_{O,t})$$

This model makes several comments on the dynamics of the elements of hope and the adoption of agricultural technologies: First, in the absence of other binding constraints, when aspirations are expanded present day effort increases and results in higher net expected utility in time t+1. In this case, expanded aspirations may result in intensified use of an existing technology or the adoption of a new technology. Second, if an individual or a group suffers from low personal agency resulting in perceived agency being less than true agency (Bandura 1977), then a farmer may refrain from the adoption of a new technology. Thus, a shift of perceived agency closer to true agency may result in the increased likelihood of a farmer adopting of a new technology. Third, if an individual or group perceives constraints on future outcomes to be more binding than they are in reality—what Amartya Sen calls "internalized constraints" (Sen 1992, 1999)—then a farmer may again refrain from the adoption of a new technology. Thus, if the perceived constraints are shifted closer to true constraints, then a farmer may be more likely to adopt a new technology.

This model is instructive for constructing strategy for the rural development of Myanmar, particularly regarding expansion and growth in productivity of the agriculture sector. Specifically, this model demonstrates the consequences of "aspirations failure" (Ray 2006), low self-efficacy (Bandura 1977), "internalized constraints" (Sen 1992, 1999) due to Myanmar's history of economic mismanagement and authoritarian governance. This model shows that if perceived agency and avenues are found to be less than true agency and avenues then simply providing access to new technologies may
not lead to swift transformation in rural Myanmar. Given this discussion, a natural follow up question is how does rural development strategy potentially overcome these challenges? This is the question in which this paper now turns.

5.3.c. Government Agricultural Agencies

If it is found that there is relative heterogeneity among a population in regards to aspirations, agency, and pathways, as is observed in the Mon State sample, then there may be a role for programs that are both designed and targeted based on psychological characteristics. For example, in the Mon State sample population, only 33% of the sample is found to possess sufficient levels of each of the necessary elements of hope. Thus what should rural development strategies make of this observation? One answer to this question seems to lie in the design and implementation of rural agricultural extension programs.

Agricultural extension programs are often implemented with the intention of speeding up the adoption of agricultural technologies in rural areas. Specifically, most extension programs are designed to address the information asymmetry program associated with technology adoption. Although many agricultural extension programs already have features that may influence the psychological lives of farmers in rural areas, it is instructive to discuss these features. Again, the Lybbert-Wydick model will be employed as a structure in which to build this discussion. Therefore, various suggestions for how agricultural extension programs may be able to influence each element of hope will be highlighted.

First, aspirations can be induced toward expansion by agricultural extension programs through carefully implemented field days and test plots. An important, and seemingly necessary, feature of field days and test plots that successfully augment aspirations is that these programs exist in the "aspirations window" of the target population, to borrow the concept developed by Appadurai (2004) and Ray (2006). The "aspirations window" includes the "similar others" of the target population, which is best understood as multidimensional. Thus, "similar" other not only includes similarities in socio-political sense, such as: connectedness, ethnicity, and religious affiliations; but also in regards to agro-ecological characteristics, such as: soil quality, rainfall, and other agricultural inputs. If the field day or the test plot is not sufficiently in the aspirations window of the target population then the new information will not be

65

considered to be applicable by the target population. In the extreme case, if a test plot is on the best land in the area with mechanized irrigation, and is farmed by a team of highly educated and well-connected government officials, then a rural farmer who perceives her soil quality to be less fertile, is less educated, and who relies on rainfall to water her field may not view the information generated by the test plot to be applicable to her specific situation.

Second, through psychological treatments or encouragement programs agricultural extension programs have the potential to boost personal agency and develops pathways among individuals. It is widely recognized that physical health is important not only because being healthier is better than being less healthy, but also because being healthy affords additional benefits, such as increased productivity in the labor market. Somehow this recognition has not extended to the realm of mental health. A recent event hosted by the World Bank and the World Health Organization highlighted the fact that public spending on issues relating to stress, anxiety, and depress is woefully less in developing countries compared to that of more developed countries. This is unfortunate because even the most privileged individuals in the world today occasionally need encouragement in order to fully achieve their potential.

Agricultural extension programs could increase their effectiveness if they included some levels of psychological or encouragement treatments. These initiatives could be implemented in several ways. One idea would be to expand the pool in which extension agents are hired and recruited. Rather than simply looking to hire agents with technical agricultural training, there may be an important role for extension agents with a psychology or counseling background. Another idea comes from the work of Albert Bandura, who implemented psychosocial programs through film or drama in a variety of developing countries. Here is Bandura explaining, what is now typically characterized as the practice of social cognitive theory (The Psychologist, 2009):

These dramatic productions are not just fanciful stories. The plotlines portray people's everyday lives, and the impediments they face. They help people to see a better life, and provide the strategies and incentives that enable people to take the steps to realize their hopes. Hundreds of episodes, over several years, allow viewers to form emotional bonds to the models, who evolve in their thinking and behavior at a believable pace. Multiple, intersecting plotlines can address different aspects of people's lives, at both the individual and social level.

This sort of intervention is in line with the intervention of aspirational documentary-style videos studied in rural Ethiopia by Bernard et al. (2014). Although a stand-alone video treatment is a relatively weak development intervention, future research should investigate how existing development initiatives could be made more beneficial by including some sort of video-based treatment. For example, how are the impacts of microcredit, crop insurance, or conditional cash transfer affected by coupling them with video based treatments inspired by social cognitive theory? If the impacts are amplified, then perhaps more development initiatives should include video or dramatic productions of some sort.

5.3.d. Investments in Rural Education Systems

One of the most harrowing consequences of the broad economic mismanagement of the previous military regime in Myanmar is the decay of the public education system, particularly in the rural areas. In Mon State, almost 24% of surveyed adults had never attended formal education (CESD *forthcoming*). Although, this disparity is improving—roughly 9% of school-age children have never attended formal education (Ibid.)—the improvement of rural education systems should remain at the forefront of Myanmar's rural development strategy for years to come.

In this analysis, it is found that educational attainment is a meaningful correlate for both aspirations and scores on the hope scale. Furthermore, out of five categories of basic needs included in the MSRHL survey, education was the category most often reported to be "less than adequate" (CESD *Forthcoming*). The analysis using the data from the Hope Survey found that holding a perception of having less than adequate provision of basic needs is associated with lower scores on the hope scale. These results present correlational evidence, and so there are a number of ways educational attainment and aspirations or hope can relate to each other. It could be that with higher educational attainment comes the increased ability to form higher aspirations as well as an increased feeling that those aspirations are within reach. It could also be that higher aspirations and higher scores on the hope scale lead to increased educational attainment. More likely, however, is that both of these effects occur and causality runs in both directions, creating a feedback loop. Therefore, although these results do not cleanly identify a causal

67

relationship between educational attainment and aspirations or hope, this correlational evidence suggests that improving access and attainment in rural educational systems may generate substantial and worthwhile spillover effects.

The issue of building adequate rural education systems is particularly tricky in rural Mon State as the ability to find relatively high paying jobs with low levels of education is made possible through shortterm employment migration into neighboring countries, particularly Thailand. Additionally, this issue becomes more challenging if lower aspirations and lower scores on the hope scale are in any way positively correlated with discount rates on the future. Educational attainment in rural Mon State often requires an individual or household to forgo relatively high present day wages in hopes of one day achieving a better paying occupation, and other benefits, due to attaining a higher level in education. One potential policy that could mitigate the difficult trade-off between educating children and living in poverty on the one hand and sending a child abroad to work and living in a dispersed family on the other, could be cash transfers conditional on educational enrollment. An effective conditional cash transfer program could effectively reduce the difference in present day income between attending school and working abroad.

As was previously mentioned, enumerators who assisted in data collection remarked on the lessons they learned about the importance of setting goals for oneself. A common sentiment of the enumerators was that they learned that actively setting goals for oneself can assist in avoiding poverty and prevent "losing one's way" through life. The enumerators suggested that introducing the concept of goal setting should be included very early on in the education, at the primary level. Many agreed that the practice of actively setting goals was not an explicit part of the current education system. Thus, adding in activities that aim to teach lessons on the power of actively setting goals, that are attainable, may be a worthwhile addition to primary school curriculum in rural Myanmar.

68

SECTION 6: CONCLUSION

Why spend the time and effort developing and validating a quantitative measurement of hope? This is an important question and one that rests at the heart of this study. Indeed hope is a concept that is difficult to understand even when equipped with a well-developed definition. Anthropologists could spend a lifetime observing and recording the dynamics of hope within a given population and still have unanswered questions. Although these observations display elements of truth, a growing number of development economists have begun wondering how hope influences outcomes of interest, and if having hope in the future is a mechanism that allows for a break in the cycle of poverty. This being the case, careful work should be undertaken to understand how to best quantify a measure hope. The present study provides a foundation for this work, by contextualizing and testing several survey instruments developed by psychologists that measure the concepts of hope, self-efficacy, and locus of control. By no means does this study represent any sweeping or dramatic conclusions; rather it offers preliminary suggestions based on the validity tests the data allowed us to perform.

In their paper on the economics of hope, Lybbert and Wydick (2016) ask the following introspective question: "How well do we as development economists understand the hopes and dreams of those we study?" They respond to the question as follows:

Researchers charged with producing the 2015 World Development Report "Mind, Society, and Behavior" assert that, "development professionals are not always good at predicting how poverty shapes mindsets" (World Bank 2015). Based on surveys of these professionals, they conclude that they may perceive poor individuals to be "less autonomous, less responsible, less hopeful, and less knowledgeable than they in fact are" (pp. 18). Such misperceptions are consistent with a restricted view of the poor that fails to appreciate the meaning, purpose and hope they derive from their lives despite the constraints they face. A richer understanding of the role hope plays in the lives of the poor, an awareness of other disciplinary perspectives on hope, and a willingness to explore its interface with economics might help align our perceptions with those we study.

The present study seeks to add to the toolkit of researchers interested in understanding the role hope plays in the lives of the poor. The objective of this paper is to investigate an approach to measure hope—defined as a function of aspirations, agency, and pathways—in the context of a rural household survey commonly used in development economics to generate and gather data. The approach used in this study is essentially that developed by C.R. Snyder to measure hope in laboratory and clinical settings in the United State and Europe (Snyder 1994, 2002). Although the approach is similar, contextualizing the survey instrument to the context of rural Myanmar was not a trivial task. The final Hope Survey was the product of careful work translating survey questions and ensuring that the questionnaire was both culturally appropriate and emotionally sensitive.

The validation exercises presented in this paper suggest that this measurement approach does in fact measure the concept of hope. A test of construct validity suggests that scores generated by the hope scale correlate with expected determinants. A test of conceptual validity suggests that this measurement approach is uniquely measuring hope and not some other related attitude. Finally an empirical validity test suggests that perceptions of welfare correlate with scores generated by the hope scale in line with *a priori* expectations. Measurement issues, however, remain to be addressed in future research. Specifically, future research should aim at developing methods for limiting bias and for improving the interpersonal comparability of a quantitative measurement of hope. Taken together the measurement approach developed in this study provides the necessary first step in the quest to empirically measuring hope in developing countries. Lastly, and perhaps this is rather clear, but hope is not the only important aspect of the psychological lives of the poor around the world. Although there is no single measure that can fully explain the cognitive complexities of humanity, an empirical measurement of hope may provide insight into the decision-making processes of the poor.

APPENDIX

APPENDIX

A1. Hope Scale Score Distributions

For purposes of justifying the use of OLS in the presence of a bounded dependent variable, the following histograms are shown. The histograms demonstrate that there is relatively little bunching at the bounds of 0 or 10 within the sampled population. The most bunching is found in figure 2, which shows that roughly 15% of the population has a pathways sub-score at 10.





Figure 2: Histogram of the Pathways Sub-Score







A2. Robustness Check

This section presents robustness checks on the OLS regression analysis presented in the main manuscript of this paper. To serve the purpose of triangulating the true statistical relationships under consideration, logit models are used and the results are compared to those presented in tables 10, 12, and 13. This analysis requires transforming the data in several ways. In order to create a binary left hand side variable, the scores generated by the hope scale are transformed to equal 1 when the score is greater than the median possible response of 5.

Table 14. Robustness Check for Table 10, Determinants of hope			
	(1)	(2)	(3)
	Big Agency	Big Pathways	High Hope
	(=1 sub-score>5)	(=1 sub-score>5)	(=1 total score>5)
Education:			
Primary	0.4165	0.1500	0.1936
$(up to 4^{th})$	(0.3006)	(0.2746)	(0.2640)
Primary	0.4605	0.6237**	0.4466
$(4^{\text{th}} \text{ and } 5^{\text{th}})$	(0.3084)	(0.2944)	(0.2725)
Intermediate	1.0706***	0.4816	0.6794**
$(6^{th} - 9^{th})$	(0.4111)	(0.3367)	(0.3191)
Secondary	0.0213	0.5030	-0.0303
$(10^{th} - up)$	(0.4121)	(0.4113)	(0.3626)
Gender: male	0.4201*	0.5000**	0.4438**
	(0.2496)	(0.2287)	(0.2106)
Age	-0.0055	-0.0082	-0.0070
-	(0.0078)	(0.0072)	(0.0067)
Obs.	465	465	465

Table 14: Robustness Check for Table 10, Determinants of Hope

Notes: Reported are coefficients from Logit regression estimates and are NOT to be interpreted as marginal effects. Standard errors in parenthesis. ***P<0.01, **P<0.05, *P<0.1.

Table 14 presents results from a logit regression model checking the robustness of the OLS regression results presented in table 10. It should be remembered that the results generated by OLS regressions in table 10 provided three basic insights. First, scores generated by the hope scale seem to increase slightly as education outcomes increase. Second, males generate higher scores on the hope scale than women. Third, there is little evidence of an age relationship with the hope scale scores.

Each of these three insights seems to hold when the analysis is performed using a logit model. First, as the respondent attains higher levels of education it seems that a higher proportion of these individuals are included in the high portion of the distribution of scores generated by the hope scale. This effect seems to be strongest as an individual completes primary school and enters intermediate school grades. Second, males are more likely to be in the higher portion of the distribution of scores generated by the hope scale. Third, there is again little evidence of an age relationship with the scores generated by the hope scale, even when the square of age is included in the regression specification.

Table 15: Robustness Check for Table 12, Perceived Household weitare and Hope				
	(1)	(2)	(3)	
	Big Agency	Big Pathways	High Hope	
	(=1 sub-score>5)	(=1 sub-score>5)	(=1 total score>5)	
(A) Present Situation:				
"Good"	0.1302	-0.2012	-0.2195	
[N=135]	(0.2759)	(0.2482)	(0.2305)	
"Not Good"	-0.2354	-0.3871	-0.3142	
[N=194]	(0.2527)	(0.2365)	(0.2224)	
Obs.	480	480	480	
(B) Compared to Neighbors:				
"Better"	[Omitted]	0.7194	1.1422**	
[N=25]		(0.5598)	(0.5579)	
"Worse"	-0.5709**	-0.3901*	-0.4313**	
[N=142]	(0.2279)	(0.2148)	(0.2046)	
Obs.	455	480	480	
(C) In the past year:				
"Improved"	-0.1307	0.2022	-0.1224	
[N=97]	(0.2838)	(0.2666)	(0.2446)	
"Worsened"	-0.2006	0.0227	-0.2042	
[N=128]	(0.2554)	(0.2354)	(0.2213)	
Obs.	477	477	477	

Table 15: Robustness	Check for	Table 12.	Perceived Household	Welfare and Hope
I dole 101 Itob dotheos	Chicch Ioi	1 4010 129	I ci cci cu ilouschoiu	i charc and mope

Notes: Reported are coefficients from Logit regression estimates and are NOT to be interpreted as marginal effects. Standard errors in parenthesis. ***P<0.01, **P<0.05, *P<0.1.

Table 15 presents results from a logit regression checking the robustness of the OLS regressions results presented in table 12. It should be remembered that the general insight from table 12 was that each of the coefficients relating to less desirable independent variables—such as the present situation being "not good", the household being "worse" off than neighbors, or the household feeling "worsened" over the past year—are all negative.

This general insight holds in some, but not all cases, and the statistical significance of this finding seems to fall across each logit regression specification. In panels A and C, the perception of household welfare being "not good" or "worsened" is associated with lower scores generated from the hope scale, but these effects are not statistically significant at the 95% or even the 90% levels. Additionally, the perception of household welfare being "good" or "improved" is also not always associated with higher scores generated from the hope scale, as was generally the case under OLS regression estimates, although these estimates are very statistically insignificant. In Panel B, the general insight holds a bit more strongly, except for regression 1 which was omitted due to a lack of observations.

	(1)	(2)	(3)		
	Big Agency	Big Pathways	High Hope		
	(=1 sub-score>5)	(=1 sub-score>5)	(=1 total score>5)		
(A) Food Consumption:			· · ·		
"More than Adequate"	0.2299	0.6153	0.5071		
[N=32]	(0.4688)	(0.4661)	(0.4065)		
"Less than Adequate"	-0.3454	-0.3691	-0.3219		
[N= 55]	(0.3206)	(0.2987)	(0.2892)		
Obs.	478	478	478		
(B) Housing:					
"More than Adequate"	0.6267	0.6357	0.6249*		
[N=43]	(0.4586)	(0.4095)	(0.3670)		
"Less than Adequate"	-0.1197	-0.1908	-0.2857		
N=102	(0.2614)	(0.2401)	(0.2280)		
Obs.	480	480	480		
(C) Clothing:					
"More than Adequate"	0.1303	0.5162	0.4952		
[N=49]	(0.3752)	(0.3718)	(0.3333)		
"Less than Adequate"	-0.2498	-0.3629	-0.3118		
[N=55]	(0.3269)	(0.2994)	(0.2899)		
Obs.	480	480	480		
(D) Health Care:					
"More than Adequate"	0.2987	0.2927	0.2929		
[N=36]	(0.4648)	(0.4173)	(0.3773)		
"Less than Adequate"	-0.6601**	-0.7304***	-0.6999***		
[N=70]	(0.2819)	(0.2670)	(0.2628)		
Obs.	478	478	478		
(E) Education:					
"More than Adequate"	-0.0082	-0.1277	-0.0604		
[N=28]	(0.5189)	(0.4411)	(0.4150)		
"Less than Adequate"	-0.7076***	-0.4393**	-0.4957**		
[N=184]	(0.2270)	(0.2082)	(0.1964)		
Obs.	477	477	477		

Table 16: Robustness Check for Table 13, Perception of Basic Needs and Hope

Notes: Reported are coefficients from Logit regression estimates and are NOT to be interpreted as marginal effects. Standard errors in parenthesis. ***P<0.01, **P<0.05, *P<0.1.

Table 16 presents results from a logit regression checking the robustness of the OLS regressions results presented in table 13. It should be remembered that the key insight from the OLS regressions presented in table 12 was that individuals who perceive a relative inadequacy of provision of some basic necessity are associated with individuals with lower scores on the hope scale. This insight is similar to that drawn from table 12.

This result tends to hold across each logit regression within each panel, albeit with slightly less statistical significance. In panels A through D, each of the coefficients relating to the perception of relative inadequacy of the provision of some basic necessity are negative. Additionally, all of the coefficients relating to the perception of more than adequate provision of some basic necessity are positive. In panel E, the coefficients relating to the perception of more than adequate provision of education are negative, but highly statistically insignificant. The coefficients relating to the perception of less than adequate provision of education are also negative, but larger and statistically significant at the 5% level.

A3: Survey Instruments

Aspirations

A10	Education	
A11	How many years of education have you completed?	
A12	Do you want to go for further schooling?	
A13	How much education do you want to complete?	
A14	How much education has your oldest son completed?	
A15	How much education has your oldest daughter completed?	
A16	How much education would you like your oldest son to complete?	
A17	How much education would you like your oldest daughter to complete?	
A20	Occupation	
A21	What is your occupation?	
A22	What occupation do you want to achieve?	
A23	What is the occupation of your oldest son?	
A24	What is the occupation of your oldest daughter?	
A25	What occupation would you like your oldest son to achieve?	
A26	What occupation would you like your oldest daughter to achieve?	
A30	Land	
A31	How much residential land do you currently own?	
A32	How much residential land would you like to own?	
A33	How much agricultural land do you currently own?	
A34	How much agricultural land do you want to own?	
A40	Household Characteristics	
A41a	Enumerator observes current wall material.	
A42a	Enumerator observes current roof material.	
A43a	Enumerator observes current floor material.	
A44a	Enumerator observes current number of stories.	
A41b	What material of wall would you like your house to have?	
A42b	What material of roof would you like your house to have?	
A43b	What material of floor would you like your house to have?	
A44b	How many stories would you like your house to have?	
A50	Remittances	
A51	How much do you currently receive in remittances per month?	
A52	How much would you like to receive in remittances per month?	
A60	Donations	
A61	How much did you give in donations in the last month?	
A62	How much would you like to give in donations per month?	
A70	Income	
A71	What is your current level of earned income per month?	
A72	How much income would you like to earn per month?	

Self-Efficacy

B01	1.	Each person is primarily responsible for his/her success or failure in life.	
	2.	One's success or failure is a matter of his/her destiny.	
B02	1.	To be successful, above all one needs to work very hard.	
	2.	To be successful, above all one needs to be lucky.	
B03	1.	One becomes successful due to hard work and effort.	
	2.	One becomes successful due to connections with powerful people.	

Hope Scale

C01	If I should find myself in a jam, I could think of many ways to get out of it.	
C02	At the present time, I am energetically pursuing my goals.	
C03	There are lots of ways around any problem that I am facing now.	
C04	Right now, I see myself as being pretty successful.	
C05	I can think of many ways to reach my current goals.	
C06	At this time, I am meeting the goals that I have set for myself.	

Locus of Control

D01	How my life takes course is dependent on me.	
D02	Compared to others, I have not achieved what I deserved.	
D03	What one achieves is, in the first instance, a question of destiny and luck.	
D04	I often experience that others make decisions about my life.	
D05	Success is gained through hard work.	
D06	What I makes plans I can make them work.	
D07	The possibilities I have I in life are dependent on social circumstances.	
D08	What happens to me is my own doing.	
D09	Getting a good job depends mainly on being in the right place at the right time.	
D10	It is difficult for people to have much control over the things politicians do in office.	

BIBLIOGRAPHY

BIBLIOGRAPHY

- Abeler, J., Falk A., Goette, L. and Huffman, D. (2011) "Reference points and effort provision" American Economic Review, vol. 101 (2), pp. 470-492.
- Adato, M., Carter, M., and May, J. (2006) "Exploring Poverty Traps and Social Exclusion in South Africa Using Qualitative and Quantitative Data" *Journal of Development Studies*, vol 42 (2), pp. 226-247.
- **Appadurai, A.** (2004) "The Capacity to Aspire: Culture and the Terms of Recognition" *Culture in Public Action*, pp. 59-84.
- Bandura, A. (1977) "Self-Efficacy: Toward a Unifying Theory of Behavioral Change" Psychological Review, vol. 84 (2), pp. 191.
- Bandura, A. (1971) Social Learning Theory. Englewood Cliffs, NJ: General Learning Press.
- Banerjee, A., Duflo E., Goldberg, N., Karland, D., Osei, R., Pariente, W., Shapiro, J., Thuysbaert,
 B. and Udry, C. (2015) "A Multifaceted Program Causes Lasting Progress for the Very Poor: Evidence from Six Countries" *Science*, vol. 348, issue 6236, DOI: 10.1126/science.1260799.
- **Banerjee, A., and Mullainathan, S.** (2010) "The Shape of Temptation: Implications for the Economic Lives of the Poor" In. National Bureau of Economic Research.
- Barrett, C. and Carter, M. (2013) "The Economics of Poverty Traps and Persistent Poverty: Empirical and Policy Implications" *The Journal of Development Studies*, 49 (7), pp. 976-990.
- Barrett, C., Garg, T., and McBride, L. (2016) "Well-being Dynamics and Poverty Traps" Centre for Climate Change Economics and Policy, Working Paper No. 250 and Grantham Research Institute on Climate Change and the Environment, Working Paper No. 222.
- **Basu, K.** (2011) "Hyperbolic Discounting and the Sustainability of Rotational Savings Arrangements" *American Economic Journal: Microeconomics*, pp. 143-71.
- Beaman, L., Duflo, E., Pande, R. and Topalova, P. (2012) "Female Leadership Raises Aspirations and Educational Attainment for Girls: A Policy Experiment in India" *Science*, vol. 335, issue 6068, DOI: 10.1126/science.1211180
- Berger, J., and Pope, D. (2011) "Can Losing Lead to Winning?" *Management Science*, Vol. 57 (5), pp. 817-827.
- Bernard, T., Dercon, S., Orkin, K. and Taffesse, A. (2014) "The Future in Mind: Aspirations and Forward-Looking Behaviour in Rural Ethiopia" *Center for the Study of African Economies-Oxford*, No. 25.
- Bernard, T., Dercon, S., and Taffesse, A. (2011) "Beyond Fatalism: An Empirical Exploration of Self-Efficacy and Aspirations in Ethiopia" *IFPRI Discussion Paper 01101*

- Bernard, T., and Taffesse, A. (2014) "Aspirations: An Approach to Measurement with Validation Using Ethiopian Data" *Journal of African Economies*, Vol. 23 (2), pp. 189-224.
- Bertrand, M., and Mullainathan, S. (2001) "Do People Mean What They Say?" Implications for Subjective Survey Data". *American Economic Review*, vol. 91 (2), pp. 67-72.
- Bertrand, M., Mullainathan, S. and Shafir, E. (2004) "A Behavioral-Economics View of Poverty" *American Economic Review*, pp. 419-423.
- Bogliacino, F., and Ortoleva P. (2013) "The Behavior of Others as a Reference Point" Columbia Business School Research Paper, pp. 13-55.
- Brady, H.E. (1985) "Factor and Ideal Point Analysis for Interpersonally Incomparable Data". *Psychometrika*, 35, pp. 283-319.
- Brown, I. (2013) Burma's Economy in the Twentieth Century. New York: Cambridge University Press.
- Caliendo, M., Cobb-Clark, D., and Uhlendorff, A. (2015) "Locus of Control and Job Search Strategies" *The Review of Economics and Statistics*" Vol. 97 (1), pp. 88-203
- Carter, M. and Barrett, C. (2006) "The Economics of Poverty Traps and Persistent Poverty: An Asset-Based Approach" *The Journal of Development Studies*, 42 (2), pp. 178-199.
- **Corneo, G., and Jeanne, O.** (2001) "Status, the Distribution of Wealth, and Growth" *The Scandinavian Journal of Economics*, pp. 283-293.
- **CESD** (*forthcoming*) "Rural Livelihoods in Myanmar's Mon State". Michigan State University, Working Paper.
- Dalton, P., Ghosal, S., and Mani, A. (2016) "Poverty and Aspirations Failure" Economic Journal.
- **Delavande, A., Gine, X., and McKenzie, D**. (2011) "Measuring Subjective Expectations in Developing Countries: A Critical Review and New Evidence". *Journal of Development Economics*. 94 (2) pp. 151-163.
- Duflo, E. (2012) "Hope as a Capability" In. Tanner Lecture.
- **Duflo, E.** (2012) "Hope, Aspirations and the Design of the Fight Against Poverty" In Arrow Lectures, Stanford University.
- **Duflo, E., Kremer, M., and Robinson, J.** (2008) "How High Are Rates of Return to Fertilizer? Evidence from Field Experiments in Kenya" *American Economic Review*. Vol. 98, No. 2, pp. 482-288.
- **Duflo, E. and Udry, C.** (2004). "Intrahousehold Resource Allocation in Cote d'Ivoire: Social Norms, Separate Accounts and Consumption Choices." *NBER Working Paper*.
- **Dupas, P., and Robinson, J.** (2011) "Why Don't the Poor Save More? Evidence from Health Savings Experiments" In. National Bureau of Economic Research.
- Easterlin, R. (2001) Income and Happines: Towards a Unified Theory" *Economic Journal*, vol. 111 (473), pp. 465-484.

- Foster, A. D., and Rosenzweig, M. (1995). "Learning by Doing and Learning from Others: Human Capital and Technical Change in Agriculture." *The Journal of Political Economy* 103(6): 1176-1209
- Field, E., Jayachandran, S. and Pande, R. (2009) "Empowering Female Entrepreneurs in India? A Field Experiment on Business Counseling" Harvard University. Mimeo.
- Fishbein, M., Ajzen, I. (1975) Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research. Addision-Wesley. Reading, MA.
- **Furth, G.** (2002) *The Secret World of Drawings: A Jungian Approach to Healing through Art.* Toronto: Inner City Books.
- Genicot, G., and Ray, D. (2014) "Aspirations and Inequality" In. National Bureau of Economic Research.
- Ghatak, M., Ghosh, P. and Kotwal, A. (2014) "Growth in the time of UPA: Myths and Reality" *Economic and Political Weekly*, vol. 49: April 19.
- **Glewwe, P., Ross, P., and Wydick, B.** (2014) "Developing Hope: The Impact of International Child Sponsorship on Self-Esteem and Aspirations" University of Minnesota Working Paper.
- Goldstein, M., and Udry, C. (2008) "The Profits of Power: Land Rights and Agricultural Investment in Ghana." *Journal of Political Economy* 116(6): 981-1022.
- Gottschalk, L. (1974) "A Hope Scale Applicable to Verbal Samples" *Archives of General Psychiatry*, vol. 30 (6), pp. 779-785.
- Goux, D., Gurgand, M., and Maurin, E. (2014) "Adjusting Your Dreams? The Effect of School and Peers on Dropout Behaviour" Discussion Paper 7948 IZA.
- Griliches, Z. (1957) "Hybrid Corn: an Exploration in the Economics of Technological Change" *Econometrica*, vol. 25, No. 4, pp. 501-522.
- Haushofer, J., and Fehr, E. (2014) "On the Psychology of Poverty" *Science* 23 May 2014: Vol. 344, Issue 6186, pp. 862-867
- Heath, C., Larrick R., and Wu, G. (1999) "Goals as Reference Points" *Cognitive Psychology*, vol. 38 (1), pp.79-109.
- Heckman, J.J., and Kautz, T. (2012) "Hard Evidence and Soft Skills" *Labour Economics*, Vol. 19 (4), pp. 451-464.
- Heckman, J.J., Stixrud, J., and Urzua, S. (2006) "The Effects of Cognitive and Noncognitive Abilities on Labor Market Outcomes and Social Behavior". In. *National Bureau of Economic Research*.
- Hirschman, A. (1970) Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States. Harvard University Press.
- **IMF** (2013) "World Economic Outlook: Too Slow for Too Long". World Economic and Financial Surveys, The International Monetary Fund. April 2016.

- Jantti, M., Kanbur, R., Nyyssola, M., and Pirttila, J. (2014) "Poverty and Welfare Measurement on the Basis of Prospect Theory", *Review of Income and Wealth*, vol. 60 (1), pp. 182-205.
- Kaboski, J., Lipscomb, M., and Midrigan, V. (2014) "The Aggregate Impact of Household Saving and Borrowing Constraints: Designing a Field Experiment in Uganda" *The American Economic Review*, vol. 204 (5), pp. 171-176.
- Kahneman, D., Schkade, D., and Sunstein, C. (1998) "Shared Outrage and Erratic Awards: The Psychology of Punitive Damages". *Journal of Risk and Uncertainty*. Vol. 16, pp. 49-86.
- Kahneman, D., and Tversky, A. (1979) "Prospect Theory: An Analysis of Decision under Risk" Econometrica: Journal of the Econometric Society, pp. 263-291.
- Karlan, D., Ratan, A., and Zinman, J. (2014) "Saving by and for the Poor" A Research Review and Agenda", *Review of Income and Wealth*, vol. 60 (1), pp. 36-78.
- Karlan, D., Osei, R., Osei-Akoto, I., and Udry, C. (2012) "Agricultural Decisions After Relaxing Credit and Risk Constraints" *Center for Global Development, Working Paper No. 310.*
- King, G., and Wand, J. (2006) "Comparing Incomparable Survey Responses: Evaluating and Selecting Anchoring Vignettes" *Political Analysis*. Vol. 15 (1), pp. 46-66.
- King, G., Murray, C.JL., Salomon, J., and Tandon, A. (2004) "Enhancing the Validity and Cross-Cultural Comparability of Measurement in Survey Research" *American Political Science Review*. Vol. 98 (1) pp. 191-207.
- Klepsch, M., and Logie, L. (1982) Children Draw and Tell: An Introduction to the Projective Use of Children's Human Figure Drawings. New York: Brunner/ Maze.
- Knight, J., and Gunatilaka, R. (2008) "Aspirations, Adaption and Subjective Well-being of rural-urban Migrants in China", *Economics Series Working Papers 381*, University of Oxford, Department of Economics.
- **Koppitz, E.** (1968) *Psychological Evaluation of Children's Human Figure Drawings*. New York: Grune and Stratton.
- Laajaj, R. (2015) "Closing the Eyes on a Gloomy Future: Psychological Causes and Economic Consequences" Paris School of Economics Working Paper.
- Lee, S.Y., Poon, W.Y., and Bentler, P. M. (1995). "A two-stage estimation of structural equation models with continuous and polytomous variables". *British Journal of Mathematical and Statistical Psychology*. 48, pp. 339–358.
- Lefcourt, H. (1982) Locus of Control: Current Trends in Theory and Research. Psychology Press.
- Lockwood, P., and Kunda, Z. (1997) "Superstars and Me: Predicting the Impact of Role Models on the Self" *Journal of Personality and Social Psychology*, vol. 73 (1), pp. 91-103.
- Liu, E. (2008). Time to Change What to Sow: Risk Preferences and Technology Adoption Decisions of Cotton Farmers in China, Princeton University working paper.

- Lybbert, T., and Wydick, B. (2016) "Poverty, Aspirations, and the Economics of Hope" University of California, Davis Working Paper.
- Macours, K., and Vakis, R. (2014) "Changing Households' Investment Behaviour through Social Interactions with Local Leaders: Evidence from a Randomized Transfer Programme", *The Economic Journal*, vol. 124 (576), pp. 607-633.
- Mani, A., Mullainathan, S., Shafir, E. and Zhao, J. (2013) "Poverty Impedes Cognitive Function" *Science*, vol. 341, issue 6149, pp. 976-980.
- Manski, C.F. (2004) "Measuring Expectations", Econometica, Vol. 72 (5), pp. 1329-1376.
- Martin, E.A., Campanelli, P.C., and Fay, R.E. (1991) "An Application of Rasch Analysis to Questionnaire Design: Using Vignettes to Study the Meaning of 'Work' in the Current Population Survey". *The Statistician*. Vol. 40 pp. 265-276.
- Menninger, K. (1959) "The Academic Lecture Hope" American Journal of Psychiatry, vol. 116 (6), pp. 481-491.
- Miceli, M., and Castelfranchi, C. (2010) "Hope the Power of Wish and Possibility" *Theory & Psychology*, vol. 20 (2), pp. 251-276.
- Miguel, T., and Kremer, M. (2004) "Worms: Identifying Impacts on Education and Health in the Presence of Treatment Externalities" *Econometrica*. Vol. 72, (1), pp. 159-217.
- Mookherjee, D., Ray, D., and Napel, S. (2010) "Aspirations, Segregation, and Occupational Choice" *Journal of the European Economic Association*, vol. 8 (1), pp. 139-168.
- Mullainathan, S., and Shafir, E. (2013) *Scarcity: Why Having Too Little Means So Much.* Time Books, Henry Holt & Company LLC, New York, NY.
- **NESAC** (2016) "From Rice Bowl to Food Basket: Three Pillars for Modernizing Myanmar's Agricultural and Food Sector" *White Paper Prepared by the National Economic and Social Advisory Council.*
- Radelet S. (2015) The Great Surge: The Ascent of the Developing World. Simon & Schuster.
- Ray, D. (2006) "Aspirations, Poverty, and Economic Change" Understanding Poverty, pp. 409-21.
- **Ross, P.** (2016) "Aspirations and Human Capital Investment: Evidence from Indian Adolescents" Working Paper, Boston University, Presented at the 2016 Midwest International Economic Development Conference, Minneapolis, MN.
- Rossi, P.H., and Nock, S.L. eds. (1983) *Measuring Social Judgments: The Factorial Survey Approach*. Sage Publishing. Beverly Hills, CA.
- Rotter, J. (1966) "Generalized Expectancies for Internal Versus External Control of Reinforcement" *Psychological Monographs: General and Applied*, vol 80 (1), pp. 1.
- Rotter, J. (1954) Social Learning and Clinical Psychology; Prentice-Hall, Inc. Englewood Cliffs, NJ.

- Rotter, J., Chance, J., and Phares, E.J. (1972) *Applications of Social Learning Theory of Personality;* Holt, Rinehart, and Winston: New York.
- Schilbach, F., Schofield, H., and Mullainathan, S. (2016) "The Psychological Lives of the Poor". *American Economic Review: Papers & Proceedings*. Vol. 106 (5) pp. 435-440.
- Sen, A. (2002) "Health: Perception versus Observation". British Medical Journal, 324, pp. 860-861.
- Sen, A. (1999) Development as Freedom. Oxford University Press.
- Sen, A. (1992) "Inequality Reexamined" In. Oxford University Press.
- Snyder, C.R. (1994) The Psychology of Hope: You Can Get There from Here. Simon & Schuster.
- Snyder, C.R. (2002) "Hope Theory: Rainbows in the Mind" *Psychological Inquiry*, vol. 13 (4), pp. 249-275.
- Snyder, C.R., Cheavens, J., and Sympson, S.C. (1997) "Hope: An Individual Motive for Social Commerce". *Group Dynamics: Theory, Research, and Practice.* 1. Pp. 107-118.
- Snyder, C.R., Harris, C., Anderson, J., Holleran, S., Irving, L., Sigmon, S., Yoshinobu, L., Gibb, J., Langelle, C. and Harney, P. (1991) "The Will and the Ways: Development and Validation of an Individual-Differences Measure of Hope" *Journal of Personality and Social Psychology*, vol. 60 (4), pp. 570.
- Stark O. (2006) "Status Aspirations, Wealth Inequality, and Economic Growth" *Review of Development Economics*, vol. 10 (1), pp. 171-176.
- Strauser, D., Ketz, K., and Keim, J. (2002) "The Relationship Between Self-Efficacy, Locus of Control, and Work Personality" *Journal of Rehabilitation*, vol. 68, pp. 20-26.
- **The Psychologist** (2009) "Social Cognitive Theory Goes Global", A talk by Albert Bandura for the British Psychological Society's London and Home Counties Branch at Friends House, London, vol. 22, pp. 504-506.
- **Thomas, G. and Silk, A.** (1990) *An Introduction to the Psychology of Children's Drawings,* New York: New York University Press.
- Wydick, B., Glewwe, P. and Rutledge, L. (2013) "Does International Child Sponsorship Work? A Six-Country Study of Impacts on Adult Life Outcomes" *Journal of Political Economy*, vol. 121 (2), pp. 393-436.
- Yoshikawa, H., Aber, J. and Beardslee, W. (2012) "The Effects of Poverty on the Mental, Emotional, and Behavioral Health of Children and Youth: Implications for Prevention" *American Psychologist*, vol. 67 (4), pp. 272.