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Shaken, but Not Deterred: Acute Stressors and the Formation of Hope and Aspirations among Tertiary-Educated Youth in Myanmar in the Aftermath of the 2025 Earthquake

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Shaken, but Not Deterred: Acute Stressors and the Formation of Hope and Aspirations among Tertiary-Educated Youth in Myanmar in the Aftermath of the 2025 Earthquake*

Abstract

Although hope and aspirations are increasingly considered to be both intrinsically and instrumentally valuable, quantitative evidence on the formation of these factors is limited. Using data from a sample of educated youth in Myanmar, this paper documents the relationship between various sources of chronic (ongoing and long-term) and acute (brief and intense) stressors with measures of hope and aspirations. The findings indicate that hope and aspirations are tightly linked with chronic stressors (low relative income and labor market mismatch). However, exposure to an acute stressor (a large and destructive earthquake) does not meaningfully influence hope and aspirations. These results are relevant to both development and emergency relief efforts that consider incorporating mental health into policy design and implementation. The results suggest that policies that aim to address sources of chronic stress (such as poverty and employment outcomes) may have underappreciated psychological benefits that complement standard economic benefits measured in the form of higher wages and employment outcomes. This further emphasizes the need to continue efforts toward development objectives that can mitigate the effects of chronic stressors, even when more acute shocks occur. Additionally, policy responses to emergency and disaster situations may be most effective if they focus on immediate material needs so that an acute stressor does not become a chronic stressor.

JEL classification

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Keywords

hope, aspirations, shocks, earthquake, Myanmar

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1. Introduction

Hope and aspirations, along with other measures of mental wellbeing, are now considered important outcomes when evaluating both development and emergency relief policies and programs. These hold *intrinsic* value as indicators of mental health, and measures of these forward-looking attitudes are increasingly used as outcomes in policy and program evaluations (see, e.g., Lybbert and Wydick 2017; Garcia, Lensink, and Voors 2020; Bloem and Gandhe 2021). There is also a growing body of both theory (see, e.g., Genicot and Ray 2017; Lybbert and Wydick 2018) and empirical evidence (see, e.g., La Ferrara, 2019; Fruttero and Calvo-Gonzalez 2025) showing that hope and aspirations hold *instrumental* value as they contribute to the realization of other important outcomes—such as educational attainment and labor force outcomes. Despite all this, there is relatively little quantitative evidence on the factors that determine the formation of hope and aspirations. Moreover, as we discuss below, any existing evidence tends to focus on one factor at a time and does not document the relative importance of multiple possible factors that could, in part, determine the formation of hope and aspirations.

In this paper we use unique data collected among educated youth in Myanmar to compare the relationship between chronic and acute stressors, on the one hand, and hope and aspirations, on the other. Chronic stressors are ongoing and long-term characteristics of an individual's socio-economic environment. By contrast, an acute stressor is a brief and intense event that is not characteristic of an individual's environment but could nevertheless have meaningful socio-economic consequences. To measure these two types of stressors, we leverage the timing of our survey relative to a large and catastrophic M_W 7.7 earthquake that occurred on March 28, 2025, in Myanmar. Using data collected both before and after the earthquake, we use a measure of exposure to the earthquake to represent an acute stressor, while pre-earthquake income and a measure of labor market fit serve as indicators of chronic stressors.

We find that hope and aspirations are tightly linked with the chronic stressors we measure (i.e., low relative income and labor market fit) and are not meaningfully or statistically related

to an acute stressor (i.e., earthquake exposure). We further investigate the effect of earthquake exposure on measures of hope and aspirations in an instrumental variable framework, to account for any possible endogeneity. Following Andrabi and Das (2017) and Andrabi, Daniels, and Das (2023), we use the distance between an individual's location at the time of answering our survey and the fault line of the earthquake as a plausibly exogenous shock representing an acute stressor. We continue to find no meaningful or statistically significant relationship between exposure to the earthquake and our measures of hope and aspirations. This lack of a relationship is striking as we do find evidence that the earthquake led to meaningful material consequences for respondents in our data. We find that respondents with greater exposure to the earthquake are more likely to report reductions in income and the need for financial support since the earthquake along with physical injury, damage to their household and local public infrastructure, lost assets, and displacement due to the earthquake.

An improved understanding of the formation of hope and aspirations can help inform the design and interpretation of development research. For instance, research in rural Ethiopia demonstrates that showing individuals a short video documentary series led to increased aspirations, investment in agriculture, children's education, and assets five years after the intervention (Bernard et al. 2025). Critically, however, when the authors measured the effect of viewing the documentaries on aspirations immediately after the intervention and six months later, they estimate null effects. This also aligns with anthropological findings revealing that aspirations change slowly as people consider and mentally experiment with their own possible alternative futures (Appadurai 2004).

These results are also important for policy. Our results, and much of the existing literature, show that policies and programs addressing ongoing and long-term development challenges (e.g., poverty and employment outcomes) can cost-effectively integrate components addressing both external material constraints and internal psychological constraints. By contrast, policies and programs responding to emergency and disaster situations (e.g., earthquakes) are likely more cost-effective if they initially focus on addressing external material needs. This is not to say that experiencing an acute shock has

no long-term psychological consequences, and it should be emphasized that some people may experience immediate psychological consequences. For instance, Kosec and Mo (2017) find that, 18 months after a large and destructive flood in Pakistan, individuals exposed to this flood reported lower levels of aspirations. Individuals within households that received flood relief aid, however, reported smaller reductions in aspirations. Thus, the long-term psychological consequences of acute events manifest because of the way that acute events can, over time, shape an individual's socio-economic environment. These results suggest that the objective of policy responses to emergency and disaster situations should be to meet immediate material needs so that an acute stressor does not become a chronic stressor.

We contribute to research studying the formation of aspirations. Seminal conceptual contributions to this literature explain that aspirations are socially determined (Appadurai 2004) and influenced by an individual's view through their "aspirations window" (Ray 2006). While this conceptual understanding is intuitive and widely accepted, quantitative research documenting determinants of the formation of hope and aspirations is limited. Existing research shows the following: business outcomes, skills, and demographics influence aspirations for enterprise growth (Dalton, Ruschenpohler, and Zia (2018), the outcomes of peers and social networks are positively associated with aspirations (Janzen et al. 2017; Gagete-Miranda 2022), exposure to a flood and emergency relief support change measures of aspirations (Kosec and Mo 2017), and randomized priming of socio-economic identities influence aspirations (Mukherjee 2017). While our work is most closely related to Kosec and Mo (2017), with both investigating how a natural disaster influences aspirations, our work differs in at least three important ways. First, the timing of our survey in the weeks after the earthquake allows us to measure the immediate effect of exposure to an acute stressor before adverse consequences become chronic. Second, we incorporate hope into our analysis in addition to aspirations, which facilitates an investigation that more closely aligns with existing theory about how aspirations can influence important development outcomes (Lybbert and Wydick 2018). Third, our unique data provides the opportunity to compare

estimated relationships between multiple types of stressors (i.e., chronic versus acute) and document their relative importance.

The remainder of this paper continues as follows. In the next section, we introduce the context of our study and describe the data we use for our analysis. This section also includes a brief conceptual framework to motivate and guide our quantitative analysis. In section 3, we present our main empirical results by documenting how chronic and acute stressors are associated with measures of hope and aspirations. In section 4, we further study the effect of earthquake exposure on hope and aspirations using an instrumental variable framework. Finally, we conclude in section 5.

2. Background and Setting

Myanmar is a fragile, low-income country in Southeast Asia that, in addition to feeling economic shocks associated with the COVID-19 pandemic, experienced a military takeover of the country in 2021. In subsequent years, violence and displacement intensified, food and fuel price increases led to a challenging inflationary environment, and the national economy experienced slow economic growth. These factors generate an economic environment with limited and even declining demand for labor (especially skilled labor), high levels of poverty, and widespread food insecurity (World Bank 2024).

2.1 Conceptual Framework

In a seminal contribution in the development literature, Lybbert and Wydick (2018) propose an economic model of hope as a function of aspirations, agency, and pathways. This model, therefore, builds on previous psychological research that conceptualizes hope as the combination of goals, agency, and pathways (Locke and Lantham 1990; Snyder 1994). The model considers aspirations to be determined by "history, culture, and the outcomes within an individual's network of relevant peers" (Lybbert and Wydick 2018, pp. 728). Agency and pathways are incorporated into the model as constraints on "production," where the term production is used merely for general illustrative purposes and extends beyond simple material production processes or income generation. These constraints, which form the basis for an individual's level of perceived agency and pathways, are thought to be

determined by an individual's observation of relevant peers within their socio-economic environment.

This existing theoretical work generates two important insights that guide our empirical analysis in this paper. First, the model motivates us to consider the formation of both hope and aspirations. While the existing literature studies a limited set of factors that seem to influence measured levels of aspirations, these studies do not also measure the relevant components of hope (i.e., agency and pathways). This is a critical gap in the existing literature. As the model proposed by Lybbert and Wydick (2018) demonstrates, aspirations influence human behavior and development outcomes only if an individual also holds sufficient hope—the necessary belief in their own ability and a clear understanding of the necessary steps required to achieve the aspiration. Said differently, high aspirations with constrained agency and pathways will not meaningfully influence future-oriented behavior. Therefore, it is critical that we measure and analyze the formation of both hope and aspirations.

Second, the idea that history, culture, and observed outcomes among peers combine to generate the foundation of factors that can form hope and aspirations generates a theoretical prediction about the relative influence of chronic and acute stressors. While chronic stressors can easily interact with history, culture, or peer outcomes in a way that influences hope and aspirations, acute stressors might not. For example, an acute stressor might be considered as a plausibly random negative shock that has not (yet) influenced one's socio-economic environment. Therefore, one interpretation of the theoretical literature to date is that chronic stressors hold relatively more potential to form hope and aspirations than acute stressors. This idea has yet to be tested empirically with quantitative data and thus represents an important motivation for our analysis in this paper.

2.2 Data

Our data come from a panel survey conducted among educated youth in Myanmar. The data were collected via a phone-based survey (i.e., lasting between 20 and 25 minutes) of high-

skilled youth living and working in Myanmar.[1] An initial survey wave was conducted between January and April 2024. That initial sample consists of 2,400 respondents, sampled from a frame of over 300,000 households maintained by a leading national survey firm. Potential respondents must meet three conditions: (i) be between 20 and 45 years of age, (ii) hold at least a bachelor's degree or equivalent, and (iii) be currently employed and living in Myanmar. In this initial sample, respondents adequately represented all states within Myanmar, and the final distribution of states in the sample closely follows that of employed graduates in Myanmar as measured by other surveys.[2] A second survey wave was conducted between February and March 2025, just weeks before the earthquake struck. The data for this analysis come primarily from the third survey wave collected in April and May 2025, in the weeks following the earthquake. This third wave includes 1,043 respondents who remained within the panel. These respondents were residing in the country at the time of the March 28 earthquake. The sampled locations span areas with varying intensity, rather than only the worst affected zones. It is important to note that while our data is technically a panel that follows the same individual over time, many of the variables we use for the analysis in this paper come from survey questions that were only included in the third survey wave. This precludes our ability to employ panel data analysis methods.

We measure hope using the 'hope scale,' a survey instrument developed by Snyder (1994). The survey instrument consists of statements, three that map to an 'agency' sub-score and three that map to a 'pathways' sub-score. Respondents indicate their relative agreement or disagreement with the following statements using a Likert scale, ranging from zero (strongly disagree to 10 (strongly agree).

1. If I were to find myself in a jam, I could think of many ways to get out of it.
2. At the present time, I am energetically pursuing my goals.

[1] Rather than conduct face-to-face interviews, we conducted interviews over the phone due to the prevailing security and mobility restrictions across much of Myanmar.

[2] The final distribution of the initial sample across states is similar to data on employed graduates in the representative Myanmar Household Welfare Surveys conducted by the International Food Policy Research Institute (IFPRI) beginning in 2020.

3. There are lots of ways around any problem I am facing right now.
4. Right now, I see myself as being pretty successful.
5. I can think of many ways to reach my current goals.
6. At this time, I am meeting the goals that I have set for myself.

Questions two, four, and six generate the agency sub-score and questions one, three, and five the pathways sub-score. Table A1 in the Supplemental Appendix reports descriptive statistics for each of the component variables included in our measure of hope. While this hope scale has been widely used and validated among respondents from university and clinical settings in the United States and Europe, its use in a context such as Myanmar is limited. Fortunately, Bloem et al. (2018) validated this survey instrument with a sample of respondents in Myanmar and supports the validity of the measures of hope we have with our sample of educated youth.

We measure aspirations with the following questions:

1. Looking ahead five years, what is the minimum monthly income you would consider satisfactory for yourself?
2. Looking ahead five years, what is the minimum monthly income you would consider achievable for yourself?

These questions clearly focus on *income* aspirations and do not incorporate other dimensions in which an individual might aspire (see, e.g., Bernard and Taffesse 2014). We consider the first question as our primary measure of income aspirations and the second question as a supporting alternative measure. While limiting, it is worth emphasizing that income aspirations are relevant in this context, especially with respect to our measures of chronic sources of stress (i.e., low relative income and labor market mismatch) and the material consequences of the earthquake. Moreover, existing research shows that income aspirations are strongly linked with real-world behavior in a way supported by existing theory (Bloem 2021; Villacis et al. 2023; Bloem et al. 2023).

In our study setting, we measure chronic stressors in two ways with three distinct measures. We consider relative income and labor market fit, with labor market fit measured as the self-

reported degree of match between one's level and field of education and their job. These measures are generally relevant in the context of Myanmar and specifically meaningful for our sample of educated and relatively high-skilled youth. Our measure of an acute stressor is exposure to a large and destructive earthquake which occurred just one month before we collected the data used in this analysis. Measuring acute stressors is challenging in practice as the data collection must take place shortly after the onset of the stressor, often amid the chaos of the associated disaster or emergency. The timely measurement of data in the aftermath of these acute stress events is critical because the passage of too much time allows the consequences of the acute stress event to possibly shape the socio-economic environment in ways that generate chronic stress.

2.3 Study Context

The third round of our panel survey was conducted in the weeks following the earthquake. According to the UNDP, at least 5 million people were severely affected by the earthquake, mostly in the Sagaing and Mandalay regions.[3] The World Bank (2025) estimates that the output losses attributable to the earthquake amounted to $2.6 billion (4 percent of GDP), and capital damages of about $11 billion (14 percent of GDP). Despite its heavy toll on life and property, including damages to housing, telecommunications, and transport infrastructure, one month after the earthquake, the United Nations in Myanmar and its partners were able to provide support to only 600,000 persons. The UNOCHA estimated early recovery efforts to cost US$275 million, of which only 16% had been met by May 2025. This follows general patterns of humanitarian needs in Myanmar being under-funded; where less than 40 percent of the Humanitarian Needs and Response Plan for 2024 had been funded (and only 8 percent until May, in 2025).

Table 1 reports descriptive statistics about the respondents in our sample. Roughly four out of every ten respondents, 38 percent, are male. Respondents are between the ages of 20 and 45 with an average age of 31. Among the respondents, 43 percent are married, and 33 percent have children. Most of the respondents, 69 percent, live in an urban area and nearly

[3] https://unsdg.un.org/latest/stories/myanmar-earthquake-un-scales-aid-efforts-one-month.

all respondents, 96 percent, have completed at least a bachelor's degree. Respondents in our data earn about 473,000 MMK (about 105 USD) per month. This implies that nearly all the respondents in our data live above the national poverty line, defined as living on 1,590 MMK per day (UNDP 2021). The economic lives of respondents in our data are not necessarily easy, however. About four out of every ten respondents, 37 percent, report being underemployed. Despite their relatively high level of education, only about one-third of respondents work in a high-skill occupation, with the remaining two-thirds working in a mid-skill occupation. Moreover, in both 2024 and 2025, about half the respondents indicated that they are willing to migrate abroad for work.[4]

Table 1: Descriptive Statistics

Variable	Obs.	Mean	Std. dev.	Min	Max
Gender male	1043	0.38	0.49	0.00	1.00
Age	1043	31.72	5.97	20.00	45.00
Is married	1043	0.43	0.49	0.00	1.00
Has children	1043	0.33	0.47	0.00	1.00
Household size	1043	4.52	2.38	1.00	18.00
Urban location	1043	0.69	0.46	0.00	1.00
Household income (MMK)	1041	944,101	2,219,635	60,000	62,000,000
Education: TVET diploma	1043	0.02	0.15	0.00	1.00
Education: Undergraduate diploma	1043	0.01	0.12	0.00	1.00
Education: Bachelor's	1043	0.94	0.23	0.00	1.00
Education: PG diploma	1043	0.01	0.08	0.00	1.00
Education: Master's	1043	0.01	0.10	0.00	1.00
Is an employee	1043	0.64	0.48	0.00	1.00
Individual income, monthly (MMK)	1036	473,114	1,925,185	30,000	60,000,000
Underemployment rate	1033	0.37	0.51	0.00	7.00
Elementary occupation	1039	0.04	0.20	0.00	1.00
Mid-skilled occupation	1039	0.65	0.48	0.00	1.00
High-skilled occupation	1039	0.31	0.46	0.00	1.00
Routine task intensity of job	1031	-0.28	0.69	-1.00	1.00
Willing to migrate in 2025	1036	0.45	0.50	0.00	1.00
Willing to migrate in 2024	1043	0.51	0.50	0.00	1.00
Want to migrate to Thailand	528	0.16	0.37	0.00	1.00
Migration readiness index	1043	0.08	0.28	0.00	1.00
Break-even wage premium	1043	398.44	496.96	-90.00	1,101.00

[4] Nearly all respondents in the sample (97%) lived in areas that experienced at least some exposure to conflict, measured by conflict-related fatalities since February 2021. About 75% resided in townships with at least one conflict-related death in the year leading up to the survey, and the average was approximately 43.

No. of employment shocks experienced	1043	1.01	1.28	0.00	6.00
Household debt (MMK)	1043	850,156	3,210,421	0.00	50,000,000
Risk appetite (0-10)	1043	6.01	2.75	0.00	10.00
Eligible for conscription	1043	0.42	0.49	0.00	1.00
Conflict deaths in township since Feb'21	1043	114.58	232.47	0.00	1,414.00
Conflict deaths in year leading up to earthquake	1043	43.81	97.13	0.00	1,132.00

Source: Authors' calculations

Data collection for our survey closely coincided with a large and destructive earthquake. On March 28, 2025, a M_W 7.7 earthquake hit the Sagaing Region of Myanmar, with an epicenter close to Mandalay—the second largest city in Myanmar. The earthquake was the most powerful and deadliest earthquake in roughly a century and led to widespread damage throughout Myanmar, especially in areas close to the Sagaing fault line.[5]

The material consequences of the earthquake are reported by respondents in our data. Table 2 shows statistics that demonstrate these material consequences. Panel A reports statistics disaggregated based on the estimated intensity of the earthquake in the location where the respondent lives. The "low" intensity column represents areas where the earthquake intensity was less than or equal to five on the one to ten Modified Mercalli Intensity (MMI) scale.[6] The "high" intensity column represents areas where earthquake intensity was greater than five on the same scale. The threshold of five represents a meaningful level on the intensity scale as it indicates meaningful exposure to the earthquake. This threshold is also useful analytically as it represents the median value among respondents in our data. We find that respondents in "high" exposure areas are more likely to report reductions in income and the need for financial support since the earthquake. These respondents are also more likely to report receiving emergency earthquake support, physical injury, damage to their household and local public infrastructure, experiencing the loss of assets, and displacement due to the earthquake. It is important to note here that receipt of support, in the form of emergency earthquake aid, is very rare among respondents in our data. Even among respondents in "high" intensity areas, only 12 percent of respondents report receiving

[5] See news reports by The Washington Post and CNN. Last accessed: August 8, 2025.
[6] The MMI is the scale currently used by the US Geological Service. See here for more details.

support. Panel B reports statistics based on whether the respondent reported experiencing damage due to the earthquake. Respondents indicating that they experienced earthquake damage are more likely to report that their income decreased "a lot" since the earthquake, that they needed and received support since the earthquake, and that they received domestic remittances since the earthquake.

Table 2: Material Consequences of the Earthquake

Description			**Δ**	**P-value**
Panel A: Earthquake intensity	*Low*	*High*		
Income decreased a lot since the earthquake	0.04	0.06	-0.03	0.08
Income decreased slightly since the earthquake	0.08	0.07	0.01	0.64
Willing to migrate before and after earthquake	0.28	0.21	0.08	0.01
Only willing to migrate after earthquake	0.04	0.05	-0.01	0.41
No longer willing to migrate after earthquake	0.22	0.17	0.05	0.03
Not willing to migrate before or after earthquake	0.45	0.57	-0.11	0.00
Needed support after the earthquake	0.06	0.14	-0.09	0.00
Received support after the earthquake	0.01	0.12	-0.11	0.00
Received international remittances after earthquake	0.05	0.07	-0.02	0.21
Received domestic remittances after earthquake	0.05	0.10	-0.05	0.00
Physical injury due to earthquake	0.01	0.06	-0.05	0.00
Damage to household residence	0.03	0.25	-0.22	0.00
Damage to public infrastructure	0.05	0.38	-0.34	0.00
Reported loss, damage, or displacement	0.08	0.44	-0.37	0.00
Lost assets	0.06	0.42	-0.35	0.00
Displaced from residence due to earthquake	0.09	0.22	-0.14	0.04
Destruction of business premises	0.05	0.15	-0.11	0.00
Destruction or loss of business assets	0.04	0.15	-0.11	0.00
Loss of customers or revenue	0.09	0.11	-0.02	0.38
Supplier disruptions	0.08	0.09	-0.01	0.72
Injury or harm to employees	0.06	0.15	-0.09	0.00
Temporary business closure	0.10	0.16	-0.05	0.06
Permanent business closure	0.00	0.00	0.00	0.33
Panel B: Self-Reported earthquake damage	*No*	*Yes*		
Income decreased a lot since the earthquake	0.03	0.10	-0.07	0.00
Income decreased slightly since the earthquake	0.07	0.10	-0.03	0.19
Willing to migrate before and after earthquake	0.25	0.27	-0.02	0.59
Only willing to migrate after earthquake	0.05	0.05	-0.01	0.65
No longer willing to migrate after earthquake	0.20	0.20	0.00	0.96
Not willing to migrate before or after earthquake	0.51	0.49	0.02	0.50

Needed support after the earthquake	0.05	0.25	-0.21	0.00
Received support after the earthquake	0.00	0.22	-0.22	0.00
Received international remittances after earthquake	0.06	0.05	0.00	0.81
Received domestic remittances after earthquake	0.05	0.15	-0.10	0.00

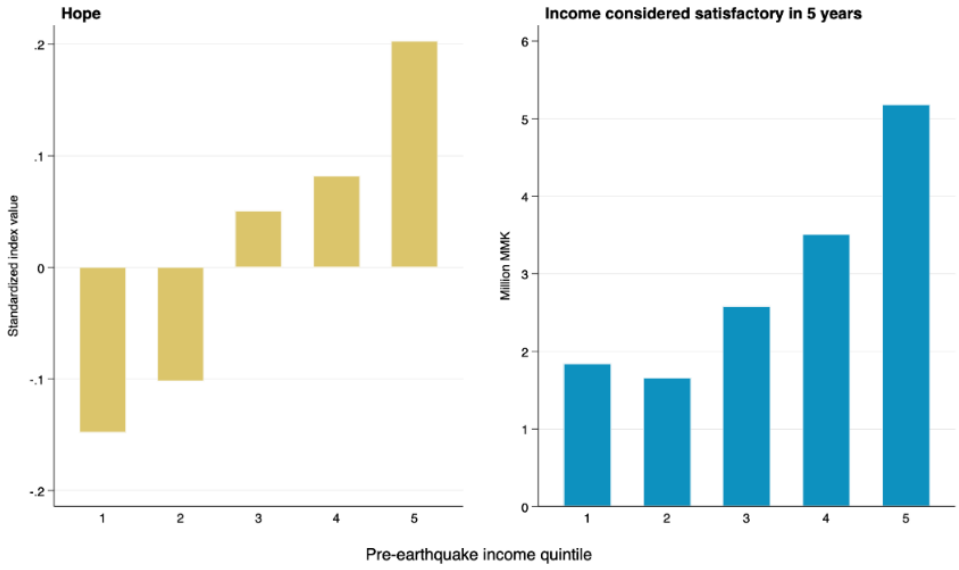
Notes: p-values are based on standard errors clustered by township.

3. Chronic and Acute Stressors

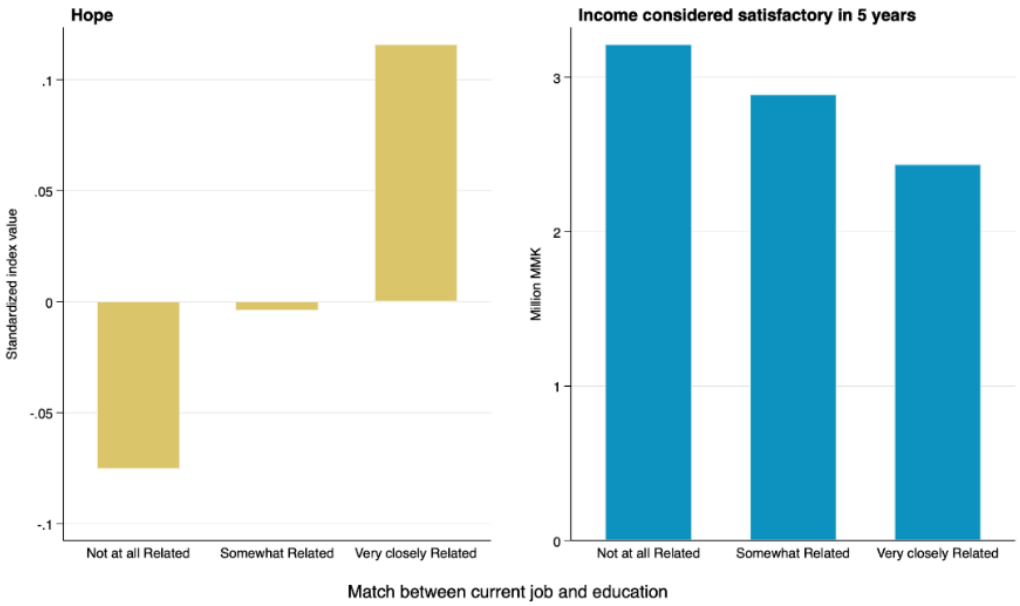
We now present our main descriptive results that examine how exposure to specific chronic or acute stressors relate to our measures of hope and aspirations. Chronic stressors are ongoing and long-term characteristics of an individual's socio-economic environment. These types of stressors are commonly considered by policy makers implementing development policies to address issues such as long-standing poverty or labor market inefficiencies that prevent individuals from achieving their full income potential. Acute stressors, in contrast, are brief and intense events that are not (yet) characteristic of an individual's environment but nevertheless could have meaningful socio-economic consequences. These types of stressors are typically found in a post-disaster emergency environment and are commonly considered by policy makers implementing emergency aid responses.

Figure 1: Chronic vs. Acute Stressors - Hope and Aspirations

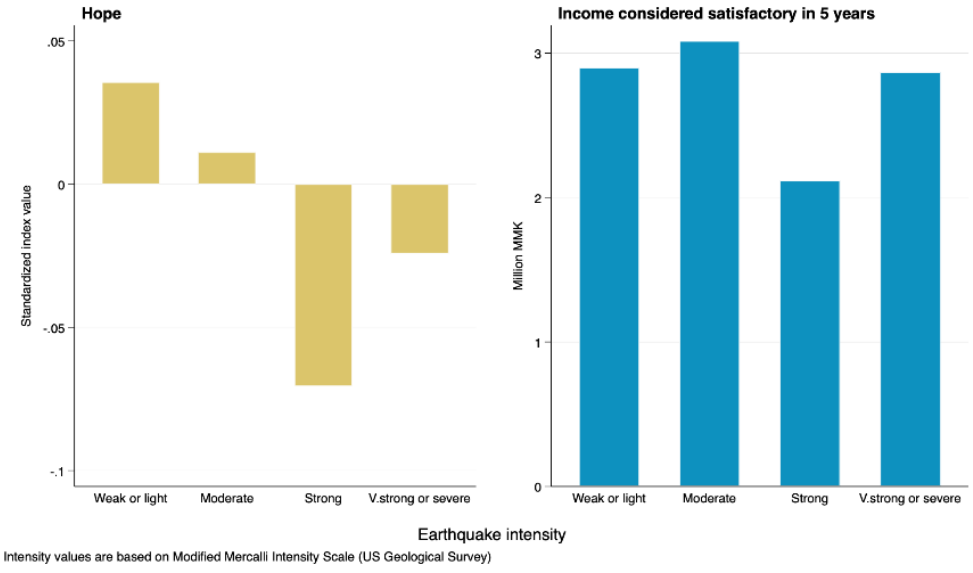
Panel (a): Income



Panel (b): Job and Education Match



Panel (c): Earthquake Exposure



We first discuss the relationship between income (measured prior to the earthquake) and our measures of hope and aspirations. Panel (a) of Figure 1 illustrates these relationships by plotting average levels of scores on the hope scale and reported income aspirations for each income quintile among respondents in our data. For both hope and aspirations, we observe

a clear pattern. Focusing on the hope scale, on the left side of panel (a), we find that scores on the hope scale monotonically increase with pre-earthquake income levels. The hope scale is standardized to have a mean of zero and a standard deviation of one, so respondents in the lowest income quintile report scores on the hope scale that are nearly 0.15 standard deviations below the mean. Scores increase slightly in each subsequent income quintile. In the highest income quintile, respondents report scores on the hope scale that are 0.2 standard deviations above the mean. Turning now to income aspirations, on the right side of panel (a), we observe a clear positive relationship between income and income aspirations. In the two lowest income quintiles, respondents on average report that they consider 2 million MMK to be satisfactory in five years. This figure increases by nearly 1 million MMK in the third and fourth income quintiles. In the highest income quintile, respondents on average report that over 5 million MMK is satisfactory in five years. Taken together these results clearly show that both hope and income aspirations are strongly linked with income, with relatively low-income respondents reporting lower levels of both hope and aspirations relative to higher income respondents. Supplemental regression analysis shows that the differences in scores on the hope scale and levels of income aspirations between income quintiles are statistically significant at conventional levels.

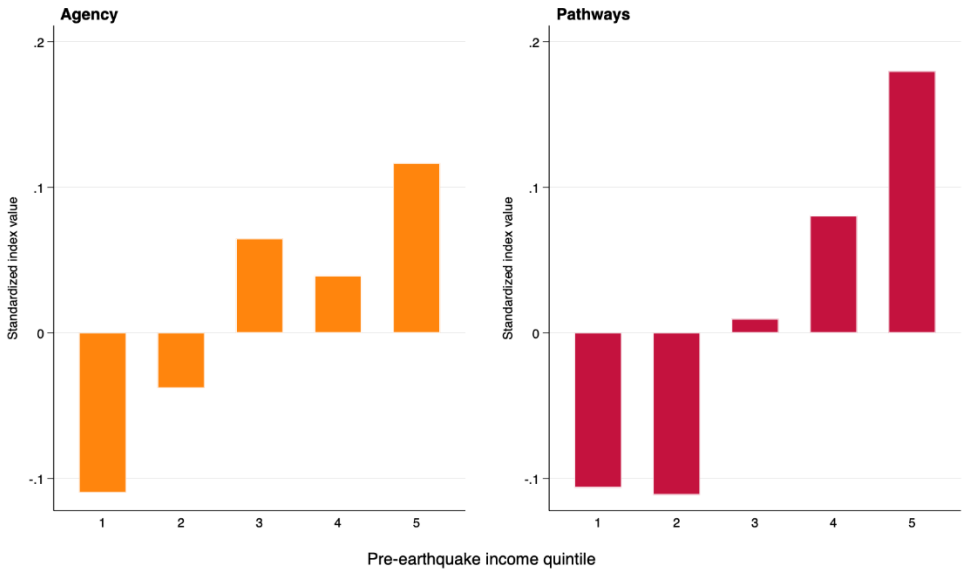
Next, we consider our measure of labor market fit. In Panel (b) of Figure 1, we show the relationship between hope and aspirations and three categories of the respondent's match between their current job and their education (i.e., not at all related, somewhat related, and very closely related). On the left, we find a clear relationship indicating that hope is very tightly linked with labor market fit. Specifically, we find that respondents who indicate that their job is "not at all related" to their education report scores on the hope scale that are roughly 0.07 standard deviations below the mean. Respondents reporting that their job is "somewhat related" to their job report scores on the hope scale that are essentially equivalent to the mean. By contrast, respondents who report that their job is "very closely related" to their education report scores on the hope scale that are over 0.1 standard deviations above the mean. Supplemental regression analysis shows that these differences on the hope scale are statistically significant at conventional levels. On the right, we find that

income aspirations decline as the labor market fit of respondents increases. This finding seems to reflect the idea that income is not the sole motivation for work and as individuals find work that is closely related to their education (perhaps generating a feeling of meaning and satisfaction), their aspirations for increased income fall.

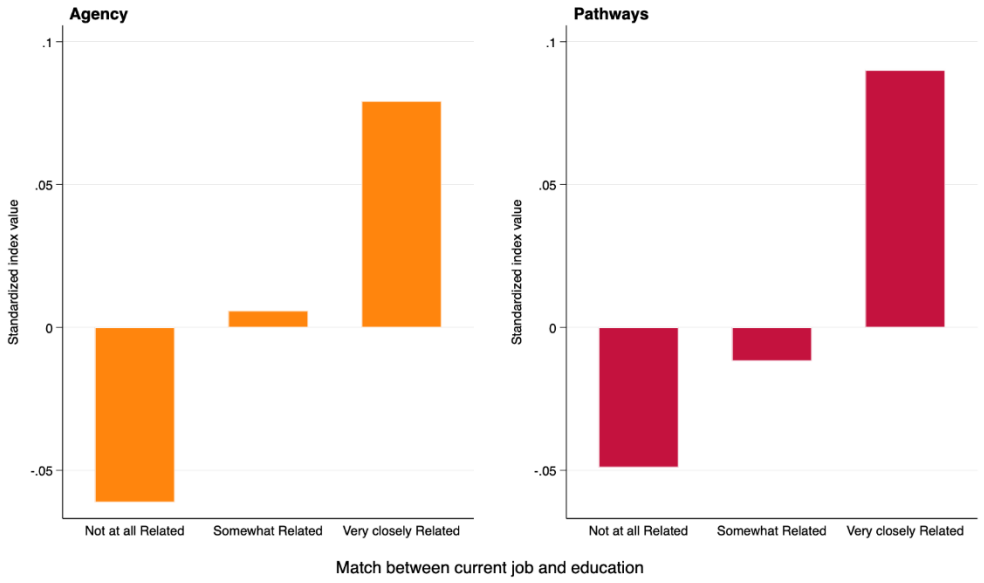
Finally, we examine the relationship between earthquake exposure (i.e., our measure of an acute stressor) and our measures of hope and aspirations in Panel (c) of Figure 1. For both hope and aspirations, we observe a clear lack of a pattern. On the left side of Panel (c), while scores on the hope scale are highest for respondents with "weak or light" or "moderate" earthquake exposure and lowest for respondents with "strong" or "very strong or severe" earthquake exposure, these differences are relatively small and (as shown by supplemental regression analysis) not statistically significant at conventional levels. Similarly, on the right side of Panel (c), we do not see a clear relationship between income aspirations and earthquake exposure. Taken together, the results in Panel (c) reveal a notable weak link between earthquake exposure and our measures of hope and aspirations.

Figure 2: Chronic vs. Acute Stressors - Agency and Pathways Sub-indices

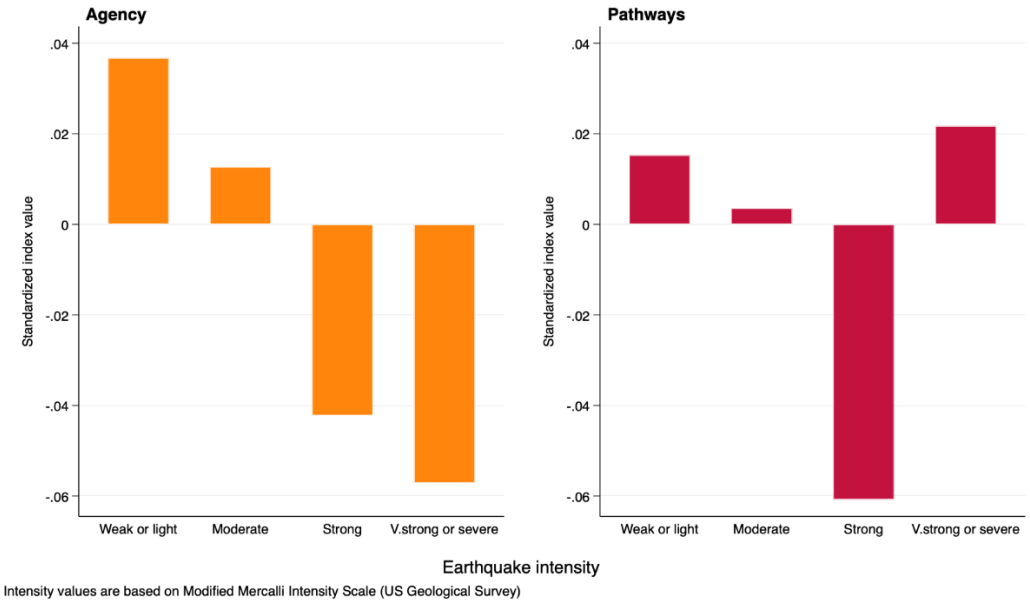
Panel (a): Income



Panel (b): Job and Education Match



Panel (c): Earthquake Exposure



The results shown so far consider only the full hope scale and do not estimate separate relationships for agency and pathways. Figure 2 illustrates these relationships. In Panel (a) we observe a positive relationship between pre-earthquake income and both the agency and

pathways sub-indices. Similarly, in Panel (b) we find that the relationships between our measure of labor market fit and both the agency and pathways sub-indexes qualitatively match the relationship we estimate with the full hope scale. These results suggest that both agency and pathways are formed similarly by exposure to chronic stressors. Differences emerge, however, when we consider earthquake exposure in Panel (c). On the left side, we observe that higher levels of earthquake exposure correspond to lower scores on the agency sub-index. While this sort of negative relationship aligns with the idea that increased exposure to an acute event might constrain an individual's agency, it is important to emphasize that the differences observed in the agency sub-index are not statistically significant at conventional levels. On the right side, we do not find any evidence of a clear pattern between earthquake exposure and the pathways sub-index. This sub-index analysis, therefore, helps unpack the estimated relationship between exposure to the earthquake and our measure of hope.

As noted above, the relationships presented so far are merely descriptive and do not represent causal effect estimates. This is especially noteworthy for chronic stressors. Indeed, one of the primary reasons why researchers study hope and aspirations is due to their instrumental value; their ability to shape economic outcomes such as labor market outcomes. In this way, respondents with higher aspirations and hope could achieve more desirable labor market outcomes. We do not have the ability to address this challenge with our data given the lack of plausibly exogenous variation in our measures of hope and aspirations. Nevertheless, documenting the descriptive link between these variables is important and motivates future research that can disentangle potential confounding characteristics.

The estimated relationship between earthquake exposure and hope and aspirations could be obscured by at least two important factors. First, it could be that our categorization of earthquake exposure into four discrete categories hides the true relationship, and this motivates analysis using the full continuous measure of earthquake exposure. Second, our measure of earthquake exposure could be endogenous. That is, the MMI scale quantifies earthquake intensity by considering the effects of tremors on people, manmade structures,

and other surrounding landscape features based on self-reports by local observers. These observations could be correlated with factors that also influence the measured hope and aspirations of our respondents. For instance, communities with a closer connection to global news networks and who might have higher income on average might be more likely to generate self-reports of earthquake exposure. We address this challenge in the following section by using instrumental variable analysis.

4. Instrumental Variable Results

To further investigate how hope and aspirations respond to earthquake exposure, we first estimate variations on the following ordinary least squares (OLS) regression specification:

$$y_{ig} = \alpha + \beta Earthquake\ Intensity_g + \epsilon_{ig}$$

In the equation above, y_{ig} represents a measure of hope or aspirations. Our main right-hand-side variable is $Earthquake\ Intensity_g$, which varies at the township level. As an alternative approach, we also generate results that replace the $Earthquake\ Intensity_g$ variable with a self-reported indicator of earthquake damage, loss of assets, or displacement (i.e., $Earthquake\ Damage_{ig}$), which varies at the individual level. Finally, ϵ_{ig} is the error term. We cluster our standard errors at the township level, of which there are 203 in our data. These results represent simple results that help contextualize and guide the interpretation of subsequent instrumental variable results.

We present these simple OLS regression results in Table 3, with each panel showing results with a different indictor of earthquake exposure. In Panel (a), we show results using our main earthquake intensity variable. We find no evidence that earthquake intensity, here represented as a continuous variable, is associated with hope, either of the agency or pathways sub-indices, or either measure of income aspirations. In Panel (b), we present "reduced form" results that use our instrumental variable directly as a right-hand-side variable in this simple OLS regression specification. We again find no evidence of any relationship with hope or either the agency or pathway sub-index. We do find a marginally statistically significant difference in income considered satisfactory in five years, but this

difference is very small, and this finding is not robust to the use of our alternative measure of income aspirations (i.e., income achievable in five years). Finally, in Panel (c), we present results based on self-reported damage, loss of assets, or displacement due to the earthquake. We again find no evidence of any difference in our measures of hope or aspirations based on this measure of earthquake exposure.

Table 3: OLS Regression Results

	(1) Hope index	(2) Agency subindex	(3) Pathways subindex	(4) Log of income considered satisfactory in 5 years	(5) Log of income considered achievable in 5 years
Panel (a): Maximum earthquake intensity					
Maximum earthquake intensity	0.0014	-0.0066	0.0090	-0.0421	-0.0456
	(0.0284)	(0.0285)	(0.0284)	(0.0279)	(0.0308)
Observations	1043	1043	1043	1036	1037
Panel (b): Distance to Sagaing fault line (km)					
Distance to Sagaing fault line (km)	-0.0000	-0.0000	-0.0000	0.0007*	0.0005
	(0.0002)	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Observations	1043	1043	1043	1036	1037
Panel (c): Self-reported damage, asset loss, or displacement					
Report at least one form of damage, loss or displacement	0.0497	-0.0108	0.101	-0.0463	-0.0680
	(0.0883)	(0.0875)	(0.0873)	(0.0778)	(0.0796)
Observations	1043	1043	1043	1036	1037

Notes: Standard errors clustered by township in parentheses. * p < 0.05, ** p < 0.01, *** p < 0.001

To address the concerns discussed above about endogeneity in our measure of earthquake intensity or other self-reported measures of earthquake damage, we estimate the following two-stage instrumental variable specification:

$$Earthquake\ Intensity_g = \alpha + \beta Distance\ to\ Earthquake\ Fault\ Line_g + \xi_{ig}$$

$$y_{ig} = \alpha + \beta \widehat{Earthquake\ Intensity}_g + \mu_{ig}$$

In the first-stage equation above, we instrument for $Earthquake\ Intensity_g$ with a variable indicating the distance between the earthquake fault line and the township. In the second-stage equation above, we use the predicted value of the earthquake intensity from the first-stage equation as our main right-hand-side variable. As above in the OLS regression specification, y_{ig} represents a measure of hope or aspirations and we cluster our standard errors at the township level.

This instrument is relevant because the intensity of the earthquake is higher for townships closer to the fault line of the earthquake. This required condition for a valid instrument can be directly observed. In Table 4, we report these "first stage" regression results. In column (1) of Table 4, we see that the instrument (i.e., distance from the Sagaing fault line) strongly predicts earthquake intensity and the sign on the coefficient is in the expected direction. The further away a respondent lives from the Sagaing fault line the lower the earthquake intensity measured on the MMI scale in their township. In column (2) we find similar results when we use self-reported damage, loss of assets, or displacement due to the earthquake as the outcome variable. We find that respondents that live from the Sagaing fault line are less likely to report damage, loss of assets, or displacement due to the earthquake.

Table 4: IV Regression Results (First Stage)

	(1) Maximum earthquake intensity	(2) Report at least 1 form of damage, loss or displacement
Distance to Sagaing fault line (km)	-0.0104***	-0.00162***
	(0.0006)	(0.0004)
F-statistic	271.53	20.70
R-squared	0.851	0.191
Observations	1043	1043

Notes: Standard errors clustered by township in parentheses. * p < 0.05, ** p < 0.01, *** p < 0.001

The instrument must also be excludable, meaning that the only way it can influence hope and aspirations is through the endogenous variable indicating earthquake exposure (i.e.,

earthquake intensity or self-reported damage, loss of assets, or displacement). Conceptually, we argue that this instrument is excludable because the specific location of the earthquake's fault line is random and thus exogenous to a host of variables that might potentially bias the estimated relationship between earthquake exposure and measures of hope and aspirations for the future. Although we cannot directly test this assumption, we can show balance in this variable based on a host of baseline characteristics. Table A2 in the Supplemental Appendix reports these balance tests which support this assumption of instrument excludability. We find evidence of balance across household characteristics in Panel (a), labor market characteristics in Panel (b), and measures of risk and exposure to shocks in Panel (c). We do find a small difference in age that is correlated with the distance from the Sagaing fault line, but this difference is very small, and this result is not robust to an adjustment for multiple hypothesis testing.

We now can turn to presenting the second-stage instrumental variable results. In Table 5, we show estimates of the effect of earthquake exposure on our measures of hope and aspirations. Like the graphical results in Section 3 and the simple OLS regression results in Table 3, in columns (1) through (3) in Table 5, we find broad evidence of a lack of a strong relationship between earthquake exposure and hope or either of the agency or pathways sub-indices. This result holds in Panel (a), when we use earthquake intensity as our measure of earthquake exposure, and in Panel (b), when we use self-reported damage, loss of assets, or displacement as our measure of earthquake exposure. In column (4), we find weak evidence of a relationship between earthquake exposure and income aspirations measured as the income level the respondent considers satisfactory in five years. This result, however, is not of a meaningful magnitude and is not robust to our alternative measure of income aspirations (i.e., income achievable in five years), presented in column (6) of Table 5. Again, the findings in columns (5) and (6) hold in Panels (a) and (b) when we use different measures of earthquake exposure. Taken together, the results in Table 5 provide support for our main descriptive findings, presented in Section 3, that an acute stressor is not closely linked to measures of hope and aspirations.

Table 5: IV Regression Results (Second Stage)

	(1) Hope index	(2) Agency subindex	(3) Pathways subindex	(4) Log of income considered satisfactory in 5 years	(5) Log of income considered achievable in 5 years
Panel (a): Maximum earthquake intensity					
Maximum earthquake intensity	0.00163	0.00106	0.00191	-0.0675*	-0.0518
	(0.0280)	(0.0289)	(0.0275)	(0.0306)	(0.0291)
Observations	1043	1043	1043	1036	1037
Panel (b): Self-reported damage, asset loss, or displacement					
Report at least 1 form of damage, loss or displacement	0.0104	0.00679	0.0122	-0.433*	-0.330
	(0.179)	(0.184)	(0.176)	(0.187)	(0.185)
Observations	1043	1043	1043	1036	1037

Notes: Standard errors clustered by township in parentheses. * p < 0.05, ** p < 0.01, *** p < 0.001

Before we conclude, and to provide an additional set of robustness tests, we show tabular results of variations of our basic OLS regression specification in Tables A3 and A4 in the Supplemental Appendix. Table A3 reports results with the hope index as the dependent variable. Column (1) shows the simple bivariate relationship between pre-earthquake income and the hope index. Column (2) shows the relationship between our indicators of labor market fit and the hope index. In both columns (1) and (2), the reported results mirror those already displayed graphically in Section 3. Column (3) shows the relationship between exposure to conflict, measured as the log of conflict fatalities, and the hope index. Although conflict is an important contextual feature of many settings within Myanmar, we do not observe any evidence of a link between exposure to fatal conflict and the hope scale. Column (4) reports again the weak relationship between earthquake exposure and the hope scale, mirroring the results discussed above. Finally, column (5) includes each of these variables together in one regression specification. We observe similar patterns in the relationship between pre-earthquake income, labor market fit, exposure to fatal conflict,

and earthquake exposure when estimating jointly as we do when we estimate these relationships separately.

We find similar results in Table A4 which reports results with our measure of income aspirations as the dependent variable. In both columns (1) and (2), the reported results mirror those already displayed graphically in Section 3. Column (3) shows the relationship between exposure to conflict and income aspirations. Again, we do not observe any evidence of a link between exposure to fatal conflict and income aspirations. Column (4) reports the relationship between earthquake exposure and income aspirations, which again mirror the results discussed above. Finally, column (5) includes all variables together in one regression specification, and we again observe similar patterns in the relationship between pre-earthquake income, labor market fit, exposure to fatal conflict, and earthquake exposure and income aspirations.

5. Conclusion

In this paper we study the formation of both hope and aspirations using unique data collected among educated youth in Myanmar. In doing so, we specifically compare the relative influence of chronic versus acute stressors in forming hope and aspirations. Chronic stressors are ongoing and long-term characteristics of an individual's socio-economic environment, which we measure in two ways: (i) relative income and (ii) labor market fit. These measures are relevant broadly in the context of Myanmar and specifically for our sample of educated and relatively high-skilled youth. An acute stressor is a brief and intense event that is not characteristic of an individual's environment but nevertheless could have meaningful socio-economic consequences. To measure exposure to an acute stressor, we leverage the timing of our survey relative to a large and catastrophic M_W 7.7 earthquake that occurred on March 28, 2025, in Myanmar.

We find two main results. First, hope and aspirations are tightly linked with the chronic stressors we measure. Second, although exposure to the earthquake led to measurable and meaningful material consequences, we do not find evidence that earthquake exposure is linked with our measures of hope and aspirations. Moreover, using the distance between an

individual's current location at the time of answering our survey and the Sagiang fault line in an instrumental variable framework, we continue to find evidence of the absence of a meaningful and statistically significant relationship between exposure to the earthquake and our measures of hope and aspirations. Although this lack of a relationship is striking as we do find evidence that the earthquake led to meaningful material consequences for respondents in our data, it is in line with existing theoretical propositions about the nature of the formation of hope and aspirations.

These results are important for at least two key reasons. First, an improved understanding of the formation of hope and aspirations can help inform the design and interpretation of development research. Notably, both hope and aspirations seem to take time to adjust to changes to an individual's socio-economic environment. Second, these results hold important policy implications. Our results suggest that policies that aim to address sources of chronic stress (e.g., poverty and employment outcomes) may have under-appreciated psychological benefits that complement standard economic benefits measured in the form of higher wages and employment outcomes. For example, child sponsorship programs that invest in the education and mentoring of youth from a young age improve labor market outcomes in adulthood (Wydick, Gewwe, and Rutledge 2013), and at least some of these effects are attributable to improved hope (Glewwe, Ross, and Wydick 2018) and aspirations (Ross et al. 2021). This further emphasizes the need to keep track of development objectives that can mitigate the effects of chronic stressors, even when more acute shocks occur. Additionally, policy responses to emergency and disaster situations may be most effective if they focus on immediate material needs so that an acute stressor does not become a chronic stressor.

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Table A1: Hope Scale Components

Variable	Obs.	Mean	Std. dev.	Min	Max
1. If I were to find myself in a jam, I could think of many ways to get out of it.	1043	8.24	2.02	2	11
2. At the present time, I am energetically pursuing my goals.	1043	8.13	2.12	1	11
3. There are lots of ways around any problem that I am facing now.	1043	7.89	2.08	1	11
4. Right now, I see myself as being pretty successful.	1043	6.50	1.99	1	11
5. I can think of many ways to reach my current goals.	1043	7.74	1.99	1	11
6. At this time, I am meeting the goals that I have set for myself.	1043	7.35	2.07	1	11

Source: Authors' calculations

Table A2: Balance Tests

Panel (a): Household characteristics						
	(1) Urban	(2) Male	(3) Age	(4) Married	(5) Has children	(6) Household income (MMK)
Distance to Sagaing Faultline (km)	0.0002	-0.0000	0.0046**	-0.0001	0.0001	707.8808
	(0.0002)	(0.0002)	(0.0017)	(0.0001)	(0.0001)	(555.2883)
Observations	1043	1043	1043	1043	1043	1041
Panel (b): Labor market characteristics						
	(1) Is an employee	(2) Individual income (MMK)	(3) Under-employed	(4) Elementary occupation	(5) Mid-skilled occupation	(6) High-skilled occupation
Distance to Sagaing Faultline (km)	-0.0002	563.6391	-0.0002	-0.0000	0.0000	0.0000
	(0.0002)	(469.0347)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Observations	1043	1036	1033	1039	1039	1039
Panel (c): Risks and Shocks						
	(1) No. of employment shocks experienced	(2) HH debt (MMK)	(3) Risk appetite	(4) Conscription eligible	(5) Conflict deaths in township since Feb'21	(6) Conflict deaths in year leading up to earthquake)
Distance to Sagaing Faultline (km)	0.0006	1046.2196	0.0004	-0.0001	0.0340	0.0628
	(0.0004)	(854.9083)	(0.0007)	(0.0002)	(0.147)	(0.106)
Observations	1043	1043	1043	1043	1043	1043

Notes: Standard errors clustered by township in parentheses. * p < 0.05, ** p < 0.01, *** p < 0.001

Table A3: Supplementary Regression Results—Hope Index

	(1)	(2)	(3)	(4)	(5)
	Hope Index				
Pre-earthquake income (USD)	0.002***				0.002***
	(0.000)				(0.000)
Education "very closely" related to job		0.191*			0.210*
		(0.087)			(0.085)
Education "somewhat" related to job		0.071			0.078
		(0.074)			(0.074)
Log of conflict fatalities since February 21			0.002		0.007
			(0.022)		(0.022)
Maximum earthquake intensity				0.001	0.001
				(0.028)	(0.027)
Constant	-0.176**	-0.0755	-0.007	-0.008	-0.298
	(0.0616)	(0.0583)	(0.086)	(0.152)	(0.180)
Observations	1041	1043	1043	1043	1041

Notes: Standard errors clustered by township in parentheses. * p < 0.05, ** p < 0.01, *** p < 0.001

Table A4: Supplemental Regressions—Income Aspirations

	(1)	(2)	(3)	(4)	(5)
	Log satisfactory income in five years				
Pre-earthquake income (USD)	0.005***				0.005***
	(0.000)				(0.000)
Education "very closely" related to job		-0.293**			-0.230**
		(0.088)			(0.070)
Education "somewhat" related to job		-0.153*			-0.141*
		(0.070)			(0.065)
Log of conflict fatalities since Feb 21			-0.000		0.013
			(0.021)		(0.018)
Maximum earthquake intensity (1-10)				-0.042	-0.035
				(0.028)	(0.024)
Constant	13.735***	14.489**	14.357***	14.584***	14.003***
	(0.056)	(0.058)	(0.084)	(0.154)	(0.163)
Observations	1034	1036	1036	1036	1034

Notes: Standard errors clustered by township in parentheses. * p < 0.05, ** p < 0.01, *** p < 0.001