

Exploring the Link Between Intentional Self-Regulation and Hope in Thriving Among  
Salvadoran Adolescents Living in Poverty

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Julia M. Dennis

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### **Abstract**

In El Salvador, many families and youth face the effects of poverty and gang violence. Studies have documented how poverty is associated with negative outcomes in youth development but, as discussed in the relational developmental systems metatheory, individuals are able to adapt to their context allowing them to remain resilient at the face of adversity. Previous research has shown that individual strengths, such as hope and intentional self-regulation (ISR), may be key factors in promoting thriving. The current study explored the link between ISR and hope in promoting thriving among Salvadoran adolescents living in poverty by capitalizing on data collected from the CI Study of Positive Youth Development (PYD), an ongoing longitudinal study. Participants included 1205 Salvadoran youth, sampled in urban and rural areas (66.3% urban; 49.3% female) between the ages of 9 – 18 years. A hierarchical regression was used to analyze how much variance ISR and hope contributed to PYD, and whether ISR and hope explained the variance in PYD above and beyond the demographic variables. Results indicated that hope, ISR, and the interaction between hope and ISR had significant positive associations with PYD scores of Salvadoran youth. Although hope and ISR significantly explained the variance in PYD above and beyond the demographic variables, the interaction between hope and ISR did not significantly explain the variance in PYD. In addition, CI-enrollment status did not significantly contribute to the variance in PYD suggesting that program status did not influence PYD scores. Future directions and implications of these findings are discussed.

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## Table of Contents

<b>Abstract</b> .....	<b>2</b>
<b>Acknowledgements</b> .....	<b>3</b>
<b><i>Exploring the Link Between Intentional Self-Regulation and Hope in Thriving Among Salvadoran Adolescents Living in Poverty</i></b> .....	<b>6</b>
Literature Review .....	9
Theoretical Framework .....	9
Effects of Poverty on Youth Development.....	10
Adolescence and Poverty .....	11
Agency and Purpose .....	12
Hope and Intentional Self-Regulation .....	13
The Current Study .....	15
Research Questions and Hypotheses.....	16
Research Question 1 .....	16
Hypothesis 1 .....	16
Research Question 2 .....	16
Hypothesis 2 .....	16
<b>Method</b> .....	<b>16</b>
Data Set .....	16
Participants.....	17
Measures .....	18
The Hopeful Future Expectations Scale.....	18
Positive Youth Development – Short Form .....	19
Intentional Self-Regulation – SOC Questionnaire.....	19
Demographics.....	19
Procedure .....	19
Data Analysis .....	20
<b>Results</b> .....	<b>22</b>
Preliminary Analyses.....	22
Hierarchical Regression .....	23
Post-Analysis Screening .....	25
<b>Discussion</b> .....	<b>26</b>
Implications .....	29
Limitations and Future Directions .....	29
Conclusions.....	31
<b>References</b> .....	<b>32</b>

**Table 1** ..... **38**  
**Table 2** ..... **39**  
**Table 3** ..... **40**  
**Table 4** ..... **41**  
**Table 5** ..... **42**

### **Exploring the Link Between Intentional Self-Regulation and Hope in Thriving Among Salvadoran Adolescents Living in Poverty**

Poverty has the power to alter the trajectories of cognitive, socioemotional, and physiological functioning (Evans & Kim, 2013), and although countries have been making strides to target and improve poverty levels, in 2020 an estimated 356 million children globally were living in extreme poverty before the pandemic (World Bank, 2020). In El Salvador, many youths and families face the hard realities of poverty. In 2015, 4 out of 10 inhabitants of El Salvador lived in poverty, and half of the country's children and adolescents lived on less than \$1.25 per day (Humanium, 2019). The world bank marks extreme poverty in El Salvador as living on \$1.90 per day or less and, although improvements were shown from a decline in extreme poverty from 13% in 1995 to 1.5% in 2019, unfortunately the pandemic has had a significant negative impact on the income of families and individuals (World Bank, 2022).

In addition, El Salvador is recognized as one of the most violent countries in Latin America (Humanium, 2019). Following the civil war in El Salvador, the country has been filled with heavily armed gangs that engage in crimes such as extortion, assassinations, drug trafficking, car theft, kidnapping, and turf wars (Centeno, 2017a). There are gangs of adolescents called, "maras," that have a large presence in El Salvador, and these gangs have more than 10,000 members, often between the ages of 16 and 18 years old (Humanium, 2019). The Organization of Cooperation and Economic Development (OCDE) reported that between 20,000 and 35,000 young Salvadorans belong to gangs and that the mean entry age is 15 years old (OCDE, n.d.).

In 2015, over 15,000 students dropped out of school because of the violence (Centeno, 2017b), and the Inter-American Development Bank documented that about a thousand dropped

out per week during 2018 (Echenique, n.d.). Moreover, it is the violence being caused by gangs that is one of the primary reasons why forced migration is occurring in El Salvador. Vulnerable families strive to seek the resources and support that they need to survive.

In a film titled, “Youth gangs in El Salvador – Marked for life,” the lives of the individuals who joined gangs, such as Mara 18 and Mara Salvatrucha (both rival gangs in El Salvador), were presented (Cordaid, 2015). The film emphasized how individuals often joined gangs as a way to defend and protect themselves, and as a way to make more money. Those who wanted to become members of either gang were beaten for up to 18 seconds, but after that they were given unconditional support for themselves and for their families.

One individual showcased was a man named Eric that was a previous member of the 18<sup>th</sup> street gang. Eric went to America when he was 13 years old during the civil war where he joined a gang in Los Angeles. He was later deported from the United States (U.S.) involuntarily and placed in prison because of the gang crimes he convicted, such as theft with violence. However, Eric described how even though a primary reason why he was deported was because of his crimes he felt another huge influence was his drug addiction (Cordaid, 2015). When Eric joined the gang, he was on heroin for years. After going to prison, he emphasized that he was able to experience a life without gangs, without drugs, and without weapons, and this was the moment where he opted for another life (Cordaid, 2015). The hope for the future that he expressed after leaving prison was what inspired him to devote himself to finding ways to help youth in gangs find other opportunities and realize that joining a gang was not the only path.

Interestingly, Eric emphasized that the youth who usually join these gangs do not have a family unit and are presented with relatively few opportunities. Yet, they want to take part in everything that happens in the country, and they want people to listen to them. Very few positive

things happen in deprived areas for these youth, so they use violence to express their dissatisfaction about their situation (Cordaid, 2015). During the film, a solution suggested by a police officer was to focus on finding ways to rehabilitate gang members. Companies, NGOs, and the church can all play important roles in the rehabilitation of youth that have joined gangs (Cordaid, 2015). In other words, programs and organizations dedicated to supporting youth may be essential in helping youth thrive in areas with high gang violence. The film emphasized how critical it is to show youth in these neighborhoods that there is another life possible aside from becoming a member of a gang. By focusing on ways to help youth realize their potential and show them other opportunities, youth may be able to avoid a negative life outcome.

Given the context and the deleterious influence of poverty and gang violence I have described, a key question is, “What are the potential strengths of Salvadoran youth that contribute to thriving despite poverty conditions?” Interestingly, current research has found positive associations between hope and intentional self-regulation with positive youth development (Callina et al., 2015; Lerner et al., 2015; Schmid et al., 2011), as described further in the Literature Review section of this thesis. This information is important because understanding if hope and intentional self-regulation predict thriving for adolescents experiencing poverty can be useful information for both programs and families living in impoverished communities.

The current study focuses on exploring if and how the link between hope and intentional self-regulation may promote thriving for Salvadoran adolescents living in poverty. By exploring ways in which character virtues (e.g., hope) and intentional self-regulation may play a supportive role in positive youth development, I may find ways in which developmental scientists and practitioners can help youth thrive in seemingly hopeless and deprived situations.



## **Literature Review**

In this section, I will discuss first the theoretical approach I will use in studying thriving among poor youth, and I will then discuss the effects of poverty on youth development. Next, I will focus on poverty among adolescents, followed by a discussion of the constructs of agency and purpose. I will then present literature about the roles of hope and self-regulation in youth development. These presentations will enable me to rationalize the goals of this study and to present the questions I will address in this thesis.

## **Theoretical Framework**

Contemporary developmental science models of human development have conceptualized the diverse individual pathways across the life span as arising as a result of the dynamic relations between the individual and the context. In the relational developmental systems (RDS) metatheory, human beings are seen as active agents in their development, as they coact with their complex, multilevel, and changing context (Lerner, 2018). Therefore, the relations between individual and context is bidirectional and mutually influential, often depicted as individual  $\Leftrightarrow$  context relations (Gestsdóttir & Lerner, 2007; Lerner, 2018). Because these coactions involve relations between a developing individual and this integrated and changing context, the potential for systematic change, for plasticity, is a defining feature of human development (Lerner, 1984, 2018).

Given this potential for plasticity in human development, human beings experiencing external pressures in their environment can adapt to their context, which is fundamental for resilience (Lerner, 1984; Lerner et. al, 2019; Masten, 2014a, 2014b; Masten et al., 2015). Plasticity is also a key component in strengths-based models of positive youth development (PYD) (Lerner et al., 2015). PYD is understood as occurring as a result of mutually beneficial

relations between the person and context, for instance, involving families, schools, and communities (e.g., Bowers et al., 2015); these mutually beneficial relations have been labeled as adaptive developmental regulations (Brandtstädter, 2006).

The PYD approach was first formed by Rick Little who established a strength-based conception of adolescents that he labeled, “positive youth development” (Lerner et al., 2021). The key idea was that PYD would occur when there was an alignment between the strengths of young people and the resources found in community-based programs (Lerner et al., 2021). Little’s version of the PYD model included four “Cs” (Competence, Confidence, Connection, and Character); Over time, the conception of this model evolved, as developmental scientists and biologists integrated what the world knew about epigenetics, plasticity, and human behavior (Lerner et al., 2021). The current study uses an evolved version of PYD which includes a fifth C, caring and, when all these five Cs were present in a young person, a sixth C emerged – contribution to themselves, to family, to school, community, and society (Lerner et al., 2021).

### **Effects of Poverty on Youth Development**

Consistent with the RDS-based PYD approach, the context is as important in enabling youth to thrive as are individual youth strengths. However, in addition to having resources that can potentially coact with individual strengths to promote thriving, there are instances when the context might present challenges to the individual’s PYD. One such contextual condition is poverty. For instance, childhood poverty has been strongly associated with a variety of negative outcomes across the life span, such as low educational attainment, increased exposure to violence, and hunger (Hughes & Tucker, 2018). In addition, poverty has been associated with elevated levels of chronic stress (Evans & Kim, 2013; McKenzie, 2019). In turn, Mullin and Arce (2008) found that families living in poverty that possess a sense of purpose are more likely

to have youth who are resilient (see to Murry et al., 2014). Buffering against the impacts of the stresses of poverty is important because developmental research shows poverty is challenging and traumatic, perhaps especially during periods of major developmental change, such as adolescence.

### *Adolescence and Poverty*

Adolescence is a complex and challenging period of developmental change because adolescents' cognitive and behavioral capacities may engage their agentic (e.g., self-regulatory) skills with fewer potential guardrails (e.g., from parents) facilitating their adaptive choices. Adolescent self-regulatory choices may also be complicated by uncertainty of efficacy because youth are experiencing coactive changes in physiological, morphological, and psychological characteristics that have uncertain specific outcomes for a specific young person. Indeed, because adolescence is a period wherein such a multiplicity of changes occurs, the stresses associated with poverty can be a powerful factor that can alter lifetime development trajectories in cognitive, socioemotional, and physical health outcomes (Evans & Kim, 2013; Palacios-Barrios & Hanson, 2019).

In addition to the stressors experienced by adolescents living in poverty, environmental aspects of poverty can play a large role in an adolescent's development as well. For instance, Royce (2021) documented how environmental factors associated with low-income neighborhoods, including exposure to drug trafficking, gang violence, and prostitution, inhibit the opportunities for adolescents to form positive social networks. This information is important because for Salvadoran adolescents this possible problematic situation may be a reality. It is essential to identify what may be inhibiting opportunities in an individual's environment to then identify key factors that may contribute to thriving.

### **Agency and Purpose**

Numerous studies have documented that individual differences in youth agency and purpose contributes to their positive development when facing contextual challenges, such as poverty, and help youth access developmental assets in their context (Bowers et al., 2015; Lerner et al., 2015; Lerner et al., 2021; Little et al., 2003; Murry & Anderson, 2020; Smith et al., 2017). Agency is the ability of an individual to act effectively to control themselves or the world around them in order to attain their goals (Bowers et al., 2015). Purpose has been given many definitions but can be understood as “an individual’s ultimate aim or goal” (Bronk, 2013).

Little et al. (2003) found that agency can be a predictor of academic performance and noted that mean levels of agency differ across sociocultural contexts, a finding that points to the importance of understanding that individual differences in development during adolescence are influenced by context. In addition, a clear sense of purpose may serve as a guide for adolescents to thrive compared to individuals who lack a purpose in life (e.g., Bronk, 2013). Bronk (2013) notes that pursuing purpose can contribute to meaningful academic experiences and help establish connections between youth and like-minded peers and mentors. This observation is important because exploring how purpose may connect with academic success and strong, positive social connections may help researchers and communities further understand factors that contribute to thriving in places involving highly adverse conditions (e.g., the threat of gang violence).

Furthermore, Bronk and Damon (2021) documented that individuals guided by purpose had better psychological health, higher levels of hope and gratitude, and were more satisfied with their lives. In addition to psychological health, it was noted that physical health showed improvements as well for individuals with a strong sense of purpose (Bronk & Damon, 2021).

Individuals with purpose experienced better sleep and self-reported health and longevity (Bronk & Damon, 2021). These findings emphasize the benefits of purpose and suggest that purpose may be related to thriving in youth.

Taken together, these findings indicate that individuals with agency and purpose have been associated with better academic performance and other factors (e.g., social connectedness, better health) that may have a positive influence on an individual's ability to thrive (Bronk, 2013; Bronk & Damon, 2021; Little et al., 2013). This relation is important because if agency and purpose contribute to youth resilience both may be related to thriving despite challenges faced from adversity, such as poverty. Understanding more about agency and purpose and how it relates to youth living in low-income communities in different contexts may provide more insight on what strengths promote thriving.

Agency may be associated with self-regulation skills (Gestsdóttir & Lerner, 2008). As well, possession of these skills may give a young person the hope that they have the capacity to take actions that will result in attaining their purposes (Callina et al., 2015). As such, it would be useful to assess hope and self-regulation in regard to PYD among youth challenged in life by poverty conditions.

### **Hope and Intentional Self-Regulation**

Given the deleterious effects of poverty, what can be understood about the potential strengths of adolescents that might buffer against problematic outcomes and foster resilience and possibly as well thriving (Masten, 2014b)? Researchers exploring the potential for character virtues related to thriving have found that hope and intentional self-regulation skills may contribute to thriving despite poverty conditions. Hope is complex and has many definitions, but can be defined as “a positive emotion, with a set of cognitions or perceptions about one's goals

and the means for attaining those goals” (Bowers et al., 2015). Hope is also seen as an essential process that connects oneself to potential success (Snyder, 1994). Intentional self-regulation involves cognitive, affective, and behavioral skills that frame actions aimed at harmonizing demands in a person’s social and physical context with a person’s resources to attain better functioning and enhance self-development (Bowers et al., 2015).

A study conducted by Schmid et al. (2011) used data from students in Grades 7 to 9 involved in the 4-H Study of PYD to assess the role of hope for the future in predicting developmental outcomes. Findings showed that higher levels of hope and intentional self-regulation significantly predicted membership in the most favorable trajectories of youth participating in the 4-H Study of PYD (see Lerner et al., 2015). In addition, the authors noted that hopeful future expectations were found to be a stronger predictor than intentional self-regulation for each of the outcomes (e.g., PYD, contribution, risk behaviors, and depressive systems) assessed.

Similarly, Callina et al. (2015) documented how data from the 4-H Study of PYD indicated that positive future expectations, intentional self-regulation, and connectedness work together to promote thriving for adolescents. The authors described how youth involved in the 4-H Study of PYD were placed into different trajectories of positive and problematic (e.g., depressive symptoms, drug use) outcomes across three years of adolescence (ages 13 to 15 years old) (Callina et al., 2015). Findings suggested that positive future expectations and intentional self-regulation predicted PYD scores for adolescents in Grades 7 and 8 (Callina et al., 2015).

Accordingly, the present research sought to explore the links between hope and intentional self-regulation in promoting thriving among adolescents in poverty. To enact this

research, the present study capitalized on a longitudinal study, ongoing at this writing, of Salvadoran youth living in poverty (Tirrell et al., 2019a).

### **The Current Study**

The purpose of the study was to assess specific features of the individual and the context in understanding if and how intentional self-regulation (ISR) and hope predict thriving among Salvadoran youth living in poverty. I focused on a sample of these youth because of the rich measurement model used in the research of Tirrell et al., (2019a), a model that includes measures of the constructs of interest in the present research. In addition, the study explored whether age, gender, location (rural and urban), and enrollment status in a program aimed at promoting PYD, may moderate if and the extent to which ISR and hope predict thriving.

To pursue this goal, I capitalized on the longitudinal Compassion International (CI) study of PYD in El Salvador, where data had been collected about both hope and ISR in relation to thriving in rural and urban, male and female adolescents, between the ages of 9 and 18 years, who are living in poverty. Only Wave 1 of data were used, however. By focusing on Wave 1 of data I was able to compare different population groups (based on age, gender, location, and CI-enrollment status) and different variables (HFE, ISR, and PYD) at a specific point in time. In addition, because the data set included 610 youth enrolled in the CI program, a faith-based sponsorship organization, and 589 in a sample of counterfactual youth, I was able to assess the relations among hope, ISR, and PYD among youth participating or not participating in the programs of CI. To analyze the data, a hierarchical regression was used in order to provide information about whether age, gender, location, and CI-enrollment status moderated the link between ISR and hope on predicting thriving.

## **Research Questions and Hypotheses**

### ***Research Question 1***

Does ISR and HFE contribute to PYD and can the variance in PYD be explained by ISR and HFE above and beyond the contribution of the demographic variables?

### ***Hypothesis 1***

ISR and HFE will contribute to PYD and that the variance in PYD can be explained by ISR and HFE above and beyond the contribution of the demographic variables.

### ***Research Question 2***

Will CI enrollment status contribute to PYD, and will there be differences between the treatment group (youth involved in CI programs) and counterfactual group?

### ***Hypothesis 2***

Given that the broader CI Study was designed as a program evaluation with a counterfactual group, I expected to see the relations among these constructs (e.g., HFE, ISR) to be stronger and more predictive of PYD among the youth enrolled in the CI programs compared to youth in the counterfactual group.

## **Method**

### **Data Set**

Compassion International is a faith-based child-sponsorship organization that partners with churches in low- and middle-income countries in Central and South America, the Caribbean, Africa, and Asia to promote thriving for children living in poverty (Sim, 2014). The CI Study of PYD is a comparative longitudinal study in El Salvador, Rwanda, and Uganda that used the Lerner and Lerner model of PYD for understanding PYD in areas experiencing poverty (see Lerner et al., 2015; Tirrell et al., 2019a; Tirrell et al., 2021). In the CI Study of PYD for



Salvadoran youth, poverty was defined as a “pronounced deprivation in well-being” (Tirrell et al., 2019a).

### **Participants**

The study used data collected at Wave 1 of the CI Study of PYD. Participants included 1205 Salvadoran youth, sampled in urban and rural areas (66.3% urban; 49.3% female). Youth involved in the CI Study at this time of testing were between the ages of 9 and 18 years (13.03,  $SD = 1.87$ ). The sample consisted of youth enrolled in CI-supported programs (51.1%) across 20 project sites in El Salvador, and comparison youth living in the same communities (see Table 1).

The CI country office selected 20 CI-supported project sites from urban and rural locations based on their judgments of sites that represented the best program outcomes (for instance, regarding graduation rates and extra-program activities). Eligibility for CI support was based on multiple criteria, including age, household monthly income relative to number of dependents, lack of other financial child-sponsorship support, proximity to a CI-supported project site, and additional indicators of poverty (e.g., housing quality, access to resources such as water source). From each CI project site, even numbers of boys and girls from the target age range (9 to 18 years) were randomly selected. The comparison sample of non-CI supported youth was drawn from elementary and primary schools located in the same communities as the CI program sites. Members of school leadership were asked to identify boys and girls representing the target age range whose families lived in poverty and met the above-noted criteria. Data collection took place in June and July 2018 for Time 1 (T1).

When collecting data on location, there were three options participants could select based on where they lived: urban, suburban, or rural. For the purpose of analysis, those who selected suburban were placed in the urban category, because there are larger differences in living

conditions between rural and suburban locations. Within both the CI-supported sample and the non-CI-supported sample, 32.9% of the youth resided in rural areas and the remaining youth resided in urban areas.

### **Measures**

For both youth participating in CI programs and the youth not participating in CI programs, the information collected included data derived from the following measures: the Hopeful Future Expectations (HFE) scale (Schmid et al., 2011) to measure hope, the Selection, Optimization, and Compensation (SOC) scale (Freund & Baltes, 2002) to measure ISR, and the Positive Youth Development (PYD) - Short Form (PYD-SF) scale (Geldhof et al., 2013) to measure overall PYD. Demographic information examined were age, gender, and living location (rural and urban). All materials were forward-translated from English to Spanish and back-translated to English to check for accuracy. Additional adaptation and contextualization of the measures occurred as a result of data collector training and piloting (see procedure). All items for the constructs were responded to using a 0 to 100 scale, using increments of 5, with 0 reflecting the lowest level of agreement for the item and 100 reflecting the highest level.

#### ***The Hopeful Future Expectations Scale***

Six items derived from the 4-H Study of Positive Youth Development (Schmid et al., 2011) were used to assess hopeful future expectations (HFE) via youth perceptions of their likelihood of having positive experiences in the future. The six items were refined based on procedures described in the Tirrell et al. (2019a) article.<sup>1</sup> Youth responded to each item using a

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<sup>1</sup> As summarized in Tirrell et al. (2019a), the Schmid et al. (2011) measure originally consisted of 12-items when tested with a similar sample of Salvadoran youth in a pilot for the CI Study of PYD. Because the model fit for the scale was moderate to poor, a series of exploratory and confirmatory factor analyses were used to create a refined and parsimonious 6-item measure of HFE.

scale of 0 (0%, *no chance*) to 100 (100%, *certain*), using increments of 5. Cronbach's alpha at T1 was 0.83.

### ***Positive Youth Development – Short Form***

To assess PYD, the 34-item Short Form measure of the Five Cs of PYD (Geldhof et al., 2013) was used. The measure was refined by Tirrell et al. (2019a) to include 28 items that reflected the five factors, referred to as the Five Cs of PYD (Lerner et al., 2015): Competence, Confidence, Character, Caring, and Connection. The Short Form measure was developed using bifactorial analysis; therefore, the measure enables either scoring of each of the Five Cs *or* overall PYD. The present study aimed to explore thriving as a whole; therefore, the measure was scored using overall PYD. Youth responded to each item using a scale of 0 (*Totally Disagree*) to 100 (*Totally Agree*), using increments of 5. Cronbach's alpha at T1 was 0.89.

### ***Intentional Self-Regulation – SOC Questionnaire***

Nine items were used to assess ISR via youth perceptions of their ability to choose and commit to goals (selection), create plans and make choices to achieve those goals (optimization), and compensate for setbacks in progress toward their goals (compensation) (Freund & Baltes, 2002). Youth responded to each item using a scale of 0 (*Never Like Me*) to 100 (*Always Like Me*), using increments of 5. Cronbach's alpha at T1 was 0.88.

### ***Demographics***

Three demographic scores used in this study were indices of age, gender, and location.

### **Procedure**

Beginning at T1 (June and July 2018), the CI Study of PYD involved recruitment of youth participating in CI-supported programs and, as well, a counterfactual group of youth who were not participating in these programs. CI country staff held three informational meetings for

partnership facilitators at the selected project sites. The meetings involved information about the study, including describing the methodology and answering questions about the survey or broader research program.

Independent data collectors were recruited from a local university and/or recruited based on previous experience with children and technology (i.e., the surveys were web-based). Data collectors had no previous involvement in CI and underwent three days of training prior to data collection. The first day was dedicated to educating data collectors about CI (e.g., history, mission, impact, child protection policy and procedure) and informing them about the purpose of the study. They were then introduced to the survey questions and response options and trained on the methodology. On the second and third days of training, data collectors piloted the survey with an independent sample of CI-supported project youth not involved in the study. Based on concerns and questions that arose at these training sessions (e.g., regarding item wording, response options), edits to the survey were made and documented.

Members of the local research team administered one-on-one interviews by reading the survey questions and entering youth responses into an online survey. The survey took about 30-45 minutes to complete. Participating sites were given thank-you gifts as determined by the project staff, including gift baskets, shoes, and/or clothing.

### **Data Analysis**

The purpose of the data analyses were to understand if and how ISR (measured using scores from the SOC Questionnaire) and HFE (measured using scores from the Hopeful Future Expectations Scale) predicted thriving (measured using scores from the PYD Short Form). Using the Statistical Package for Social Sciences (SPSS) 28, a hierarchical regression analysis was used to examine if and to what extent age, gender, location (urban and rural), and CI-enrollment status

moderated any links between ISR and hope in predicting thriving. Previous research indicates that age, gender, and location are positively correlated with PYD, as well as with ISR and HFE (see Lerner et al., 2015); therefore, the goal of this analysis was to partition the covariance between the first set of variables (age, gender, location, and CI-enrollment status) and the theoretically- and empirically-based predictor variables, ISR and HFE. As already noted, I hypothesized that ISR and HFE contributed to PYD and that the variance in PYD can be explained by ISR and HFE above and beyond the contribution of the demographic variables.

To test this hypothesis, age, gender and location were entered first in the hierarchical regression analysis in order to understand how much variance they contribute to PYD. Then, in Model 2 of the analysis, CI-enrollment status was entered to ascertain if it accounted for significant variance in thriving. Model 3 of the analysis, added ISR, followed by Model 4 which added HFE. In Model 5, I assessed the interaction between ISR and HFE to see if there were any significant increases in variance explained (see Table 2).

This research may contribute valuable information regarding contextual influences on ISR, hope, and positive youth development. Understanding if and the extent to which intentional self-regulation skills and hope for the future predict thriving is important for enhancing current understanding of potential strengths that promote positive youth development and resilience for adolescents living in poverty.

## Results

In this section, I will first present the results of the preliminary analyses. Next, I will discuss the results from the hierarchical regression analyses testing the key questions and hypotheses of this study. In turn, I will then discuss the results of the post-analysis screening.

### Preliminary Analyses

Table 3 provides descriptive statistics for scores on ISR, HFE, and PYD. These descriptive statistics indicate that ISR, HFE, and PYD have a negatively skewed distribution because all mean values were closer to the maximum than the middle of the distribution. To check normality of the distributions of ISR, HFE, and PYD, histograms and p-plots were conducted. In addition, skewness and kurtosis values were evaluated using Field's (2018) guidelines that skew should be  $< |1|$  and kurtosis should be  $< |3|$ . For ISR, the histogram was negatively skewed, as it had a peak in frequency toward the right side of the curve. For the distribution, the absolute value of the skewness was 1.78, and the kurtosis was leptokurtic. This finding shows that the data set has heavier tails than a normal distribution. The standard deviation (SD) of ISR was 13.34. The P-Plot comparing ISR to the normal distribution appeared to deviate from the normal distribution line. Based on these tests, I concluded that the data for ISR does not have a normal distribution and is negatively skewed.

For HFE, the histogram was negatively skewed, as it had a spike in frequency toward the right side of the curve. For the distribution, the absolute value of the skewness was 2.25 and the kurtosis was leptokurtic, which deviates from a normal distribution. The SD of HFE was 11.71. The P-Plot comparing HFE to the normal distribution appeared to deviate from the normal distribution line. Based on these tests, I concluded that the data for HFE does not have a normal distribution and is negatively skewed.

For PYD, the histogram also had a negative skew. For the distribution, the absolute value of the skewness was 1.32 which deviates from a normal distribution. In addition, the kurtosis was 2.26, which can be considered leptokurtic. The SD of PYD was 11.80. For the P-Plot, the cluster of data was overall close to the normal distribution line despite a slight curve toward both ends. Based on these tests, I concluded that the data for PYD does not have a normal distribution and is negatively skewed.

To investigate univariate outliers, histograms and box plots were analyzed. For the ISR histogram, I noticed a few potential outliers to the left of the distribution tail. Comparing these data to the box plot, I saw several outliers that were consistent with the presence of a negative skew. For the HFE and PYD histograms, I found similar results.

Scatterplots were used to assess the linearity of the relation between the predictor variables and the outcome. There was a positive linear relation found between ISR and PYD, as well as HFE and PYD.

### **Hierarchical Regression**

Whereas ISR, HFE, and PYD had some outliers, the large sample allowed for the regression analysis to be conducted. Accordingly, a hierarchical regression was used to examine if and to what extent age, gender, location (urban and rural), and CI-enrollment status moderated links between ISR and hope in predicting thriving. Table 4 shows the regression coefficients and Table 5 shows the summary of  $R^2 \Delta$ . First, a model was estimated with age, gender, and living location as predictors. Results showed that 1.5% of the variation in PYD can be accounted for by age, gender, and living location, and the amount was statistically significant,  $F(3, 1196) = 6.12$ ,  $p < .001$ . In Model 1,  $R^2$  was  $F(3, 1193) = 6.12$ , which is significant ( $p < .001$ ). For living location, individuals living in rural areas were associated with higher positive youth development

scores compared to individuals living in urban areas ( $B = 0.95$ ,  $\beta = 0.04$ ,  $p = 0.05$ ). Neither gender nor age differences were significant in this sample. For gender,  $B = -0.36$ ,  $\beta = -0.02$ ,  $p = 0.43$ , and for age  $B = -0.36$ ,  $\beta = -0.03$ ,  $p = 0.10$ .

Next, a model was estimated including CI-enrollment status as a predictor. Results showed that 1.7% of the variation in PYD can be accounted for by CI-enrollment status, age, gender, and living location, and the amount was statistically significant,  $F(4, 1196) = 5.02$ ,  $p < .001$ . Examining the change in  $R^2$  for Model 2, 0.1 % of the variation in PYD can be accounted for by CI-enrollment status over and above the variation accounted for by age, gender, and living location and the amount was not significant,  $F(1, 1192) = 1.69$ ,  $p = .19$ .

Then, a third model was estimated including ISR as a predictor. Results showed that 51.2% of the variation in PYD can be accounted for by ISR, CI-enrollment status, age, gender, and living location. The amount was statistically significant,  $F(5, 1196) = 250.19$ ,  $p < .001$ . Examining the change in  $R^2$  for Model 3, 49.6% of the variation in PYD can be accounted for by ISR over and above the variation accounted for by CI-enrollment status, age, gender, and living location and the amount was statistically significant,  $F(1, 1191) = 1210.51$ ,  $p < .001$ . Individuals with a higher ISR score were associated with a higher PYD score ( $B = 0.52$ ,  $\beta = 0.59$ ,  $p < .001$ ).

A fourth model was estimated including HFE as a predictor. Results showed that 55.4% of the variation in PYD can be accounted for by HFE, ISR, CI-enrollment status, age, gender, and living location. The amount was statistically significant,  $F(6, 1196) = 246.205$ ,  $p < .001$ . When examining the change in  $R^2$  for Model 4, 4.2% of the variation in PYD can be accounted for by HFE over and above the variation accounted for by ISR, CI-enrollment status, age, gender, and living location and the amount was statistically significant,  $F(1, 1190) = 110.88$ ,  $p$



<.001. Higher HFE scores were associated with higher PYD scores ( $B = 0.27$ ,  $\beta = 0.27$ ,  $p = <.001$ ).

A fifth model was estimated including an interaction between ISR and HFE. Results showed that 55.5% of the variation in PYD can be accounted for by the interaction, HFE, ISR, CI-enrollment status, age, gender, and living location. The amount was statistically significant,  $F(7, 1196) = 212.10$ ,  $p < .001$ . When examining the change in  $R^2$  for Model 5, 0.1% of the variation in PYD can be accounted for by the interaction between ISR and HFE over and above the variation accounted for by HFE, ISR, CI-enrollment status, age, gender, and living location and was significant,  $F(1, 1189) = 3.90$ ,  $p = .05$ . Higher scores for both ISR and HFE were associated with higher scores for PYD ( $B = 0.002$ ,  $\beta = 0.05$ ,  $p = .05$ ).

### **Post-Analysis Screening**

A post-analysis screening was conducted to check that assumptions about collinearity, normality, homoscedasticity, and influential cases. The variance inflation factor was less than 10 and tolerance was greater than 0.1, suggesting that collinearity was not an issue (Keith, 2019). Histograms and P-Plots were constructed for standardized residuals and indicated that the residuals were approximately normally distributed. In the histogram, to the left of the distribution there were a few scores that were further than 3 standard deviations from the mean, but all seemed plausible and were retained. The assumption of homoscedasticity did show signs of non-normality, as indicated by scatter plots for the standardized residuals for HFE, ISR, and PYD. To account for potential violations in homoscedasticity,  $\alpha$  was set to a more stringent level ( $p < .01$ ) for purposes of interpretation. In addition, 31 cases were identified as having leverage greater than three times the average leverage value (0.02 in this data set). Cook's distance, SDBeta, and SDFit were within the expected ranges (Field, 2018). Although the assumption of influential

cases appeared to be potentially violated due to a few individuals with higher leverage values, overall, only one measure of influence (leverage) identified influential cases.

### **Discussion**

According to numerous studies, hope and ISR have the potential to predict positive youth outcomes and have been associated with PYD (Callina et al., 2015; Lerner et al., 2015; Schmid et al., 2011). The goal of the present study was to explore the link between ISR and hope in promoting thriving among Salvadoran adolescents living in poverty. Because age, gender, and location are positively correlated with PYD (see Ardal et al., 2017; Bowers et al., 2015; Paricio et al., 2020), this study explored if and the extent to which ISR and HFE contributed to PYD beyond the variance associated with age, gender, living location, and CI-enrollment status. My hypothesis was that ISR and HFE contribute to PYD and that the variance in PYD can be explained by ISR and HFE above and beyond the contribution of the demographic variables. In addition, given that the broader CI Study was designed as a program evaluation with a counterfactual group, I expected to see relations among these constructs (e.g., HFE, ISR) to be stronger and more predictive among the youth enrolled in the CI programs compared to youth in the counterfactual group.

Consistent with previous research (Callina et al., 2015; Lerner et al., 2015; Schmid et al., 2011), results from the hierarchical regression analyses found that Salvadoran adolescents with higher levels of ISR were significantly associated with higher levels of PYD, and higher levels of hope were also significantly associated with higher levels of PYD. In addition, the results indicated that the interaction between ISR and HFE was positively associated with higher levels of thriving and had a significant contribution to the variance in PYD. For Salvadoran youth, this

study suggests that the combination of hope and ISR may be key factors that promote thriving while being challenged in life by poverty.

Interestingly, findings from the study conducted by Schmid et al. (2011), which used data from the 4-H Study of PYD, documented that hope for the future was a stronger predictor for thriving than ISR; this finding differs from my results. One reason why my results may have varied from those of Schmid et al. is that the present study was conducted in El Salvador and the Schmid et al. study was conducted in the U.S. Because of this difference, it may be that national or cultural context played a critical role in why hope and ISR were shown to work well together among Salvadoran youth compared to American youth. In addition, religion may have played a critical role in why my results varied from the American 4-H study. As described previously, CI is a faith-based sponsorship program; therefore, both the CI and non-CI youth involved in the study have backgrounds in faith (e.g., Catholic, Evangelical). Religion can nurture feelings of hope, and the fact that this population was religious may have influenced the link between ISR and hope in promoting thriving for Salvadoran youth.

Conversely, the variance explained for by the interaction between hope and ISR above and beyond the other variables (e.g., age, gender, living location, CI-enrollment status) was not statistically significant. Because there were five Models in the regression and Model 1 included age, gender, and living location, all variables associated with PYD in previous literature (Ardal et al., 2017; Bowers et al., 2015; Paricio et al., 2020), it is possible that the analyses were underpowered for the interaction in the regression model. It would be interesting to see how these results may change if the hierarchical regression model had more power.

In addition, contrary to my hypothesis, findings demonstrated that CI-enrollment status did not significantly contribute to the variation in PYD. This finding may indicate that whether

participants were part of the CI Study of PYD, or part of the counterfactual group, did not influence the PYD scores of the Salvadoran adolescents participating. Given this finding, it is important to note that these are group data, and my ideas focus on development which involves within person change, therefore this study does not have enough within person data points to allow me to adequately explore specificity. Tirrell et al. (2019b) documented that, for the CI Study of PYD in El Salvador, there were varying relations across the 20 sites involved in the study. For example, at 7 sites CI youth had higher PYD scores, at 3 sites CI youth had lower PYD scores, and 8 sites had a mixture of results (Tirrell et al., 2019b). Because I collapsed data across all 20 sites in order to obtain average scores at one point in time, my analyses were not sensitive to possible variations across sites. To further investigate specificity, future research may analyze each of the 20 sites separately in order to assess if relations vary by site. In addition, I could have added CI-enrollment status to Model 1 of the hierarchical regression to indicate if CI-enrollment status significantly related to PYD and then compared it to the other variables (e.g., age, gender, living location, ISR, HFE).

Interestingly, the findings of this study showed that Salvadoran adolescents living in rural areas had higher PYD scores compared to Salvadoran adolescents living in urban areas. According to the organization Kids in Need of Defense (KIND), gangs dominate the urban areas of El Salvador, although in recent years the presence of gangs has been increasing in rural and semi-urban areas (KIND, n.d.). Because youth living in urban settings may be more vulnerable to gang violence, that may be a reason why PYD scores were lower for Salvadoran youth living in urban areas compared to Salvadoran youth living in rural areas.

## **Implications**

Given these findings, there are many possibilities in which the information learned about ISR and hope in relation to thriving may be manifested in various programs across El Salvador. Snyder (1994) described how hope is an essential process of connecting oneself to potential success and having higher levels of hope allows people to not dwell as heavily on their shortcomings because they are focused on accomplishing goals. Although hope may play a large role in an individual's success, hope alone may not be sufficient enough to change people's lives, but combining hope with ISR may establish a way for youth living poverty to build a better life. Because of the connection between hope and ISR, it gives practitioners in El Salvador the opportunity to not just instill hope but nurture ISR skills in youth. Enhancing agency and ISR skills in Salvadoran youth may provide them with the tools they need to build themselves a better life, and in turn promote thriving.

## **Limitations and Future Directions**

These findings must be considered in light of several key limitations of the proposed study and the CI Study of PYD more generally. Regarding recruitment and sampling, the study was limited to data from only one location, El Salvador. It would be interesting to see how other geographic locations and cultural differences may affect the results. Future studies may consider conducting this research in other nations among children of different ages experiencing various conditions. In addition, the sample consisted of adolescents participating in a faith-based program of CI, therefore participants in the study all had backgrounds with faith, which could have affected the generalizability of the study. Future research should include participants with varying backgrounds to gain a better understanding of PYD.

The study was also limited by only focusing on HFE, ISR, and PYD. There may be other variables that were not assessed in the proposed study that may have an influence; therefore, future research might study other variables, such as feeling known and loved or religious coping. In addition, the method of measurement was limited because it only used self-report assessment. When using only self-report measures, there could be confirmation bias or self-desirability bias. Future research might consider using peer or teacher reports and should consider including qualitative data collection or observational research as well. By including qualitative data through interviews, researchers may get a better understanding of the participants lived experiences, which could be beneficial for learning more about positive development because it would enable researchers with a deeper understanding of the context. In addition, including observational data would allow researchers to observe the agentic behavior of youth in the study. For example, youth enrolled in the CI program receive vocational training skills to help their future, such as tailoring, baking, and poultry production or fish farming (Compassion International, 2022). Observing these agentic behaviors would provide researchers with a deeper understanding of youth and the actions they take in their everyday lives.

In the procedure of the study, the method of data collected involved data collectors that had one-on-one sessions with children. Having these one-on-one sessions with data collectors and participants may be a limitation because there could be potential differences in how children built rapport with different data collectors, which may influence the quality of answers. Future studies might consider focusing on the potential influences that the relationship between the data collector and participant may have on positive development.

Finally, the study was limited by using only one time of measurement. In the CI Study of PYD in El Salvador, there have been two waves of data collected, and this study focused on only

one wave of data. As the study continues, and three waves of data are available, developmental analysis could be undertaken. In addition, future studies might test latent factor models or structural equation modeling to get a better sense of how this hypothesized model fits the data and to better account for measurement error.

### **Conclusions**

Taken together, these findings contribute to the literature currently available on ISR and hope as character virtues related to thriving, as well as expand on what programs and families living in El Salvador may understand regarding ISR and hope as potential strengths to promote thriving among adolescents living in poverty. Given what developmental science knows about the effects of poverty, it is important to identify strengths that promote thriving for adolescents experiencing adversity, and my hope is that this study sheds a light on another area of potential strengths in relation to positive youth development.

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**Table 1***Descriptive Statistics*

Wave 1 of Testing (June and July 2018)		
Measure	CI Youth (N = 610; 51.1% ♀)	Counterfactual Youth (N = 589; 48.9% ♀)
Age	$\bar{x} = 13.23$ years (SD = 1.81)	$\bar{x} = 12.82$ (SD = 1.90)
HFE	$\bar{x} = 92.68$ (SD = 11.50)	$\bar{x} = 92.56$ (SD = 11.94)
ISR	$\bar{x} = 88.00$ (SD = 13.33)	$\bar{x} = 87.97$ (SD = 13.37)
PYD	$\bar{x} = 85.18$ (SD = 11.57)	$\bar{x} = 84.66$ (SD = 12.04)
Urban	69.3%	63.2%

Note: HFE = Hopeful Future Expectations; ISR = Intentional Self-Regulation; PYD = Positive Youth Development

**Table 2***Hierarchical Regression Model*

Model 1	Model 2	Model 3	Model 4	Model 5
Age	✓	✓	✓	✓
Gender	✓	✓	✓	✓
Living Location	✓	✓	✓	✓
	CI Enrollment Status	✓	✓	✓
		HFE	✓	✓
			ISR	✓
				HFE x ISR

**Table 3***Descriptive Statistics of the Continuous Variables*

Variable	<i>N</i>	Min	Max	<i>M (SD)</i>	Skewness	Kurtosis
ISR	1199	0.00	100.00	87.99 (13.35)	-1.78	4.77
HFE	1199	10.83	100.00	92.62 (11.72)	-2.25	6.04
PYD	1199	26.67	100.00	84.93 (11.80)	-1.32	2.26



**Table 4***Model 5 with the Interaction between ISR and HFE as Predictors*

Coefficient	Estimate	SE	<i>p</i> - value
Intercept	86.97	1.66	< 0.001
<i>b</i> <sub>1</sub>	-0.21	0.12	0.10
<i>b</i> <sub>2</sub>	-0.36	0.46	0.43
<i>b</i> <sub>3</sub>	0.95	0.49	0.05
<i>b</i> <sub>4</sub>	0.61	0.46	0.18
<i>b</i> <sub>4</sub>	0.52	0.02	< 0.001
<i>b</i> <sub>5</sub>	0.27	0.03	< 0.001
<i>b</i> <sub>6</sub>	0.002	0.001	0.049

*Note:*  $F(1, 1189) = 3.90, p = .05, R^2 = 0.56, R^2_{adj} = 0.553$

**Table 5***Summary of R<sup>2</sup> Δ*

Set	Predictors	<i>p</i> - value
1	Age, Gender, Living Location	< .001
2	CI-Enrollment Status	.194
3	ISR	< .001
4	HFE	< .001
5	ISR x HFE	.049