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Resilience in Ecuador

A Cross-Sectional Study of Emotional Well-being, Stressful Life Events and Protective Factors in a Group of Adult Scholarship-Holders from Deprived Areas of Ecuador

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Master's thesis in PSY3916 General Psychology
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Preface

This master's thesis marks the end of my five-year education in psychology at the Norwegian University of Science and Technology in Trondheim. The data collection for this thesis started in September 2023, and ended in February 2024. The thesis was written from August 2023 to May 2024.

I would like to thank my supervisor, Roxanna, for inspiring me, and helping the idea for the thesis come to life. Her guidance has introduced me to captivating areas of psychology, delving into topics like resilience, protective factors, and cultural differences. It was through Roxanna's previous work in Peru that I saw what I could use this opportunity to write my master thesis about. She encouraged me to use my experiences from living and volunteering in Ecuador, prompting an exciting idea to investigate resilience theories in this context. I have learned so much about the complexity of these subjects, and I am grateful for her guidance along the way.

I also wish to express my gratitude to my co-supervisor, Frederick, for his invaluable assistance in the analytical aspects of this thesis. His patient and careful explanations were greatly appreciated and has enriched my understanding of research methodologies and data analysis, sparking my enthusiasm for these intricate processes.

To both supervisors, thank you for your dedicated hours spent refining my ideas, guiding my process, and challenging me. Despite your busy schedules, you generously provided time and expertise, challenging me in improving my writing, reflections, and analyses. Supervision of writing the introduction, literature review, and discussion was mainly done by Roxanna. Data analysis was supervised by Frederick. Both contributed with feedback to the final draft.

Elise Åkernes

Trondheim, May 2024

Abstract

The purpose of this study was to investigate resilience by exploring the connections between protective factors, emotional well-being, and stressful life events in an Ecuadorian context. In the context of adversity, some people show better than expected positive outcomes of adaptation and emotional well-being. This study aimed to investigate the moderating effect of resilience on the relationship between stressful life events and emotional well-being in Ecuadorian adults, as well as group comparisons. Knowing what contributes to resilience in individuals who live in stressful environments can help further develop Mission Alliance's work in Ecuador. The sample were former and current scholarship-holders from Mission Alliance's program CUMAN, and another sample from the general Ecuadorian population. A total of 150 Ecuadorians answered the survey. The relationships between the variables were analyzed in JASP through Confirmatory Factor Analysis, independent t-tests, and moderation analysis. Results were unexpected, lacking validation of the RSA, group differences, and moderation effects. This was likely because of significant challenges stemming from sampling methods (small sample size and not representative). Additional analyses of the relationship between the variables were explored in a post hoc path analysis. The results showed that level of education significantly predicted resilience, while resilience significantly predicted well-being. Limitations of the study and relevance for Mission Alliance's work in Ecuador was discussed.

Keywords: resilience, well-being, stressful life events, young adults, Ecuador

Sammendrag

Hensikten med denne studien var å undersøke resiliens ved å utforske sammenhengene mellom beskyttende faktorer, emosjonelt velvære, og stressende livshendelser i en ecuadoriansk kontekst. Ved motgang viser noen mennesker bedre positiv tilpasning og følelsesmessig velvære enn andre. Denne studien hadde som mål å undersøke den modererende effekten av resiliens på forholdet mellom stressende livshendelser og emosjonelt velvære i Ecuador, samt gruppesammenligninger. Å vite hva som bidrar til motstandskraft hos individer som lever i stressende miljøer kan bidra til å videreutvikle Misjonsalliansens arbeid i Ecuador. Utvalget var tidligere og nåværende stipendiere fra Misjonsalliansen sitt program CUMAN, og et annet utvalg fra den generelle ecuadorianske befolkningen. Totalt svarte 150 ecuadorianere på undersøkelsen. Forholdene mellom variablene ble analysert i JASP gjennom bekreftende faktoranalyse, uavhengige t-tester og moderasjonsanalyse. Resultatene var uventede, med manglende validering av RSA, gruppeforskjeller og moderasjonseffekter. Dette var mest sannsynlig på grunn av utfordringene under rekrutteringen (liten utvalgsstørrelse og ikke representativt). På grunn av uventede resultater, og siden det er første gang disse skalaene er brukt i en ecuadoriansk kontekst, ble forholdet mellom variablene utforsket i en post hoc «path analysis». Resultatene viste at utdanningsnivå var en signifikant prediktor for resiliens, og at resiliens var en signifikant prediktor for velvære. Studiets begrensninger og relevans for Misjonsalliansens arbeid i Ecuador ble diskutert.

Nøkkelord: resiliens, velvære, stressende livshendelser, unge voksne, Ecuador

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List of Abbreviations (or Symbols)

RSA   Resilience Scale for Adults

SPANE Scale of Positive and Negative Emotions

FS   Flourishing Scale

SPANE-B Scale of Positive and Negative Emotions - Balance

SPANE-P Scale of Positive and Negative Emotions - Positive

SPANE-N Scale of Positive and Negative Emotions - Negative

SL-SLE Spanish Language Checklist of Stressful Life Events

LEVE   Listado de Eventos de Vida Estresantes

USD   United States Dollar

AMAS   Alliance Microfinance AS

CUMAN Comunidad Universitaria de Misión Alianza Noruega

SOC   Sense of Coherence (scale)

HSCL-25 Hopkins Symptom Checklist-25

SES   Socioeconomic Status

SRRS   The Social Readjustment Rating Scale

NSD   Norwegian Center for Research Data

JASP   Jeffreys's Amazing Statistics Program

ML   Maximum Likelihood

CFA   Confirmatory Factor Analysis

RMSEA Root Mean Square Error of Approximation

CFI   Comparative Fit Index

TLI   Tucker-Lewis Index

df   degrees of freedom

NTNU   The Norwegian University of Science and Technology

SEM   Structural Equation Modeling

Introduction

Ecuador

Ecuador is a middle income-country located on the northwestern coast of South America, with a population of 16 938 986 (INEC, 2022). Ecuador boasts diverse natural landscapes, including beaches, the Amazonian jungle, and volcanoes. Despite its richness in nature, Ecuador is one of South-America's poorer states. In Ecuador, a person is considered poor if their per capita family income is less than USD 88.72 per month. About 25% of the Ecuadorian population fits into this grouping. Extreme poverty is categorized at a per capita family income of less than USD 50.00 per month. Around 8% of the national population in Ecuador live in extreme poverty (INEC, 2022).

Although Ecuador experiences significant poverty levels, it is categorized as an upper middle-income country, due to its Gross National Product (GNP) being 6301.3 USD (World Bank, 2022). The exportation of oil has been their economic advantage since 1972 (Leifsen & Jacobsen, 2023). However, up until the late 90's the country experienced several economic crises and instability. By the end of 1999, the Ecuadorian currency "sucre" had rapidly lost its value, and the country was headed towards hyperinflation. This ended in full dollarization (The UN-Association, 2023). A lot of people lost their trust in banks because of this period, due to loans not being paid back etc. (Beckerman, 2001). This shows the country's external dependence in terms of the economy. Currently, Ecuador faces significant international debt, and endemic inequality persists within the country (The UN-Association, 2023).

Inequality refers to how household income is shared in society. The Gini Coefficient is the most used measure for inequality, where 0 equals perfect equality and 1 perfect inequality. Ecuador's Gini Coefficient for 2022 was measured at 0.466 (INEC, 2022b). According to the United Nations definition, a Gini index of less than 0.2 represents perfect income equality, 0.2-0.3 represents relative equality, 0.3-0.4 adequate equality, and 0.4-0.5 a big income gap.

A Gini coefficient exceeding 0.5 represents a severe income gap, indicating the warning level of the Gini coefficient 0.4 (Teng et al., 2011). It is noteworthy that Ecuador's Gini coefficient surpasses this warning level, signifying substantial income gaps among its citizens.

Ecuador suffers from inequality, great differences between poor and rich, high levels of unemployed citizens, inflation, political disruption, and corruption (The UN-Association, 2023). The country's security situation worsened after the start of COVID-19, as the Government has declared several states of emergency since 2021 because of gang-related violence and criminality. The homicide rate has increased to almost 16 per 100,000 citizens. These issues make security a big concern for many Ecuadorians (Human Rights Watch, 2023). Also, the persistent economic disparities stem from prolonged economic crises and longstanding issues the country has grappled with over the years. Many Ecuadorians live with short-term contract jobs for just a few weeks or months, others try earning money through small sales at traffic lights or starting small businesses (Mission Alliance, n.d.). These circumstances fail to lay the groundwork for a secure and steady future for the majority, thereby continuing to influence crime rates, political disruptions, and inequality.

Young people in Ecuador (between the ages of 15-29) represent about 25% of the total population (INEC, 2022a). Before the pandemic, Ecuadorian youth were likely to work in informal and low-skilled jobs. The youth unemployment rate was high, especially for women (World Bank, 2021). The amount of teen pregnancies among young women in Ecuador has increased in recent years, with 111 births per 1000 adolescent girls (15-19 years old). This is the highest number in Latin America (Herrán & Palacios, 2020). Young people in Ecuador grapple with these challenges in addition to the substantial inequalities, poverty rates, crime rates, and insecurities that afflict the country in 2023.

The Ecuadorian population is highly concentrated in the two biggest cities: Guayaquil and Quito, the last being the country's capital. Guayaquil has high crime rates, poverty, and

security issues, as well as problems such as bombings, gang violence, drugs and corruption being major concerns that augmented in 2021 (Human Rights Watch, 2023). These issues have made the work of Mission Alliance in Guayaquil difficult, resulting in the decision to send the Norwegian envoys home safely (K. A. Løkslid, personal communication, 22 November 2022). In January 2024, these same issues resulted in the president declaring an internal armed conflict in Ecuador, with curfew and police in the streets. This was due to heavy issues with crimes related to narcotics and gangs (Hermann & Yépez, 2024).

Mission Alliance

Mission Alliance is a diaconal Norwegian organization that has been working against poverty and injustice since 1901. Their focus areas are poverty, education, children, safeguarding against violence and assault, and strengthening civil society. Driven by a vision to reduce injustice in the world, they have since their startup developed networks in several countries. Centered on establishing a sustainable network of local individuals, their work emphasizes community functionality without heavy reliance on the Norwegians deployed there. Operating across multiple countries, their mission is to reduce poverty and foster dignity in an unjust world (https://misjonsalliansen.no/en).

A primary idea of their focus in the nations of operation involves reducing poverty by creating employment. Mission Alliance owns a non-profit microfinance management company called Alliance Microfinance AS (AMAS), that supports better livelihood for poor and disadvantaged people by giving access to loans, savings, insurance, and other financial services (Alliance Microfinance AS, n.d., https://amas.as/). Mission Alliance has established "Banco D-Miro", a non-profit microfinance management company in Guayaquil, Ecuador, providing microfinance services to those without access to traditional banks. With a presence since 1994, Mission Alliance is respected and focuses on improving livelihoods by fighting poverty and inequality (Alliance Microfinance AS, n.d., https://amas.as/).

Another institution established by Mission Alliance in Ecuador is a center for mentally and physically challenged children, called Centro Creer, in Guayaquil. They also frequently host football practices for children and work closely with hospitals and other health institutions that are financially supported by the organization. Some other focus areas include establishing safe support groups for women, where they can share experiences, such as dealing with the rising amount of teen pregnancies. These groups also aim to motivate women within a culture where male dominance, often known as "macho culture", is common (Misjonsalliansen, 2023; Mission Alliance, n.d.).

As mentioned, since 2021 the security situation in Guayaquil has gradually worsened. As a result, Mission Alliance first returned volunteers home to Norway earlier than planned, in April 2023. The same month, the Norwegian envoys and their two children were also sent home, leaving behind their work at the office in Guayaquil. This highlights the difficult experiences and life stress that the general population in this area live (Hegertun, 2023). However, since Mission Alliance is a well-established organization in the city, their work continues, and it is led by local employees. Another area of their work is the follow-up and leadership-training of the student group that is part of Mission Alliance's scholarship program "CUMAN".

CUMAN

One of Mission Alliance's main areas of work in Ecuador is through education. Over 20 years ago they started a scholarship program for young students called CUMAN in Guayaquil. CUMAN stands for "*Comunidad Universitaria de Misión Alianza Noruega*" (Eng: University Community of Mission Alliance Norway). Their premise is that education, both regular education and higher education, is a safe way out of poverty, and into a better future for young adults in Ecuador. Despite the existence of higher education institutions, youths in

urban areas of Guayaquil cannot access higher education due to the costs associated with education for them and their families.

The scholarship is given to a small group of students each year, approximately 10-12. To be admitted to the program, the student must submit an application to Mission Alliance. Candidates must fulfill certain admission requirements: they must have little economic resources, be between 18-22 years old, and at the beginning of their university education. They should also be single (not married), show interest in local community development (for instance churches, university) and show "good social intelligence", this means that they can demonstrate skills at creating relations. These requirements are evaluated subjectively by the people working on the CUMAN scholarship in Mission Alliance's local office (K. A. Løkslid, personal communication, 22 November 2022).

In addition to fulfilling the mentioned requirements, the candidates must include a certificate from the pastor of the church they belong to, along with a diploma of their grades from school. After the first round of evaluation, pre-selected candidates are called in for an interview, and then they are visited in their homes. During this home-visit, the Mission Alliance evaluators meet the candidate and their family, and often they get the last confirmation that the candidate will be admitted into the scholarship program. Mission Alliance then provides them with economic support in finishing their education, while involving them in meetings and leadership training. The Norwegian envoys, operating from the Mission Alliance offices in Guayaquil in 2022, provided details regarding this process and requirements for the CUMAN scholarship. However, as previously noted, they had to return to Norway due to the increasingly challenging security situation (K. A. Løkslid, personal communication, 22 November 2022).

Summary and Introduction to the Concept of Resilience

The student group of scholarship-holders CUMAN comes from a context of disadvantages, deprivation, and poverty in Ecuador. Despite this, they are enrolled in higher education, with the help of Mission Alliance. In the process of receiving this scholarship, the students must show persistence, good social skills, and community engagement. Considering the requirements and process to receive this scholarship, we hypothesize that this group has a high level of protective factors of resilience. This will be further discussed later, but first, an in-depth explanation of the framework and theory behind resilience will be presented.

What is Resilience?

Resilience is a multidimensional construct that is empirically investigated when protective factors are initiated in contexts of stress (Luthar et al., 1993). It is theorized that individuals' ability to activate protective factors of resilience can prevent negative outcomes in a person's mental health (Morote et al., 2017). To address resilience processes, there must be some form of adversity and stress in the life of the individual. Resilience may increase the probability of positive outcomes when an individual is exposed to a stressful environment and decrease the negative outcomes in terms of mental disorders. In other words, protective factors of resilience can provide the individual with the ability to use family, social, and external support systems to cope better with stress (Friborg et al., 2003).

Historically, resilience was studied when individuals or groups face negative life events, such as survivors of war, violence, or natural disasters (Herrman et al., 2011). The focus shifted away from negative life events, high risk and adaptational failures, into a more positive outlook. A focus on positive adaptations, and the antecedents to positive outcomes, is an important notion in the framework of resilience. This approach in research is called salutogenic, the study of health maintenance processes, rather than disease (Harrop et al., 2006). The emphasis is not on what has deteriorated in the life of individuals, but what are the

protective factors that have helped these people lead a more resilient life, despite facing adversities.

Protective Factors

Protective factors are positive elements in the individual's life that make them more likely to modify adversity in a positive direction (Luthar et al., 2015). Three main categories of protective factors are often used in research: the individual level, family level, and community level (Friborg et al., 2003; Harrop et al., 2006; Masten & Garmezy, 1985). At the individual level, personal attributes like self-efficacy and autonomy are considered protective factors. At the family level, caregivers that show warmth, trust and emotional responsiveness are regarded as elements that provide protective factors. At the community level, external resources outside of the family that show reliability and support are seen as protective factors, such as qualified and empathic adults in school (Luthar & Cicchetti, 2000; Masten & Garmezy, 1985). Protective factors are seen as the opposition to risk factors. Risk factors are elements in individuals' lives that make them more inclined to develop health problems later in life, whereas protective factors modify adversity in a positive direction.

A well-studied protective factor is self-efficacy, a psychological trait that can contribute to resilience (Pradhan & Kumar, 2021). The term was presented by Albert Bandura in 1997, as the belief that one can achieve what they set out to do. People with high self-efficacy are generally thought to be more effective, healthier, and more successful than those with low self-efficacy (Bandura, 1997). This is because people tend to do what they believe they are capable of, and not what they think they are going to fail at. Believing in yourself might make you perform better, and thus achieve more than if you limit yourself, as people with low self-efficacy tend to do. Self-efficacy, as a personal attribute, can be considered a protective factor, given that individuals with elevated self-efficacy tend to enjoy better health and mental well-being.

Research shows that the parental care provided to children greatly affects them later in life. Sensitive, responsive, and consistent parents show their children that they are safe, and their needs will be taken care of (Hostinar & Miller, 2019). The quality of parenting is considered one of the most important protective factors for children (Masten & Garmezy, 1985), providing the individual with their main support system and feeling of belonging. However, children who grow up in homes where their parents or caregivers show less sensitivity towards their feelings, or are abusive, are more likely to experience a constant level of threat and stress (Hostinar & Miller, 2019). This will be further presented under "Adversity and Stress in the Context of Resilience Theory".

Human development begins as early as inside the womb. Early experiences related to parenting and family conditions contribute to how the individual develops different types of protective factors. The economic status of families impacts children and their development, through influencing the well-being of parents and subsequently shaping their parenting practices (Conger et al., 1994; Elder & Caspi, 1988). Consequently, children are more likely to encounter difficulties in fostering protective factors within families affected by poverty and social marginalization due to observed decreased parental sensitivity in such contexts. This correlation between family economics, parental education, and child mental health problems was also substantiated in a 2014 study (Bøe et al., 2014).

In addition, external support systems outside of the family are important for development. Protective factors in the community are meaningful for establishing mental health. Having a positive relationship with at least one adult outside of the family, for instance, in the extended family or in school, seems to contribute to a healthy development (Luthar & Cicchetti, 2000). Experiencing social support, both from family and external resources, helps to protect individuals while enhancing self-esteem, increasing their perceptions of control over the situations they are presented, and strengthening their sense of

security (Luthar & Cicchetti, 2000). Poverty may lead to social deprivation, which again may cause individuals to struggle to develop a positive adaptation to adversity.

The indirect effects of poverty may contribute to limited access to resources, opportunities, and healthcare-services (Shean, 2015). Poverty, diminished social competence and worsened well-being can collectively hinder an individual's ability to navigate life and access opportunities, ultimately impeding their capacity to contribute to society. This can, in turn, further undermine their overall development and weaken their resilience to future stressors, as it prevents the accumulation of protective factors through the cultivation of personal attributes and social relationships.

Model in the Resilience Scale for Adults (RSA)

As a concept, resilience is multidimensional. It covers many aspects of an individual's life, and different abilities that they possess. The resilience framework focuses on positive outcomes, not only negative adaptational ones, and the antecedents to the positive outcomes (Luthar & Cicchetti, 2000). It is highly based on the idea of protective factors, not one specific factor or trait that an individual possesses and uses to handle adversities (Luthar & Cicchetti, 2000). On the contrary, resilience is positive adaptation despite adversity supported by multidimensional protective factors that can be defined in many different areas of life. Because of this, researchers long struggled to find a reliable and valid measurement for resilience.

As of today, many different measurements for resilience have been developed, but few have demonstrated good validity and reliability, and often their items and measurements on protective factors were one-sided, not adequately focusing on examining resilience across multiple levels (Windle et al., 2011). As agreed upon by many researchers, protective factors are categorized in three categories: personal, family, and external resources (Friborg et al., 2003; Harrop et al., 2006; Masten & Garmezy, 1985). Most of the resilience scales evaluated

by Windle et al. (2011) were criticized for emphasizing personal attributions over family and community importance. However, the Resilience Scale for Adults (RSA) was one of five scales that was evaluated positively for acknowledging the significance of all three protective categories (Windle et al., 2011). The RSA has been used to assess protective factors of resilience in several studies, and has shown good psychometric and cross-cultural properties (Anyan et al., 2019; Cowden et al., 2016; Hilbig et al., 2015; Hjemdal et al., 2011, 2015; Kormi-Nouri et al., 2013; Morote et al., 2017).

General Description of the RSA

The Resilience Scale for Adults (RSA) was first developed in Norway (Hjemdal et al., 2001). The aim of this scale was to find a way to measure the presence of protective factors including personal attributes, family cohesion and external resources. In the first version they used 45 items, categorized into 5 subcategories: *Personal Competence*, *Social Competence*, *Social Support*, *Family Coherence*, and *Personal Structure* (Hjemdal et al., 2001). This preliminary version of the scale was assessed in a Norwegian sample, confirming the construct validity through positive correlations with measures of healthy adaptation (Sense of Coherence-scale (SOC)), and negative correlations with symptoms of anxiety and depression (HSCL-25) (Friborg et al., 2003; Hjemdal, 2007).

Since its development, it has been reviewed and altered, ending up with the existing 33 items categorized in 6 subscales evaluating independent protective factors; *Perception of Self, Planned Future, Social Competence, Family Cohesion, Social Resources,* and *Structured Style* (Friborg et al., 2009). The initial factor "*Personal Competence*" was split into two new factors: "*Perception of Self*" and "*Planned Future*". This was based on unpublished data that indicated that two factors might describe the data better. Therefore, three items were added to "*Personal Competence*", to facilitate the remodeling of two factors (Friborg et al., 2005), ending up with "*Perception of Self*" (views of their strengths and abilities) and "*Perception of*

future" (beliefs about opportunities for realizing plans and goals). These factors were later

renamed: *Perception of Self*, and *Planned Future* (Hjemdal, 2007).

      Perception of Self evaluates the individual's belief in their capacity to solve or handle

adverse life circumstances. *Planned Future* assesses the respondent's ability to have a

positive outlook on their future, make plans, develop clear future goals, and their confidence

in success. *Social Competence* asks about the capacity to engage in social settings,

interactions, and create friendships. This category is related to establishing and maintaining

social relations and networks, and measures social aptness and flexibility. *Family Cohesion*

evaluates the presence of shared values within the individual's family, together with a similar

view of the future, family loyalty and recognition. *Social Resources* focus on whether the

individual has other people in their life outside of family that may provide support and

encouragement when needed. *Structured Style* assesses goal-directed behavior, their

preference for routines in their life, planning and having an organized approach to tasks

(Anyan et al., 2019).

      The RSA structure of six factors is based on the three categories of protective factors:

personal attributions, family cohesion, and external resources (Friborg et al., 2003; Harrop et

al., 2006; Masten & Garmezy, 1985). The subcategories *Perception of Self (*6 items*), Planned

Future (*4 items*), Social Competence (*6 items*)*, and *Structured Style (*4 items*)* reflect personal

attributions of the individual that are considered qualities that typically resilient people

inhabit. These are also called the intrapersonal factors (Morote et al., 2017). The two

remaining categories consist of items regarding *Family Cohesion (6 items)*, and *Social

Resources (7 items)*, also called interpersonal factors (Morote et al., 2017). The structure of

six factors has been retested using Confirmatory Factor Analysis in Italy, Lithuania, South

Africa, and Peru (Capanna et al., 2015; Cowden et al., 2016; Hilbig et al., 2015; Morote et al.,

2017), confirming the goodness of the 6-factor RSA model. In line with expectations, the

connections revealed negative correlations to hopelessness and psychological distress, alongside positive correlations to subjective well-being, confirming the construct validity. This supports the idea that resilience, measured by the presence of protective factors, is associated with good adaptation and well-being (Hjemdal, 2007).

In the initial stage of development, the authors decided to change the item's format from a Likert scale to a semantic differential scale. The original items were positively worded, which is consistent with resilience research. Nevertheless, the potential for acquiescence bias, the tendency to respond in a consistently affirmative or negative manner, was acknowledged as a possible concern. They decided to change the response format to a semantic differential scale, with the psychometric properties still intact (Friborg et al., 2006).

The RSA in Different Cultural Contexts

In 2011, the Resilience Scale for Adults was critically evaluated by Windle, Bennet and Noyes and received praise for being one of the best in terms of psychometric ratings. However, it was criticized for its lack of cross-cultural validity (Windle et al., 2011). Since then, the RSA has been validated in five different countries, and has been translated into seven languages, including Spanish. Different cross-cultural studies have been executed in Brazil, Iran, Australia, Lithuania, Italy, South-Africa, Belgium, and Peru, thereby providing more evidence for its cross-cultural relevance (Capanna et al., 2015; Cowden et al., 2016; Hilbig et al., 2015; Morote et al., 2017).

In cross-cultural studies, it is essential to evaluate diverse psychometric concepts. Ensuring that the test or survey works similarly across groups and cultures is important. Assessing scales in different cultural contexts is essential to test the instrument's measurement invariance, providing insights into whether individuals from different countries interpret the items uniformly. At the basic level, configural invariance ensures that the basic organization of the constructs is supported in both cultures. Next, metric invariance assures

that each item contributes similarly to the latent construct across groups. During data analysis, the factor loadings are constrained to be the same across cultures/contexts, aiming for a score of e.g. 5 to signify the same concept in another group. Lastly, scalar invariance examines whether differences in item means are attributed to variations in the latent variable mean, rather than differences in how the item works across cultures (Putnick & Bornstein, 2016). In essence, it ensures that a common reference point exists: if both groups score 3, it should mean the same in both cultures.

The meaning of resilience for an individual varies across different cultures, and different countries may value different positive or negative outcomes of adaptation. Scalar invariance can for example mean that higher education is seen as a favorable outcome in Western countries, while it may be ranked lower on the success-scale in other countries, where education is not free (Windle et al., 2011).

In the Belgian validation study of the RSA, they confirmed the 6-factor structure, as verified in the Norwegian comparison sample, thereby supporting configural invariance. However, the metric invariance was only partially supported, reporting significantly different factor loadings for the items on the factor Structured Style between the Belgian and the Norwegian sample. Removing the items belonging to this factor resulted in better results, confirming that the subjects from both the Belgian and the Norwegian sample interpreted the item wording similarly. Complete scalar invariance could not be confirmed, although such occurrences are infrequent, hence it was not regarded as a critical flaw (Hjemdal et al., 2011).

The RSA in a Latin American Context

There are few studies about resilience with the RSA in the context of Latin-American Spanish-speaking countries. In 2015, the RSA was used in a Brazilian study with a Portuguese-speaking sample (Hjemdal et al., 2015). They reported that the RSA was valid in a Brazilian population, and the results correlated positively with SOC (Sense of Coherence, a

general positive intrapersonal adjustment) and negatively with HSCL-25 (symptoms of anxiety and depression), confirming the construct validity of the RSA-scale (Hjemdal et al., 2015).

Further, the Brazilian validation study tested for measurement invariance of the RSA. Because the initial six-factor RSA model was deemed satisfactory in both cultures, configural invariance was sufficiently supported. Metric invariance was confirmed, reporting comparable factor loadings, meaning that a one-point higher raw score on the RSA corresponds to an equal amount of change in the latent trait in both samples. They reported that both the item's wording and the response scales were interpreted similarly in Brazil and Norway (Hjemdal et al., 2015). Scalar invariance was considered small, as 7 of 33 items were reported as causing non-invariance. This means that 21% of the items could have a different meaning to different people in the sample. However, these results are considered small, emphasizing that complete scalar invariance seldom is supported in psychological measures, and they deemed comparable factor loadings (metric invariance) most important (Hjemdal et al., 2015).

In addition, the Resilience Scale for Adults has been assessed in Peru in 2017. Here they investigated the psychometric properties of the scale in a Spanish-speaking context for the first time, to see if the scale was valid in the Peruvian culture. They found that the results contributed to the understanding of resilience as a multidimensional concept of protective factors. In the Peruvian study, they included measures of stressful life events and psychological illness that confirmed the external validity, with results showing that the protective factors measured by the Spanish version of the RSA explained the amounts of variance in anxiety and depression above other relevant variables such as life stress, age, education, and gender (Morote et al., 2017). Both these results, and the ones from the Brazilian sample, support the idea that resilience measured by the RSA predicts good mental health, and in return may prevent negative outcomes in South American groups of adults.

We expect to further contribute to the validation of the RSA through this study, in yet another Latin American context. To our knowledge, this will be the first time the RSA is used to evaluate protective factors of resilience in Ecuador. This study will further test the validity and reliability of the RSA, while also discussing other related topics such as the influence of education on an individual's resilience level. In Peru, they found that this was not the case for the Peruvian sample (Morote et al., 2017). Here we will further comment on the importance of Education because of the focus on Mission Alliance and their experience on the positive impact of higher education for young adults in Guayaquil, Ecuador.

The RSA is copyrighted and requires permission from the authors to use it for studies. The RSA was translated into Spanish and revised by two linguists and certified translators in Peru (Morote et al., 2017). This same version is used in the present study.

Adversity and Stress in the Context of Resilience Theory

Research has demonstrated that protective factors of resilience minimize negative mental health outcomes that may come when individuals experience stress. In terms of stress, there are many different definitions. Life stress, or adversity, is something that exists in the lives of every individual. However, it is important to distinguish life stress from other definitions and types of stress. Adverse situations and/or irritations in daily life may cause some form of stress reaction, which is a physiological response that activates the sympathetic nervous system. These stressors are studied as "daily hassles". Daily hassles are for example traffic jams, or a disagreement with your significant other (Carr & Umberson, 2013). This "alarm reaction" is an adaptive response to danger that makes the body ready to act in response to a stressor. In defining stress, we often distinguish between "stressor" (the stimulus causing the reaction) and "stress" (the response to the stimulus) (Schwarzer & Schulz, 2003).

Life stress pays more attention to the stressor causing a stressful life *situation*, the situation being the stimulus (Schwarzer & Schulz, 2003). Certain stressful life events are seen as

normative, different transitions that are likely to happen in life, such as school transitions, marriage, childbirth, or the death of parents. On the other hand, stressful life events may also be non-normative events that are not likely to happen to every human being, such as disasters or trauma (earthquakes, accidents, terror, crime, war etc.) (Schwarzer & Schulz, 2003). In the context of Ecuador and CUMAN, people likely encounter a heightened frequency of stressful life events. They experience the typical normative stressors experienced by any other human beings, including school transitions, marriage, and deaths in the family, while also grappling with the security challenges and prevalent poverty in Ecuador.

Socioeconomic status (SES) may influence health outcomes, and a lower SES can contribute to higher levels of life stress. SES is a multidimensional construct that is often defined based on three indicators: income, education, and occupational status. Additionally, in recent years factors like subjective social status and neighborhood SES have been included in said definition. Having a low socioeconomic status is closely linked to higher rates of various health problems (Hostinar & Miller, 2019). Children who grow up in families of low SES are at a higher risk of negative developmental outcomes, such as emotional and psychosocial development issues (Bøe et al., 2014; Bradley & Corwyn, 2002; Reiss, 2013).

A longitudinal study from 2013 followed children from families living in poverty, revealing that they displayed lower overall self-regulation skills already from the age of 4. This tendency persisted into adolescence (Hostinar & Miller, 2019). Self-regulation skills serve as a protective factor among personal attributions, guarding individuals against deteriorating mental health. The economic hardships often associated with lower socioeconomic status contribute to an increased likelihood of harsh parenting, creating an environment where children may face constant threat levels due to less sensitive or abusive caregivers. This continuous perception of threats and insecurity triggers a prolonged activation of the stress-response system (Hostinar & Miller, 2019). The presence of constant

threat levels underscores the potential for worsened mental and physical health in children navigating adversities. Therefore, the interaction of socioeconomic factors, parenting dynamics, and self-regulation collectively shapes the well-being of children growing up in such challenging environments.

Poverty and Economic Satisfaction

Poverty, financial deficiency, and restricted standards of living were significantly negatively correlated to psychological well-being in a study from Switzerland (Vetter et al., 2006). A study from Chile reported a strong relationship between acute income drop and the risk of mental disorders. This study also reported that having a lower level of education and poorer housing quality had statistically significant correlations to common mental disorders (Araya, 2003). Although facing stressful life events such as a sudden decrease in income may increase the likelihood of mental disorders, research also highlights the effect on children's development when exposed to long-term poverty. Children growing up in poor families experience a lower quality of child-rearing environment. In a study from the US, children from families living in chronic poverty showed lower cognitive performance and had more behavior problems than other children. In addition, they showed lower social competence (National Institute of Child Health and Human Development Early Child Care Research Network, 2005).

There are many ways to assess people's economic situations. One way is through asking them to subjectively evaluate themselves. This may be done as presented by Hsu (2010), where two questions assess their economic situations: one question about the economic situation they lived in as children, and another question asking them how satisfied they are with their economic situation now. Hsu found that economic satisfaction played an important role in life satisfaction among elders in Taiwan, consistent with existing results

from other studies (Hsu, 2010). These measures of economic status are used in the present study.

Measuring Life Stress - SL-SLE

Life stress is connected to mental health issues (Bøe et al., 2018). As mentioned, during development, children are influenced by their caretakers and life situations. Experiencing long-term poverty, constant levels of threat, or many stressful life events, may result in a worsened mental health. Resilience helps minimize health problems related to stress (Hostinar & Miller, 2019). Individual abilities such as self-regulation, parental warmth, and external support systems are part of making individuals less likely to develop mental health issues. This is linked to the protective factors that resilience measures. However, poverty, social exclusion, family limitations and the chronic stress that this may bring into the lives of individuals, are greatly related to negative mental health outcomes (Bøe et al., 2018; Reiss, 2013).

There is no easy way to measure stress, and researchers have struggled to find methods that are reliable for the exact stressor and reaction to stressor. Biologically, one can measure the activation of the stress-response system through heart rate and blood-pressure. Self-reports are also common to assess stress responses (Schwarzer & Schulz, 2003). In the context of life stress as events, it is harder to measure the reaction to stressors, as they increase over time. In terms of human development, and the development of protective factors, life stress may be factors such as poverty, social inequality, marginality from childhood and onto adult life, with impact on the family and the way you are brought up.

In 1967, Holmes and Rahe put together a list of life events that they attempted to measure in their severity by ranking them (The Social Readjustment Rating Scale - SRRS). Here, life situations like marriage, detention in jail or institution, and death of spouse were given individual values in a rating questionnaire. This is a well-established scale that has been

used for decades in measuring life stress (Morote Rios et al., 2014). The limitation here is that individuals may have very different subjective rankings of the importance of each life event. Whether or not an event was desirable, they are still seen as stressful, therefore both positive and negative life events are included. The experience of events may vary from person to person: some experience divorce as the start of a depression period, while others view it as freedom and experience a greater life satisfaction (Schwarzer & Schulz, 2003). However, the SRRS show reliability and validity with promising results (Morote Rios et al., 2014).

Some stressful life events are perceived and valued differently in different cultures. Due to lack of research on life stress in Latin America, a relevant checklist for this culture was developed in 2014. The instrument Spanish-Language Checklist of Stressful Life Events - SL-SLE (Esp: Listado de Eventos Estresantes - *LEVE*) was presented as a stressful life events checklist specifically for the Latin American/Peruvian context. Aiming to develop a contextually relevant, short list of stressful life events for Peruvian adults, they based the list off the SRRS (Holmes & Rahe, 1967), and made changes and additions. The results were an empirically supported and culturally relevant short list of stressful life events, contextually relevant for Peruvian adults, called the SL-SLE (Esp: LEVE) (Morote Rios et al., 2014).

The SL-SLE does not measure objective stress but identifies potentially harmful life events for the emotional well-being of adults in Peru. The SL-SLE also demonstrates satisfactory psychometric characteristics and capacity in identifying adults at risk of developing symptoms of anxiety and depression (Morote Rios et al., 2014). This list is used in the present study.

Positive adaptation, Mental Health and Well-being in the Context of Resilience Theory

The relationship between life stress and negative health outcomes has mounting evidence, indicating that experiencing a lot of life stress may lead to more risk of negative mental health outcomes (Schneiderman et al., 2005). Having good mental health does not only mean the

absence of mental disorders, but a state of mental well-being, where you can cope with stress, realize your abilities, excel in learning, and contribute to your community (World Health Organization, 2022). Emotional well-being is an important component of sound mental health, encompassing the experience of positive emotions and a general sense of well-being.

Positive emotions produce important beneficial effects during times of stress (Ong et al., 2006). This contributes to supporting individuals' well-being, by interrupting the ongoing experiences of stress, and preventing delays in adjusting to future stressors, therefore they are an important part of what it means to be resilient (Ong et al., 2006). When experiencing a stressful life event or situation, positive emotions support coping behaviors, while also developing a long-lasting resilience to better cope with future stressful life events (Arantzazu Rodríguez-Fernández et al., 2018).

Estimating positive emotions can be achieved using a range of diverse approaches. Among the most efficient ways of assessing positive emotions are self-reported feelings. It is considered a reliable and valid method, while being very flexible (Lucas et al., 2009). By asking individuals to report how often they experience different emotions, one can efficiently gather data. However, participants' answers may be influenced by social desirability, and unconsciously be unable or unwilling to report true emotional experiences. Despite these limitations, self-reports likely provide the best insight into the experience of emotions within individuals over time (Lucas et al., 2009). Different scales employ various terminology and frameworks for categorizing emotions. However, as long as a broad spectrum of positive emotions is sampled, different scales can produce consistent results regarding positive emotions (Lucas et al., 2009). Concerning the time frame, researchers have to be careful in capturing emotional responses, not mood or personality differences. The shorter the time frame evaluated, it is more likely to capture emotional responses, while a longer time frame more often results from personality (Lucas et al., 2009).

Berend et al. (2020) aimed to assess the potential role of flourishing, particularly positive emotions, as resilience factors for perceived stress and stress symptomatology during a stressful test phase. The results were consistent with the salutogenic approach and positive psychology research, illustrating that positive emotions and human flourishing serve as resilience factors concerning stressful life events (Berend et al., 2020). Feelings of flourishing include social-psychological functioning such as positive relationships, feelings of competence, having a purpose and meaningful life, and being engaged in one's interests (Diener et al., 2010). In a study conducted in the USA, traits like emotional regulation, emotional awareness, sense of purpose, and optimism were found to be promising individual protective factors of well-being in a sample experiencing adversity (Hamby et al., 2018). These align with characteristics associated with flourishing.

Frequently, a combination of self-report measures is used to evaluate emotional well-being. Here, we utilize two scales: the Scale of Positive and Negative Emotions (SPANE) and the Flourishing Scale (FS). SPANE assesses 6 different positive emotions as well as 6 negative emotions, in a general evaluation of the emotional state. This is part of reflecting the full emotional experience of the respondent, while not setting cultural limitations with different weights of a certain emotion, as some emotions may be valued distinctively in different cultures (Diener et al., 2010). Another advantage of the SPANE is the focus on the amount of time said feelings are experienced, instead of asking about intensity (Diener et al., 2010).

Flourishing is another dimension of positive emotional state. It highlights aspects of emotional well-being that are deemed important. Social relationships are integral to achieving good mental health, emphasizing the importance of not only feeling supported within these relationships but also experiencing a sense of reciprocity in providing support to others. The Flourishing Scale addresses different social-psychological functional aspects of life, from a

subjective standpoint, including both social relationships aspects, and the involvement in meaningful activities (Diener et al., 2010).

Together, the SPANE and FS is deemed a valid way of measuring emotional well-being, with high reliability and high convergence with similar scales (Diener et al., 2010), and is used together in the present study to measure the respondents' emotional well-being.

Research Questions

This study investigates resilience by exploring the connections between protective factors, stressful life events, and emotional well-being in an Ecuadorian context. We focus on two samples: former and current scholarship-holders from the Mission Alliance program "CUMAN", and a sample from the general Ecuadorian population.

In the context of adversity, individuals experience stress and suffer its consequences, however, some people show better-than-expected positive outcomes of social adaptation and emotional well-being. We aim to investigate if protective factors of resilience have a significant effect on the relationship between stressful life events and emotional well-being in Ecuadorian adults, especially in those participating in the program CUMAN of Mission Alliance. In addition, we aim to discover important information about the level of resilience in Ecuador, regarding Mission Alliance's role in supporting higher education and further better social security for Ecuadorian youths. Knowing what contributes to resilience in individuals who live in such stressful environments can help further develop their work with current and future participants in the CUMAN scholarship program. Based on this, we have formulated the following research questions:

1. Can the factor structure of the Resilience Scale for Adults (RSA), The Scale of Positive and Negative Emotions (SPANE), and the Flourishing Scale (FS) be replicated in an Ecuadorian sample?

2. Are there significant differences in the levels of protective factors of resilience, emotional well-being and stressful life events between the CUMAN-group and the general Ecuadorian sample?

3. Does resilience moderate the relationship between life stress and well-being, and is this moderation effect different for participants in the CUMAN vs. non-CUMAN group?

Hypotheses

Hypothesis 1: Confirmatory Factor Analyses

   The aim is to assess and confirm whether the scales can provide us with valid and reliable information about protective factors of resilience and well-being in an Ecuadorian sample. The RSA has great psychometric properties and its six-factor model has been tested across cultures (Anyan et al., 2019; Cowden et al., 2016; Hilbig et al., 2015; Hjemdal et al., 2011, 2015; Kormi-Nouri et al., 2013; Morote et al., 2017).

   The bidimensional structure of the Scale of Positive and Negative Emotions (SPANE) and the unidimensional structure of the Flourishing Scale (FS) were originally confirmed in a sample of students from different Universities in the US and one from Singapore (Diener et al., 2010). Later, the structure of both FS and SPANE has been confirmed in several studies in Europe, Asia, and Latin-America: in Canada, Portugal, Italy, Turkey, Japan, China, India, and Peru (Cassaretto Bardales & Martínez Uribe, 2017; Giuntoli et al., 2017; Howell & Buro, 2015; Senol-Durak & Durak, 2019; Silva & Caetano, 2013; Singh et al., 2018; Sumi, 2014; Tong & Wang, 2017).

   The unidimensionality of the Flourishing Scale has additionally been supported by studies in New Zealand, Colombia, France, Spain, Greece, Russia, Iran, Brazil, Puerto Rico (Checa et al., 2018; Didino et al., 2019; Fonsêca et al., 2015; González-Rivera, 2018; Hone et al., 2014; Khodarahimi, 2013; Kyriazos et al., 2018; Martín-Carbonell et al., 2021; Ramandi et al., 2020; Villieux et al., 2016), as well as confirmation of the bidimensional structure of SPANE in Germany and China (Li et al., 2013; Rahm et al., 2017). Our hypothesis:

H1: It is expected that the factor structures of the Resilience Scale for Adults (RSA), the Scale of Positive and Negative Emotions (SPANE), and the Flourishing Scale (FS) would be supported in an Ecuadorian sample with good internal reliability and validity scores.

Hypothesis 2: Group Comparisons

For the second research question, we want to examine any group differences between the CUMAN group (former and current participants) and the general Ecuadorian sample. Ecuador has a high number of people living in poverty, social injustice, and economic inequality. In addition, problems with bombings, gang violence, drugs, and corruption are major concerns that have augmented since 2021, especially in the city of Guayaquil (Human Rights Watch, 2023). Given the amount of research on life stress and negative mental health outcomes, and the typical characteristics of the population of Ecuador, we expect that the number of reported stressful life events will be similar in both samples.

As described, participants in the CUMAN program were selected in a phased process where a mixture of personal attributes like self-efficacy, the ability to create personal relations with other individuals, the pursuit of higher education, and the interest in local community development were evaluated. In addition, general requirements such as age (18-22 years old), civil status, having started their university education, and the low socio-economic context of their families were considered. It is important to highlight that some theories and empirical research suggest that resilient individuals often pursue higher education, e.g.: longitudinal study where the majority of resilient children studied from birth pursued a higher education later on (Werner, 1989). Additionally, the program provides them with further protective resources by having an external support system (Luthar & Cicchetti, 2000; Masten & Garmezy, 1985). Therefore, we hypothesize that these are individuals with high levels of resilience and well-being:

H2.1: The CUMAN-group would report significantly higher scores of protective factors in RSA, and a higher score on well-being (FS+SPANE-B), than the general Ecuadorian sample.

H2.2: The CUMAN-group and the general Ecuadorian sample would show similar numbers of stressful life events (SL-SLE).

Hypothesis 3: Moderation

For the third research question, we will look at the moderating effect of resilience on the relationship between life stress and well-being, as illustrated in Figure 1 below. Protective factors are posited to minimize the negative effect that stressful life events have on well-being, by providing the individual with positive personal attributions, family cohesion, and social resources that strengthen their resilience (Friborg et al., 2003; Luthar et al., 2015; Morote et al., 2017). Resilience contributes to a positive adaptation to stressful life situations, which again leads to better mental health. Experiencing that you are able, successful, and capable of dealing with adversity will in turn protect your mental health and emotional well-being in future situations of adversity.

This hypothesis also assumes a negative relationship between life stress and well-being. The relationship between life stress and negative health outcomes has mounting evidence, indicating that experiencing more life stress may lead to a higher risk of negative health outcomes, and less well-being and positive mental health outcomes (Pradhan & Kumar, 2021; Schneiderman et al., 2005). Considering theories regarding life stress and well-being, we expect higher levels of stressors to be associated with worsened emotional well-being. In addition, we assume a positive relationship between resilience and well-being. Individuals' ability to activate protective factors of resilience can prevent negative outcomes in a person's mental health (Morote et al., 2017).

Figure 1

Illustration of the Moderation Effect of Resilience on the Relationship between Stressful Life Events and Well-being
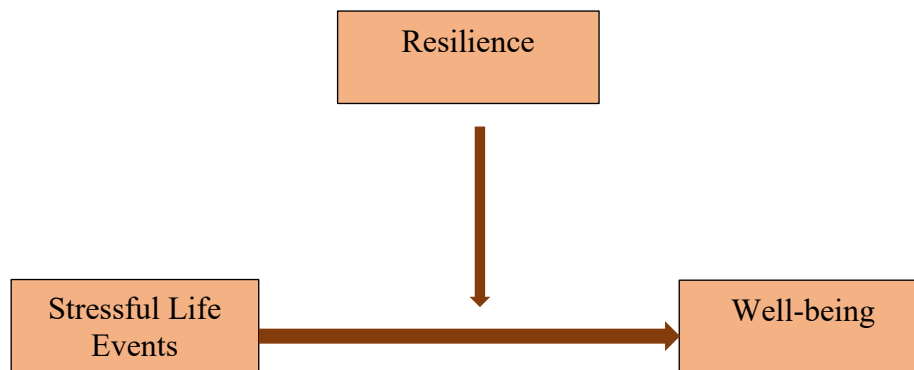
We assume that the Ecuadorian population experiences a great deal of life stress and that protective factors of resilience can minimize negative mental health outcomes in the presence of such conditions. The RSA has been used to study this in several other countries as mentioned, but this will be the first time this effect will be studied in Ecuador, to our knowledge. Our hypotheses:

Hypothesis 3.1: In the whole sample, as the level of resilience increases, the effect of stressors on well-being would become smaller or insignificant.

Hypothesis 3.2: It is expected that this moderating effect of resilience would be greater for the CUMAN sample, as this group is expected to have a higher level of resilience, and a higher level of well-being.

Materials and Methods

Data Collection

The study was approved by the Norwegian Center for Research Data (NSD). Participants were recruited through a non-probability sampling method. The requirements were to be an Ecuadorian between 18 to 40 years living in Ecuador. We wanted to gather data from a varied group with different ages, educations, participants from CUMAN (former and current) and people from the general population in the same area. Most of our contacts are from the city of Guayaquil, therefore it is expected that most participants origin from this city and share many of the same experiences. Participants were not compensated. CUMAN participants were recruited through a purposive sampling (Hazari, 2023). Due to the difficulties to reach voluntary participants with similar characteristics to the CUMAN group (i.e. a project implemented from Norway, with a researcher with few contacts in the area, no financial support for recruiting or for compensation), snowball sampling was used to gather data (Handcock & Gile, 2011; Hazari, 2023). The link to the survey was distributed to Ecuadorian citizens through contacts in Ecuador, Mission Alliance, who were then asked to further distribute the link to possible participants: current and former participants of the CUMAN program and anyone from the general population of Ecuador. They were informed about their rights and consented by answering the first question and submitting the form. Data collection continued from September 2023 until February 2024.

Exclusions

Participants with more than 10% (3 or more) missing data for the Resilience Scale for Adults (RSA) were excluded from further analysis. Within the effective sample, in participants with less than 10% missing data, the omitted responses were replaced with the mean score for the subscale the item belonged to, following recommendations from the

development of the RSA (Friborg et al., 2009). The same procedure was done for participants with one (1) missing item in SPANE and FS.

For the SL-SLE, subjects reporting between 9-16 stressful life events are considered outliers by psychometric procedures, this amount of stressors is frequently reported in war and refugees (Morote Rios et al., 2014). However, in total, 7 (5%) people reported between 9-16 stressful life events. Deeming these participants' answers as varied and truthful, they were not excluded from further analysis. This is also taking into consideration that the life events reported are likely to have happened to Ecuadorians living in Guayaquil, considering the recent events, as mentioned (Hermann & Yépez, 2024).

Instruments

As an opening question, participants were asked whether they were part of CUMAN Mission Alliance or not ("Yes" if they had been/currently were, and "No" if they were not involved in CUMAN).

Demographic Variables

They were next asked to report age, gender, and education. Participation was age-restricted, reporting from 18 to 40 years old. Gender was separated into 3 categories: male, female, and other. Education was defined by asking about their level of education, grouped into 5 categories: 1. Basic education incomplete – 2. Basic education complete – 3. Technical Career (Not University) – 4. University education incomplete – 5. University education complete.

Participants' subjective economic situation was assessed based on two questions. The first question established the participants' family's economic situation as a child, on a scale from: 1. Extreme poverty – 2. Poverty – 3. Like the average – 4. More than the average – 5. My family was rich.

Secondly, participants are asked to assess how satisfied they are with their economic situation now, on a scale from: 1. Very unsatisfied – 2. Unsatisfied – 3. Regular – 4. Satisfied – 5. Very satisfied. This is used to assess the participants' economic level, both growing up and their current status (Hsu, 2010). Some changes were made when translating the items from English to Spanish, e.g.: "Extreme poverty" and "My family was rich" instead of just "Very Poor" and "Rich").

Resilience Scale for Adults (RSA)

This scale is a self-report instrument that establishes the level of protective factors of resilience in adults. It is based on 33 questions that are categorized in 6 subcategories: (1) Perception of Self, (2) Planned Future, (3) Social Competence, (4) Family Cohesion, (5) Social Resources, and (6) Structured Style (Hjemdal et al., 2001). The questions are ranged on a 7-point scale, in a semantic differential format. Participants can score from 33-231. A high score indicates a high level of resilience. The scale is reliable (Cronbach's α from .67 to .81 and total score .88) and stable (test-retest, Pearson *r* from .73 to .80, and total score .84) (Hjemdal et al., 2006). The scale has been used in many studies in different cultures to test its cross-cultural reliability, including a Spanish-speaking Latin American context, and is a well-established scale for measuring resilience (Anyan et al., 2019; Friborg et al., 2003; Hjemdal et al., 2015; Morote et al., 2017).

Scale of Positive and Negative Emotions (SPANE)

The SPANE-scale measures the participants' self-reported positive and negative emotions over the last 4 weeks. It consists of two subcategories: (1) Positive emotions with 6 items, and (2) Negative emotions with 6 items (Diener et al., 2010). The informants respond on a scale: 1. Very Rarely – 5. Very Often or Always, as to how many times in the last 4 weeks they experienced each emotion. The scale includes both general positive and negative

feelings, thereby including certain feelings that may have different values in particular

cultures. The summed positive score (SPANE-P) can range from 6 to 30, and the negative

scale (SPANE-N) likewise. The two scores can be combined by subtracting the negative score

from the positive score, resulting in a SPANE-B score that can range from -24 to 24. The

SPANE scale shows good psychometric properties with Cronbach's α of .87 for positive

items, .81 for negative items, and .89 for SPANE-B. Together with the Flourishing Scale it is

an established and cross-culturally relevant measurement of well-being (Diener et al., 2010).

Flourishing Scale (FS)

The Flourishing Scale is a self-report scale consisting of 8 items. The items are

statements about human functioning, positive relationships, feelings of competence, and

having meaning and purpose in life. All items are phrased in a positive direction. The

participants are asked to rate how much they agree with each statement, on a 7-point scale

from Strongly Disagree to Totally Agree. Participants can score from 8 (strong disagreement

with all items) to 56 (strong agreement with all items). The FS shows good psychometric

properties with a Cronbach's α of .87 in the original study (Diener et al., 2010). Similar

results are found in other replications, such as Cronbach's α of .89 in Iranian adults.

Validation studies in Portugal, Iran, and Japan demonstrated that FS and SPANE are reliable

and valid scales (Singh et al., 2018).

Spanish-Language Stressful Life Events Checklist (SL-SLE)

SL-SLE is a checklist where participants are asked to mark any event that has happened

to them during their lives. The list consists of 20 stressful life events, negative (13), positive

(4) and neutral (3) events, uncontrollable (9) and controllable (11) events. A higher score

indicates more life stress. It is a self-report scale with 20 items. Examples of statements are

"Death of spouse", "Divorce" or "Applying for a big loan". The checklist was validated in a

similar South American context (i.e. Peru) where higher scores of adult life stress was associated with possible risks for mental health issues such as anxiety and depression (Morote Rios et al., 2014). The SL-SLE is used to measure stressors in this study.

Statistical Analysis

The hypotheses were analyzed in (JASP Team, 2024), (Version 0.18.2). Participants missing more than 10% of items in the Resilience Scale for Adults (RSA) were excluded from further analysis (3 responses or more). Missing data in the RSA were replaced with the mean score for the subscale the item belonged to, for each individual (Friborg et al., 2009). This same procedure was followed for missing data in the Scale of Positive and Negative Emotions (SPANE) and the Flourishing Scale (FS). For participants missing only 1 item in either SPANE or FS, the missing item was replaced by the mean score for SPANE-P, SPANE-N, or Flourishing Scale, respectively. In total, two (2) participants were excluded from further analysis of the RSA (>3 missing items), and 1 participant was excluded from SPANE and FS (1 missing item). Statistical significance was assumed at $p < 0.05$.

Data Inspection

Before data analysis, the dataset was inspected for multivariate non-normality and heteroskedasticity. The dataset graphs were visually inspected for outliers. Further, the normality and heteroskedasticity of the dataset was assessed to ensure more reliable data. Normal distribution holds a pivotal role in statistics, as it is an important element in the process of statistical generalization (Mehmetoglu & Jakobsen, 2022). Maximum likelihood is the default and commonly used option when there is no severe departure from multivariate normality (Mehmetoglu & Jakobsen, 2022). However, different estimators may be necessary if there is a non-normal data distribution in the sample.

Deviation from Normality: Skewness & Kurtosis

When assessing the normality of the dataset, the levels of skewness and kurtosis are important. Skewness is a lack of symmetry in the distribution. Ideally, a normal distribution would have a skewness value of 0. When a distribution is more skewed to the left, it has a

negative skewness, while more to the right is a positive skewness. Kurtosis is a measure of the pointiness of a distribution (Mehmetoglu & Jakobsen, 2022). A normal distribution typically features kurtosis levels closer to 0. Positive kurtosis suggests a distribution more concentrated or peaked in the center, creating a sharper shape, whereas negative levels of kurtosis indicate a more spread-out or flatter distribution (Field, 2018).

Shapiro-Wilk's test

Another way of assessing the normality of the sample is through comparing the scores in the sample to a set of scores that follow a normal distribution with similar mean and standard deviations. This may be done with a Shapiro-Wilk's test in JASP. If the test is not significant, it means that the distribution of the sample is not significantly different from a normal distribution. If the test shows significance, there is an indication of non-normal distribution (Field, 2018).

Heteroskedasticity in groups: Brown Forsythe's test

When inspecting the dataset for heteroskedasticity in groups, the most used test is the Levene's test. Levene's tests test the null hypothesis that the variances in the different groups are equal. If it is non-significant, it means that the variances in the data are roughly equal, and the assumption is durable (Field, 2018). JASP provides an option to select the Brown-Forsythe test instead of Levene's. Brown-Forsythe works better for groups with big differences. This test also assesses group variances based on the inverse of their sample sizes, not by the sample size itself (Field, 2018). Considering there is a big difference in the sample size of the two groups used in the t-tests for hypothesis 2, the Brown Forsythe test is applied.

Data Inspection: The Current Dataset

As shown in Table 1, tests for skewness and kurtosis were performed, showing tendencies to multivariate non-normality (significant Shapiro-Wilk tests) (Field, 2018). This

was expected; therefore, maximum likelihood estimators and robust standard error were chosen for all confirmatory factor analysis. Brown-Forsythe test is applied for the t-tests. For the Moderation Analysis, the estimates were bootstrapping based on 5000 replicants (Mehmetoglu & Venturini, 2021).

For the Resilience Scale for Adults (RSA), items 7, 19, 29, 8, 14, 3, 15, 26, 10, 22, 31, 11, 23, 28, 33, 6, and 18 were reversed. Unfortunately, due to mistakes while creating the survey, one emotion from SPANE was lost ("Bad"). Therefore, SPANE-N only consists of 5 emotions in this study, with the total score of 11 for SPANE-B instead of 12.

Data Analysis: Confirming Factor Structures

Hypothesis 1 was tested with three separate Confirmatory Factor Analyses for the three scales: The Resilience Scale for Adults (RSA), the Scale of Positive and Negative Emotions (SPANE), and the Flourishing Scale (FS). As presented in Table 1, the RSA and Flourishing Scale showed signs of deviation from normality (Shapiro-Wilk's test: $p < .001$). Levels of skewness and kurtosis were also high for the Flourishing scale (Skewness: -1.19 and kurtosis: 2.75). Because of signs of non-normal data, Maximum likelihood estimation with robust standard errors was chosen for all three Confirmatory Factor Analyses.

For the Resilience Scale for Adults (RSA), the items were placed in their corresponding subscales, creating 6 factors: Factor 1: Perception of self (6 items), Factor 2: Planned future (4 items), Factor 3: Social competence (6 items), Factor 4: Family cohesion (6 items), Factor 5: Social resources (7 items), Factor 6: Structured style (4 items).

For the SPANE, the items were placed in their corresponding subscales, creating 2 factors: SPANE-P (positive emotions, 6 items) and SPANE-N (negative emotions, 5 items). For assessing the reliability, a Cronbach's Alpha reliability analysis was performed for all three Confirmatory Factor Analyses.

Table 1

Skewness, kurtosis, and Shapiro Wilk's tests for RSA, SPANE, FS

	RSA total score	SPANE-B	Flourishing
Skewness	0.38	0.11	-1.19
Std. Error of Skewness	0.20	0.20	0.20
Kurtosis	-0.74	-0.24	2.75
Std. Error of Kurtosis	0.40	0.40	0.40
Shapiro-Wilk	0.96***	0.99	0.93***
P-value of Shapiro-Wilk	< .001	0.296	< .001

Note. * = $p < .05$, ** = $p < .01$, *** = $p < .001$

Data Analysis: Group Comparisons

To respond to hypothesis 2.1: "*The CUMAN-group would report significantly higher scores of protective factors in RSA, and a higher score on well-being, than the general Ecuadorian sample.*" two independent t-tests were performed. First with *RSA total score* as the dependent variable and CUMAN as the grouping variable. For the second t-test, well-being (FS+SPANE-B) was the dependent variable, and CUMAN the grouping variable.

Assumptions of normality of the scale's total scores were tested with the Shapiro-Wilk's test in the subgroup of CUMAN participants. Both groups showed signs of deviation from normality through a significant Shapiro-Wilk's test in the variable *RSA total score*, ($p = .034$, $p < .001$), and the CUMAN group had significant Shapiro Wilk's test for the variable *well-being* ($p = .001$). The Equality of Variances was tested with the Brown-Forsythe test, due to low sample size and group size differences (Field, 2018), showing a significant result ($p = .003$) for the *RSA total scor*e. Because of signs of non-normal data, the non-parametric estimator Mann-Whitney was applied for all group comparisons with t-tests (Field, 2018).

To respond to hypothesis 2.2: "*CUMAN-group and general Ecuadorian sample would show similar numbers of stressful life events (SL-SLE).*" an independent t-test was performed with SL-SLE as the dependent variable and CUMAN as the grouping variable.

Data Analysis: Moderation

To respond to hypothesis 3.1: "*In the whole sample, as the level of resilience increases, the effect of stressors on well-being becomes smaller or insignificant.*" a moderation analysis was performed with *stressful life events* as the predictor, *well-being* as the outcome, and *RSA total score* as the moderator. First, the predictor and moderator were mean centered so that the mean would equal 0. An interaction term was created by multiplying the mean centered variables *SL-SLE* and *RSA total score*, creating a moderating effect.

Considering both wellbeing, SL-SLE, and Flourishing showed indications of multivariate non-normality in the Shapiro-Wilk test, the estimates were bootstrapping based on 5000 replicants (Mehmetoglu & Venturini, 2021).

To respond to hypothesis 3.2: *It is expected that the moderating effect of resilience would be greater for the CUMAN sample, as this group is expected to have a higher level of resilience, and a higher level of well-being*, The same moderation analysis was done two separate times to test if the results would differ, one moderation analysis for CUMAN group, and another for the non-CUMAN group, the sample from the general Ecuadorian population. Same procedures were followed, with the estimation bootstrapping based on 5000 replicates (Mehmetoglu & Venturini, 2021).

Results

Descriptive statistics

A detailed description of the demographics is presented in Table 2 and Table 3. In total, 150 Ecuadorians answered the survey, of which 63 (42%) were men, 86 (57%) were women, and one person (1%) reported their gender as "Other". Their age ranged from 18-40 ($M =$ 27.58, $SD = 6.55$).

Level of education ranged from "Basic Education incomplete" =1 to "University Education completed" =5 ($M = 4.17$, $SD = 1.10$). 53% reported having completed their university education, 24% had incomplete university education, 12% only had basic education completed, 9% reported to have a technical career, and only two people (1%) reported to not have completed basic education.

Subjective economic situation was assessed by two estimates: the economic situation in childhood ranging from "Extreme poverty" =1 to "My family was rich" =5 ($M = 2.83$, $SD =$ 0.76) and satisfaction with the economic situation now, ranging from "Very unsatisfied" =1 to "Very satisfied" =5 ($M = 3.09$, $SD = 0.89$). 51% reported that their economic situation in their childhood was "Like the average", 28% said they lived in poverty, 17% better than average, 3% extreme poverty, and one person (1%) answered that they were rich. As to how satisfied they are with their economic situation now, the majority (43%) answered "Neutral", 29% said they were satisfied, 21% were unsatisfied, 4% were very satisfied, and 3% were very unsatisfied.

Forty-three (29%) participants had been/were currently part of the CUMAN program by Mission Alliance. One hundred and seven (71%) were not part of this program.

Table 2

Descriptive statistics of the study population (N = 150)

Age, years	
Range	18-40
Mean (*SD*)	27.58 (6.55)
Gender, *n*(%)	
Male	63 (42%)
Female	86 (57%)
Other	1 (0.7%)
CUMAN, *n*(%)	
Yes	43 (29%)
No	107 (71%)
Education, *n*(%)	
Basic incomplete	2 (1%)
Basic complete	18 (12%)
Technical career	13 (9%)
University incomplete	37 (25%)
University complete	80 (53%)
Economic sit child, *n*(%)	
Extreme poverty	5 (3%)
Poverty	42 (28%)
Average	77 (51%)
More than average	25 (17%)
Rich	1 (0.7%)
Economic sit now, *n*(%)	
Very unsatisfied	5 (3.3%)
Unsatisfied	31 (20%)
Neutral	65 (43%)
Satisfied	43 (29%)
Very satisfied	6 (4%)

Table 3 demonstrates the demographic variables distinctly for the CUMAN group and the non-CUMAN group.

Table 3

Demographics separated by groups CUMAN and non-CUMAN (N = 150)

	Age		Gender		Level of Education		Economic situation childhood		Economic situation now	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Valid	106	43	107	43	107	43	107	43	107	43
Missing	1	0	0	0	0	0	0	0	0	0
Mean	26.73	29.67	1.61	1.54	4.06	4.44	2.95	2.54	3.00	3.33
Std.Dev	6.52	6.20	0.51	0.51	1.11	1.01	0.68	0.88	0.86	0.92

Note. No = General Ecuadorian sample. Yes = current and former students of CUMAN.

Frequency and percentage for each life event in the variable SL-SLE (Stressful Life Events) are presented in Table 4, for the whole sample.

Table 4

Frequency and percentage of stressful life events in the total sample (N = 144)

	Total	
Life event	*f*	%
Death of spouse/mate	7	5
Detention in jail or other institution	16	11
Surviving a disaster (fire, flood, earthquake)	47	33
Death of close family member (parent, siblings, children)	56	39
Major injury/illness to self	23	16
Important changes at economic level	89	62
Separation of spouse/mate	15	10
Being fired/laid-off/unemployed	50	35
Being a victim of crime (assault, rape)	61	42
Experiencing a severe auto accident	17	12
Getting married (or moving in together)	22	15
Gaining a new family member (birth, adoption, grandparents)	41	29
Attempting to modify addictive behaviour of self (smoking, alcohol, drugs)	18	13

Divorce	12	8
Pregnancy	22	15
Death of close friend	43	30
Reconciliation with spouse/mate	5	4
Obtaining a major loan or home mortgage (…de alto valor)	16	11
Conflicts or violence in the family	36	25
Not getting justice from the state	31	22

Confirmatory Factor Analyses

Resilience Scale for Adults

The Confirmatory Factor Analysis of the six factor-structure of the Resilience Scale for Adults (RSA) could not be replicated due to model non-convergence. The subscales were run individually, to see their individual model fit measures. Results are presented in Table 5.

Table 5

Multiple criteria for evaluating the goodness of fit of subscales of the RSA

	X^2	*df*	CFI	TLI	RMSEA
RSA Perception of Self	31.77	9	0.85	0.75	0.13
RSA Planned Future	16.39	2	0.80	0.39	0.22
RSA Social Competence	74.10	9	0.55	0.26	0.22
RSA Family Cohesion	49.93	9	0.81	0.68	0.18
RSA Social Resources	98.83	14	0.82	0.73	0.20
RSA Structured Style	4.81	2	0.84	0.53	0.10

Note. Robust standard errors and maximum likelihood estimation.

The reliability of the RSA was good, with a Cronbach's Alpha level of .91 ($n = 148$) (see Table 9). The reliability of the 6 subscales of the RSA was good and acceptable, ranging

from 0.34 to 0.82. The subscale Structured Style showed the lowest reliability (α = .34), as reported in validation studies from Italy, Peru, and Brazil (Capanna et al., 2015; Hjemdal et al., 2015; Morote et al., 2017).

Scale of Positive and Negative Emotions and Flourishing Scale

Summary Table of multiple criteria for evaluating the goodness of fit of the Scale of Positive and Negative Emotions (SPANE) and the Flourishing Scale (FS) are presented below in Table 6.

Table 6

Multiple criteria for evaluating the goodness of fit of SPANE and FS

	X^2	*df*	CFI	TLI	RMSEA
SPANE	69.46	43	0.95	0.93	0.06
FS	23.10	20	0.99	0.99	0.03

Note. Robust standard errors and maximum likelihood estimation.

The bidimensional factor structure of the Scale of Positive and Negative Emotions (SPANE) was confirmed in the current sample. The factor model explained 69% of the variance in emotions (X^2 = 69.46; RMSEA = 0.06; CFI = 0.95; TLI = 0.93, *p* = .006). As shown in Table 7, all factor loadings were satisfactorily high (> 0.40), except for one item "Jubiloso/a" (Joyful) (0.33).

The reliability of the scale was acceptable, with a Cronbach's Alpha level of .84 for the total balance score of all 11 items (SPANE-B). The corresponding Cronbach's Alpha for the two subscales were also good: SPANE-P (α = .82), SPANE-N Cronbach's Alpha (α = .76) (see Table 9).

Table 7

Confirmatory Factor Analysis SPANE (Scale of Positive and Negative Emotions) (N = 149)

	Factor loadings	
	1	**2**
Factor 1: Positive feelings (SPANE-P)		
1.Positive (Positivo/a)	0.49***	
3.Good (Bien)	0.54***	
4.Pleasant (Agradable)	0.49***	
6.Happy (Feliz)	0.57***	
9.Joyful (Jubiloso/a)	0.39***	
11.Contended (Contento/a)	0.53***	
Factor 2: Negative feelings (SPANE-N)		
2.Negative (Negativo/a)		0.58***
5.Unpleasant (Desagradable)		0.58***
7.Sad (Triste)		0.70***
8.Afraid (Temeroso/a o Asustado/a)		0.54***
10.Angry (Enojado/a)		0.44***

Note. Robust standard errors and Maximum Likelihood estimation.

* = *p* < .05, ** = *p* < .01, *** = *p* < .001

The unidimensional factor structure of the Flourishing Scale (FS) was confirmed in the current sample. As shown in Table 6, the factor model explained 23% of the variance in emotions (X^2 = 23.10; RMSEA = 0.03; CFI = 0.99; TLI = 0.99, *p* = .284). All factor loadings were satisfactorily high (> 0.40) (see Table 8). The reliability of the scale was good, Cronbach's Alpha (α = 0.91).

Table 8

Confirmatory Factor Analysis FS (Flourishing Scale) (N = 149)

	Factor loadings
	1
Factor 1: Flourishing	
1. I lead a purposeful and meaningful life	0.93***
2. My social relationships are supportive and rewarding	0.84***

3. I am engaged and interested in my daily activities	0.83***
4. I actively contribute to the happiness and well-being of others	0.81***
5. I am competent and capable in the activities that are important to me	0.98***
6. I am a good person and live a good life	0.78***
7. I am optimistic about my future	0.90***
8. People respect me	0.96***

Note. Robust standard errors and Maximum Likelihood estimation. .

* = $p < .05$, ** = $p < .01$, *** = $p < .001$

Table 9 summarizes the values of Cronbach's Alpha described above for each scale. It demonstrates the means, standard deviations, and Cronbach's Alpha for the different subscales of the RSA, SPANE, Flourishing, and the computed scores, for the whole sample.

Table 9

*Mean, Standard Deviation and Cronbach's alpha for the different scales (*N = 150*)*

Variables	*M*	*SD*	Cronbach's Alpha	Min.	Max.
RSA total score (n=148)	156.87	26.74	0.91	101	227
RSA Perception of Self (n=149)	28.38	5.45	0.65	16	42
RSA Planned Future (n=150)	18.33	3.83	0.57	9	28
RSA Social Competence (n=148)	27.72	5.59	0.61	17	42
RSA Family Cohesion (n=148)	29.07	6.53	0.74	13	42
RSA Social Resources (n=148)	35.00	7.92	0.82	15	49
RSA Structured Style (n=149)	18.39	3.89	0.34	11	28
SPANE-B (n=149)	8.70	5.65	0.84	-7	23
SPANE-P (n=149)	22.15	3.33	0.82	13	30
SPANE-N (n=149)	13.45	3.26	0.76	6	22
Flourishing (n=149)	43.86	7.41	0.91	10	56
Well-being (SPANE-B + Flourishing) (n = 149)	52.56	11.82	0.76	12	79

Note. RSA = Resilience Scale for Adults, SPANE-B = SPANE both (SPANE-P – SPANE-N), SPANE-P = SPANE positive emotions, SPANE-N = SPANE negative emotions, SL-SLE = Spanish Language Stressful Life Events.

T-tests

There were signs of deviation from normality in the *RSA total score*, *well-being*, and *SL-SLE*, therefore Mann-Whitney is reported. Effect size is Rank-Biserial Correlation, < .01 being a trivial effect, 0.1 a small effect, 0.3 a medium effect, and 0.5 a large effect (Goss-Sampson, 2019).

An independent t-test showed that there was a small to medium, non-significant difference between CUMAN ($n = 43$) ($M = 164.12$ $SD = 30.71$) and non-CUMAN ($n = 105$) ($M = 153.91$ $SD = 24.47$), in total score of resilience $t(148) = -0.16, p = .119$.

An independent t-test showed that there was a small to medium, non-significant difference between CUMAN ($n = 43$) ($M = 54.33, SD = 12.31$) and non-CUMAN ($n = 106$) ($M = 51.84, SD = 11.59$), in well-being $t(149) = -0.16, p = .126$.

An independent t-test showed that there was a small to medium, non-significant difference between CUMAN ($n = 43$) ($M = 4.51, SD = 2.35$) and non-CUMAN ($n = 107$) ($M = 3.98, SD = 2.53$) in total score on stressful life events $t(150) = -0.16, p = .125$.

Moderation

In total, three moderation analyses were performed. First, we tested whether the relationship between life stress and well-being was moderated by resilience for the whole sample. Then, the total sample was split into the CUMAN group and the non-CUMAN group. Two separate moderation analyses were performed, testing if this same moderation effect would differ between them.

All three models showed similar results. The moderation effect was non-significant. The expected, negative relationship between life stress and well-being was not present. Life stress explained between 0-2% of the variation in well-being. In the first moderation model (the whole sample), resilience explained 47% of the variation in well-being. Resilience explained 40% of the variation in well-being for CUMAN, and 51% of the variation in well-being for non-CUMAN group.

A detailed description of the results from all three moderation analyses with tables and figures is attached in the appendix.

Post Hoc Analysis: Exploration of Paths

The moderating effect of resilience could not be replicated in the current sample. The expected, negative relationship between life stress and well-being could not be found, not in the total sample nor in the respective groups.

This study is partly exploratory, being the first time all constructs are used in an Ecuadorian context. Therefore, we were interested in exploring how CUMAN and other variables related to well-being and resilience in a post hoc analysis, as the positive relationship between resilience and well-being is continuous through the analyses. A multiple regression analysis was done to explore possible predictors for resilience. All demographic variables were added to see how they predicted *RSA total score* (*CUMAN, Age, Gender, Level of Education, Economic situation childhood, Economic situation now*). Coefficients were estimated from bootstrapping based on 5000 replicates (Mehmetoglu & Venturini, 2021). Results from the multiple regression are shown in Table 10.

In total, the multiple regression model explained 13% of the variation in the *RSA total score*, and the model was significant for the sample ($p = .005$) (see Table 10). All regression coefficients are presented in Table 10. *Level of Education* was a significant predictor for total score of resilience, ($p = .001$).

Table 10

Summary of Multiple Regression with total score of resilience as dependent variable

Model		Unstardardized	Bias	Standard Error	*p**	95% CI*		Fit
						Lower	*Upper*	
H₀	(Intercept)	131.85***	0.16	18.39	< .001	95.68	168.17	
	CUMAN	5.26	0.42	5.42	0.396	-5.62	15.33	
	Age	0.10	0.02	0.40	0.910	-0.78	0.78	
	Gender	1.05	0.06	4.13	0.858	-7.68	8.44	
	Level of Education	7.01***	-0.18	2.15	0.001	3.27	11.64	
	Economic situation childhood	-5.17	-0.21	3.31	0.177	-10.73	2.38	
	Economic situation now	2.94	0.46	11.46	0.858	-18.88	26.77	
								R^2 = 0.13**

Note. Bootstrapping based on 5000 replicates. Coefficient estimate is based on the median of the bootstrap distribution. * Bias corrected accelerated.

** = $p < .01$, *** = $p < .001$

Because of the difference of variance in well-being explained by resilience in the CUMAN and non-CUMAN groups (40% and 51% respectively) in the moderation analyses, and *Level of Education* being a significant predictor for resilience, the variables *Level of Education, CUMAN, RSA total score*, and *well-being* were added to a path analysis using SEM modeling in JASP. Maximum likelihood estimation with bias corrected bootstrapping based on 1000 replicates was applied (Mehmetoglu & Venturini, 2021). The paths explored were *well-being* explained by *resilience*, *resilience* explained by *CUMAN*, and *resilience* explained by *Level of Education*.

Results for the path analysis are presented in Table 11 and Figure 2. The model showed good model fit. The non-significant chi square (*p* = .286) indicates that there is no

significant difference between our model and the covariance structure of the data, which indicates a good model fit (Hjemdal et al., 2006). Further, the CFI and TLI were above the advised value of 0.9 (CFI = 0.99, TLI = 0.99). The RMSEA was 0.04, indicating good model fit (Hooper et al., 2008). The model explained 47% of the variation in well-being, as well as 12% of the variation in total score of resilience.

As shown in Table 11, *Level of Education* is a significant predictor for *RSA total score* ($p < .001$). *RSA total score* is a significant predictor for well-being ($p < .001$).

Table 11

Regression coefficients for path analysis using SEM modeling

Predictor	Outcome	Estimate	Std. Error	z-value	*p*
CUMAN	RSA total score	7.42	4.60	1.61	.107
Level of Education	RSA total score	7.21***	1.91	3.79	<.001
RSA total score	Well-being	0.30***	0.03	11.46	<.001

Note. Bias-corrected bootstrap based on 1000 replicates, Maximum Likelihood Estimator.

* = $p < .05$, ** = $p < .01$, *** = $p < .001$

Figure 2 represents the results from the path analysis with SEM modeling. It shows the path from *Level of Education* to *resilience*, and from *resilience* to *well-being*, both significant. CUMAN is also connected to *Level of Education*, through *RSA total score*, to *well-being*.

Figure 2

Path diagram of SEM modeling Level of Education, CUMAN, resilience, and well-being
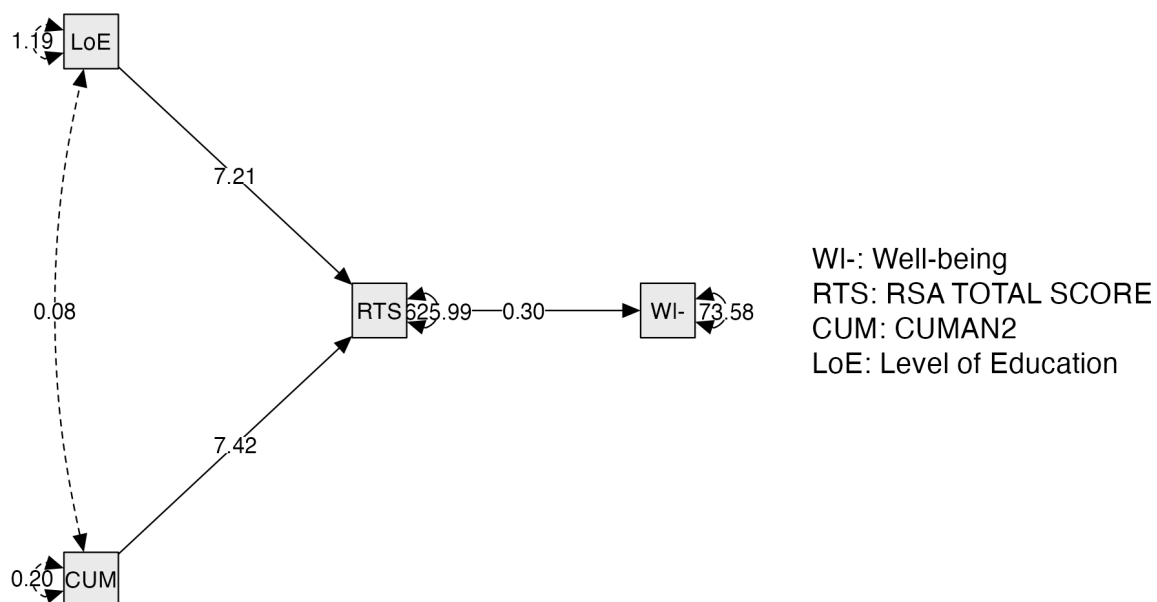
Note. Bias-corrected bootstrap based on 1000 replicates, Maximum Likelihood Estimator.

Discussion

The overall goal of this master thesis was to discover important information about the level of resilience, well-being, and life stress in Ecuadorian adults. In particular, relevant information for the Norwegian organization Mission Alliance working in Guayaquil, Ecuador was envisioned. The discussion of the results is divided into four parts. First discussing each result corresponding to the three research questions with hypotheses, together with a discussion of the results from the exploration of the path analysis. From there a general discussion of how methodological aspects of the study (e.g. sample size, variety, and instruments validity) may be related to the unexpected results. Third, we discussed the relevance of the study for Mission Alliance's work in Ecuador. Lastly, some limitations and recommendations for future research are mentioned.

The goal of this study was split into three hypotheses. The first aimed to confirm the Resilience Scale for Adults (RSA), the Scale of Positive and Negative Emotions (SPANE), and the Flourishing Scale (FS) in an Ecuadorian setting. The second intended to discover group differences between the current and former adult scholarship-holders of CUMAN, Mission Alliance, and the rest of the general Ecuadorian sample, hypothesizing higher levels of well-being and resilience in the CUMAN group, and similar levels of stressful life events. The third hypothesis aimed to discover the moderating effect of resilience on the relationship between life stress and well-being, while also exploring if this effect would differ between CUMAN and non-CUMAN groups.

Exploration of the Reliability and Validity of Measures of Well-being, Life stress and Resilience in an Ecuadorian Sample

For the first research question, it was hypothesized that the factor structure of the RSA, the SPANE, and the FS would be replicated in an Ecuadorian sample, with good internal

reliability and validity scores. The scales are consistently reliable and valid across multiple different cultures, as presented in the literature review.

The Resilience Scale for Adults

The six-factor structure of the Resilience Scale for Adults could not be replicated in the current Ecuadorian sample. Preliminary analysis to test the factor structure of the RSA did not meet an acceptable model fit. Both CFI and TLI values were below the advised value of 0.9. Also, the RMSEA was high, which indicates a poor fit. Generally, it is recommended to have a RMSEA value below 0.06 (Hooper et al., 2008).

It is the first time the Resilience Scale for Adults is used in an Ecuadorian study, and its administration was online. While acknowledging the potential influence of cultural differences in interpretation of questions and resilience, it is important to note that the RSA has been validated across numerous cultures, including Latin American and Spanish-Speaking countries. However, in the specific cases of validation in Peru and Brazil, the administration was made in paper format. In the current study the administration was online. In addition, the format of semantic differential scale is sometimes considered to increase complexity and cognitive demand from participants (Friborg et al., 2006), which may also influence the results.

This attempt to further demonstrate the external validity of the RSA was not successful in terms of confirming the factor structure. However, Cronbach's Alpha showed good reliability for the construct (*RSA total score*, $\alpha = 0.91$). Therefore, the RSA was used as a composite sum score in further analyses. The subscale *Structured Style* (goal-directed behavior, preference for routines in life, planning and having an organized approach to tasks (Anyan et al., 2019)) showed the lowest reliability ($\alpha = .34$), similar to reports from validation studies of the RSA in Italy, Peru, and Brazil (Capanna et al., 2015; Hjemdal et al., 2015;

Morote et al., 2017). This may count as further proof of the different importance people lay in different aspects of the protective factors of resilience. In the Peruvian validation study it was suggested that social networks are particularly meaningful in facing adversities (Morote et al., 2017). Typically, family, and social resources are more important in Latin American culture, than maintaining a structured style. On the other hand, *Structured Style* might be a type of cognitive organization and planning that could potentially be interpreted and used in different ways. This may impact the low reliability for this subscale in this sample, especially considering the low reliability reported in other Latin American RSA validation studies (Hjemdal et al., 2015; Morote et al., 2017).

The challenges regarding data collection and achieving a complete and larger sample in the study, alongside the confirmed reliability, reinforces the idea that the primary issue in confirming its factor structure lies in the sample size. This will be further discussed under "General Discussion: Sampling Methods: Size and Variability".

Constructs for well-being

The Construct Validity of the Scale of Positive and Negative Emotions (SPANE) and the Flourishing Scale (FS) were confirmed with a Confirmatory Factor Analysis in this sample, with acceptable values of TLI, CFI (< 0.90), and RMSEA (> 0.06) (Hooper et al., 2008). In addition, their internal reliability showed good levels of Cronbach's Alpha, SPANE: $\alpha = 0.84$, and FS: $\alpha = 0.91$. The bidimensional factor structure of the Scale of Positive and Negative Emotions and the unidimensional factor structure of the Flourishing Scale were therefore confirmed. Hypothesis 1 is therefore partly confirmed.

Critics regarding computation of SPANE-B. Diener et al. (2010) presented the procedure of computing the SPANE-Balance score, subtracting SPANE-N (negative

emotions) from the SPANE-P (positive emotions). This was done in the present study, resulting in a SPANE-B score that can range from -24 (unhappiest possible) to 24 (highest affect balance possible). This means that a person with a very high score, like 24, reports rarely or never experiencing any negative feelings, but often or always positive feelings (Diener et al., 2010). This same procedure has been followed in replication and validation studies (Cassaretto Bardales & Martínez Uribe, 2017; Giuntoli et al., 2017; Howell & Buro, 2015; Li et al., 2013; Senol-Durak & Durak, 2019; Silva & Caetano, 2013; Singh et al., 2018; Sumi, 2014; Tong & Wang, 2017).

In terms of interpreting the results from SPANE-B, Rahm et al. (2017) highlighted the challenge associated with subtracting one set of values from another, emphasizing the difficulty in discerning the specific emotions characterized by high or low scores. Rahm et al. commented that it would be difficult to differentiate if a person had high rates of both feelings (26 or 20) or felt almost nothing at all (8 and 2). This could further make it challenging to determine which interventions would be needed to improve the subject's overall well-being. This nuanced distinction holds significance, especially in the context of studies that inform intervention planning or in different cultural contexts. However, it is pertinent to note that the present study employs SPANE-B as a metric for assessing emotional well-being, measuring the subjective frequency of positive and negative emotional experiences in the past month, in conjunction with the flourishing measure. While Rahm et al. (2017) underscored an important consideration regarding interpretative challenges associated with SPANE-B, the current investigation aligns with the broader body of literature affirming the reliability of the SPANE and flourishing scale, as presented in the literature review. Therefore, further differentiation on this aspect is not extensively commented on in the present discussion. However, it is important to acknowledge this critical viewpoint regarding the assessment of emotional well-

being, recognizing that human beings rarely conform to such a computational way of thinking.

Group comparisons

The second research question focused on group differences between the current and former scholarship holders CUMAN and the other respondents of the general population in Guayaquil, Ecuador. It was hypothesized that the CUMAN group would show higher levels of the total score of resilience and higher levels of emotional well-being. It was also hypothesized that the two groups would show similar levels of stressful life events.

The CUMAN group did not show a significantly higher score of protective factors of the RSA, or a higher score of well-being, compared to the general Ecuadorian sample. An independent t-test showed that there was a small to medium, non-significant difference between the two groups in total score of resilience $t(148) = -0.16$, $p = .119$, and well-being $t(149) = -0.16$, $p = .126$. This indicates a rejection of hypothesis 2.1.

Hypothesis 2.2 was confirmed. As expected, there was no significant difference between CUMAN and non-CUMAN groups in the variable stressful life events $t(150) = -0.16$, $p = .125$. We expected them to have similar levels of stress considering participants are from the same area and probably share experiences because of the augmented levels of insecurity and crime.

While the t-test showed non-significant results, the effect sizes might indicate a potential trend in the data. According to Goss-Sampson (2019) values between 1 and 3 indicate small to medium effects. The CUMAN group exhibited a slightly higher level compared to the other Ecuadorian sample, although not significant. While caution is warranted in interpreting non-significant results, this trend may merit further investigation or consideration in the context of the information presented in the introduction. Participants from CUMAN were selected in a multi-phased process considering their personal attributes, family situations, pursuit of higher

education, and interest in local community development. Also, they are provided with extra external resources with their companions in CUMAN and the workers in the Mission Alliance office. Based on this, we assumed their levels of resilience and well-being might be significantly enhanced by the support and thus be higher than a general Ecuadorian population not receiving these opportunities.

Unexpected Results: Absence of Life Stress Impact on Well-being and Moderation Effects

It was expected that resilience would moderate the relationship between stress and well-being in both groups, and the whole sample. It was hypothesized that as the level of resilience increases, the negative effect of life stress on well-being would become smaller or insignificant. There was also an interest to explore if this moderating effect would be different for CUMAN and non-CUMAN groups.

The anticipated relationships among the variables in our moderation model did not manifest as distinctly as expected. Research commonly reports a negative relationship between life stress and well-being, although usually the outcome variables are symptoms or signs of negative health or mental health. For instance, higher levels of SL-SLE have been associated with symptoms of anxiety and depression (Morote Rios et al., 2014), and life-stress is generally linked to mental health issues (Bøe et al., 2018). However, factors related to the SL-SLE checklist like poverty, financial deficiency, and restricted standards of living, were significantly negatively correlated to psychological well-being in a study from Switzerland (Vetter et al., 2006). The moderation effect hypothesized in this study (i.e. that resilience acts as a moderator for this negative relationship) was also found with the SLE in a Norwegian sample (Hjemdal et al., 2006). This expected adverse impact of life stress on well-being did not materialize in the present analysis. Consequently, it is not surprising that the remaining moderation did not demonstrate an effect, given that the initial negative correlation did not

occur. This indicates that there may have been an issue with the measurement method of using a checklist.

Criticism of SLE as a Measurement Instrument for Life Stress

There are challenges in choosing a measurement tool such as a checklist for stressful life events. The experience of life events varies greatly among individuals. Some may perceive events like divorce differently, with reactions ranging from distress to relief (Schwarzer & Schulz, 2003). The checklist format may not adequately capture the nuances of these reactions, potentially overlooking the emotional intensity and severity associated with each event. As such, while the SL-SLE provides a structured approach to assessing stressful life events, its limitations should be considered when interpreting the data, particularly in a context as diverse and complex as Guayaquil, Ecuador.

The majority of participants in the current study reside in Guayaquil, where they experienced an increase in life stress during the last year, marked by prevailing insecurity, crime, and fear. This escalation led to the declaration of an internal armed conflict at the beginning of 2024, prompting a curfew and increased police presence (Hermann & Yépez, 2024). The type of life stress experienced by these participants, may not be accurately captured using a measurement tool like the SL-SLE where these kinds of events are not represented. While the SL-SLE attempts to encompass relevant stressors, it may overlook nuanced experiences and current emotional responses. Moreover, the experience of life events, even if they are part of the checklist or not, may vary a lot from person to person. The form of a checklist makes it harder to measure the reactions to these stressful life events, leaving the emotion and the severity out of the equation.

In terms of life stress, normative and non-normative stressful life events are evaluated (Schwarzer & Schulz, 2003). The people living in Guayaquil, Ecuador during the time period this survey was distributed, experienced both normative stressful life events that are seen as

transitions likely to happen in life, (school transitions, marriage, childbirth, etc.), as well as non-normative events that are not as likely to happen to individuals (concretely, a curfew, increased police presence, declaration of an internal armed conflict, fear of crime related to narcotics etc.). While grappling with normal transitions of life that may be stressful, they also deal with prevalent poverty and the security challenges that come with living in this area.

Concerning the items presented in the Checklist of Stressful Life Events (SL-SLE), it is worth considering whether some elements of life stress in this specific sample may be missing. While many relevant questions are present, they might lack some of the experiences these people deal with. It might have been beneficial to include inquiries regarding worries, stress, feelings of insecurity, and socio-political unrest. Nevertheless, incorporating such questions poses challenges when creating a checklist for both experienced and non-experienced events. These stressors are often intertwined with feelings and emotional responses, rather than being easily captured by a checklist format where one simply marks experienced events.

Furthermore, this marks the first use of SLE in an Ecuadorian context. The applicability of the construct is unknown in this context, which makes it difficult to establish how well the SL-SLE functions as a measurement tool of life stress in this sample, and in an Ecuadorian sample in general. Incorporating inquiries regarding worries, stress, and feelings of insecurity could provide a more comprehensive understanding of the participants' lived experiences. The effectiveness of SL-SLE as a measurement tool for life stress in this sample remains uncertain.

General Discussion

Sampling Methods: Size and Variability

For this part of the discussion, we will start with a presentation of the sampling method used in this study, and its consequences: small sample size and homogenous. Then, the effects of these problems on the different results from each hypothesis will be discussed, the construct validation of the RSA, the group comparisons, and the problems with moderation analysis as a consequence of the missing validation for the RSA.

The effects measured did not mirror our hypothesized results. This is likely due to the sampling methods. Participants were recruited through a non-probability sampling method. CUMAN participants were recruited in a purposive sampling method, while snowballing was used to reach out to the general Ecuadorian participants (Handcock & Gile, 2011; Hazari, 2023). The link to the survey was distributed to our contacts in Ecuador, who were asked to further send it to possible participants. Considering our contacts were mainly within the Mission Alliance and CUMAN-group, this is probable to have resulted in a small and homogenous sample size. This likely impacted both the lack of confirmation of the factor structure for the RSA, the group comparisons, and the moderation analyses.

Hypothesis 1 was only party confirmed, as the RSA could not be validated in this study. With an effective sample of 148, this likely hindered confirmation of the factor structure. The low sample size may be compared to other existing studies. The Italian validation study of the RSA affirmed its 6-factor structure, despite commenting on their relatively small sample size of 308 participants (Capanna et al., 2015). In the Peruvian context, the factor structure of the 33-items instrument was replicated in a group of 857 participants (Morote et al., 2017). The suggested number of participants in validity studies per item on a scale is 5-10, while others present a general "rule of thumb" to have at least between

100-200 participants. Such guidelines are often criticized for their lack of generalizability, depending on each individual scale and their complexities (Brown, 2015). However, the current study involves only 150 participants, 2 of them with missing responses for items in the RSA. In terms of the suggested quantity, this falls within the lowest percentile, barely meeting the threshold. The small sample size has likely impacted the results, hindering the confirmation of the factor structure of the RSA.

In addition, sampling strategy may influence results. Sampling methods of nonprobability nature often lacks a representative sample of the population, and this can be crucial for survey research (Meltzoff & Cooper, 2018). Nonprobability sampling method were used to collect data. CUMAN participants were recruited in a purposive sampling method (Hazari, 2023). However, voluntary participants with similar characteristics to the CUMAN group proved difficult to find, because of this project being implemented from Norway with limited contacts in the area, no financial support for recruiting or compensation. Therefore, snowball sampling was used to gather data from the general Ecuadorian population (Handcock & Gile, 2011; Hazari, 2023). The participant pool gathered from a snowballing sampling is not regarded a representative sample of the population (Handcock & Gile, 2011). This likely resulted in a limited representation of the general Ecuadorian population, with people sharing socio-economic conditions or cultural characteristics, even if split into CUMAN and non-CUMAN. If a more representative set of respondents had participated, different results may have emerged, highlighting the potential influence of not only sample size, but representativeness in terms of variability. Not having a representative sample for the Ecuadorian population has possibly resulted in the groups being too homogeneous for conducting group comparisons.

Regarding the moderation analysis, it is crucial to acknowledge the challenges arising from the lack of validation of the RSA. When testing hypotheses involving latent constructs, as is done in moderation analysis, it is important for these constructs to be validated (Mehmetoglu & Jakobsen, 2022). Unfortunately, the validity of the RSA could not be demonstrated in this study, likely due to the small sample size, as mentioned. This limitation makes it challenging to draw inferential conclusions. The small sample size and limited variability pose difficulties in generalizing findings about the Ecuadorian population.

It is important to acknowledge that small sample sizes often struggle to find statistically significant results due to low statistical power (Faber & Fonseca, 2014). An effect is regarded as irrelevant because of too high significance levels, and this is often the case if there is a low sample size (Mehmetoglu & Jakobsen, 2022). As we could not confirm our alternative hypothesis because of non-significant results, this study indicates that there is insufficient evidence to assert statistical differences. Therefore, it is possible that the current data contains effects that are understated due to the limited sample size (Rusticus & Lovato, 2014). Consequently, the fact that the current study has identified certain tendencies and statistically significant findings suggests that these results may be particularly noteworthy. It may indicate a meaningful pattern within the data, also considering the robust estimators applied to the statistical analyses. Through *Level of Education,* CUMAN potentially plays an active role in fostering the levels of resilience in the group of interest, and this shows possible indication of the important work of Mission Alliance in Guayaquil, Ecuador.

Post Hoc Explorations: Resilience as a Predictor for Well-being

In this study, a noteworthy observation was the evident positive association between resilience and well-being. In the moderation analysis, total score of resilience was a consistent predictor for well-being in all three separate analyses. This highlights the importance of the

intrapersonal and interpersonal protective factors evaluated, and the individual's ability to "bounce back" from adversity in maintaining a positive mental state. An additional noteworthy finding from the moderation analysis was the possible difference in level of resilience as predictor for well-being, between being part of CUMAN or not. This was further explored in the multiple regression (where education emerged as a significant predictor of resilience), and then in the path analysis. The results showed that level of education significantly predicted resilience, while resilience significantly predicted well-being. Being statistically significant, this demonstrates that the model seems to adequately represent the observed relationships between the variables *CUMAN*, *Level of Education*, *resilience*, and *well-being*. This reinforces the idea that in this sample, education promotes resilience, which in turn promotes well-being. This highlights the potential value of educational interventions in fostering protective factors and enhancing well-being.

The scholarship program CUMAN helps young adults continue and finish their higher education. Therefore, Mission Alliance's work holds significance in maintaining and/or developing well-being and resilience among their CUMAN students. These scholarship-holders are carefully chosen through the recruitment process described in the introduction. Mission Alliance selects students they believe are capable, and further nurtures them to excel academically, thereby bolstering their resilience and subsequent well-being. The impact of this extended educational intervention, encompassing personal, material, and social support through several years in young adults, raises discussion about its influence on the development of protective factors of resilience. Protective factors are developmental assets, and there is consistent research showing that during young adulthood, there is still an increase of these assets (Morote et al., 2017; Masten & Garmezy 1985). Personal characteristics in human beings are continuously molded by interactions with their environment (Hostinar & Miller, 2019). Shean (2015) also comments that resilience research has the potential to

improve psychological, emotional, and educational outcomes in young people (Shean, 2015). The type of support that Mission Alliance provides may impact this development of protective factors of resilience in their students selected as part of CUMAN.

It is relevant to discuss whether Mission Alliance's requirements to participate in CUMAN help them choose students who already pertains a high level of resilience and well-being, and whether their involvement in CUMAN contributes to their educational level, reinforcing these positive attributes. The relationship between CUMAN participation, educational attainment, resilience, and well-being is complex and interconnected. This investigation prompts an intriguing discussion about Mission Alliance's impact on the emotional well-being and resilience of both current and former scholarship recipients.

Significance of the Study: Worsening Situation in Ecuador, WEIRD

The importance of this study is emphasized by the dramatically worsening security situation in Guayaquil, Ecuador, where Mission Alliance operates. The majority of the participants reside in this area, which has experienced a drastic transformation since 2022. Initially, Norwegian envoys were supposed to assist with data collection, but due to escalating security concerns, they had to return to Norway in 2023 before data collection could begin. As a result, only two Ecuadorian contacts who had participated in the CUMAN program helped with data collection. The security situation continued to worsen into 2023 and peaked in 2024. The sample already included individuals facing high levels of poverty and low socio-economic status, exacerbating their life stress. These circumstances underscore the challenging experiences and life stressors faced by the participants, emphasizing the relevance and importance of resilience theory in this context.

The significance of this study is further highlighted by the uniqueness of the sample, which does not conform to the classic "WEIRD" context (Western Educated Industrialized,

Rich, and Democratic). The body of research upon which psychology and many scientific fields relay for generalization often comprises data predominantly derived from Western (North American) undergraduates. In recent years, there has been growing skepticism regarding the extent to which findings from such research samples can be generalized to the entire human population (Heine et al., 2010). The current study, along with subsequent studies, plays a crucial role in contributing to the valuable body of research focused on populations in Latin America, particularly in contexts marked by poverty, criminality, and insecurity. The cultural insights gained from this study hold considerable importance. Notably, this study represents the introductory application of the RSA, SPANE, FS and SL-SLE measures within an Ecuadorian context.

Relevance for Mission Alliance and Recommendations for Future Research

As stated in the introduction, the goal was to gather valuable insights for the diaconal Norwegian organization Mission Alliance's work in Ecuador. Emphasizing the value of education, this study highlights the impact of Mission Alliance's initiatives in Guayaquil, Ecuador, regarding contributing to the level of resilience and well-being. Specifically, Mission Alliance offers young adults opportunities for higher education, providing academic exploration, support, and a community with peers facing similar life situations and sharing similar goals. Even though this study may not encompass all desired information, it offers Mission Alliance a glimpse into the positive impact of their work on young Ecuadorian adults. By supporting protective factors of resilience with a multidimensional (economy, education, family, community), contextually grounded (youths' socio-cultural conditions), and long-lasting intervention, the organization contributes to the overall well-being of these individuals. The deteriorating security situation in Ecuador these last years make this intervention even more valuable. Further investigations should continue to explore the

notations we could not find in the current study, as well as comparing the current results with future research outcomes.

Future studies should prioritize gathering a bigger and more representative sample of the Ecuadorian population. This is especially important for contributing to the complete validation of the Resilience Scale for Adults in an Ecuadorian context. Additionally, exploring the resilience levels of CUMAN participants compared to the general population, and investigating potential moderation effects not present in this study would be valuable. Conducting research with a sufficient number of participants to test the use of the Checklist for Stressful Life Events (SL-SLE) as a measurement for life stress, and examining its relationship with well-being, would address the gaps identified within this investigation and provide additional understanding. Due to the developmental nature of resilience, it is especially important for future research to prioritize longitudinal methods and probabilistic sampling procedures. This is necessary to ascertain whether these findings align with results from similar samples and contexts.

Limitations

This is a cross-sectional study, meaning that we cannot draw causal inferences from the results presented. Utilizing a cross-sectional survey lacks the ability to illustrate causal processes. From a lifespan developmental perspective, it is important to recognize that employing cross-sectional survey in addressing these concerns may lack some information. Participants' memory could be influenced by their current states, such as ongoing depression or other challenges in their current life circumstances (Wang & Cheng, 2020).

An important constraint to highlight regards the data collection. I was in charge of gathering data with the assistance of my resourceful, although limited, connections in Ecuador in a context of increased social unrest. While the support of Ecuadorian friends and contacts

through Mission Alliance was valuable, data collection was limited. The recruitment of participants primarily relied on messages disseminated by two Ecuadorian friends. Unfortunately, due to a restricted network in Ecuador, digital reliance, and restricted time, the participant pool remained relatively small.

Conclusion

This study aimed to describe and explore important information about the level of resilience, well-being, and life stress in Ecuadorian adults, while focusing on relevant information for the Norwegian organization Mission Alliance working in Guayaquil, Ecuador. Mission Alliance provides a selected group of young adults with the opportunity to pursue higher education through a scholarship program, CUMAN. Based on extensive literature we hypothesized that the Resilience Scale for Adults (RSA), the Scale of Positive and Negative Emotions (SPANE), and the Flourishing Scale (FS) would be replicated in this Ecuadorian sample. Further, we assumed that the CUMAN group would show higher levels of resilience and well-being compared to the general Ecuadorian sample, while demonstrating similar levels of stressful life events. Thirdly, we hypothesized the moderation effect of resilience on the relationship between life stress and well-being.

Although sampling limitations (size and representativeness) didn't allow us to verify the factor structure of the RSA, the SPANE and FS were confirmed. Group comparisons did not manifest as distinctly as expected, with small, non-significant effects, however, important differences could be described and will guide further studies. For the moderation, the negative relationship between life stress and well-being was not present in the current sample, therefore, the moderation effect of resilience on this relationship was not found.

However, some tendencies emerged during post hoc analyses, revealing a path through level of education, resilience, and well-being. The importance of the work of Mission Alliance and their CUMAN scholarship program was highlighted through this path, underscoring the value of contributing to level of education in the Ecuadorian population during the difficult and stressful times that are happening. Moreover, the possible impact of CUMAN as an educational intervention is further emphasized by its complex, deep, and long process in terms of providing material, personal and social support that further develops the

participants protective factors of resilience. The associations between these variables were prominent in the path analysis, highlighting the important contribution of Mission Alliance's intervention through CUMAN. Further research is necessary to contribute to the insights presented, as well as the missing results.

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Appendix A: Results Moderation Analyses

List of Figures

List of Tables

Results Moderation: Total Sample

Results are presented in Table A1, Table A2, Figure A1, and Figure A2.

As shown in Table A1, the model explained 49% of the variation in well-being. The results showed that the expected, negative relationship between life stress and well-being did not

exist in this sample. Life stress explained 0% of the variation in well-being ($R^2 = 0.00$).

Resilience explained 47% of the variation in well-being ($R^2 = 0.47$).

Table A2 shows that the moderator life stress*resilience explained 0% of the variation in well-being ($R^2 = 0.00$) and is therefore not a significant moderator for the relationship ($p = .272$). By adding moderation to the regression model, the total variance explained barely changed, from 48.9% to 49.3%.

The coefficient for the moderator-variable is negative, meaning that the relationship between life stress and well-being, although not significant, decreases as the level of resilience increases (-0.01, $p = .272$) (see Table A2). The negative effect life stress has on well-being (small and not significant in this sample) decreases as the level of resilience increases.

Table A1 *Model Summary Moderation – Well-being*

Model	R	R²	Adjusted R²	RMSE	p
H₀	0.70	0.49	0.48	8.52	< .001

Note. Bootstrapping based on 5000 estimates, Maximum Likelihood Estimator. Null model includes SL-SLE Centered, RSA total score Centered, SL-SLE Centered*RSA total score Centered

Table A2 *Coefficients and Significance Levels for Moderation – well-being*

Model		Unstandardized	Standard Error	p
H₀	(Intercept)	52.89***	0.71	< .001
	SL-SLE Centered	0.72**	0.29	.003
	RSA total score Centered	0.31***	0.03	< .001

Model	Unstandardized	Standard Error	p
SL-SLE Centered *RSA total score Centered	-0.01	0.01	.184

Note. Bootstrapping based on 5000 estimates, Maximum Likelihood Estimator. Coefficient estimate is based on the median of the bootstrap distribution.

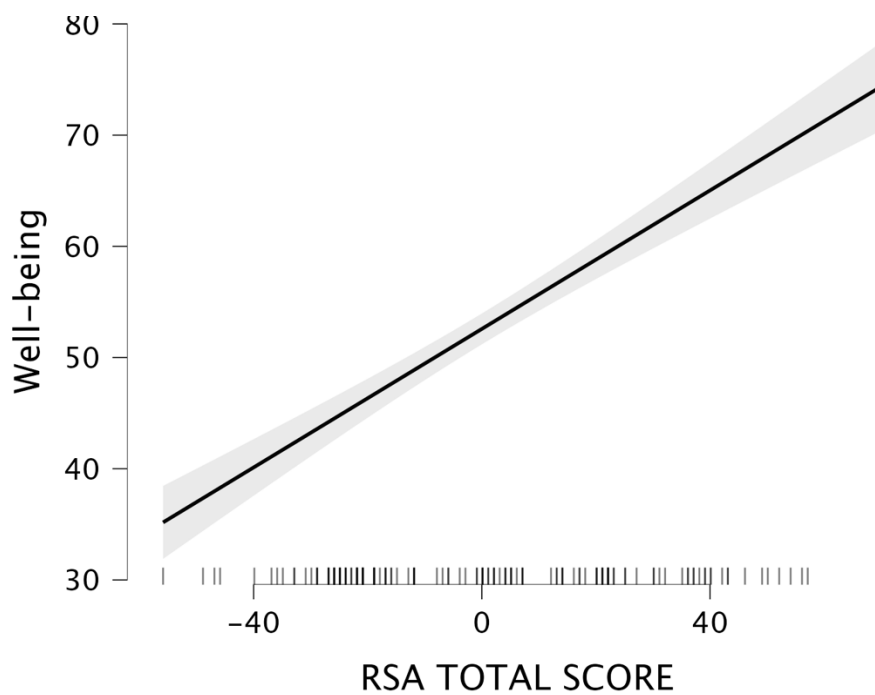RSA total score Centered * SL-SLE Centered represent the moderation effect.

* = *p* < .05, ** = *p* < .01, *** = *p* < .001

Figure A1 *Marginal effect of SL-SLE on Well-being for whole sample*
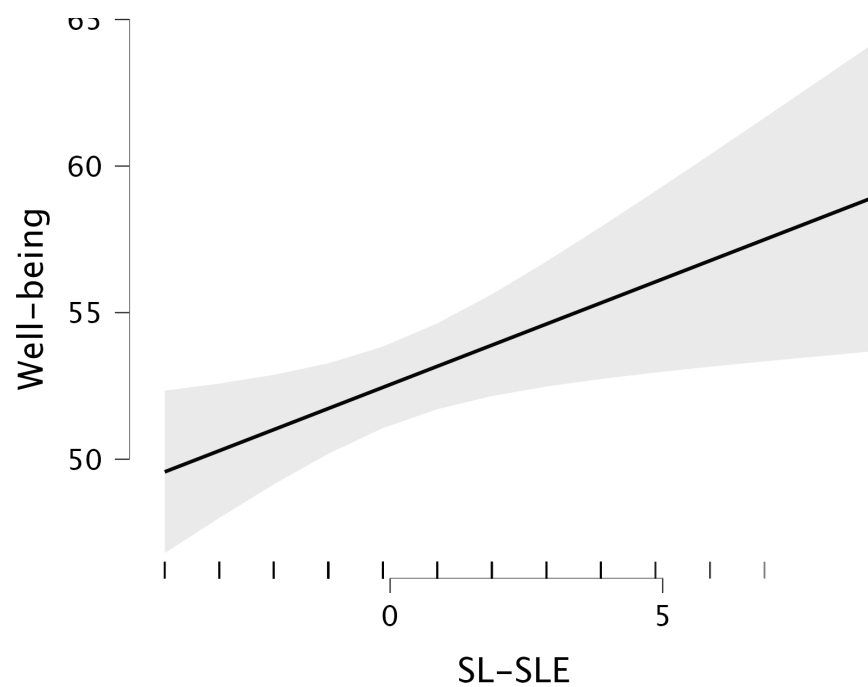
Note. Bootstrapping based on 5000 estimates, Maximum Likelihood Estimator.

Figure A2 *Marginal effect of RSA total score on Well-being for whole sample*

Note. Bootstrapping based on 5000 estimates, Maximum Likelihood Estimator.

After the initial moderation analysis for the whole sample, the same analysis was replicated twice, separately for the CUMAN participants and the non-CUMAN participants. This was to see if the effect would differ between the two samples.

Results Moderation: CUMAN Group

Results are shown in Table A3, Table A4, Figure A3, and Figure A4. Model summary shown in Table A3. Adding moderation to the model: total variance explained from 41.4% to 42.1%. Life stress explained 0% of the variance in well-being for the CUMAN group (R^2 = 0.00). Resilience explained 40% of the variance in well-being for the CUMAN group (R^2 = 0.40). As shown in Table A4, resilience is not a significant moderator for the relationship (p = .487) in the CUMAN group. The moderator life stress*resilience explains 1% of the variation in well-being (R^2 = 0.01).

Also, the relationship between life stress and well-being decreases as resilience increases (negative coefficient, but very small and not significant). -0.02, $p = 487$. (see Table A4).

Table A3 *Model Summary Moderation – Well-being for CUMAN group*

Model	R	R²	Adjusted R²	RMSE	p
H₀	0.65	0.42	0.38	9.72	< .001

Note. Bootstrapping based on 5000 estimates, Maximum Likelihood Estimator.

Null model includes RSA total score Centered, SL-SLE Centered, RSA total score

Centered*SL-SLE Centered

**Table A4** *Coefficients and significance level for moderation – Well-being for CUMAN group*

Model		Unstandardized	Standard Error	p
H₀	(Intercept)	51.99***	2.07	< .001
	RSA total score Centered	0.27***	0.06	< .001
	SL-SLE Centered	0.86	0.94	.229
	RSA total score Centered*SL-SLE Centered	-0.02	0.02	.412

Note. Bootstrapping based on 5000 estimates, Maximum Likelihood Estimator. Coefficient

estimate is based on the median of the bootstrap distribution.

RSA total score Centered*SL-SLE Centered represent the moderation effect.
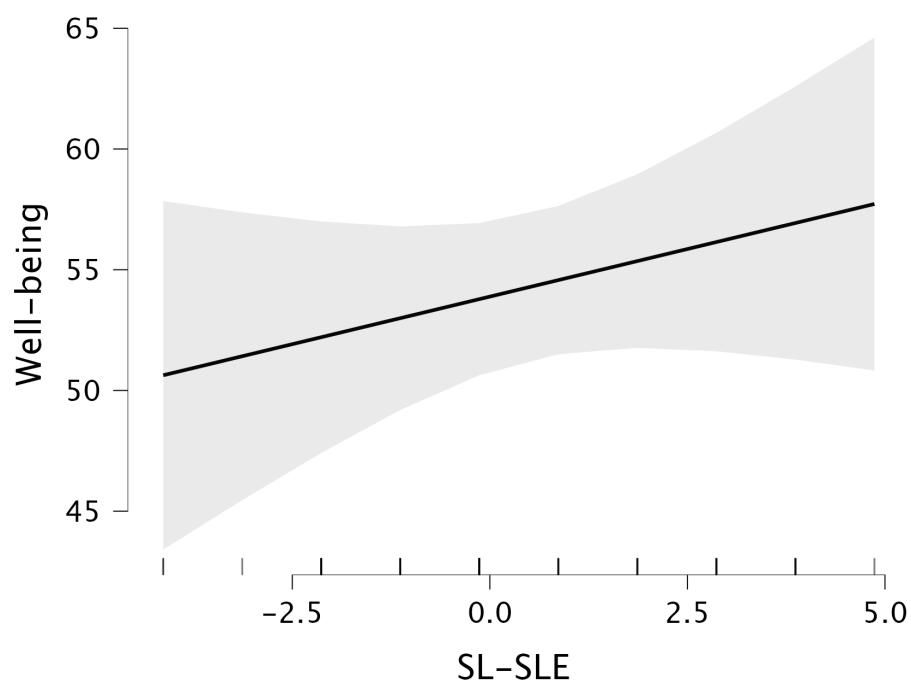
$* = p < .05, ** = p < .01, *** = p < .001$

Figure A3 *Marginal effect of RSA total score on Well-being for CUMAN group*
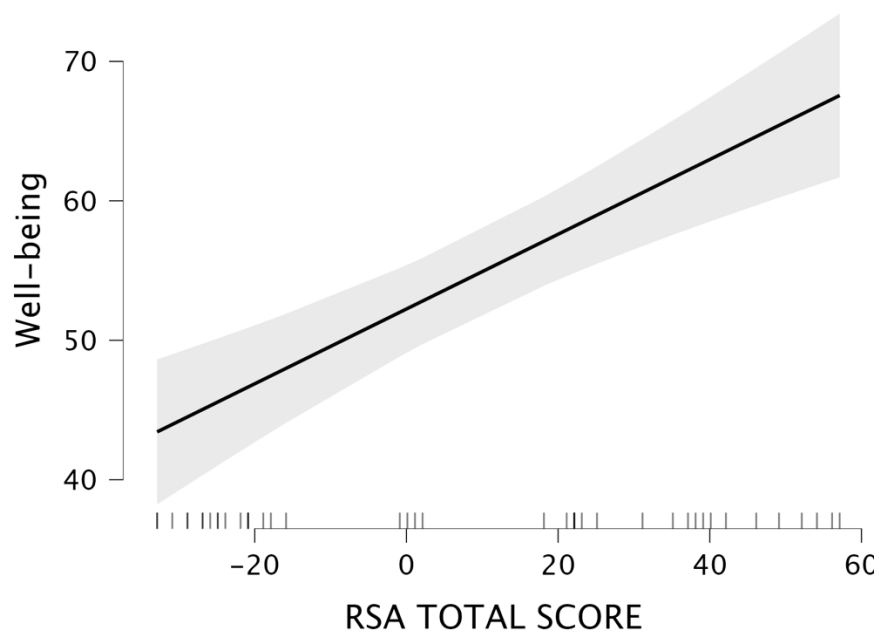
Note. Bootstrapping based on 5000 estimates, Maximum Likelihood Estimator.

Figure A4 *Marginal effect of SL-SLE on Well-being for CUMAN group*

Note. Bootstrapping based on 5000 estimates, Maximum Likelihood Estimator.

Results Moderation: non-CUMAN Group

Results are shown in Table A5, Table A6, Figure A5, and Figure A6. Model summary

shown in Table A5. Adding moderation to the model: total variance explained from 53% to

53.3%. Life stress explains 2% of the variation in well-being for non-CUMAN group ($R^2 =$

0.02). Resilience explains 51% of the variation in well-being for non-CUMAN group (R^2

=0.51). Resilience is not a significant moderator for the relationship ($p = .385$) (see Table

A6). The moderator life stress * resilience explains 0% of the variation in well-being (R^2

=0.00).

Also, the relationship between life stress and well-being decreases as resilience

increases (negative coefficient, but very small and not significant). -0.01, $p = 385$. (see Table

A6).

Table A5 *Model Summary Moderation – Well-being for non-CUMAN group*

Model	R	R^2	Adjusted R^2	RMSE	p
H₀	0.73	0.53	0.52	8.07	$< .001$

Note. Bootstrapping based on 5000 estimates, Maximum Likelihood Estimator.

Null model includes RSA total score Centered, SL-SLE Centered, RSA total score Centered:

SL-SLE Centered

Table A6 *Coefficients and significance level for moderation – Well-being for non-CUMAN group*

Model		Unstandardized	Standard Error	p
H₀	(Intercept)	53.00***	0.76	< .001
	RSA total score Centered	0.35***	0.03	< .001
	SL-SLE Centered	0.70*	0.33	.021
	RSA total score Centered *SL-SLE Centered	-0.01	0.01	.380

Note. Bootstrapping based on 5000 estimates, Maximum Likelihood Estimator. Coefficient estimate is based on the median of the bootstrap distribution.

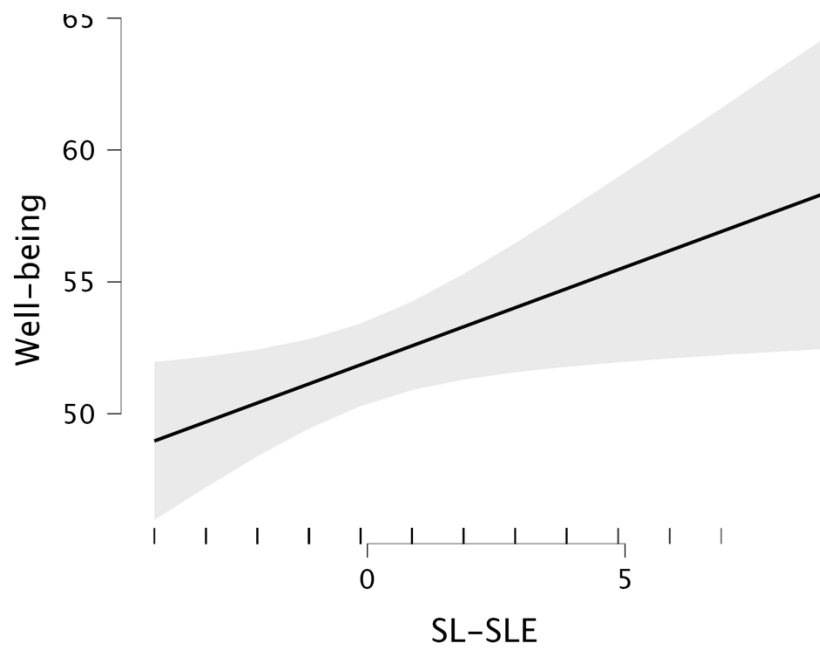RSA total score Centered*SL-SLE Centered represent the moderation effect.

* = $p < .05$, ** = $p < .01$, *** = $p < .001$

Figure A5 *Marginal effect of RSA total score on Well-being for NON-CUMAN group*
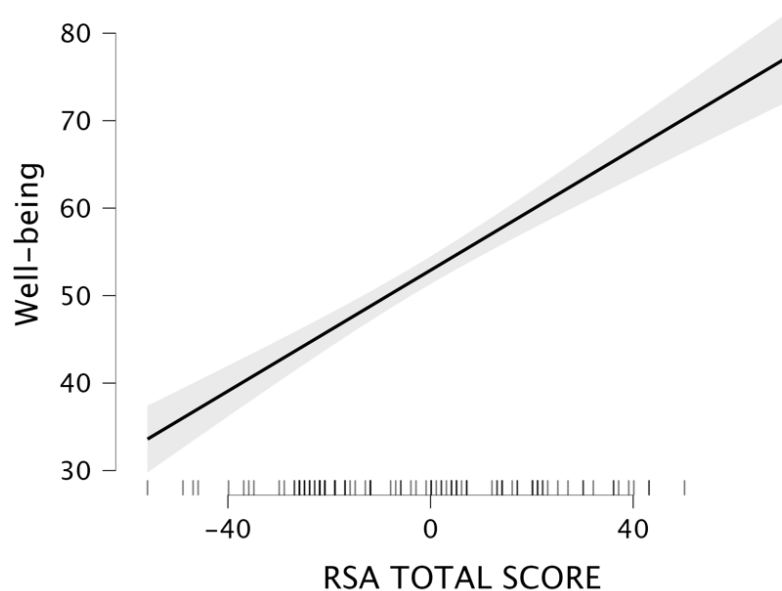
Note. Bootstrapping based on 5000 estimates, Maximum Likelihood Estimator.

Figure A6 *Marginal effect of SL-SLE on Well-being for NON-CUMAN group*

Note. Bootstrapping based on 5000 estimates, Maximum Likelihood Estimator.

Appendix B: Items from the Scales used in this study

Resilience Scale for Adults (RSA)

Spanish translation: Mª Angels Balsells, Nuria Fuentes, Asunción Pastor, Cristina Salom.

Adaptada: Grupo GRISIJ.

The Resilience Scale for Adults (RSA) is protected by intellectual property and subjected to copyrights. Please get in touch with the property owners for more information about this scale.

Scale of Positive and Negative Experience (SPANE)

© Copyright by Ed Diener and Robert Biswas-Diener, January 2009.

Please think about what you have been doing and experiencing during the past four weeks. Then report how much you experienced each of the following feelings, using the scale below. For each item, select a number from 1 to 5, and indicate that number on your response sheet.

1. Very Rarely or Never

2. Rarely

3. Sometimes

4. Often

5. Very Often or Always

Positive

Negative

Good

Bad

Pleasant

Unpleasant

Happy

Sad

Afraid

Joyful

Angry

Contented

Scoring:

The measure can be used to derive an overall affect balance score, but can also be divided into positive and negative feelings scales.

Positive Feelings (SPANE-P): Add the scores, varying from 1 to 5, for the six items: positive, good, pleasant, happy, joyful, and contented. The score can vary from 6 (lowest possible) to 30 (highest positive feelings score).

Negative Feelings (SPANE-N): Add the scores, varying from 1 to 5, for the six items: negative, bad, unpleasant, sad, afraid, and angry. The score can vary from 6 (lowest possible) to 30 (highest negative feelings score).

Affect Balance (SPANE-B): The negative feelings score is subtracted from the positive feelings score, and the resultant difference score can vary from -24 (unhappiest possible) to 24 (highest affect balance possible). A respondent with a very high score of 24 reports that

she or he rarely or never experiences any of the negative feelings, and very often or always has all of the positive feelings.

Flourishing Scale (FS)

©Copyright by Ed Diener and Robert Biswas-Diener, January 2009

Below are 8 statements with which you may agree or disagree. Using the 1–7 scale below, indicate your agreement with each item by indicating that response for each statement.

7 - Strongly agree

6 - Agree

5 - Slightly agree

4 - Neither agree nor disagree

3 - Slightly disagree

2 - Disagree

1 - Strongly disagree

I lead a purposeful and meaningful life

My social relationships are supportive and rewarding

I am engaged and interested in my daily activities

I actively contribute to the happiness and well-being of others

I am competent and capable in the activities that are important to me

I am a good person and live a good life

I am optimistic about my future

People respect me

Scoring:

Add the responses, varying from 1 to 7, for all eight items. The possible range of scores is from 8 (lowest possible) to 56 (highest PWB possible). A high score represents a person with many psychological resources and strengths.

Spanish-Speaking Checklist of Stressful Life Events (SL-SLE)

Listado de Eventos de Vida Estresantes en Español – LEVE

Marca con un *ASPA (X)* en el cuadrado los eventos que hayas vivido o te hayan ocurrido **a lo largo de tu vida:**

1. Muerte del esposo/a.
2. Privación de la libertad (encarcelamiento o confinamiento en una institución).
3. Vivir un desastre (incendio, terremoto, inundación, etc.).
4. Muerte de un familiar cercano (padres, hijos/as, hermanos/as).
5. Enfermedad o incapacidad personal grave
6. Cambios importantes a nivel económico.
7. Separación marital o de la pareja.
8. Perder el empleo.
9. Ser victima de un crimen (asalto, violación, etc.).
10. Sufrir un accidente grave de auto
11. Matrimonio o convivencia.
12. Llegada de un nuevo miembro a la familia (nacimiento, adopción, llegada de abuelos, etc.).
13. Tratar de cambiar una conducta adictiva (cigarro, alcohol, drogas, etc.).
14. Divorcio.

15. Embarazo.

16. Muerte de un amigo muy cercano.

17. Reconciliación matrimonial o de la pareja.

18. Pedir una hipoteca o préstamo de alto valor.

19. Conflictos o violencia en la familia
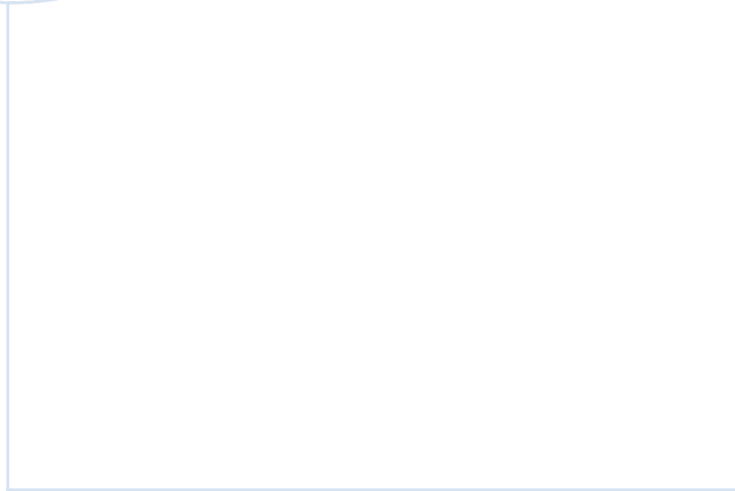
20. No recibir justicia del estado

Morote Rios, R., Hjemdal, O., Martinez Uribe, P., & Corveleyn, J. (2014). Life stress as a determinant of emotional well-being: development and validation of a Spanish-language checklist of stressful life events. *Health Psychology and Behavioral Medicine: An Open Access Journal*, *2*(1), 390-411.

Appendix C: Stressful Life Events by Gender

Table C1 *Stressful life events by gender* ($N = 150$)

	Gender		
	Men	**Women**	**Other**
Valid	63	86	1
Missing	0	0	0
Mean	4.22	4.09	2
Std. Deviation	2.39	2.57	
Minimum	0	0	2
Maximum	10	13	2

Note.