



UNIVERSIDADE D
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**ASPIRATIONS AND EXPECTATIONS MEASURES FOR
ADOLESCENTS AND EMERGING ADULTS
A SYSTEMATIC REVIEW OF THE LITERATURE**

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Everything that is done in the world is done by hope.

Martin Luther

Aknowledgments

To Vinicius,

for challenging me and inviting me to explore my growth zone; for the environment of security and tranquility that you provided along this path; and for your inspiring intelligence that motivated me on the arduous paths of discovery.

To Professor Tomás,

for allowing this learning opportunity that has continually brought me positive surprises; for having believed in this project from the beginning; and for your trust in us to carry it forward.

To my mother, father, and brother,

for the unconditional love you give me, made of bonds that allow growth without barriers; for having taught me that learning only stops with our evening; for always keeping an eye on my path and for always being there for me.

To life,

for constantly presenting me with a banquet of meanings and reasons to believe, causing the smallest light of emotion to shine brightly in the darkness of thought.

Abstract

The present study aims to survey the theoretical background, factor structure and psychometric properties of measures that assess the aspirations and expectations of adolescents and emerging adults across different life domains. We searched three online databases (PubMed, PsycNET, and ProQuest) for relevant articles, using a string of search terms with the following four terminological cores: (1) age (adolescents, youths, etc...); (2) assessed psychological constructs (aspirations, expectations, etc...); (3) psychological measurement (scales, questionnaires, etc...); and (4) psychometric procedures (validation, reliability, etc...). Additionally, we searched the same online databases for articles containing the included measures name. Furthermore, we e-mailed the measures' authors asking for articles not included in the search. Only articles that included psychometric properties of measures that assessed future aspirations and/or expectations of participants aged between 12 and 30-year-old were included. From the 1,845 retrieved articles, 31 met the inclusion criteria reporting psychometric properties of eight measures. Data was extracted and assessed by two raters, and a third rater was accessed for a casting vote. The most frequent scales' languages were English and Spanish, and the most frequent data collection context was in the USA. We grouped the included scales according to their factorial structures' semantic similarities and found five different sorts of content: (1) prospective life domains; (2) future lifestyle domains; (3) positive and negative expectations; (4) career-focused domains; and (5) self/other focused domains. Evidence of internal structure validity and reliability were the only ones present in all of the analyzed studies. Findings suggest that the theoretical background for measuring aspirations and expectations has a direct impact on the content of items. Therefore, the choice of a measure for data collection must be based on specific research questions.

Keywords: aspiration, expectation, systematic review, adolescents, emerging adults.

Resumo

O presente estudo tem como objetivo examinar os fundamentos teóricos, a estrutura fatorial e as propriedades psicométricas de medidas que avaliam aspirações e expectativas de adolescentes e adultos emergentes em diferentes domínios da vida. Pesquisaram-se por artigos relevantes em três bases de dados online (PubMed, PsycNET e ProQuest) usando termos de buscas com quatro núcleos terminológicos: (1) idade (adolescentes, jovens, etc.); (2) construto psicológico avaliado (aspirações, expectativas, etc.); (3) avaliação psicológica (escalas, questionários, etc.); e (4) procedimentos psicométricos (validação, confiabilidade, etc.). Além disso, pesquisaram-se nas mesmas bases de dados artigos contendo o nome das medidas selecionadas previamente. De seguida, enviou-se um e-mail aos autores das medidas solicitando artigos não incluídos na pesquisa. Foram incluídos os artigos que continham propriedades psicométricas de medidas que avaliam as aspirações e/ou expectativas de participantes com idade entre 12 e 30 anos. Dos 1.845 artigos recuperados, 31 atenderam aos critérios de inclusão relatando propriedades psicométricas de oito medidas. Os dados foram extraídos e avaliados por dois avaliadores e um terceiro avaliador exerceu o voto de desempate sempre que necessário. Os idiomas das escalas mais frequentes foram o inglês e espanhol, e o contexto de recolha de dados mais frequente foi nos EUA. Agruparam-se as medidas selecionadas de acordo com as semelhanças semânticas das suas estruturas fatoriais de modo a encontrar cinco tipos diferentes de conteúdo: (1) domínios da vida prospetivos; (2) domínios relacionados a estilo de vida futuro; (3) expectativas positivas e negativas; (4) domínios focados na carreira; e (5) domínios focados em si ou outros. As evidências de validade da estrutura interna e de fidelidade foram as únicas presentes em todos os estudos analisados. Os resultados sugerem que a base teórica para medir as aspirações e expectativas tem um impacto direto sobre o conteúdo dos itens. Portanto, a escolha de uma medida para a coleta de dados deve ser baseada em questões específicas de pesquisa.

Palavras-chave: *aspiração, expectativa, revisão sistemática, adolescentes, adultos emergentes.*

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Introduction

The nature of human development and the particularities of the current times state that planning for the future is an extremely important task for adolescents and emerging adults. On the one hand, from an historical perspective, the solidity of modern social structures and values gave way to a liquid society characterized by countless possibilities and uncertainties (Bauman, 2000). A world that offers multiple choices makes it more difficult to find out what is important and what is worth fighting for. Social changes like the increase in the number of years spent in education and a subsequent later entry into the labor market represent moments of exploration and excitement towards life, which at the same time generate feelings of anxiety and instability (Arnett, 2000; 2004). On the other hand, from the developmental perspective, youths are going through significant transformations at the cognitive, emotional, and physical level (Piaget, 1967; Steinberg, 1993). It is a time with many challenges when it comes to defining a personal identity and making commitments regarding future life (Erikson, 1968). The new emerging values arising with the changes in society enable new future life projects and lifestyles, which break down the old ways of conceiving the transition to adulthood.

Setting future goals is a task of personal exploration intimately related to the transition to adulthood. After a certain age and with the necessary brain maturations, adolescents become capable of conceiving future possibilities and thus imagine themselves in different hypothetical situations (Inhelder & Piaget, 1958). They engage in experimentation and seek to gain personal empirical evidence allowing them to reflect and make justified choices. They devise plans for the future according to different values and seek to lead a lifestyle that conforms to those values. In the past, such thinking was perhaps more typical of an adolescent, however, nowadays, it extended and became prominent for those at the beginning of their adult lives. The transformation in industrialized societies contributed to the prolongation of adolescent's experimentation period of social roles (Arnett, 2000; 2004). Thus, studying the new features of the transition to adulthood will allow societies to follow human development in a more positive and evidence-based way.

The content, ascribed value and expectancy of future goals affect the quality of the motivation to pursue them (Atkinson & Raynor, 1978; Lens, Paixão, Herrera & Grobler, 2012). On the one hand, the future goals one values the most (i.e., their aspirations) play a central role in their daily motivation. On the other hand, perceptions about the likelihood of occurrence of future events (i.e. expectations) can shape one's daily choices about life. Different goals produce different motivation quality, which in turn leads to different life experiences and senses of accomplishment. Hence, assessing the content of these cognitive representations may allow a greater understanding of the choices of adolescents and emerging adults, which in turn may

provide valuable knowledge for future research and interventions in different fields, such as education, clinic, career counseling, etc.

With regards to the importance of studying young people's psychological future, scientific literature has reached somewhat conflicting conclusions regarding their impact on people's lives (Gjesme, 1983; Schmidt, Lamm, & Trommsdorff, 1978). The contradictory findings relate to the theoretical multiplicity in the field, which resulted in the creation of several psychological measures assessing different facets of a same larger construct (Coscioni, Teixeira, Damásio, Dell'Aglio, & Paixão, *in press*). It is thus relevant to examine these different measures in order to identify similarities and differences between them. The present thesis aims to survey the theoretical background, factor structure, and psychometric properties of psychological measures assessing expectations and aspirations of adolescents and emerging adults across different life domains. Therefore, a systematic review of the literature was carried out in several indexed databases following the PRISMA 2009 statement (Moher, Liberati, Tetzlaff, Altman & PRISMA Group, 2009).

Review of the Literature

Adolescence, emerging adulthood, and future thinking

Adolescence is a stage of human development comprising a set of biopsychosocial changes with different cultural meanings. Piaget (1967) stated that the maturation of adolescents' brain structures relates reciprocally to the genesis of formal structures. This allows adolescents to create systems and theories, some of these representing future life planning. According to Inhelder and Piaget (1958), a life plan is "a scale of values which puts some ideals above others and subordinates the middle-range values to goals thought of as permanent" (p. 350). It represents a formal structure, which may help adolescents integrate into adult life with means of planning future activities in society. Therefore, future planning plays an important role in adolescent thinking.

Erikson's Psychosocial Development Theory is characterized by the succession of stages in which the individual goes through a specific conflict (Erikson, 1968). Adolescence's characteristic conflict is identity versus identity confusion, through which adolescents explore beliefs, values, and goals, in an attempt to integrate a personal sense of the self. When adolescents manage to construct a sense of identity in a satisfactory way, they develop loyalty, which represents security about themselves and their position in society. During the growth into a coherent sense of identity, adolescents go through a psychosocial moratorium, i.e., an experimental period in which they experience different social roles before committing to an identity (Erikson, 1968). The end of this period is marked by personal commitments regarding the future. These commitments are related, for example, to sexual orientation, moral and ethical values, and profession choices. Thus, both Piaget and Erikson agreed on the importance of future thinking during adolescence.

The concept of adolescence may not be defined only through a biological and universal perspective, since it is sensitive to cultural issues. Thus, adolescence must be conceived as a stage of development to which meanings are ascribed, so that its conception may change accordingly to time and context (Ozella, 2002). Both Erikson and Piaget defined adolescence according to the time and culture they lived in, and their theories have been considered somewhat inadequate to describe nowadays adolescents (Arnett, 2007; Gopnik, 1996; Halford, 1989). However, their statements concerning adolescence as a stage when one plans for the future is still reminiscent in

more contemporary theories (Steinberg, 1993). Decisions regarding schooling and future professional aspects, for example, remain as psychosocial tasks for current adolescents.

Recently, a new stage of development between adolescence and adulthood has been discussed. Over the past two decades, Arnett (2000) described this stage as a transition between adolescence and adulthood, which he called emerging adulthood. This stage is characterized as an extension of the moratorium period of adolescence due to the postponement of conjugality, parenting, leaving a parental home, and the increased time invested in education. He described some features that characterize this development stage (Arnett, 2004) and some of them relate to future thinking. For example, 'identity exploration' refers to the exploitation of possibilities regarding love, work, and worldviews. This exploration anticipates decision-making on future life commitments. 'Self-focus' relates to emerging adults' focus on developing themselves for adult life needs, which connects to the future needs' forethought. Lastly, 'possibilities/optimism' represents the emerging adults' beliefs in different possible futures they may accomplish. Therefore, it seems emerging adults, as much as adolescents, are looking to discover who they are and who they want to be by means of exploring possibilities in their future lives.

Future time perspective theoretical approaches

Different theoretical perspectives conceptualize psychological future through very different terminologies – such as future time perspective (FTP), future orientation (Nurmi, 1991; Seginer, 2009; Trommsdorff, 1983), future time orientation (Gjesme, 1983), etc. Regardless of the absent consensual terminology, FTP is a construct encompassing cognitive, motivational, and behavioral processes related to the way individuals subjectively experience their future (Seginer, 2009). It has been investigated from a plurality of theoretical approaches assessing different FTP components. According to Seginer (2009), these approaches can be divided into two groups, the thematic and the athematic approaches. The latter - athematic approaches - focus on cognitive dispositions or personality traits related to psychological future. The former - thematic approaches - investigate the psychological future through its content, which can either be through future representation reports (aspirations, fears, and expectations), or through the contrast between different life domains (work, family, and education) on psychological processes (Coscioni et al., *in press*). In this systematic review of the literature, our focus will be on the thematic approaches, which traditionally investigate aspirations and expectations across different life domains.

Different theories have assessed aspirations and expectations, which we conceive as cognitive representations of desired and expected futures respectively. However, a definition on these constructs is not always clear. Mahler, Simmons, Frick, Steinberg & Cauffman (2017), for example, defined aspirations as “the importance they [adolescents] ascribe to achieving their

goals” and expectations as “the perceived likelihood of achieving their goals” (p. 1). These definitions are ambiguous because they refer to other related constructs (Coscioni et al., in press) such as *value* (the importance and relevance individuals attribute to goals) and *expectancy* (a state of waiting generated from beliefs and representations of events estimated for the future). That is, they overarchingly refer to affective and cognitive components of a cognitive representation, and not to the cognitive representation itself.

Other theories also refer to aspirations and expectations, although not always the same term is used. Possible self (PS; Markus & Nurius, 1986) is a construct that defines one’s ideas of what they would like to become (hoped-for-selves), what they might become (expected-selves), and what they are afraid of becoming (feared-selves). These three dimensions of PS relate respectively to aspirations, expectations, and fears (Coscioni et al., in press). Life goals (LG; Emmons, 2003) is another related construct, defined as one’s personal aspirations and dreams. Coscioni et al. (in press) stated that hope is also a term commonly used to define aspirations. However, this concept can be understood either as a future representation with positive value or as a personal characteristic of self-regulation. In Seginer’s (2009) theoretical model on FO, hope appears as a facet of the cognitive component expressing desired content for the future. Within the scope of self-regulation perspectives, the main perspective is that of Snyder et al. (1991) in which hope is a term embracing motivational characteristics similar to optimism. From now on, we will assume the following definitions: *aspirations* refer to highly valued states of affairs; and *expectations* refer to cognitive representations of future-likely states of affair (Coscioni et al., in press).

Studies with adolescents and young adults revealed contradictory results between aspirations and expectations with subjective well-being. For example, Sánchez-Sandoval and Verdugo (2016) found significant positive correlations between economic/occupational expectations and life satisfaction. On the other hand, Fonseca, Silva, Paixão, Crespo & Relvas (2019) found that hopes related to financial resources and work/career presented no relation to well-being. These contradictory results may be related to the type of instrument used. Whilst in the first study they used a measure that uses an inductive methodology (i.e., participants list their answers freely), in the second study a measure with a deductive approach was used (i.e., the items are presented beforehand). Different theories that study psychological future or related constructs have equivalent psychological measures. The content of these measures is directly influenced by their theoretical assumptions. Thus, it is important to survey these measures, their theoretical similarities and differences, and their psychometric characteristics.

Psychological measures construction

Psychological measures aim to access unobservable constructs that represent latent variables. According to Pasquali (1999), the construction of a psychological measure encompasses three main stages: a theoretical stage, an empirical (experimental) stage, and an analytical (statistical) stage. The theoretical procedure concerns the theory that underlies the psychological construct to be measured, and its operationalization in items. The empirical procedure relates to a survey undertaken in order to test the created measure. The analytical procedure refers to the statistical analysis that allows the characterization of the measure's validity, reliability, and normativity. For each of these procedures, there are different steps to be taken in order to progress during the development of a psychological measure. Each step involves different methodologies producing results that may successfully complete the task required in the corresponding step.

Validation and reliability are two central processes in the assessment of psychological measures. The validation process represents the accumulation of scientific evidence that supports the interpretations of the results in relation to what the measure is supposed to assess (Primi, Muniz, & Nunes, 2009). That is, if the measure is able to truly assess the construct that it's supposed to measure. According to the *Standards for Educational and Psychological Testing* (American Educational Research Association, American Psychological Association, National Council on Measurement in Education, 2014), validity evidence may be based on four different sources, based on: the content; the response process; the internal structure; and the relationships with external variables. Validity evidence based on the content seeks to investigate whether the measure's content globally represents the construct to be assessed. Validity evidence based on the response process seeks to gather data on the mental processes arising during the completion of the measure. Validity evidence based on the internal structure seeks to raise data on the structure of the correlations between items and subdimensions. Lastly, validity evidence based on relationships with external variables seek to raise data on the correlation between the measure's scores and other variables (which can be related to the same construct, related constructs, and different constructs).

Regarding reliability, Pasquali (1999) refers to it as "how close the score obtained in the test is to the subject's true score in any trait" (p. 194, *our translation*). Thus, reliability represents the accuracy of the measure in assessing the construct it is supposed to measure. Different criteria can be used to assess the measure's reliability, which may depend on the number of times the measurement is made and the purposes of the study. The test-retest technique calculates the correlation between the results obtained from the same subject at two different times of data collection (Pasquali, 1999). Internal consistency verifies the homogeneity of the measure's items (Pasquali, 1999), which is assessed by different statistical techniques, such as Cronbach's Alpha (α), McDonald's Omega (Ω), Average Variance Extracted and Composite Reliability.

Goals

The main objective of the present study is to survey the theoretical background, factor structure, and psychometric properties of measures that assess the aspirations and expectations of adolescents and emerging adults across different life domains. The specific objectives are:

- (1) to survey the languages and cultures in which the included measures were created and/or adapted;
- (2) to survey the theories and construct definitions on which the included measures are grounded;
- (3) to survey the included measures' specific content and factor structures, considering the number of items and factors
- (4) to survey the included measures' validity evidences based on the content; the response process; the internal structure; and the relationships with external variables;
- (5) to survey the included measures' reliability evidence, considering test-retest, Cronbach's Alpha (α), McDonald's Omega (Ω), Average Variance Extracted and Composite Reliability.

Method

Research strategy

We searched the online databases ProQuest (ERIC, Sociological Abstracts, and Social Services Abstracts), PsycNET (PsycINFO and PsycARTICLES), and PubMed, which index scientific literature in the fields of education, sociology, social service, psychology, psychiatry, and health and medical sciences. We first used a string of search terms with four terminological cores: (1) terms related to adolescence and emerging adulthood (adolescent* OR "young adult" OR "young adults" OR "emerging adults" OR "emerging adult" OR youth* OR teenager* OR pupil* OR student*.); (2) terms related to the psychological construct of our interest (aspiration* OR expectation* OR "future orientation" OR "possible self" OR "possible selves" OR "future time perspective" OR "future goal" OR "future goals" OR expectanc* OR hope*); (3) terms related to psychological measurement (scale* OR measure* OR index* OR questionnaire* OR inventor* OR subscale*); and terms related to psychometric procedures (validation OR validity OR psychometric* OR "factor structure" OR reliability). The four terminological cores were presented between parentheses and separated by the Boolean term "AND". We limited the search to the articles' title, abstract, or keywords, and used filters to limit the search results to articles. No time or language filters were applied.

We included articles according to the following criteria: (1) being a psychometric study on a psychological future measure which: (a) assesses aspirations and/or expectations (although other terms could have been used), (b) through deductive methods, and (c) through a thematic approach; and (2) using samples with 12 to 30 year old participants. Regarding the samples, articles were included with younger and older participants if the majority of the sample was composed of the expected age range. Additionally, we excluded articles that assessed specific life domains, i.e., domains extending only to a small number of individuals.

Subsequently, we searched the same online databases for articles containing the included measures. The same filters, and inclusion and exclusion criteria were applied. Lastly, we e-mailed the measures' authors in order to ask for extra articles that could help us analyze the evidence related to the validity and reliability of the measures.

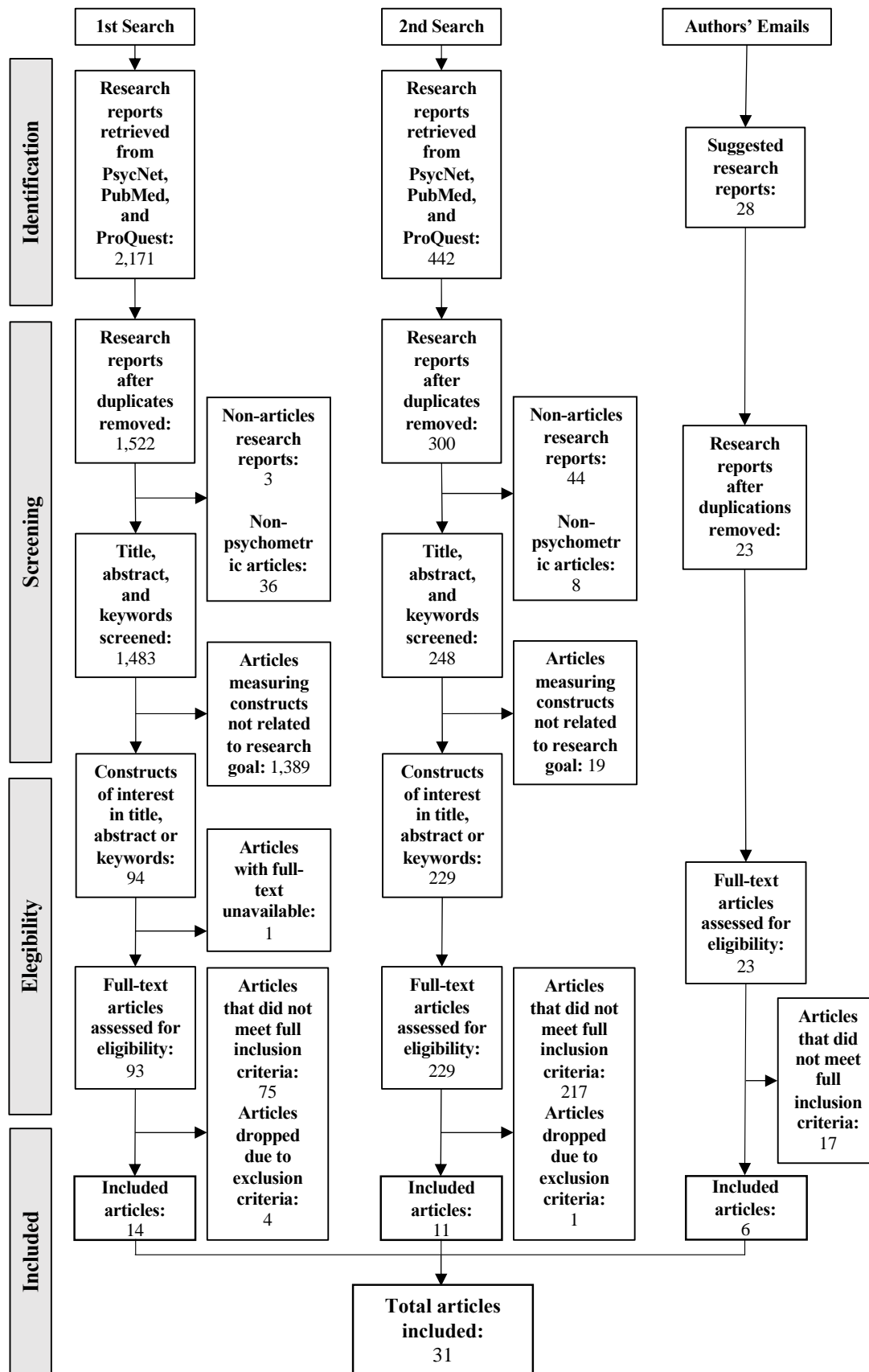
Articles screening

The first search occurred on June 18th, 2019, and two reviewers (master students previously trained for this task) found 2,171 articles. The articles were controlled for duplication, resulting in 1,522 articles. Among these, one was unavailable, three were not articles, 36 were not psychometric studies, and 1,389 assessed measures measuring constructs not related to our research goal. The remaining 93 papers had their full text assessed and 18 met the inclusion criteria. Four of them were left out due to exclusion criteria resulting in 14 articles. The second search occurred on March 2nd, 2020, and 442 articles were found. Duplications and articles found in the first search were excluded, resulting in 300 articles. Among these, 44 were not articles, eight were not psychometric studies, and 19 assessed construct measures not related to our research goal. The remaining 229 articles had their full text assessed and 11 met the criteria. As for the communication with authors, 28 articles were suggested, of which five were duplicated. The remaining 23 articles had their full text assessed and six met the inclusion criteria. Altogether, 31 articles and eight relevant measures were included. A third reviewer (a doctoral student working in the field) assessed the articles for a casting vote whenever reviewers found different results. A flow-chart describing the screening process is presented in Figure 1.

Data extraction

The aforementioned two raters assessed the 31 papers, in order to extract data regarding theoretical backgrounds; construct definitions; measures' number of items, extracted factors, validity evidence (based on content of test, response process, internal structure analysis), and reliability evidence (reliability coefficients, test-retest correlations, and invariance tests). Whenever raters found different results, the aforementioned third rater assessed the article to provide a casting vote.

Figure 1 – Flow-chart diagram



Results

The included articles were published between 1989 and 2019. The tables in Appendix 1 and 2 presents data concerning measures' languages, location (countries where data collection occurred), theoretical background, and constructs and dimensions definitions. The most frequent languages were English and Spanish, followed by Portuguese, Korean and Norwegian. Four different measures have been created in the USA, and two in Spain, South Korea, Norway and Brazil. The remaining countries had only one measure with data collected. The tables in Appendix 3 and 4 summarizes the reported evidence regarding the measure's validity and reliability, which will be discussed separately in the next subsections.

Adolescents Future Expectations Scale (AFES)

The AFES (Sánchez-Sandoval & Verdugo, 2016) assesses future expectations of adolescents and its content was grounded on a review of the literature on future expectation measures across different cultures. A preliminary version was reviewed by experts, resulting in a 14-items measure tested in a sample of 551 Spanish adolescents. An Exploratory Factor Analysis (EFA) extracted four factors: economic/occupational (5 items), academic (3 items), well-being (3 items), and family (3 items). A Confirmatory Factor Analysis (CFA) with another sample of 574 Spanish adolescents confirmed the same four-factor structure. Full-scale reliability (α) was 0.85, and the subscale reliability varied from 0.65 to 0.81. Correlations with self-esteem and life satisfaction were medium.

The AFES was adapted for parents' usage in a dyadic study with adolescents and their parents (*Adolescent Future Expectations Scale for Parents*; AFES-P; Sánchez-Sandoval, Verdugo & Río, 2019). A Principal Components Analysis (PCA) with a sample of 660 parents extracted four components equivalent to the AFES' factors and a CFA with the same sample supported the same internal structure. Subscale reliability was tested through Cronbach's α and McDonald's Ω , which varied respectively from 0.73 to 0.86, and from 0.80 to 0.90. Furthermore, full-scale and subscale Average Variance Extracted (AVE), and Composite Reliability (CR) varied respectively from 0.48 to 0.65, and from 0.66 to 0.92. The AFES' and AFES-P' scores were highly correlated.

In another study with a Portuguese and a Spanish sample, Verdugo, Freire, and Sánchez-Sandoval (2018) ran a CFA with 267 Portuguese adolescents showing satisfactory results. A configural invariance test across the two samples showed an adequate fit. Cronbach's α and McDonald's Ω for the global scale in the total sample was 0.84 and 0.89 respectively. In the Spanish and Portuguese subsamples, the coefficients varied from 0.62 to 0.86, and from 0.58 to 0.83 respectively. Additionally, full-scale and subscale AVE, and CR varied respectively from 0.40 to 0.66, and from 0.35 to 0.44 for the Spanish sample; and from 0.60 to 0.78, and from 0.56 to 0.71 for the Portuguese sample.

Adolescents Life Goals Profile Scale (ALGPS)

The ALGPS (Gabrielsen, Ulleberg & Watten, 2012) assesses perceived importance and attainability of LG amongst adolescents. Its content was grounded on a review of the literature based on Emmons (2003), who provided a theoretical taxonomy with four LG domains: relations, generativity, religion, and achievements. In addition, focus groups with Norwegian adolescents provided knowledge concerning their LG content. A first version with 34 items was tested in a sample of 140 adolescents and an EFA extracted three factors. A new version with 21 items was tested in a sample of 244 adolescents and an EFA extracted the four expected factors. A cross-validation study was carried out with a sample of 294 adolescents, and an EFA maintained the four-factor solution. A CFA was carried out and Gabrielsen et al. (2012) concluded it supported the theoretical factor structure. Nevertheless, the CFI fit index was not acceptable according to Brown's (2006) reference values. Subscale reliability (α) varied from 0.65 to 0.75. Correlations with satisfaction with life, subjective happiness, sense of coherence, and self-efficacy were medium to strong. Correlations with Big-5 traits were absent or small.

Aspiration Index (AI)

The AI assesses future goals across several life domains and among respondents in different stages of lifespan. However, research was carried out mostly with undergraduate or adolescent samples. AI's first version had four domains (self-acceptance, affiliation, community feeling, and financial success; Kasser & Ryan, 1993) and assessed the degree of their importance and perceived likelihood. Its factor structure was tested through an EFA. A few years later, three extra domains were added (image, health, and fame; Kasser & Ryan, 1996), and the new factor-

structure was tested through a higher-order PCA with the subscale scores. The PCA extracted two components: intrinsic goals (self-acceptance, affiliation, community feeling and physical fitness) and extrinsic goals (fame, image and financial success). Subscale' reliability (α) across studies ranged from 0.54 to 0.89.

Several seven-factors versions, containing from 24 to 57 items, were created and adapted to Croatian (Krupić & Corr, 2019; Rijavec, Brdar & Miljković, 2011), German (Klusmann, Trautwein & Lüdtke, 2005; Schmuck, Kasser & Ryan, 2000), Iranian (SabzehAra, Ferguson, Sarafraz & Mohammadi, 2014), Norwegian (Utvær, Hammervold & Haugan, 2014), Japanese (Nishimura & Suzuki, 2016) and South Korean (Kim, Kasser & Lee, 2003). The adapted versions' factor structures were tested through several EFAs, CFAs and measurement equivalence analysis that supported the same or very similar organization. A version with an extra factor entitled "power" was tested for measurement equivalence and showed a satisfactory fit between an American and a Russian sample (Ryan et al., 1999). However, a Croatian version excluded the factor "health" on the grounds that it was not a psychologically oriented feature, but without reporting empirical evidence (Rijavec et al., 2011). Regarding assessed rating dimensions, three of these studies used only importance rating (Kim et al., 2003; Nishimura & Suzuki, 2016; Utvær et al., 2014), two studies used importance and likelihood ratings (Klusmann et al., 2005; Schmuck et al., 2000) and two studies used importance, likelihood and attainment ratings (Rijavec et al., 2011; SabzehAra et al., 2014). The German version (Klusmann et al., 2005) was adapted to assess parental goals for their children (AI-PG; Hollmann, Gorges & Wild, 2018). A CFA with 21 items supported the structure of seven first-order factors reflecting goals content, and two second-order factors reflecting goals motivational orientation. Subscale reliability (α) across these versions ranged from 0.64 to 0.92.

New AI versions were created with four extra factors (hedonism, conformity, safety, and spirituality) and adapted to Bulgarian, Chinese, French, German, Korean, Romanian and Spanish. CFAs and measurement equivalence across 15 cultures supported the 11-factor model (Grouzet et al., 2005). CFI index was slightly below the .90 criteria (Brown, 2006), however Grouzet et al (2005) defended that the result still supports the theoretical since RMSEA and SRMR (which achieved acceptable values) are more adequate to test complex models. Circumplex multidimensional scaling analysis suggested two orthogonal continuums distinguishing the goals' domains: intrinsic versus extrinsic goals, and self-transcendence versus physical self. Self-transcendence includes "aspirations that represent going beyond or outside of oneself", and physical self represents "aspirations that primarily concern the physical body" (Grouzet et al., 2005, p. 807).

A direct replication study tried to confirm the same circumplex structure of goal content with nine samples containing 1,762 Polish students (Górnik-Durose & Jach, 2016). The procedures followed the same steps and none of the results confirmed the findings of the original study. In another study with the same sample (Górnik-Durose, Jach & Langer, 2018), a PCA with 23 items extracted three components: extrinsic, intrinsic and transcendent goals. Each component

item was tested in three extra PCAs in order to extract seven components related to specific life domains. A CFA supported the model. Means of scale's reliability (α) ranged from 0.67 to 0.90.

Regarding external variables, although the relationship between extrinsic aspirations and subjective well-being remains controversial, most of the findings showed intrinsic aspirations to be more likely to lead individuals to higher subjective well-being, in contrast with the pursuit of extrinsic aspirations (see, for example, Nishimura & Suzuki, 2016, and Rijavec et al., 2011).

Career Aspiration Scale (CAS)

The CAS (Gray & O'Brien, 2007) assesses career aspirations of adolescents and emerging adults and its content was grounded on a review of the literature on women's career theory (Betz & Fitzgerald, 1987). A preliminary version was reviewed by experts resulting in a 10-items measure, which was tested in four PCAs with different samples: 288 American college females, 409 American female adolescents, 207 post-college women (part of the second sample five years later), and 364 Mexican American female adolescents. The first PCA extracted a two-component solution and two items were excluded due to low and cross loadings. The other three PCAs considered only the eight items left and they replicated the same two-component solution: leadership and achievement aspirations (6 items) and educational aspirations (2 items). Full-scale and subscale' reliability (α) ranged from 0.51 to 0.82 and 2-weeks interval test-retest yielded strong correlations. The low reliability indices ($\alpha < 0.6$) correspond to the educational aspiration subscale, especially within the Mexican American sample. Correlations ranged from medium to high for career decision self-efficacy; were medium for attitudes towards women's roles, occupational self-efficacy, and instrumentality; small for multiple role self-efficacy; and small to medium (and negative) for importance of career versus family.

A revised 33-items version of the CAS was created (CAS-R; Gregor & O'Brien, 2015; Gregor, O'Brien & Sauber, 2017) and tested in three CFAs with different samples: 328 undergraduate females, 199 female graduates, and 359 undergraduate men. Nine items were removed from the first CFA due to low loadings, conceptual redundancy and poor fit. The final version consisted of a 24-items measure with three factors – even within the male sample, although any invariance model across gender groups was tested. The factors were named: leadership aspiration (8 items), educational aspiration (8 items), and achievement aspiration (8 items). Subscale reliability (α) ranged from 0.80 to 0.90, and 2-weeks test-retest correlations were medium to strong. Subscale correlation ranged from medium to strong for work role salience; small to medium for achievement motivation; and small and negative for willingness to compromise career for future partner. Leadership subscale yielded a small negative correlation with willingness to compromise career for future children.

A Korean version of CAS-R was translated and adapted (K-CASR; Kim, O'Brien & Kim, 2015). A CFA with 377 college Korean women resulted in a poor fit and an 18-items solution was found to be a good fit. Subscale reliability (α) ranged from 0.82 to 0.90 and 2-week interval test-retest correlations were strong. Correlations ranged from medium to strong for achievement motivation and career goal engagement; and small for career orientation.

Future Expectations Questionnaire (FEQ)

The FEQ (Prince et al., 2016) assesses threats to safety and positive expectations of male adolescents and emerging adults. It has been adapted from a previous future expectation measure in which it included some items tapping into threats to future safety. A CFA tested a two-factors model against a one-factor model across six waves of data collection with African American and Latino male youths. The fit indices for the two-factor model were consistently better across all the waves. Test-retest correlations demonstrated that the positive future expectations had stronger correlational patterns. Full scale's reliability (α) at wave 1 was 0.73 and waves 2 to 6 ranged from 0.81 to 0.89. Invariance testing found no significant differences in the magnitude and latent factor means of the two-dimensional model across ethnic groups.

Future Expectations Scale for Adolescents (FESA)

The FESA (McWhirter & McWhirter, 2008) measures future expectations of adolescents and its content was grounded on reviews of the literature on adolescent expectations and Chilean culture (as the measure was originally created for Chilean adolescents). A preliminary version was reviewed by two experts, resulting in a 25-items measure tested in a sample of 389 Chilean adolescents. An EFA resulted in a 5-factors solution, and one item dropped. The factors were entitled: work and education (10 items), marriage and family (4 items), church and community (3 items), health (4 items), and children's future (3 items). Full-scale and subscale reliability (α) ranged from 0.71 to 0.88. Full-scale scores highly correlated to hope, school connectedness and connectedness to self-in-the-future. Correlations to risk factors were small or insignificant.

FESA was translated and adapted for Brazilian context (Dutra-Thomé, Koller, McWhirter & McWhirter, 2015) and a CFA with 547 emerging adults showed that the original factor structure did not fit. Thus, an EFA with the same sample resulted in a different solution, also with five factors: work and education (7 items), children and family (5 items), marriage (3 items),

church (3 items), health (4 items). Two items originally in the factor ‘marriage and family’ were associated with the factor ‘children’s future’, creating a new factor ‘children and family’. Two items from the original factor ‘church and community’ were removed due to low loadings, and the factor renamed as only ‘church’. Full-scale reliability (α) was 0.89, and subscale reliability ranged from 0.70 to 0.86. Contrary to the original version rating dimension that measures expectations (goals likelihood), the Brazilian FESA assesses aspirations (goals importance). It might be because the Portuguese word *expectativa* (expectation/expectancy in English) can also refer to a highly valued state of affairs.

Hope Index (HI)

The HI assesses wishes and expectations (Staats, 1989) and its content was grounded on the responses of 234 students and 303 parents about the things that they hoped for. Based on Beck’s self-other-world depressive triad, half of the items are self-referenced (hope self domain – eight items) and the rest refer either to others or to world circumstances (hope other domain – eight items). The integrity of the subscales was demonstrated using factor analysis (Staats & Stassen, 1986, cit in Staats, 1989), and full-scale and subscale reliability (α) ranged from 0.72 to 0.85. Test-retest correlations with 101 American students were low to medium. Hope was measured in 1988, in 1991 during the weekend of the Gulf ground invasion, and in the 1992 recession (Staats & Partlo, 1993). Hope for peace increased in the weekend of ground invasion, and hope for productivity increased during the 1992 recession, as well as during the Gulf invasion, in comparison to hope measured in 1988. Thus, the measure has shown to have utility as a psycho-social indicator, as hope for peace increased under threat of war and hope for productivity increased in a time of recession.

The HI was translated and adapted to the Brazilian context with adolescents and emerging adults (Pacico, Zanon, Bastianello & Hutz, 2011; Pacico, Zanon, Bastianello, Reppold & Hutz, 2013). Five items were added grounded on 60 Brazilian students’ responses in an open-ended questionnaire about their future aspirations. A 21-items version was tested in a sample of 844 undergraduates, and an EFA extracted the predicted factorial structure. The new items all loaded in the hope-self factor. The original 16-items measure was also tested in a separate EFA which found the same solution. A CFA was conducted with the same sample for both versions and the results suggested acceptable fits. The 16-items and 21-items full-scale and subscale’ reliability (α) ranged from 0.79 to 0.89. The 21-items version was also submitted to a PCA with a sample of 450 adolescents. Final results found the same factorial solution. Reliability (α) was 0.83 for hope self and 0.81 for hope other. Correlations to dispositional hope, self-esteem and optimism were low to medium.

Possible Selves Scale for Adolescents (PSSA)

The PSSA (Molina, Schmidt & Raimundi, 2017) assesses PS of adolescents across different life domains. Its content was grounded on a review of the literature on self-concept and PS, and on a qualitative study with Argentinian adolescents. A 214-items preliminary version was reviewed and evaluated by experts resulting in a 96-items version. An EFA with a sample of 320 Argentinian adolescents resulted in five factors: self-sufficiency (11 items), peer relationships (9 items), good behavior (5 items), physical appearance (5 items), and physical ability (5 items). A separate-EFA with eight items identified a solely PS global assessment subscale. Subscale reliability (α) varied from 0.80 to 0.94. Non-parametric correlations with self-perception profiles were high in the homogeneous domains (e.g., 'physical ability' and athletic competence, 'good behavior' and behavioral conduct). 'Peer relationships' strongly correlated to social acceptance, and medially correlated to close friendship and romantic appeal. Lastly, 'self-sufficiency' correlated moderately with academic competence.

Discussion

This research surveyed the theoretical background, factor structure, and psychometric properties of psychological measures assessing expectations and aspirations of adolescents and emerging adults across different life domains. We searched online databases and found 31 articles evaluating eight psychological measures. The most recurrent data collection context was in the USA and the most frequent languages were English and Spanish. AI was the most worldwide included measure, adapted over 20 languages and cultures in all inhabited continents.

The included measures were grounded on different theoretical approaches, consequently influencing the generation of their content. A first group embodies two measures assessing predominantly prospective life domains, both grounded on thematic approaches of future orientation. ‘Prospective life domains’ refer to the next steps in adolescent’s life planning, which usually relate to higher education, work and career, and marriage and family (Seginer, 2009). FESA was created in Chile and later adapted to the Brazilian culture, where the original factor structure did not achieve good fit indices. This reinforces that future goals measures may be sensitive to cultural effects. Thus, cultural differences must be taken into consideration when future goals are measured across different cultural contexts. However, some measures may be adapted to other cultures and keep their original factor structure. AFES, for example, was originally created in Spain and adapted for Portuguese context without any changes in its factor structure. It may indicate greater similarities between Portugal and Spain than Chile and Brazil regarding their juvenile population’s life goals.

Despite using different names, FESA and AFES factors share in common the measurement of life domains linked to education, work, and family. Unlike AFES, FESA does not separate ‘work and education’ domains, both in its original and Brazilian versions. Despite the interrelations of these dimensions, they are two explicitly different life domains. Thus, combining them diminishes the possibility of discriminating adolescents and emerging adults with aspirations or expectations related to only one of these domains. In contrast, AFES is less comprehensive than FESA in the ‘family’ domain; the first has only one factor related to family life whilst the latter has two. In FESA’s original version, ‘marriage and family’ formed one factor and ‘children's future’ formed another, while in the Brazilian version ‘marriage’ formed a single factor separated from ‘children and family’. Future measures may propose three family domains discriminating intimate relationships, family lifestyle, and children. In addition, FESA has a factor related to ‘church and community’ (or only ‘church’, in the case of the Brazilian version) and another related to ‘health’; AFES in contrast has a ‘well-being’ factor. New life domains consistent with the characteristics of adolescents and emerging adults may be created to deepen

our understanding of these lifecycle stages. A factor measuring 'traveling' aspirations and expectations, for example, may be relevant since it relates to the identity exploration characteristic of emerging adulthood (Arnett, 2000).

A second group includes three measures grounded in different theories assessing predominantly existential domains. The existential category contrasts with prospective life course domains by being related not only to the subjective future, but also to the past and the present. Thus, this category focuses on future lifestyles and/or personal values intended to be pursued or maintained in the future, such as self-concerns and leisure (Seginer, 2009). ALGPS is grounded on life goals theory (Emmons, 2003) and considers that having life goals is inherent to a meaningful life. AI is grounded on Self-Determination Theory (Deci & Ryan, 2000) and distinguishes between intrinsic and extrinsic goals. Lastly, the PSSA is grounded on Possible Selves Theory (Markus & Nurius, 1986) and states the end of high school as a reference point to assess adolescent's PS. Thus, it contrasts with the other measures without a precise time reference. It may be the reason why the measure did not include domains related to marriage or parenting.

The second group is mostly interested in participant's personal values regarding the future rather than personal projects being pursued. Nevertheless, many of these measures' factors have some content related to prospective domains of life. For example, PSSA 'self-sufficiency' factor has some items related to work, education, material goods, relationship with others, and personal characteristics. ALGPS 'achievements' factor has some items related to education. Most factors encompass domains that could be separated and specified but that together relate to the sort of future life participants want to live. Therefore, the dichotomy between prospective life course and existential domains (Seginer, 2009) is not always easy to distinguish since some domains relate to both the life project' next steps and lifestyles of a participant.

The three measures left have very particular constitutive dimensions. FEQ distinguishes positive and negative future expectations. The study reporting its creation is grounded on a longitudinal data collection with African American and Latino young men living in high risk urban areas. The sample offered an opportunity to examine the structure of future expectations in a population that experience increasing risks limiting their life chances. Young minorities' safety threat expectations are harmful to well-being and predict later life and socioeconomic negative outcomes. Simultaneously, positive expectations may act as a protective factor in contexts of adversity. Therefore, it is important to create measures assessing positive and negative expectations, as within vulnerable populations it might nurture or obstruct several outcomes.

CAS is a career-specific measure grounded on women's career theory (Betz & Fitzgerald, 1987). The measure sought to improve women's career measures by going beyond the traditional/non-traditional and prestigious/non-prestigious dichotomy through the domains of leadership, achievement, and educational aspirations. The factor structure of a Mexican American teenager's sample did not replicate the original factor structure, which was extracted with samples of white college women. It may relate to the influence of language, racism and acculturation in

one's perception of career possibilities. This highlights the importance of developing specific aspirations and expectations measures for vulnerable youth groups.

Lastly, HI is grounded on Beck's (1963) depressive triad and distinguishes between hope directed to self and hope directed to others. It is particularly relevant considering that adolescence and emerging adulthood are ages-of-onset for psychological illness (Kessler et al., 2007). These domains contribute to psychopathology conceptualization through the depression model, but also to personality issues. Thus, it may be of clinical interest to notice a greater discrepancy between high scores for hope for self, compared to low scores for hope for others/world. Also, the measure was used as a potential psycho-social indicator, by measuring hope between moments of social tension (Staats & Partlo, 1993).

One measure assessed only aspiration (CAS), three assessed only expectation (AFES, FEQ, PSSA) and three assessed both aspiration and expectation (ALGPS, AI, HI). Regarding FESA, the original version assessed expectations while the Brazilian version assessed aspiration – although data on expectations in the Brazilian context has been collected, these have not yet been analyzed (Dutra-Tomé, personal communication, October 2018). It is important to note that assessing both facets, aspiration and expectation, allows an assessment of 'strain', i.e., the gap between aspirations and expectations. Previous research has indicated that high levels of strain are a predictor of risk behaviors (Knight, Ellis, Roark, Henry & Huizinga, 2017; Mahler et al., 2017).

All measures, except for FEQ, reported validity evidence based on content evaluation either through reviews of the literature, open-ended questionnaires, focus groups, interviews, or expert evaluation. In addition, adaptation studies carried out translations, back-translations, and pilot studies with subsequent evaluation. HI adaptation for Brazilian context brought new items after opened questionnaires were carried out with undergraduates. The study was original on generating extra content reflecting Brazilian cultural particularities. Nevertheless, the original factor structure was also tested, which allowed future comparisons with other countries.

Only the HI adaptation for Brazilian context reported validity evidence based on response process. A pilot study was carried out to grasp participants' perceptions regarding HI content, which is relevant to verify not only the semantic adequacy, but the coherence between theoretical framework and mental processes arising during data collection (Primi et al., 2009). This validating process is largely neglected (Morgado, Meireles, Neves, Amaral & Ferreira, 2017), although it may improve the item's content generation and consequently the measure's internal structure.

All measures had their internal structure analyzed either by EFA, PCA, or CFA. CAS creation studies, HI Brazilian adaptation study, and some AI studies used PCAs instead of EFAs, which is a psychometric limitation. Since PCAs do not distinguish specific and common variances of items, it may extract higher factor loadings, which in turn inflate explained variance (Damásio, 2012). In addition, psychometric measures intend to assess latent construct, and therefore the common variance across items.

Kaiser-Guttman criterion (Eigenvalue > 1.0) was predominantly used as a factor retention criterion. However, this method is not recommended as an isolated factor retention criterion since it was developed based on a population correlation matrix (Damásio, 2012). Thus, it may overestimate the number of factors to be retained due to sampling errors, since the included studies used samples and not populations. An AI study, the FESA Brazilian adaptation, and the PSSA creation study have used Parallel Analysis as retention criterion. This method increases the precision by retaining only factors with Eigenvalues higher than those obtained in a parallel analysis with simulated data (Damásio, 2012).

As for rotation criterion, AFES and AI were the only measures whose extracted factors were rotated using an orthogonal method, instead of an oblique one. However, this can be considered a limitation because the orthogonal rotations generate factors that are independent of each other due to the assumption that there is no correlation between them. This is a hypothesis rarely obtained in sciences such as psychology (Damásio, 2012). AI studies that used orthogonal rotations may be justified by the fact that they were trying to separate intrinsic from extrinsic goals.

All measures except for PSSA and FESA had their factor structure tested through a CFA, which is solid evidence about their internal structure. It would be important for measures that only tested their factor structure through EFAs and PCAs to check the factorial structure through a CFA. In contrast, FEQ was the only one that went straight to CFA with no previous EFAs. The fit indices of the CFA carried out with ALGPS raised questions about the adequacy of the proposed factorial structure. In cases of measures adaptation, CFA was the most used statistical method for internal structure analysis, which is a widely used approach (Borsa, Damásio & Bandeira, 2012). However, even if the fit indices were good, further studies with EFAs could be carried out to test if the factor structures extracted also reflect the original factor structure.

Studies with AI and FEQ reported evidence of measure invariance across culture and ethnicity respectively. Nevertheless, some AI adaptations have shown results that did not replicate the proposed factorial structure, which raises questions regarding its cross-culturality. Measure's cross-cultural adaptations allow the comparison between groups of different languages and cultures, which contributes to the measure validity and evaluation equity, both in terms of methods and comparison of results. Thus, cross-cultural adaptations are justified by the relevance of multicultural studies. Other measures should carry out similar procedures and test the measurement invariance between different cultures. No measure evaluated the invariance between gender or age group.

The measures that raised validity evidence based on the relation with external variables used mostly related constructs. Most measures (AFES, AI, ALGPS, FESA, HI) investigated the relations of their scores with positive psychology constructs (e.g. self-esteem, satisfaction with life, happiness, vitality, self-actualization). These correlations may indicate that aspirations and expectations can also be considered positive constructs. However, some measures correlated their scores with constructs highly consistent with its particular content. For example, CAS used

measures of work and career aspects, such as career decision self-efficacy, multiple roles self-efficacy, and work role salience. PSSA used a self-perception measure, which relates to PS conception as a future component of self-concept. AFES had its scores compared to AFES-P scores, which is a scale assessing the same content as AFES although from the parents' perspective. Developing parental versions for adolescents' future goals measures may allow the assessment of the influence of parents' expectations in adolescent's adjustment and the discrepancies between family members' expectations. As for the evidence with unrelated constructs, ALGPS used a personality measure and some AI studies used mostly depression and anxiety indicators. FEQ was the only scale that did not raise evidence of validity based on the relations with external variables (and also FESA and HI adaptation studies for Brazilian context). Cronbach's alpha was the most frequent criterion for reliability evidence. Yet, it has some limitations, since it assumes all retained items have a linear correlation with each other. It also presumes that the covariance between items is the same for all variables, that is, that all retained items have the same importance for the factor (Damásio, 2012). AFES and AI were the only measures presenting other criteria, namely McDonald's omega, AVE, and CR. Some studies have presented Cronbach's alphas below 0.60, which represents unacceptable values of reliability. Studies with CAS, AI, HI, and FEQ reported good test-retest reliability evidence.

Conclusions

The present thesis surveyed psychological measures that assess expectations and aspirations of adolescents and emerging adults across different life domains. The theoretical background, factor structure, and psychometric properties of eight measures were analyzed across 31 articles retrieved from online databases. The measures were mostly applied in the USA context; English and Spanish were the predominant languages.

This study contributes to the literature in several ways. Firstly, it is possible to highlight the influence of different theories on the generation of the measures content. The included measures evaluated aspirations and expectations in very different ways that can be divided into five groups: domains of prospective life; domains of future lifestyles; career-specific domain; dichotomous domain focused on hopes for the self and for others; and lastly, dichotomous domain between positive and negative expectations. There is no approach or measure that stands out as the most ideal for measuring young people's aspirations and expectations; the research questions may guide the choice of the best to be included on data collection.

The construction and adaptation of psychological measures necessarily involves psychometric issues. This study sought to group some of the limitations present in the included measures construction and/or adaptation studies. The limitations that seem to happen more frequently are the use of PCAs instead of EFAs and the isolated use of the Kaiser-Guttman criterion for factorial retention. Both conducts may lead to an inflated number of factors retained. In addition, some measures still need to be tested in a CFA.

This study has some limitations that should be listed. Firstly, the number of indexed online databases may not be enough to survey all relevant publications and existing scales that measure aspirations and expectations in adolescents and emerging adults. In addition, when searching other online databases, the terms should also be used in other languages. For example, if we were to search on Portuguese or Brazilian bases, we would use the terms in Portuguese. A second limitation refers to the number of terms related to psychological future, both in terms of quantity and clarity of definitions. Thus, it is very likely that there are more scales assessing aspirations and/or expectations, although using a different term not included in the search. We did not aim to exhaust the measures that assess aspirations and expectations of young people. Although these limitations are present, the investigation is relevant to present the scales used in articles indexed in the most relevant databases in the area.

Our research suggests that this is the first study that aimed to survey the theoretical background, factorial structures, and psychometric properties of measures assessing young people's aspirations and expectations. The results and discussion presented can help future studies

seeking to assess these psychological characteristics on young people across different contexts. First, by presenting a set of already existing measures, which may then be easily chosen by a research team. Second, by means of directing the creation of new measures capable of overcoming the limitations of the ones previously described. Assessing the most significant and likely future content for adolescents and emerging adults may contribute also to rethinking intervention strategies, educational models, and therapeutic practices. It may be a way of anticipating the direction in which the societies we live progress, and the kind of adult's today's youth will become.

References

- American Educational Research Association, American Psychological Association, National Council on Measurement in Education (2014). *Standards for Educational and Psychological Testing*. Washington, DC: AERA.
- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, *55*(5), 469–480. <https://doi.org/10.1037/0003-066X.55.5.469>
- Arnett, J. J. (2004). *Emerging adulthood: The winding road from the late teens through the twenties*. New York: Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780195309379.001.0001>
- Arnett, J. J. (2007). Emerging adulthood: What is it, and what is it good for? *Child Development Perspectives*, *1*(2), 68–73. <https://doi.org/10.1111/j.1750-8606.2007.00016.x>
- Atkinson, J. W., & Raynor, J. O. (1978) *Personality, motivation, and achievement*. Washington: Hemisphere. <https://doi.org/10.1111/j.2044-8295.1979.tb01702.x>
- Bauman, Z. (2000). *Liquid Modernity*. Cambridge: Polity Press. <https://doi.org/10.1590/S0034-75902002000100010>
- Beck, A. T. (1963). *Depression: Clinical, experimental and theoretical aspects*. New York: Harper & Row.
- Betz, N. E., & Fitzgerald, L. F. (1987). *The career psychology of women*. Orlando, FL: Academic Press. <https://doi.org/10.1002/smi.2460040312>
- Borsa, J. C., Damásio, B. F., & Bandeira, D. R. (2012). Cross-cultural adaptation and validation of psychological instruments: some considerations. *Paidéia (Ribeirão Preto)*, *22*(53), 423-432. <https://doi.org/10.1590/S0103-863X2012000300014>
- Brown, T. A. (2006). *Confirmatory factor analysis for applied research*. New York: The Guilford Press.
- Coscioni, V., Teixeira, M. A. P., Damásio, B. F., Dell’Aglío, D. D., & Paixão, M. P. (in press). Perspectiva temporal futura: Teoria, construtos e instrumentos [Future time perspective: Theories, constructs, and instruments]. *Revista Brasileira de Orientação Profissional*.
- Damásio, B. F. (2012). Uso da análise fatorial exploratória em psicologia. *Avaliação Psicológica*, *11*(2), 213-228. Recovered on September 26th, 2020, from http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S1677-04712012000200007&lng=pt&tlng=pt.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*, 227–268. https://doi.org/10.1207/S15327965PLI1104_01

- Dutra-Thomé, L., Koller, S. H., McWhirter, E. H., & McWhirter, B. (2015). Application of the Future Expectation Scale for Adolescents (FESA) in Brazil. *Psicologia: Reflexão e Crítica*, 28(2), 331-339. <https://dx.doi.org/10.1590/1678-7153.201528213>
- Emmons, R. A. (2003). Personal goals, life meaning, and virtue: Wellsprings of a positive life. In C. L. M. Keyes & J. Haidt (Eds.), *Flourishing: Positive psychology and the life well-lived* (pp. 105–128). Washington, DC: American Psychological Association. <https://doi.org/10.1037/10594-005>
- Erikson, E. H. (1968). Adolescence. In: *Identity, youth and crisis* (pp. 128-135). New York, NY: Norton. <https://doi.org/10.1002/bs.3830140209>
- Fonseca, G., Silva, J. T., Paixão, M. P., Crespo, C., & Relvas, A. P. (2019). Future Hopes and Fears of Portuguese Emerging Adults in Macroeconomic Hard Times: The Role of Economic Strain and Family Functioning. *Emerging Adulthood*, 1-9. <https://doi.org/10.1177/2167696819874956>
- Gabrielsen, L.E., Ulleberg, P. & Watten, R.G (2012). The Adolescent Life Goal Profile Scale: development of a new scale for measurements of life goals among young people. *Journal of Happiness Studies*, 13, 1053–1072. <https://doi.org/10.1007/s10902-011-9306-2>
- Gjesme, T. (1983). On the concept of future time orientation: considerations of some functions' and measurements' implications. *International Journal of Psychology*, 18(1-4), 443-461. <https://doi.org/10.1080/00207598308247493>
- Gopnik, A. (1996). The post-Piaget era. *Psychological Science*, 7, 221-225. <https://doi.org/10.1111/j.1467-9280.1996.tb00363.x>
- Górnik-Durose, M.E., & Jach, Ł. (2016). The Structure of Goal Contents Revisited. A Verification of the Model in Polish Samples. *Polish Psychological Bulletin*, 47, 451–463. <https://doi.org/10.1515/ppb-2016-0053>
- Górnik-Durose, M., Jach, Ł., & Langer, M. (2018). Intrinsic – Extrinsic – Transcendent. A triarchic model of goal contents: introduction and validation. *Current Issues in Personality Psychology*, 6(1), 1–16. <https://doi.org/10.5114/cipp.2017.66890>
- Gray, M. P., & O'Brien, K. M. (2007). Advancing the assessment of women's career choices: The Career Aspiration Scale. *Journal of Career Assessment*, 15(3), 317–337. <https://doi.org/10.1177/1069072707301211>
- Gregor, M. A., & O'Brien, K. M. (2015). Understanding career aspirations among young women: improving instrumentation. *Journal of Career Assessment*, 24(3), 559–572. <https://doi.org/10.1177/1069072715599537>
- Gregor, M., O'Brien, K. M., & Sauber, E. (2017). Understanding career aspirations among young men. *Journal of Career Assessment*, 27(2), 262–272. <https://doi.org/10.1177/1069072717748957>
- Grouzet, F. M., Kasser, T., Ahuvia, A., Dols, J. M., Kim, Y., Lau, S., Ryan, R. M., Saunders, S., Schmuck, P., & Sheldon, K. M. (2005). The structure of goal contents across 15

- cultures. *Journal of personality and social psychology*, 89(5), 800–816. <https://doi.org/10.1037/0022-3514.89.5.800>
- Halford, G. (1989). Reflections on 25 years of Piagetian cognitive developmental psychology, 1963-1968. *Human Development*, 32, 325-357. <https://doi.org/10.1159/000276484>
- Hollmann, J., Gorges, J., & Wild, E. (2018). You will attain my goal: The structure of parental goals for children based on an adapted version of the Aspirations Index. *European Journal of Psychological Assessment*, 34(1), 22–29. <https://doi.org/10.1027/1015-5759/a000317>
- Inhelder, B., & Piaget, J. (1958). Adolescent thinking. In (A. Parsons & S. Milgram, Trans.): *An essay on the construction of formal operational structures. The growth of logical thinking: From childhood to adolescence* (pp. 334-350). Basic Books. <https://doi.org/10.1037/10034-000>
- Kasser, T., & Ryan, R. M. (1993). A dark side of the American dream: correlates of financial success as a central life aspiration. *Journal of personality and social psychology*, 65(2), 410–422. <https://doi.org/10.1037//0022-3514.65.2.410>
- Kasser, T., & Ryan, R. M. (1996). Further Examining the American Dream: Differential Correlates of Intrinsic and Extrinsic Goals. *Personality and Social Psychology Bulletin*, 22(3), 280–287. <https://doi.org/10.1177/0146167296223006>
- Kessler, R. C., Amminger, G. P., Aguilar-Gaxiola, S., Alonso, J., Lee, S., & Ustün, T. B. (2007). Age of onset of mental disorders: a review of recent literature. *Current opinion in psychiatry*, 20(4), 359–364. <https://doi.org/10.1097/YCO.0b013e32816ebc8c>
- Kim, Y., Kasser, T., & Lee, H. (2003). Self-concept, aspirations, and well-being in South Korea and the United States. *The Journal of social psychology*, 143(3), 277–290. <https://doi.org/10.1080/00224540309598445>
- Kim, Y. H., O'Brien, K. M., & Kim, H. (2015). Measuring career aspirations across cultures: using the Career Aspiration Scale with young Korean women. *Journal of Career Assessment*, 24(3), 573–585. <https://doi.org/10.1177/1069072715599538>
- Klusmann, U., Trautwein, U., & Lüdtke, O. (2005). Intrinsische und extrinsische Lebensziele: Reliabilität und Validität einer deutschen Fassung des Aspirations Index [Intrinsic and extrinsic personal goals: Reliability and validity of a German translation of the Aspirations Index]. *Diagnostica*, 51(1), 40–51. <https://doi.org/10.1026/0012-1924.51.1.40>
- Knight, K. E., Ellis, C., Roark, J., Henry, K. L., & Huizinga, D. (2017). Testing the role of aspirations, future expectations, and strain on the development of problem behaviors across young and middle adulthood. *Deviant Behavior*, 38(12), 1456–1473. <https://doi.org/10.1080/01639625.2016.1206716>
- Krupić, D., Corr, P. J. (2019). How reinforcement sensitivity theory relates to self-determination theory. *Personality and individual differences*, 155. <https://doi:10.1016/j.paid.2019.109705>
- Lens, W., Paixao, M. P., Herrera, D., & Grobler, A. (2012). Future time perspective as a motivational variable: Content and extension of future goals affect the quantity and quality of

- motivation. *Japanese Psychological Research*, 54(3), 321-333. <https://doi.org/10.1111/j.1468-5884.2012.00520.x>
- Mahler, A., Simmons, C., Frick, P. J., Steinberg, L., & Cauffman, E. (2017). Aspirations, Expectations and Delinquency: The Moderating Effect of Impulse Control. *Journal of youth and adolescence*, 46(7), 1503–1514. <https://doi.org/10.1007/s10964-017-0661-0>
- Markus, H., & Nurius, P. (1986). Possible selves. *American psychologist*, 41(9), 954–969. <https://doi.org/10.1037/0003-066X.41.9.954>
- McWhirter, E. H., & McWhirter, B. T. (2008). Adolescent future expectations of work, education, family, and community: development of a new measure. *Youth & Society*, 40(2), 182–202. <https://doi.org/10.1177/0044118X08314257>
- Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & PRISMA Group (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS medicine*, 6(7), e1000097. <https://doi.org/10.1371/journal.pmed.1000097>
- Molina, M. F., Schmidt, V., & Raimundi, M. J. (2017). Possible selves in adolescence: development and validation of a scale for their assessment. *The Journal of Psychology*, 151(7), 646–668. <https://doi.org/10.1080/00223980.2017.1372347>
- Morgado, F. F. R., Meireles, J. F. F., Neves, C. M., Amaral, A. C. S., & Ferreira, M. E. C. (2017). Scale development: ten main limitations and recommendations to improve future research practices. *Psicologia: Reflexão e Crítica*, 30, 3. <https://dx.doi.org/10.1186/s41155-016-0057-1>
- Nishimura, T., & Suzuki, T. (2016). Aspirations and life satisfaction in Japan: The Big Five personality makes clear. *Personality and Individual Differences*, 97, 300–305. <https://doi.org/10.1016/j.paid.2016.02.070>
- Nurmi, J. E. (1991). How do adolescents see their future? A review of the development of future orientation and planning. *Developmental Review*, 11(1), 1–59. [https://doi.org/10.1016/0273-2297\(91\)90002-6](https://doi.org/10.1016/0273-2297(91)90002-6)
- Ozella, S. (2002). Adolescência: uma perspectiva crítica. In: Contini, M.D., Koller, S., & Barros, M. (orgs.). *Adolescência e psicologia: concepções, práticas e reflexões críticas* (pp. 16-24). Rio de Janeiro: Concelho Federal de Psicologia
- Pacico, J. C., Zanon, C., Bastianello, M. R. & Hutz, C. S. (2011). Adaptation and validation of the Hope Index for brazilian adolescents. *Psicologia: Reflexão e Crítica*, 24(4), 666-670. <https://doi.org/10.1590/S0102-79722011000400006>
- Pacico, J. C., Zanon, C., Bastianello, M. R., Reppold, C. T. & Hutz, C. S. (2013). Adaptation and validation of the Brazilian version of the Hope Index. *International Journal of Testing*, 13(3), 193-200. <https://doi.org/10.1080/15305058.2012.664833>
- Pasquali, L. (1999). Testes referentes a construto: teoria e modelo de construção. Em L. Pasquali (Org.). *Instrumentos psicológicos: manual prático de elaboração* (pp. 37-71). Brasília, DF: Laboratório de Pesquisa em A valiação e Medida - LabPAM.
- Piaget, J. (1967). *Six Psychological Studies*. New York: Random House.

- Primi, R., Muniz, M. & Nunes, C. H. S. S. (2009). Definições Contemporâneas de Validade de Testes Psicológicos. In: Cláudio Simon Hutz. (Org.). *Avanços e polêmicas em avaliação psicológica* (pp. 243-265). São Paulo: Casa do Psicólogo.
- Prince, D. M., Epstein, M., Nurius, P. S., King, K., Gorman-Smith, D., & Henry, D. B. (2016). Assessing future expectations of low-income minority young men: survival-threats and positive expectations. *Journal of Child and Family Studies*, 25(7), 2089–2101. <https://doi.org/10.1007/s10826-016-0384-y>
- Rijavec, M., Brdar, I., & Miljković, D. (2011). Aspirations and well-being: Extrinsic vs. intrinsic life goals. *Social Research - Journal for General Social Issues*, 20, 693–710. <https://doi.org/10.5559/di.20.3.05>.
- Ryan, R. M., Chirkov, V. I., Little, T. D., Sheldon, K. M., Timoshina, E., & Deci, E. L. (1999). The American Dream in Russia: Extrinsic Aspirations and Well-Being in Two Cultures. *Personality and Social Psychology Bulletin*, 25(12), 1509–1524. <https://doi.org/10.1177/01461672992510007>
- SabzehAra, M., Ferguson, Y. L., Sarafraz, M. R., & Mohammadi, M. (2014). An investigation of the associations between contingent self-worth and aspirations among Iranian university students. *The Journal of social psychology*, 154(1), 59–73. <https://doi.org/10.1080/00224545.2013.843501>
- Sánchez-Sandoval, Y., & Verdugo, L. (2016). Desarrollo y validación de la Escala de Expectativas de Futuro en la Adolescencia (EEFA). *Anales de Psicología*, 32(2), 545–554. <https://dx.doi.org/10.6018/analesps.32.2.205661>
- Sánchez-Sandoval, Y., Verdugo, L. P., & Río, F. J. (2019). Adolescent Future Expectations Scale for Parents (AFES-p): development and validation. *Journal of Child and Family Studies*, 28, 1481–1489. <https://dx.doi.org/10.1007/s10826-019-01375-y>
- Schmidt, R. W., Lamm, H., & Trommsdorff, G. (1978). Social class and sex as determinants of future orientation (time perspective) in adults. *European Journal of Social Psychology*, 8(1), 71-90. <https://doi.org/10.1002/ejsp.2420080107>
- Schmuck, P., Kasser, T., & Ryan, R. M. (2000). Intrinsic and extrinsic goals: their structure and relationship to well-being in German and U. S. college students. *Social Indicators Research*, 50(2), 225–241. <https://doi.org/10.1023/A:1007084005278>
- Seginer, R. (2009). Future Orientation: A conceptual framework. In: *Future orientation: Developmental and ecological perspectives* (pp. 1-27). Springer International Publishing. https://doi.org/10.1007/978-0-387-88641-1_1
- Snyder, C. R., Harris, C., Anderson, J. R., Holleran, S. A., Irving, L. M., Sigmon, S. T., ... & Harney, P. (1991). The will and the ways: Development and validation of an individual-differences measure of hope. *Journal of Personality and Social Psychology*, 60(4), 570- 585. <https://doi.org/10.1037/0022-3514.60.4.570>
- Staats, S. (1989). Hope: a comparison of two self-report measures for adults. *Journal of Personality Assessment*, 53(2), 366–375. https://doi.org/10.1207/s15327752jpa5302_13

- Staats, S., & Partlo, C. I. (1993). A brief report on hope in peace and war, and in good times and bad. *Social Indicators Research*, 29(2), 229–243. <https://doi.org/10.1007/BF01077897>
- Steinberg, I. (1993). *Adolescence* (10^a ed.). New York: McGraw-Hill.
- Trommsdorff, G. (1983). Future orientation and socialization. *International Journal of Psychology*, 18(1-4), 381-406. <https://doi.org/10.1080/00207598308247489>
- Utvær, B.K., Hammervold, R., & Haugan, G. (2014). Aspiration Index in vocational students – dimensionality, reliability, and construct validity. *Education Inquiry*, 5(3), 359–383. <https://doi.org/10.3402/edui.v5.24612>
- Verdugo, L., Freire, T. and Sánchez-Sandoval, Y. (2018) Understanding the Connections between Self-Perceptions and Future Expectations: A Study with Spanish and Portuguese Early Adolescents. *Revista de Psicodidáctica*, 23, 39-47. <https://doi.org/10.1016/j.psicoe.2017.07.001>

Appendix 1

Table 1

Bibliometric and theoretical data

Scale	Language (Country)	Theoretical B.	Construct definition
<i>AFES</i>	Spanish (Spain); Portuguese (Portugal)	Thematic approaches of future orientation	Future Expectations: “the extent to which the person expects an event to occur” (Sánchez-Sandoval & Verdugo, 2016, p. 545, <i>our translation</i>)
<i>ALGPS</i>	Norwegian (Norway)	Life Goals Theory	Life Goals: “individual’s personal dreams and aspirations of living a meaningful life” (Gabrielsen et al., 2012, p. 1054)
<i>AI</i>	Bulgarian (Bulgaria); Chinese (China); Croatian (Croatia); English (Australia, Egypt, India, and USA); French (Canada, France); German (Germany); Iranian (Iran); Japanese (Japan); Korean (South Korea); Norwegian (Norway); Polish (Poland); Romanian (Romania); Russian (Russia); Spanish (Colombia, Dominican Republic, Spain)	Self-determination Theory	Aspiration: “long-term aims people value and strive for” (Utvær et al., 2014, p. 360)
<i>CAS</i>	English (USA); Korean (South Korea)	Women’s Career Theory	Career Aspirations: “the degree to which individuals seek leadership roles, advanced education, and recognition in future careers” (Gregor et al., 2017, p. 262)
<i>FEQ</i>	English (USA)	Possible Selves Theory	Future expectations: “the most realistic beliefs youth hold in relation to their future possibility” (Prince et al., 2016, p. 2089)
<i>FESA</i>	Spanish (Chile); Portuguese (Brazil)	Thematic approaches of future orientation	Future expectations: “a combination of hope and optimism about possible outcomes” (McWhirter & McWhirter, 2008, p. 183) “believing that something will happen” (Dutra-Thomé, 2015, p. 331)
<i>HI</i>	English (USA); Portuguese (Brazil)	Beck’s Depression Theory	Hope: “future referenced events that are wished for, have positive affect and have some cognitively perceived probability of occurrence” (Staats, 1989, p. 366)
<i>PSSA</i>	Spanish (Argentina)	Possible Selves Theory	Possible Selves: “the self-knowledge of our potential and our future” (Molina et al., 2017, p. 646)

Appendix 2

Table 2

Assessed component and factors

Scale	Component	Factors (number of items)
<i>AFES</i>	Expectations	Economic Expectations (5): job prospects and acquisition of material resources; Academic Expectations (3): expected level of study attained; Well-Being Expectations (3): social relations, health and safety; Family Expectations (3): stable family life and having children.
<i>ALGPS</i>	Both	Relations (5): close and reciprocal relationships; Generativity (5): altruistic behaviors and concern for future generations; Religion (2): relationship with God; Achievements (4): work life.
<i>AI</i>	Both	Affiliation (6): To have satisfying relationships with family and friends; Community feeling (4): To improve the world through activism or generativity; Conformity (5): To fit in with other people; Financial success (4): To be wealthy and materially successful; Hedonism (5): To experience much sensual pleasure; Image (5): To look attractive in terms of body and clothing; Physical health (5): To feel healthy and free of illness; Popularity (4): To be famous, well-known, and admired; Safety (5): To ensure bodily integrity and safety; Self-acceptance (8): To feel competent and autonomous; Spirituality (6): To search for spiritual or religious understanding
<i>CAS</i>	Aspirations	CAS – Leadership and Achievement (6): intentions to obtain promotions, manage and train others, and be recognized as a leader in one’s field; Educational Aspirations (2): plans to continue one’s education in one’s field. CAS-R – Leadership (8): seeking leadership and training/managing others in one’s career; Achievement (8): the desire to be one of the very best in one’s field or recognized for one’s accomplishments; Educational (8): planning to pursue advanced education related to one’s career. K-CASR – Leadership (5); Achievement (6); Educational (7)
<i>FEQ</i>	Expectations	Positive Expectations (5): future safety and happiness; Threats to Safety (2): survival-based threats.
<i>FESA</i>	Expectations (Chile); Aspirations (Brazil)	Chilean version - Work and Education (10): future work and education; Marriage and Family (4): marrying and having children; Church and Community (3): religious participation and community leadership; Health (4): good health and healthy behaviors; Children’s Future (3): children’s well-being. Brazilian version - Work and Education (7): future work and education; Children and Family (5): future children’s and family well-being; Marriage (3): having a partner and getting married; Church (3): religious participation; Health (4): good health and health behaviors.
<i>HI</i>	Both	Hope-self (8): wishes and expectations regarding himself/herself; Hope-other (8): wishes and expectations related to others and to global circumstances. Brazilian version - Hope-self (13); Hope-other (8)
<i>PSSA</i>	Expectations	Self-sufficiency (11): independence; Peer Relationships (9): romantic relationships; Good Behavior (5): morally correct behavior; Physical appearance (5): satisfaction with physical image; Physical ability (5): sports skills

Appendix 3

Table 3

Validity evidence

Scale	Content	Relations to other measures
<i>AFES</i>	Review of the literature, Experts evaluation	Self-esteem, life satisfaction.
<i>ALGPS</i>	Review of the literature, Focus groups	Subjective happiness, satisfaction with life, sense of coherence, general perceived self-efficacy, personality.
<i>AI</i>	Review of the literature	Kasser & Ryan (1993): self-actualization, vitality, control orientation, depression, anxiety, global functioning, social productivity, behavior disorders; Kasser & Ryan (1996): self-actualization, vitality, depression, anxiety, physical symptoms, narcissism, positive affect, negative affect; Klusmann et al. (2005): personal goals; Schmuck et al. (2000): self-actualization, vitality, anxiety, depression, physical symptoms; Sabzehara et al. (2014): self-worth, self-compassion, integrative self-knowledge, narcissism, self-esteem; Utvær et al. (2014): motivation, perceived competence, confidence, persistence; Nishimura & Suzuki (2016): life satisfaction, extraversion, conscientiousness, neuroticism, openness, agreeableness; Kim et al. (2003): self-actualization, vitality, happiness, unhappiness, anxiety, physical symptoms; Ryan et al. (1999): self-esteem, life satisfaction, self-actualization, depression; Rijavec et al. (2011): competence, autonomy, relatedness, life satisfaction, vitality; Górnik-Durose et al. (2018): values, spirituality.
<i>CAS</i>	Review of the literature, Experts evaluation	CAS: attitudes toward women's roles, multiple role self-efficacy, career decision self-efficacy, occupational self-efficacy, instrumentality; CAS-R: work role salience, Willingness to compromise career for future partner, achievement motivation. K-CASR: achievement motivation, career orientation, career goal engagement.
<i>FEQ</i>	n/a	n/a
<i>FESA</i>	Chilean version Review of the literature, Interviews	Chilean version: hope, school connectedness, connectedness to self-in-the-future; Brazilian version: n/a
<i>HI</i>	Open-ended questionnaires	Brazilian version (adolescents' sample): dispositional hope, self-esteem, optimism.
<i>PSSA</i>	Review of the literature, Open-ended questionnaire, Experts' evaluation.	Self-Perception.

Appendix 4

Table 4
Validity and reliability evidence

Scale	Internal structure	Reliability
<i>AFES</i>	<p>Sánchez-Sandoval & Verdugo, 2016 EFA: 4 factors – 49,72% of variance explained (1125 adolescents) Extraction criteria: PAF Retention criteria: Eigenvalue > 1.0 Rotation method: Quartimax</p> <p>CFA: 4 factors Estimator: MLE Indices: RMSEA= .047, SRMR= .040, CFI= .96, TLI= .95</p> <p>Verdugo, Freire & Sánchez-Sandoval, 2018 CFA: 4 factors (267 Spanish and 267 Portuguese adolescents) Estimator: n/a Indices: RMSEA= .03; CFI= .97; NNFI= .96; IFI= .97; MFI= .96</p> <p>AFES-P PCA: 4 factors – 74,31% of variance explained (1125 adolescents) Retention criteria: n/a Rotation method: Quartimax</p> <p>CFA: 4 factors Estimator: MLE Indices: RMSEA= .05, CFI= .95, NNFI= .93, IFI= .95, MFI= .90</p>	<p>Sánchez-Sandoval & Verdugo, 2016 Full-scale α: .85; Subscales α: .65 to .81</p> <p>Verdugo, Freire & Sánchez-Sandoval, 2018 Full-scale α: 0.84 Full-scale Ω: 0.89 ES: α: 0.62 to 0.86 PT: α: 0.58 to 0.83. AVE (ES): 0.40 to 0.66 AVE (PT): 0.60 to 0.78 CR (ES): 0.35 to 0.44 CR (PT): 0.56 to 0.71</p> <p>Configural invariance across cultures Estimator: n/a CFI = .932; RMSEA = .045</p> <p>AFES-P α: 0.73 to 0.86 Ω: 0.80 to 0.90 AVE: 0.48 to 0.65 CR: 0.66 to 0.92.</p>
<i>ALGPS</i>	<p>3 EFAs (244 adolescents) (1) 3 factors – variance explained: n/a Extraction criteria: PAF Retention criteria: n/a Rotation method: Oblimin</p> <p>(2) 4 factors – 56,6% of variance explained Extraction criteria: MLE Retention criteria: Parallel Analysis Rotation method: Geomin</p> <p>(3) 4 factors – variance explained: n/a Extraction criteria: MLE Retention criteria: n/a Rotation method: Geomin</p> <p>CFA: 4 factors (294 adolescents) Estimator: MLE Indices: RMSEA= .073, SRMR= .074, CFI= .844</p>	<p>α: .65 to .75</p>
<i>AI</i>	<p>Kasser & Ryan (1993) EFA (study 2): 4 factors (198 undergraduates) Extraction criteria: n/a Retention criteria: Eigenvalue > 1 Rotation method: Oblimin</p> <p>EFA (study 3): 4 factors (140 18-year-old adolescents) Extraction criteria: n/a Retention criteria: Eigenvalue > 1</p>	<p>Kasser & Ryan (1993) Study 2 α: .71 to .86 Study 3 α: .54 to .71</p> <p>Kasser & Ryan (1996) α: .79 to .89</p> <p>Klusmann et al. (2005) α: .67 to .89; Test-retest (76 undergrads)</p>

Table 4 (continuation)

Validity and reliability evidence

Scale	Internal structure	Reliability
<i>AI</i>	Rotation method: n/a	<i>r</i> : .59 to .89
	Kasser & Ryan (1996)	Schmuck et al. (2000)
	PCA : 2 factors (192 undergraduates)	α : n/a
	Extraction criteria: n/a	Sabzehara et al. (2014)
	Retention criteria: n/a	α : .84 to .88
	Rotation method: Varimax	Utvær et al. (2014)
	Klusmann et al. (2005)	α : .70 to .88
	2 EFAs : (4,565 high school students)	CR: .71 to .88
	(1) 7 factors	Nishimura & Suzuki (2016)
	Extraction criteria: PAF	α : .67 to .87
	Retention criteria: Parallel Analysis	Kim et al. (2003)
	Rotation method: Oblimin	α : .67 to .79;
	(2) 2 factors	Configural invariance across cultures
	Extraction criteria: PAF	Estimator: n/a
	Retention criteria: Parallel Analysis	.00 < RMSEAs < .04; .99 < NFIs < .999; .99 < CFIs < .999
	Rotation method: Oblimin	.03 < RMSEAs < .12; .95 < NFIs < .999; .96 < CFIs < .999 (constrained model)
	Schmuck et al. (2000)	Ryan et al. (1999)
	CFA : 2 factors (83 German and 125 American undergraduates)	Configural invariance across cultures
	Estimator: n/a	Estimator: n/a
	Indices: n/a	RMSEA= .038, NNFI= .96, IFI= .97
	SabzehAra et al. (2014)	Rijavec et al. (2011)
	CFA : 2 factors (502 undergraduates)	α : .70 to .91
	Estimator: MLE	Grouzet et al. (2005)
	Indices:	α : .67 to .90
	Importance – RMSEA= .05, SRMR= .06, CFI= .94	Configural invariance across cultures
	Likelihood – RMSEA= .05, SRMR= .06, CFI= .95	Estimator: MLE
	Attainment – RMSEA= .05, SRMR= .06, CFI= .95	Safety domain – RMSEA= .012, [.000, .023], SRMR= .032, CFI= .995
	Krupić & Corr (2019)	Physical Health domain – RMSEA= .046, [.039, .054], SRMR= .063, CFI= .950
	CFA : 2 factors (327 mainly students)	Self-Acceptance domain – RMSEA= .017, [.013, .021], SRMR= .065, CFI= .956
	Estimator: n/a	Affiliation domain – RMSEA= .013, [.004, .020], SRMR= .047, CFI= .985
	Indices: RMSEA= .064, SRMR= .030, CFI= .992	
	Utvær et al. (2014)	
	CFA : 7 factors (415 secondary school students)	
	Estimator: MLE	
	Indices: RMSEA= .050 [.046, .055], SRMR= .062, CFI= .96, NFI= .93, NNFI= .96, GFI= .84, AGFI= .82	
	CFA : 2 factors	
	Estimator: MLE	
	Indices: RMSEA= .052 [.047, .056], SRMR= .068, CFI= .96, NFI= .93, NNFI= .96, GFI= .84, AGFI= .81	
	Nishimura & Suzuki (2016)	
	CFA : 2 factors (474 undergraduates)	
	Estimator: MLE	
	Rotation: Promax	
	Indices: TLI = .931, CFI = .957, RMSEA = .096 [.074, .118], SRMR = .045	
	Rijavec et al. (2011)	
	2 EFAs : (835 undergraduates)	
	(1) 6 factors – variance explained: n/a	

Table 4 (continuation)

Validity and reliability evidence

Scale	Internal structure	Reliability
<i>AI</i>	Extraction criteria: PAF Retention criteria: n/a Rotation method: Oblimin (2) 2 factors – variance explained: n/a Extraction criteria: n/a Retention criteria: n/a Rotation method: n/a	Spirituality domain – RMSEA= .018, [.012, .024], SRMR= .034, CFI= .995 Conformity domain – RMSEA= .028, [.020, .036], SRMR= .058, CFI= .987 Image domain – RMSEA= .021, [.016, .027], SRMR= .052, CFI= .980 Financial Success domain – RMSEA= .038, [.031, .046], SRMR= .042, CFI= .978
	Grouzet et al. (2005) CFA: 11 factors (1854 undergraduates) Estimator: n/a Indices: CFI = .87; SRMR = .050; RMSEA = .045 [.044, .046]	Górník-Durose & Jach (2016) CFA: 11 factors (1762 mainly undergraduates) Estimator: n/a Indices: CFI = .92; SRMR = .087; RMSEA = .066 [.065, .068]
	Górník-Durose et al. (2018) - Study 1 4 PCAs (528 subjects) (1) 3 factors – variance explained: 43.29% Retention criteria: n/a Rotation method: Varimax (2) 2 factors – variance explained: 56.62% Retention criteria: n/a Rotation method: Varimax (3) 3 factors – variance explained: 55.94% Retention criteria: n/a Rotation method: Varimax (4) 2 factors – variance explained: 72.66% Retention criteria: n/a Rotation method: Varimax	Górník-Durose et al. (2018) 3 domains α : .72 to .90 7 subscales α : .65 to .92; Test-retest 7 factors r: .56 to .87 (79 undergraduates) 3 factors r: .68 to .87 (79 undergraduates)
	4 CFAs: (two samples of 617 subjects) (1) 7 factors Estimator: n/a Indices: RMSEA= .049, SRMR= .050, CFI= .97, NNFI= .97 (2) 3 factors Estimator: n/a Indices: RMSEA= .054, SRMR= .073, CFI= .97, NNFI= .96 (3) 7 factors Estimator: n/a Indices: RMSEA= .041, SRMR= .049, CFI= .97, NNFI= .97 (4) 3 factors Estimator: n/a Indices: RMSEA= .045, SRMR= .063, CFI= .97, NNFI= .96	
	Górník-Durose et al. (2018) - Study 2 2 CFAs (319 subjects) (1) 7 factors (Estimator: n/a) Indices: RMSEA= .041, SRMR= .047, CFI= .98, NNFI= .98 (2) 3 factors (Estimator: n/a) Indices: RMSEA= .045, SRMR= .063, CFI= .98, NNFI= .97	

Table 4 (continuation)

Validity and reliability evidence

Scale	Internal structure	Reliability
<i>CAS</i>	<p>CAS</p> <p>4 PCAs</p> <p>(1) 2 factors – 62% of variance explained (228 female undergrads) Retention criteria: Eigenvalue > 1 Rotation method: Oblimin</p> <p>(2) 2 factors – 52% of variance explained (409 high school women) Retention criteria: Eigenvalue > 1 Rotation method: Oblimin</p> <p>(3) 2 factors – 70% of variance explained (207 mainly undergrads) Retention criteria: Eigenvalue > 1 Rotation method: Oblimin</p> <p>(4) 2 factors – 49% of variance explained (364 Mexican American high school females) Retention criteria: Eigenvalue > 1 Rotation method: Oblimin</p> <p>CAS-R</p> <p>3 CFA: 3 factors</p> <p>(1) Estimator: MLE (328 undergraduate women) Indices: RMSEA= .09 [.086, .098], CFI= .95, TLI= .94</p> <p>(2) Estimator: MLE (202 female graduate students) Indices: RMSEA= .09, CFI= .93, TLI= .92</p> <p>(3) Estimator: MLE (359 undergraduate men) Indices: RMSEA= .09, CFI= .94, TLI= .93</p> <p>K-CASR</p> <p>CFA: 3 factors</p> <p>Estimator: MLE (377 college women) Indices: RMSEA= .079 [.071, .087], CFI= .905, SRMR= .052</p>	<p>CAS</p> <p>Full scale α: .51 to .77; Subscales α: .67 to .82 (Leadership & Achievement) and .56 to .76 (Educational)</p> <p>Test-retest r: .71 and .84 (56 undergraduate women)</p> <p>CAS-R α: .80 to .90</p> <p>Test-retest r: .68 to .81 (56 undergraduate women) r: .64 to .82 (55 undergraduate men)</p> <p>K-CASR α: .82 to .90</p> <p>Test-retest r: .76 to .83 (29 undergraduate women)</p>
<i>FEQ</i>	<p>6 CFA: 2 factors</p> <p>(1) Estimator: MLE (338 adolescents) Indices: RMSEA= .05 [.02, .84], TLI= .98, CFI= .99</p> <p>(2) Estimator: MLE (286 adolescents) Indices: RMSEA= .07 [.03, .10], TLI= .98, CFI= .99</p> <p>(3) Estimator: MLE (248 adolescents) Indices: RMSEA= .04 [.00, .08], TLI= .99, CFI= .99</p> <p>(4) Estimator: MLE (254 adolescents) Indices: RMSEA= .14 [.11, .17], TLI= .95, CFI= .97</p> <p>(5) Estimator: MLE (259 adolescents) Indices: RMSEA= .09 [.06, .12], TLI= .98, CFI= .99</p> <p>(6) Estimator: MLE (228 adolescents) Indices: RMSEA= .12 [.08, .15], TLI= .98, CFI= .98</p>	<p>α: .73 to .89;</p> <p>Test-retest r: .68 to .87 (101 undergraduates)</p> <p>Configural invariance across cultures Estimator: n/a RMSEA = .088; CFI = .96; TLI= .95</p>
<i>FESA</i>	<p>Chilean version</p> <p>EFA: 5 factors – 59,9% of variance explained Extraction criteria: PAF Retention criteria: Eigenvalue > 1 Rotation method: Oblimin</p>	<p>Chilean version</p> <p>Full-scale α: .87; Subscales α: .71 to .88</p>

Table 4 (continuation)

Validity and reliability evidence

Scale	Internal structure	Reliability
<i>FESA</i>	<p>Brazilian version</p> <p>CFA: WLSMV (5 factors) Indices: RMSEA= .105 [.101, .110], WRMR= 2.10, CFI= .880</p> <p>EFA: 5 factors – 59% of variance explained Extraction criteria: PAF Retention criteria: Parallel Analysis Rotation method: Oblimin</p>	<p>Brazilian version</p> <p>Full-scale α: .89; Subscales α: .71 to .86</p>
<i>HI</i>	<p>American version EFA: manuscript unavailable</p> <p>Brazilian version (young adults' sample)</p> <p>2 EFAs</p> <p>(1) 2 factors (16-items) – 43.7% of variance explained Extraction criteria: PAF Retention criteria: n/a Rotation method: n/a</p> <p>(2) 2 factors (21-items) – 40.9% of variance explained Extraction criteria: PAF Retention criteria: n/a Rotation method: n/a</p> <p>2 CFA: 2 factors</p> <p>(1) Estimator: MLE (16-items) Indices: RMSEA= .08 [.07, .08], SRMR= .07, CFI= .94</p> <p>(2) Estimator: MLE (21-items) Indices: RMSEA= .07 [.06, .07], SRMR= .07, CFI= .95</p> <p>Brazilian version (adolescents' sample)</p> <p>PCA: 2 components – 39% of variance explained Retention criteria: Eigenvalue > 1 Rotation method: Oblimin</p>	<p>α: .72 to .85;</p> <p>Test-retest r: .53 to .75 (101 students)</p> <p>Brazilian version (young adults' sample) Full scale α (16-items): .85; Subscales α: .79 (HopeSelf) and .80 (HopeOther) Full scale α (21-items): .89; Subscales α: .86 (HopeSelf) and .80 (HopeOther)</p> <p>Brazilian version (adolescents' sample) Subscales α: .83 (HopeSelf) and .80 (HopeOther)</p>
<i>PSSA</i>	<p>2 EFAs</p> <p>(1) 5 factors – 53.82% of variance explained Extraction criteria: Unweighted Least Squares Retention criteria: Parallel Analysis Rotation method: Promin</p> <p>(2) 1 factor – 47.8% of variance explained Extraction criteria: Unweighted Least Squares Retention criteria: Eigenvalue > 1 Rotation method: n/a</p>	<p>α: .80 to .94</p>