

PLANEA Independent Life Skills Scale: Development and Validation

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Abstract

Background: The aim of this study was to develop and validate the PLANEA Independent Life Skills Scale, an instrument created according to the Planea Program framework for training independent living skills in young people in residential care. **Method:** A sample of 1,098 young people took part, 60% were women and 37% were living in residential child care, with a mean age of 17.69 years ($SD = 2.25$). Psychometric analyses were carried out within the frameworks of Classical Test Theory and Item Response Theory models. **Results:** The new instrument demonstrated three first-order factors (Self-Care and Wellbeing, Daily Arrangements and Organizational Skills, and Employment and Accommodation) and one second-order factor (Independent Life Skills), with excellent test score reliability, including a short version, PLANEA-9 ($\omega = .86 - .94$). Clear evidence was found of validity in relation to other variables, such as general self-efficacy ($r = .519$), and discriminative capacity. **Conclusions:** The PLANEA Independent Life Skills Scale was shown to be a reliable valid instrument for assessing this construct in young people.

Keywords: Independent living skills, residential care, psychometric properties, assessment, short version.

Resumen

Escala PLANEA de Habilidades Para la Vida Independiente: Desarrollo y Validación. Antecedentes: el objetivo del estudio fue el desarrollo y validación de la Escala PLANEA de Habilidades para la Vida Independiente, un instrumento creado a partir del Programa Planea de desarrollo de habilidades para la vida independiente en jóvenes en acogimiento residencial. **Método:** participaron 1.098 jóvenes, de los cuales el 60% eran mujeres y el 37% vivían en acogimiento residencial, con una media de edad de 17,69 años ($DT = 2,25$). Los análisis psicométricos se realizaron en el marco de los modelos de la Teoría Clásica de los Tests y la Teoría de Respuesta al Ítem. **Resultados:** el nuevo instrumento quedó conformado por tres factores de primer orden (Autocuidado y bienestar, Gestiones y organización diaria, y Trabajo e Independencia) y un factor de segundo orden (Habilidades para la vida independiente), con excelente fiabilidad, incluida una versión corta, PLANEA-9 ($\omega = .86 - .94$). Se encontró evidencia clara de validez en relación con otras variables, como autoeficacia ($r = .519$), así como buena capacidad discriminativa. **Conclusiones:** la Escala PLANEA de Habilidades para la Vida Independiente mostró ser un instrumento válido y fiable para evaluar este constructo en población juvenil.

Palabras clave: habilidades para la vida independiente, acogimiento residencial, propiedades psicométricas, evaluación, versión corta.

Residential child care in Spain has increasingly specialized during the last two decades to address the most challenging needs of children and young people in the care system (Bravo & Del Valle, 2009; Del Valle & Bravo, 2013). This population, which is composed mainly of teenagers or preteens —66% aged 15 or older, 86% including those over 11— (Observatorio de la Infancia, 2020), has been found to be particularly vulnerable to experiencing emotional and behavioural challenges (González-García et al., 2017), showing lower levels of subjective well-being than young people from the general population (Llosada-Gistau et al., 2015) and includes subgroups with very specific needs, such as children and young people with intellectual disability (Águila-Otero et al., 2018) or unaccompanied asylum-seeking youth (Bravo & Santos González, 2017).

Many of these young people are likely to face the additional challenge of turning 18 without the prospect of returning to their family home, being the first milestone of an early transition to independent adult life for care leavers. This process is shorter, more compressed, and far riskier for them than for their non-care experienced peers (Stein, 2004) and usually leads them to poorer outcomes in key domains of life, according to international research (Gypen et al., 2017). Although extensive studies on care leavers' outcomes in Spain are still to be done, recent research has found them to be more likely to have experienced academic instability and failure, resulting in poor academic qualifications and labour training (Jarrot et al., 2015; Montserrat et al., 2013). This leads to them having a precarious socio-economic situation that compromises their transition to independent living, as they find themselves in low-paid jobs and very often return to their birth family to search for support, which may not be the most appropriate choice (Martin et al., 2019).

Ensuring a planned, gradual preparation for leaving care is considered one of the key points to overcome these risks and support successful transitions from care (Harder et al., 2020; Stein, 2008). Research has suggested that care leavers who feel more

prepared are also more likely to cope better as independent adults and to have experienced a better transition process, including a stable placement from which they were supported to gradually acquire independent living skills, or “ILS” (Mendes et al., 2011).

Although both tangible or ‘hard’ skills (budgeting, job searching, cooking, etc.) and intangible or ‘soft’ skills (interpersonal, social skills, etc.) should be targeted in independent living programs and interventions (Nollan et al., 2000), different frameworks have been proposed to organize them. One of the most representative frameworks was proposed by Biehal et al. (1995). They identified three broad areas: self-care (hygiene, diet, health, etc.), practical skills (budgeting, housekeeping, etc.), and interpersonal skills (social, relationship skills), to which Stein and Wade (2000) added two more: education and identity skills. A more recent and comprehensive framework by Courtney et al. (2017) also identifies the areas mentioned above but classifies them as part of a broader set of developmental assets needed for successful transitions, including practical ILS, psychosocial and relationship skills, and study and work skills.

Despite the importance of assessing preparation for leaving care, reliable and valid instruments to measure perceived ILS from young people’s perspective are scarce. A rapid review conducted by Naccarato et al. (2008) found only one instrument for that purpose that offered information about its psychometric properties: the Casey Life Skills Assessment (CLSA). This instrument, probably the best and more widely used to measure ILS in this population, uses 113 items to cover eight domains in life skills, including practical, interpersonal, self-care, and study-work skills through a multi-informant approach —self-reported and caregiver’s versions— (Bressani & Downs, 2002; Casey Family Programs, 2017). Although its comprehensiveness makes CLSA very informative, its long application time (30-40 min.) and the little knowledge available about its psychometric properties (Nollan et al., 2000), make this instrument difficult to use for scientific research.

Spain has a shorter tradition in the development of ILS training programs and assessment tools, compared to other North American or European countries. To date, the main reference was The Umbrella Programme, a paper-and-pencil booklet of activities designed by educational organisations from five European countries to develop autonomy and life skills in young people in care that was later adapted and translated into Spanish by Del Valle and García-Quintanal (2006). The program also offered a multi-informant ILS assessment tool in the Spanish version, but this instrument did not develop psychometric validation studies.

As a consequence of the update of the Spanish national child welfare law in 2015, which declared offering preparation for leaving care from 16 years old compulsory for agencies, there is a renewed interest in developing ILS training tools that can be integrated into children’s homes as part of their educational intervention. One of these tools was Planea Program (Del Valle & García-Alba, in press), which followed the principles of Umbrella Program to develop a content updated set of activities that can be used through an online platform and covers nine thematic areas related to independent living. However, no ILS assessment tool had been, to the best of our knowledge, developed or adapted that could keep up with the minimum psychometric standards to be considered reliable and valid in the Spanish context.

For this reason, the present study aimed to develop and validate a new ILS measurement tool, created from the framework of skills development that Planea Program defined to be used both

in practice and research on the field of leaving care in Spain. This general objective can be divided into two specific objectives. Firstly, to study the psychometric properties of the instrument, considering internal structure, reliability, and characteristics of the items. Secondly, to examine evidence of validity in relation to other relevant measures and the discriminative capacity of the instrument. We hypothesize that the resulting instrument will feature different dimensions, as well as adequate psychometric properties. Sufficient evidence of validity in relation to other variables is expected to be found from the study of correlations between the instrument’s scores with general self-efficacy, a measure of general perceived ability to face tasks and relevant autonomy measures, as well as an adequate capacity of the instrument to discriminate between young people with different levels of independence.

Method

Participants

The sample consisted of 1,098 participants (60% women) aged 14-27 ($M = 17.69$, $SD = 2.25$) and comprised two groups. The first group of participants, which were recruited by means of a non-random snowball procedure, belonged to the general population and accounted for 63% of the total sample. The mean age was 17.97 ($SD = 2.27$) and 72.3% were female. The second group (37%) was composed of young people living in residential child care or receiving aftercare services and agreed to participate after being proposed to by their care workers. Females accounted for 39.2% of this group, being the mean age 17.21 ($SD = 2.14$). Participants were recruited from all autonomous communities in Spain.

Instruments

PLANEA Independent Life Skills Scale. With the aim of assessing the perceived knowledge of young people regarding important skills for everyday independent life, we used a set of 39 Likert-type items using 4-point scales (1 = ‘nothing’; 2 = ‘little’; 3 = ‘enough’; 4 = ‘a lot’). The development of the test was made following the recommendations of Muñiz and Fonseca-Pedrero (2019). Given that the definition in literature of independent living skills has been mainly addressed from a practice-oriented approach, linked to specific programs and services, and considering the purpose of developing an instrument that could serve to measure the base-line and progress of young people engaged in ILS training programs in Spain, the authors used an inductive approach in the operational definition of the variable. For this, a team of experts from academia and practice was gathered to evaluate the contents and skills targeted in Planea Program, the most recent and comprehensive tool published in Spain to help young people in residential care develop their autonomy and ILS (Del Valle & García-Alba, in press). It was agreed that 8 of 9 areas of content were relevant, including health care, family and social relationships, study-work skills, money management, citizenship, every-day autonomy development, and setting a home. The last area, related to personal growth (emotional wellbeing and regulation, self-esteem, etc.) was excluded considering that, although important for young people preparing to leave care, it should be measured by specific instruments that are already available.

From this framework, the team developed an initial bank of 50 items that best represented the skills aimed to develop by Planea

Program. This set of items was then sent to a panel of experienced experts in the field of supporting young people in their transition to adulthood from care along with a questionnaire for them to evaluate each item's clarity and pertinence through a 10-point Likert scale. Items were re-evaluated by the team if their score was lower than 85 out of 90 in any of the domains or if one or more scores were 6 or lower and 11 of them were excluded when the team reached consensus to consider them redundant or irrelevant. Wording changes were made to 12 of the remaining 39 items to improve their clarity, considering the experts' suggestions. A qualitative pilot study was conducted in order to detect any major issues in the clarity of the items. For this, 18 young people in residential care participated in an observed application of the instrument in small groups. None of them reported difficulties in understanding the items and answering them.

PLANEAT. With the aim of evaluating the degree of autonomy of young people when engaging in doing real daily life activities and tasks, an additional 8-item scale was developed following the same procedure, named PLANEAT (tasks). This questionnaire, which is made up of 8 items that used a 4-level Likert-type scale (3 = 'I do it by myself'; 2 = 'I do it with an adult person'; 1 = 'Someone else does it for me', 0 = 'Not done, neither alone nor supported'), is meant to be used to study evidence of validity in relation to other variables of PLANEAT Independent Life Skills Scale. An Exploratory Factor Analysis (EFA) was performed to study the internal structure of the instrument. The optimal implementation of Parallel Analysis suggested two dimensions, which explained 65.6% of the variance and showed an excellent fit (Goodness of Fit Index [GFI] = .996; Root Mean Square of Residuals [RMSR] = .034). Promin was used as rotation method, and the correlation between dimensions was .40. The first dimension, named Managing Daily Life Tasks, is composed of 4 items, and it showed a reliability of .77. The second dimension, named Doing Household Chores, is composed of 4 items, and it showed a reliability (α) of .84. The total score, named Personal Autonomy showed a reliability (α) of .84. Items of this scale are available in Table 1.

General Self-efficacy Scale. Self-efficacy was included as a measure potentially related to self-perceived everyday life skills and the feeling of readiness for independent life (Benbenishty & Schiff, 2009). It was assessed by the Spanish adaptation of the General Self-efficacy Scale (Baessler & Schwarzer, 1996) with the 10-point Likert-type response format proposed by Sanjuán et al. (2000). The instrument is composed of ten items and exhibits good psychometric properties, with reliability coefficients (α) above .80 both for adolescent population (.89) (Espada et al., 2012) and college students (.87) (Sanjuán et al., 2000). In the current study, the reliability (α) coefficient was .91.

EDATVA Scale. Autonomy in the transition to adulthood was also included in order to study its relationship with perceived everyday life skills and it was measured using EDATVA Scale (Romero et al., 2020). This 19-item instrument presents a structure of four dimensions, according to important factors related to this construct from both an inter and trans-subjective perspective: (1) self-organization, (2) understanding context; (3) critical thinking, and (4) socio-political engagement. The instrument shows good reliability indexes (α) for both the total score (.84) and each of the factors (.70 - .77). In the current study, the reliability (α) coefficients were as follows: Self-Organization: .83; Understanding Context: .72; Critical Thinking: .79; Socio-Political Engagement: .74, and total score: .87.

Procedure

The instruments were administered using paper-and-pencil ($n = 81$) and via the Internet ($n = 1,017$). Participants gave their informed consent to be part of the study, after being informed about its objectives and characteristics, the confidentiality and anonymity of their responses, and that their participation was voluntary. Special attention was devoted to administering similar information and instructions to all participants, regardless of their form of participation (paper-and-pencil or online). Personal or sensitive data were not gathered from the participants, which were assigned an alpha-numeric code for data treatment. The datasets were securely stored and analysed under the supervision of the principal investigator responsible for the study. This research was approved by the Ethics in Research Committee of the University of Oviedo.

Data analysis

The total sample was randomly divided into two subsamples in order to use the first one (1/3) to conduct exploratory analyses and the second one (2/3) to confirm the factorial structure obtained. In the first subsample, composed of 367 participants ($M_{\text{years}} = 17.70$, $SD_{\text{years}} = 2.31$) aged 14 to 26 years old (59% women), EFAs were performed to study the dimensionality of the instrument. KMO and Bartlett's test were used to study the sampling adequacy to perform Factor Analysis. The EFAs were performed on the polychoric correlation matrix, using Unweighted Least Squares (ULS) as estimation method (Ferrando & Lorenzo-Seva, 2017). The dimensionality of the instrument was determined through the optimal implementation of Parallel Analysis (Timmerman & Lorenzo-Seva, 2011) with 1,000 matrices of random correlations and the percentage of explained variance was also considered. Finally, the Unidimensional Congruence (UniCo), Explained Common Variance (ECV), and Mean of Item RESidual Absolute Loadings (MIREAL) indices were used to study the adequacy of the data to a single dimension. The following values support treating the data as essentially unidimensional: UniCo > .95; ECV > .85; MIREAL < .30 (Calderón-Garrido et al., 2019). Oblimin oblique rotation was used as rotation method. GFI and RMSR were used as fit indices, establishing a good fit when GFI > .95 and RMSR < .06 (Hu & Bentler, 1999).

Once the questionnaire had been explored, the second subsample (2/3) was used to confirm the factorial structure. This was composed of 731 participants, with a mean age of 17.69 years ($SD = 2.22$), ranging from 14 to 27 years old, 60.7% being women. We performed various Confirmatory Factor Analyses (CFA) on the polychoric correlation matrix, testing the fit of unidimensional, multidimensional (three first-order factors), second-order factor, and bifactor models. ULS was used as estimation method. Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and Root Mean Square of Error Approximation (RMSEA) were used as fit indices, being an adequate fit when CFI and TLI > .95 and RMSEA < .06 (Hu & Bentler, 1999). To select the model with the best fit, we calculated the AIC and BIC for each model. As a criterion, we considered a minimum difference of nine points between the AIC and BIC indices to be indicative of the model with a lower index showing a better fit to the data (Anderson, 2008).

As it was possible to defend a second-order factor, a 9-item short version of the questionnaire was developed (PLANEAT-9),

including three items per dimension. The items selected were those that, having a factorial weight greater than .55, differed the most in content. An EFA was then performed on the polychoric correlation matrix, using ULS as the extraction method, and the UniCo, ECV and MIREAL indicators to study the adequacy of the data to a single dimension.

Once the dimensionality of the questionnaire had been studied, descriptive statistics of the final items (mean, standard deviation, skewness, and kurtosis), and discrimination indices (corrected item-test correlation) were studied. Furthermore, Differential Item Functioning (DIF) of the items was studied according to gender, for which the logistic regression procedure was used (Gómez-Benito et al., 2013). The reliability of the different dimensions' scores of the questionnaire and the total score was also studied using Cronbach's α coefficient and McDonald's ω coefficient. From the Item Response Theory (IRT) perspective, the precision of the instrument was studied through the Test Information Function. This procedure was followed for both the original and the short version.

In order to study evidence of validity in relation to other variables, Pearson's correlation was calculated between the different dimensions of the questionnaire, the short version (PLANEA-9), and the self-efficacy and transition to adulthood autonomy tests. To obtain evidence about the discriminatory capacity of the original questionnaire and the short version, several t tests for independent samples were performed to study differences in each dimension score according to the autonomy status of participants (independent living, economic independence and working experience). Cohen's d was used to estimate the effect size, considering it as small for values between 0.2 and 0.4, medium for values between 0.4 and 0.7, and large from 0.7 (Cohen, 1988).

Descriptive statistics, discrimination indices, DIF, and differences between groups were carried out with SPSS 24 software (IBM Corp, 2016). The EFA and the reliability coefficients were calculated with FACTOR software (Ferrando & Lorenzo-Seva, 2017). The CFA were carried out with Mplus8 software (Muthén & Muthén, 2017). For IRT analyses, IRTPro software was used (Cai et al., 2011).

Results

Evidence Based on Internal Structure

In the first subsample, both KMO (.896) and Bartlett's statistic ($p < .001$) showed a good data fit to be submitted to Exploratory Factor Analysis. The optimal implementation of Parallel Analysis recommended three factors and unidimensional indicators did not meet the criteria to affirm the structure as unidimensional: UniCo = .906, ECV = .775, MIREAL = .251. Considering that the percentage of variance explained by the first factor was 31.9% and the fit indices of the unidimensional model were not very adequate (GFI = .910; RMSEA = .107), it seems sensible to reject a unidimensional structure of the questionnaire (Calderón-Garrido et al., 2019).

Since the optimal implementation of Parallel Analysis recommended three factors, an EFA was carried out with this three-dimensional structure after eliminating three items that did not show an adequate factor loading in any of the factors. The EFA was repeated for the 36 remaining items of the questionnaire, which increased the percentage of variance explained by the

three factors to 49%. The fit indices were adequate (GFI = .974; RMSEA = .059). The final three factors make theoretical sense due to the content of the items that compose them. The first of them, named Self-Care and Wellbeing, is composed of 16 items related to everyday self-care tasks and skills, including nutrition, personal health and hygiene, household chores, or leisure. The second, Daily Arrangements and Organizational Skills, includes 12 items that measure skills related to making arrangements such as appointments, applications, banking-related tasks, or payments. The third, named Employment and Accommodation, covers those skills associated with becoming independent or emancipating, such as work-related skills, budgeting or finding a place to live. A list of the items in each dimension can be found in Table 1.

Finally, due to both the correlation between the different factors (.604, .502. and .656) and the high theoretical sense of showing a total score of the questionnaire, a second-order EFA was performed with the final 36 items in order to find a hierarchical common factor to the dimensions. The second-order EFA showed an adequate fit to the data (GFI = .990; RMSEA = .001), with three first-order factors (Self-Care and Wellbeing, Daily Arrangements and Organizational skills and Employment and Accommodation), and a second-order factor (Independent Life Skills). The factor loadings of the first-order factors to the second-order factor were .681, .778 and .630.

In the second subsample (2/3), four models of CFA were adjusted: a unidimensional model, a model with 3 first-order factors, a model with 3 first-order factors and a second-order factor, and a bifactor model with a general factor and 3 specific factors. As seen in Table 2, the bifactor model is the one that presents a better fit to the data, followed by a second-order factor model. However, the factorial loadings of the items in the bifactor model are too low or even negative. This, added to the fact that the bifactor model tends to better fit (Gignac, 2016), leads to the second-order factor model being chosen. The factor loading of each item is shown in Table 2, ranging between .326 and .817. The factor loadings of the first-order factors to the second-order factor were .765, .970, and .801. The factorial structure of the second-order factor model is shown in Figure 1. Regarding DIF, only one item showed DIF by gender (item 16), but the effect size was small.

Development of a Short Version (PLANEA-9)

Due to the existence of a second-order factor, a short 9-item version (PLANEA-9) was developed by selecting the 3 items of each dimension that had a factorial loading greater than .55 and differed the most in content. An EFA was then performed for these 9 items, where the optimal implementation of Parallel Analysis recommended a single dimension, showing a good fit when considering it as unidimensional (CFI = .971; RMSEA = .080 CI 90 % [.060- .100]). Furthermore, unidimensional indicators were all adequate (UniCo = .967, ECV = .868, MIREAL = .237), and the factor loadings ranged between .463 and .829. None of the items in the short version showed DIF.

Descriptive Statistics, Item Analysis, Reliability and Precision

The descriptive statistics of the final items of the PLANEA Independent Life Skills questionnaire are in Table 3. In general

Table 1
Items of the PLANEA Life Skills Assessment Tool

PLANEA Independent Life Skills Scale	
Dimension 1. Self-Care and Wellbeing	1. Hacer un menú semanal saludable. [Plan a healthy weekly menu] 2. Encontrar actividades para apuntarme en mi tiempo libre. [Find activities to sign up to do in my free time] 3. Cuidar de mi higiene personal diariamente. [Take daily care of my personal hygiene] 4. Protegerme del contagio de enfermedades de transmisión sexual. [Protect myself from sexually transmitted diseases] 5. Utilizar métodos anticonceptivos para evitar un embarazo. [Use contraceptive methods to prevent unintended pregnancy] 7. Comprar los medicamentos que me recete el médico. [Buy the medicines prescribed by the doctor] 8*. Preparar un botiquín con medicamentos básicos para tener en mi casa. [Prepare a first-aid kit including basic medicines to have at home] 9. Hablar con alguien de confianza cuando tengo un problema y necesito ayuda. [Talk to someone I can trust when I have a problem and need help] 22. Comprar ropa sin gastar mucho dinero. [Buy clothes within my budget] 29. Llamar a la policía, ambulancia o bomberos en caso de emergencia. [Call the police, ambulance or fire department in case of emergency] 30. Comprar los utensilios necesarios para cocinar. [Buy the kitchenware I need to cook] 31*. Cocinar comidas variadas. [Cook varied meals] 32. Hacer la limpieza de una casa. [Clean up the house] 33. Utilizar la lavadora. [Use the washing machine] 34. Pasarlo bien en mi tiempo libre. [Have fun in my free time] 36*. Usar el transporte público por mi cuenta. [Use public transportation on my own]
Dimension 2. Daily Arrangements and Organizational Skills	6. Pedir cita para ir al médico. [Make an appointment with the doctor] 12. Pedir una beca para mis estudios. [Apply for a grant to study] 19*. Abrir una cuenta en un banco. [Open a bank account] 20. Usar una tarjeta de crédito. [Use a credit card] 21. Devolver algo que he comprado. [Return a purchase] 23. Hacer compras por Internet. [Make online purchases] 24. Hacer compras a plazos. [Finance a purchase] 25. Hacer gestiones en las oficinas de mi ayuntamiento. [Make arrangements at public administration offices] 26. Votar en unas elecciones. [Vote in elections] 27*. Conseguir renovar el DNI o el pasaporte. [Apply for or renew your identity card or passport] 28. Solicitar ayudas económicas si lo necesito (para el alquiler, etc.). [Apply for financial aid if I need to (to pay the rent, etc.)] 35*. Organizar un viaje a otra ciudad (buscar transporte, sitio para dormir...). [Plan a trip to a different city (find transportation, accommodation...)]
Dimension 3. Employment and Accommodation	13. Hacer mi currículum vitae. [Write my CV] 14*. Buscar ofertas de trabajo. [Search for job opportunities] 15. Apuntarme en la oficina de empleo. [Register at a public employment office] 16. Prepararme para realizar una entrevista de trabajo. [Prepare myself for a job interview] 17. Informarme sobre mis derechos como trabajador/a. [Find information about my rights as an employee] 18. Gestionar mi dinero de forma que pueda ahorrar una parte. [Manage my money so I can save some of it] 38*. Buscar piso o casa para vivir. [Find a place to live on my own] 39*. Independizarme para vivir por mi cuenta. [Become independent and live on my own]
Deleted items	10. Apartarme de un amigo/a que no es bueno para mí. [Break up with a friend who is not good for me] 11. Apuntarme a los estudios o cursos que quiero hacer. [Sign up for a class or course that I want to do] 37. Proteger un ordenador de virus cuando uso Internet. [Protect my computer from viruses when I surf the Internet]
PLANEA-T	
Dimension 1. Managing Daily Life Tasks	1. Pedir cita para ir al médico. [Make an appointment with the doctor] 3. Hacer gestiones con mi cuenta bancaria o tarjetas. [Manage my bank account and cards] 5. Ir a comprar mi ropa. [Go shopping for clothes] 6. Matricularme en un centro para estudiar o hacer cursos. [Enrol in a course or in college]
Dimension 2. Doing Household Chores	4. Ir a hacer la compra de comida. [Do the grocery shopping] 7. Cocinar la comida. [Cook meals] 8. Hacer la limpieza de mi habitación o de otras partes de la casa. [Clean up my room or other parts of the house] 9. Lavar la ropa. [Do the laundry]
<i>Note:</i> * = items included in the short version	

terms, the items show adequate values in skewness and kurtosis. The discrimination indices are all adequate, ranging between .330 and .549 in Self-Care and Wellbeing dimension, between .396 and .659 in Daily Arrangements and Organizational Skills dimension, and between .360 and .734 in Employment and Accommodation dimension. The reliability of the test scores was excellent in the first-order factors, second order factor Independent Life Skills, and short version (see Table 3).

From the IRT framework, the precision of the original instrument and the short version were studied through Test Information Function. Regarding the original instrument (Figure 2), it shows adequate precision throughout all ability levels in the measured variable, being the standard error below .5 throughout the theta continuum. Regarding the short version (Figure 3), it only lost important precision at extreme ability levels, despite the fact that the instrument is reduced by 27 items compared to the original version.

Table 2
Fit Indices of Confirmatory Factor Analysis

	Unidimensional model	Three first-factors model	Second-order factor model	Bifactor model
RMSEA	.088 [.085 - .090]	.069 [.066 - .072]	.051 [.048 - .054]	.045 [.042 - .048]
CFI	.810	.884	.910	.934
TLI	.799	.876	.903	.925
AIC	55,136.080	54,116.562	54,116.557	53,655.997
BIC	55,797.675	54,791.941	54,791.936	54,510.558
ABIC	55,340.429	54,325.168	54,325.164	53,919.949

Note: RMSEA = Root mean square error of approximation [90% CI]; CFI = Comparative fit index; TLI = Tucker-Lewis index; AIC = Akaike information criterion; BIC = Bayesian information criterion; ABIC = Adjusted BIC

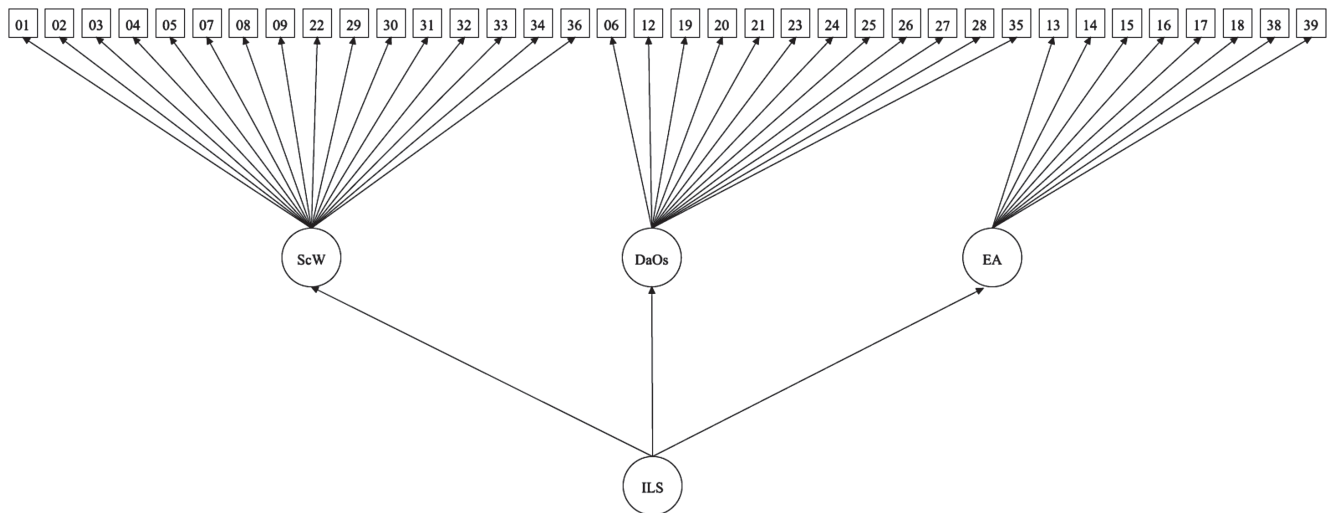


Figure 1. The Factorial Structure of PLANEA Independent Life Skills Scale. Note. ILS = Independent Life Skills; ScW = Self-Care and Wellbeing; DaOs = Daily Arrangements and Organizational Skills; EA = Employment and Accommodation

Validity Evidence Based on Relations to Other Variables

With the aim of obtaining evidence of validity in relation to other variables, Pearson’s correlations were performed between the different dimensions of the questionnaire, self-efficacy test, the two measures related to personal autonomy (EDATVA scale and PLANEA-T), and short version (PLANEA-9). Evidence of validity was found for all the measures studied, as the dimensions of PLANEA Independent Life Skills questionnaire, its total score, and the short version showed relevant correlations with them (see Table 4). Therefore, perceived level of ILS is associated not only with general self-efficacy but also with the level of autonomy in the transition with a similar level across its four dimensions in EDATVA scale. Important correlations were also found between the instrument and PLANEA-T, as it was expected that a higher level of autonomy in performing every-day life tasks would impact perceived independent living skills. Furthermore, the correlation between the total score of the original questionnaire and the short version (PLANEA-9) was very high (.924).

The Discriminative Capacity of PLANEA Test

Regarding the differences based on experience of autonomy by means of indicators such as working experience, independent

living and economic independence, differences were found in all dimensions of the questionnaire and total score, and also in the short version, always in favour of those with working experience, living independently and being economically independent, with large effect sizes in most cases (see Table 5). It was only in the dimension of Self-Care and Wellbeing where no differences were found based on economic independence.

Discussion

The assessment of perceived ILS in young people in and leaving care has proved to be an important indicator of success in their future (Häggman-Laitila et al., 2019). In Spain, although growing attention has been given to preparing young people for leaving care since the national child welfare law update in 2015 declared it compulsory from 16 years old, there remains a gap in the use of structured training programs and assessment tools for this purpose. To address this issue, the present study proposed a new reliable, valid independent life skills measurement tool, which was developed following the PLANEA Program framework (Del Valle & García-Alba, in press), currently implemented in an autonomous region of Spain.

The use of an exploratory and confirmatory approach to study the dimensionality of the measure delivered a structure

Table 3
Descriptive Statistics, Factor Loadings and Reliability of PLANEA Independent Life Skills Scale

Dimension	Item	Mean	Standard deviation	Skewness	Kurtosis	Correlation item-test	Factor loading (EFA)	Factor loading (CFA)	α	ω
Self-Care and Wellbeing	01	2.78	0.843	-0.164	-0.656	.417	.438	.491	.86	.86
	02	2.96	0.912	-0.479	-0.666	.330	.447	.350		
	03	3.74	0.525	-2.002	3.534	.332	.579	.402		
	04	3.60	0.682	-1.809	3.000	.387	.566	.489		
	05	3.55	0.822	-1.824	2.418	.401	.640	.518		
	07	3.50	0.788	-1.568	1.774	.459	.450	.686		
	08*	2.97	0.951	-0.487	-0.813	.471	.374	.615		
	09	3.22	0.906	-0.901	-0.183	.285	.339	.326		
	22	3.24	0.868	-0.869	-0.187	.369	.561	.542		
	29	3.50	0.771	-1.490	1.458	.392	.465	.556		
	30	3.49	0.766	-1.566	2.002	.549	.628	.746		
	31*	3.10	0.922	-0.631	-0.668	.466	.407	.586		
	32	3.47	0.706	-1.104	0.432	.469	.524	.607		
	33	3.20	0.971	-0.894	-0.422	.357	.298	.535		
	34	3.69	0.552	-1.599	1.777	.336	.577	.435		
36*	3.62	0.715	-1.906	2.983	.438	.549	.670			
Total	53.63	6.439	-0.828	0.868	-	-	-			
Daily Arrangements and Organizational Skills	06	3.05	0.983	-0.646	-0.741	.498	.277	.625	.90	.90
	12	2.39	1.122	0.147	-1.350	.547	.557	.634		
	19*	2.33	1.187	0.225	-1.466	.607	.499	.746		
	20	2.93	1.146	-0.600	-1.120	.659	.634	.728		
	21	3.45	0.812	-1.369	0.993	.396	.245	.552		
	23	3.23	1.007	-1.039	-0.194	.462	.331	.549		
	24	2.20	1.119	0.386	-1.242	.452	.273	.542		
	25	1.85	0.986	0.856	-0.433	.560	.366	.717		
	26	2.58	1.255	-0.119	-1.627	.565	.782	.606		
	27*	3.09	0.994	-0.738	-0.634	.616	.538	.725		
	28	1.87	1.035	0.892	-0.487	.470	.474	.636		
	35*	3.04	0.996	-0.659	-0.731	.562	.314	.751		
Total	32.01	7.940	-0.152	-0.716	-	-	-			
Employment and Accommodation	13	2.42	1.092	0.116	-1.286	.652	.695	.737	.90	.90
	14*	2.34	1.047	0.209	-1.146	.718	.784	.765		
	15	1.93	1.072	0.778	-0.752	.689	.887	.746		
	16	2.25	1.037	0.322	-1.067	.734	.885	.745		
	17	2.32	1.046	0.210	-1.149	.643	.685	.699		
	18	3.13	0.842	-0.662	-0.304	.360	.472	.554		
	38*	2.60	1.097	-0.100	-1.306	.615	.408	.817		
	39*	2.51	1.063	0.013	1.229	.599	.530	.756		
Total	19.50	6.042	0.196	-0.792	-	-	-			
Total Independent Life Skills		105.15	17.46	-0.204	-0.344	-	-	-	.94	.94
Total short version		25.60	5.79	-0.218	-0.648	[.323 - .658]	-	[.495 - .736]	.86	.86

Note: * = items included in the short version.

composed of three dimensions and a single second-order factor, whose psychometric properties were optimal in terms of internal consistency and reliability ($\omega = .86 - .94$). The additional 9-item short version that was developed (PLANEA-9), whose correlation with the original questionnaire was very high ($r = .924$), showed similar psychometric properties, as the loss of reliability of the instrument was low despite the significant reduction of its length ($\omega = .86$). The development and validation of brief measures like this

has increased in the last decade (e.g. Blanca et al., 2020; Postigo et al., 2020) due to the benefits of reducing application times for both research and practice, which PLANEA-9 also offers.

The dimensions of the main instrument, named (1) Self-Care and Wellbeing, (2) Daily Arrangements and Organizational Skills and (3) Employment and Accommodation after their contents, seem to cluster items neither exactly according to thematic training areas—like those featured in Umbrella and Planea programmes

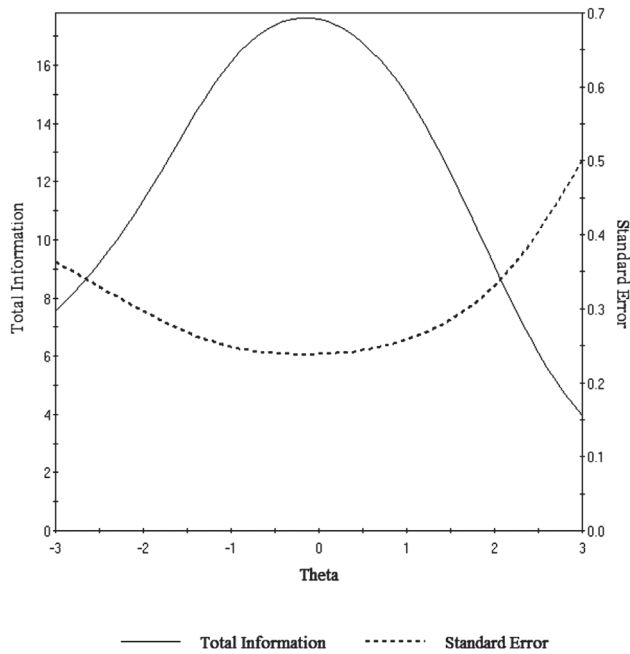


Figure 2. Information Function of PLANEA Independent Life Skills Scale

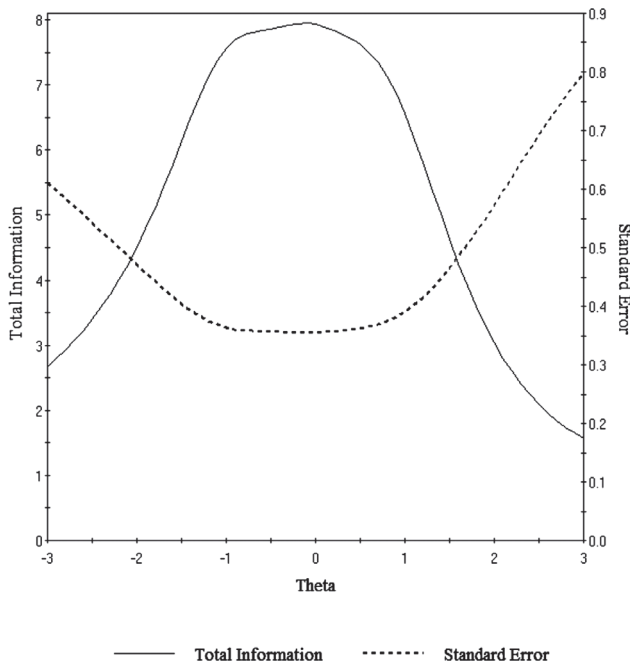


Figure 3. Information Function of PLANEA-9 Test

or CLSA test— nor following the traditional ILS theoretical frameworks reviewed.

Dimension 1 included items measuring skills related to personal wellbeing, self-care and healthy lifestyle, but also items that evaluate practical skills related to housekeeping, self-care and interpersonal skills. This dimension seems, therefore, to represent every task and skill related to taking autonomous care of oneself, including the own house, relationships and free time. Dimension

2 seems, in turn, to include practical skills, such as making appointments and applications and financial and consumer-related skills, but these activities differ from those in dimension 1 in their context, as they are always performed in the community and imply communicating with official private or public organizations as a part of active citizenship. Finally, the focus of dimension 3 was clearly on practical skills related to finding a job, being financially independent and emancipating to live on their own.

The structure features then three key domains: (1) taking care of oneself and the own home, (2) operating in the community as a citizen and (3) living and being financially independent. This could represent the process of transitioning into adulthood, which implies the progressive acquisition of new roles and responsibilities towards oneself and the others and culminates with “the completion of training or education, finding a job, being able to sustain mature relationships and establishing their own home” (p. 187) as described by López et al. (2013). These dimensions could constitute, from our point of view, a simple but significant framework to lead autonomy-development practice in children’s homes, as young people can benefit from the early gradual development of areas related to personal every-day autonomy at home and in the community, whereas those related to emancipating —getting a job, finding a place of their own to live, etc. — should be addressed later on and supported during care leavers’ 20’s through aftercare services (Harder et al., 2020).

Significant evidence of validity was found in the correlations between our instrument and the three additional measures studied: self-efficacy, autonomy in transition and personal autonomy. The measurement of self-efficacy expectancies to becoming independent as a perception of “readiness” to leave care, could be very important in this context, as individuals with high efficacy expectations have also been found to be more likely to successfully cope with stressful experiences linked to vital transitions and adaptations in general (Jerusalem & Mittag, 1995). Moreover, using PLANEA-T a measure of every-day autonomy might add key information to interpret PLANEA Independent Life Skills test, as the structure and regulations of children’s homes do not always allow young people to fully exercise their autonomy.

Finally, the discriminative capacity of the instrument seemed good, as those individuals that informed of higher autonomy levels at economical, work and accommodation-related levels, scored higher across both the main scale and subscales, except for Self-Care and Wellbeing subscale for those that informed being economically independent. However, these results must be taken with precaution, as the majority of the participants were students and, therefore, less likely to have entered the job market.

There are some limitations of the present study that must be taken into account. First, the online convenience sampling method used for recruiting young people from the general population might overrepresent young people engaged in training and education over those that have not accessed post-compulsory education or have already entered the job market. Larger and more representative samples should be considered for future studies, that could also benefit from a deeper definition and study of participants’ profiles and personal situations.

In conclusion, PLANEA Independent Life Skills test points to be a reliable, valid instrument to measure perceived ILS in young populations, both normative and care-experienced. We expect this measure, along with its short version (PLANEA-9) and personal autonomy measure (PLANEA-T) to contribute to both practice and

Table 4
Correlation Between Different Dimensions of the Questionnaire, Short Version, and Self-Efficacy and Autonomy Tests

	PLANEA Independent Life Skills Scale				
	Self-Care and Wellbeing	Daily Arrangements and Organizational Skills	Employment and Accommodation	Total Independent Life Skills	Short version (PLANEA-9)
Total General Self-Efficacy Scale	.489	.422	.424	.519	.483
EDATVA scale					
Self-Organization	.401	.343	.365	.427	.387
Critical-Thinking	.395	.333	.259	.384	.317
Understanding Context	.330	.420	.257	.398	.331
Sociopolitical Engagement	.282	.285	.329	.345	.319
PLANEA-T					
Total Personal Autonomy	.374	.420	.425	.476	.485
Managing Daily Life Tasks	.325	.548	.419	.514	.511
Doing Household Chores	.307	.155	.279	.280	.297
Short version (PLANEA-9)	.704	.827	.832	.924	–

Table 5
Differences in PLANEA Independent Life Skills Questionnaire Based on Independent Living, Economic Independence and Working Experience

	Working experience				Independent living				Economic independence			
	M No	M Yes	t(p)	d	M No	M Yes	t(p)	d	M No	M Yes	t(p)	d
Self-Care and Wellbeing	52.76	55.53	-7.04 (<.001)	0.44	53.00	56.66	-6.99 (<.001)	0.62	53.54	54.81	-1.38 (.169)	0.21
Daily Arrangements and Organizational Skills	30.35	35.62	-10.73 (<.001)	0.70	32.25	37.65	-8.88 (<.001)	0.78	32.93	36.89	-3.65 (<.001)	0.55
Employment and Accommodation	18.05	22.66	-12.57 (<.001)	0.82	18.11	21.73	-6.63 (<.001)	0.66	18.38	23.79	-6.59 (<.001)	0.99
Total Independent Life Skills	101.15	113.86	-11.89 (<.001)	0.77	103.38	116.08	-9.20 (<.001)	0.83	104.87	115.49	-4.41 (<.001)	0.67
Short version (PLANEA-9)	24.24	28.55	-12.75 (<.001)	0.79	24.87	29.73	-10.95 (<.001)	0.93	25.45	29.32	-6.04 (<.001)	0.71

Note: M= mean; t= student-t statistic; d= effect size

research in the field of leaving care in Spain as it can help establish well-informed training objectives, evaluate training programs, or serve as a screening assessment tool, considering assessment and evaluation as a key part of a mature system of social intervention. Future studies should further address not only the adequacy and strengths of using this new framework for assessing perceived independent life skills in care-experienced young people living in non-residential alternative care placements but also the potential differences between young people in residential care and from

general population. Special attention should also be devoted to studying the influence in receipt of services and support to acquiring life skills and the influence of their profiles and life trajectories.

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