Abstract: Human beings must develop many skills to cope with the large amount of challenges that currently exist in the world: media empowerment for an active and democratic citizenship, knowledge acquisition and conversion for lifelong and life-wide learning, 21st century skills for matching demand and supply in labor markets, and dispositional employability for unpredictable future career success. One of the tools for achieving these is online education, in which students have the chance to manage their own time, content, and goals. Thus, this paper analyzes these issues from the perspective of skills gained through e-learning and validates the Socio-Technical E-learning Employability System of Measurement (STELEM) framework. The research was carried out with former students of the Universitat Oberta de Catalunya. Exploratory and confirmatory factorial analyses validate several consistent and reliable scales in two areas: (i) employability, based on educational social capital, media empowerment, knowledge acquisition, knowledge conversion, literacy, digitalness, collaboration, resilience, proactivity, identity, openness, motivation, organizational culture, and employment security; and (ii) socio-technical systems existing in this open online university, based on its information and communications technology (ICT), learning tasks, as well as student-centered and organizational approaches. The research provides two new psychometrical scales that are useful for the evaluation, monitoring, and assessment of relationships and influences between socio-technical e-learning organizations and employability skills development, and proposes a set of indicators related to human and social capital, valid in employability contexts.

Keywords: employability; skills; e-learning; socio-technical system; lifelong learning

1. Introduction

Our society is experiencing a time of great social, economic, political, technological, and educational changes. At the social level, more than 65 million people are forcibly displaced, in a humanitarian crisis comparable the one that existed after World War II [1]. At the economic level, a collaborative economy is being generated, one that is motivated by price, convenience, and non-monetary exchanges [2]. In the political dimension, different actors are generating a post-truth politics [3] with consequences in different areas, one of them being education [4].
the educational sphere is also being modified due to the pedagogical use of information and communication technologies [5].

From this educational perspective, all these changes are also affecting the relationship between education and employability, a subject of great concern in many countries and international organizations. In fact, the vast majority of countries have been applying lifelong learning initiatives that have been based and have been very close to the human capital theory [6,7], itself based on the importance of skills and abilities learned by citizens as avenues for the economic and social development of countries. In this way, many criticisms are being put on the table, one being that its conceptualization is too utopian [8]; other examples of criticisms involve its economic orientation and mercantilist vision of education [9].

Thus, the application of the human capital theory has generated confusing situations, such as overqualification [10], skill-biased technical change that increases the level of employment of the most educated workers [11], or a lack of concreteness and utility for numerous situations revolving around career and working life pathways [12]. On the other hand, this generally and economically-centered accepted human capital theory has been aimed at the individualization of work organizations, a situation that in the present times of Uberisation can have different consequences that are not always good for workers, such as involuntary self-employment, job insecurity, and personal debt [13].

This context of a networked society with an economy based on social and peer production [14] has an impact in several areas, such as the critique of the individualist and economic vision of human and social capital [15], and an adult learning affected by globalization, which has made learning became more work oriented [16]. In this sense, education has to be redesigned to take into account more imaginative and artistic aspects, which help to understand the large number of changes we are experiencing today [17]. In addition, education has to contribute to the development of lifelong learning because of its current focus on economic issues, such as employability, especially in Europe [18].

Considering all these aspects, our paper aims to open a new way of analyzing and measuring the relationship between lifelong e-learning and employability by proposing a framework for a Socio-Technical E-learning Employability System of Measurement (STELEM). This framework takes into account a number of issues linked to employability, which are related to biographical, psychological, cognitive, pedagogical, educational, social, technological, business, and political aspects. All these variables are necessary and important for establishing mechanisms for measuring an online education that must develop the skills for work, but above all for life. It is worth noting that this kind of education is related to the ancient Greek term of *paideia*, which has to do with education that shapes an ideal and excellent citizen of the polis [19,20].

2. Theoretical Context and Hypotheses

At the theoretical level, the research developed has connections with various theories. On the one hand, it connects with aspects related to the theory of discrimination, which asserts that several personal characteristics are valued in the labor market [21]. There is another relationship with labor markets and the queue theory [22], which states that workers are ranked according to their productivity and wages.

On the other hand, the paper is mainly related to the human capital theory, briefly discussed above. This theory has been used to guide continuing education, which has been focused on improving workforce employability under the OECD’s guidelines and point of view for human capital [23]. In fact, it seems that lifelong learning, which emerged by the mid-1990s, was very aligned with the Organization for Economic and Development (OECD), the EU, and the World Bank’s approaches, which put an emphasis on work, and that it forgot its other main approach according to the UNESCO’s humanistic orientation [24].

From an educational point of view, a framework based on online learning is presented because this type of methodology can act as a catalyst for refocusing the educational world [25]. Thus, the world of e-learning needs a new theory about learning [26], which has to overcome the different generations of
e-learning technologies for teacher-student-content management [27] by going toward a smart learning realized through e-learning [28].

Based on these premises, the framework starts from the idea of considering the online education system in a holistic way, according to the propositions of a whole that goes beyond the sum of its parts [29]. From this perspective, and considering that the competences developed through e-learning have to be valid for the improvement of employability, the approach of socio-technical systems has been considered. This theory enables the analysis of relations between the different and complementary social and technological actors that intervene in a coordinated and interrelated way in the world of work, with many uses and applications [30]. This theory allows the use of diverse socio-technical design principles that are associated with the improvement and efficiency of the relations between social and technical systems [31].

Considering the current and future development of information and communication technologies (ICT), and their application in educational contexts with ubiquitous e-learners, the socio-technical perspective is open to new concepts, such as the ecology of the e-learning environment [32]. In this way, the framework is based on a valid approach in the future. By taking into account student-related issues, this student-centered framework is very useful for measuring important points related to work motivation, performance, and skills development, such as achievement and motivation control, anxiety and emotion control, and self-regulation [33].

With respect to the validity and use of socio-technical systems (STS), numerous applications exist, such as STS in companies [34], STS in management information systems (MIS) [35], and STS for quality assessment [36]. Specifically, there are other uses related to education, such as STS in schools [37], blended doctoral program [38], mobile learning [39], distance learning for professional development [40], and e-learning and blended learning [41].

From a purely employability-based perspective, research takes into account the labor markets transitions [42] and the skills gaps existing in modern graduates [43]. As will be seen, it also considers career development learning, experience, skills, emotional intelligence, and reflection-evaluation [44]. On the other hand, the proposed framework designs an e-learning for employability related to ICT that takes into account micro level factors related to individual circumstances [45], as well as variables related to access and use of information, group work, opinions about decentralized decisions, creativity and interdisciplinarity in companies, and biodemographic and psychosocial variables [46]. In particular, the framework takes into account issues related to perceived employability and career self-management [47], as well as situation (social and individual) and personal (objective and subjective) dimensions [48].

Figure 1 shows the model for the STELEM framework. On the one hand, it takes into account the socio-technical e-learning system, according to its social (organization, and students) and technical (ICT, and learning tasks) subsystems. On the other hand, it integrates indicators related to online students’ employability, which are related to several criteria: (i) skills (literacy; digitalness; collaboration), which are needed to live in the 21th century; (ii) knowledge (knowledge acquisition; knowledge conversion), which are important for learning in knowledge societies; (iii) dispositional employability (resilience; proactivity; identity; openness), which is a predisposition to work and career adaptability; (iv) labor markets (motivation; organizational culture; employment security), which capture feelings about future external factors that influence jobs and work situations; (v) citizenship (media empowerment), which is necessary for democratic and multicultural societies; and (vi) educational attainment (educational social capital), which is a key variable in employment.

It is therefore key to prove whether there is a useful framework for analyzing online education effects on e-learners’ employability, and for taking into account many personal, organizational, and technological variables. This situation is tested by analyzing and validating results related to two psychometric scales. Moreover, other variables are proposed for adding other needed variables to this scale and generating the global STELEM framework. Thus, the two following hypotheses are
defined, which are proved below by using psychometrics in a case study related to Alumni from the Universitat Oberta de Catalunya (UOC), a fully online university based in Barcelona:

**Hypothesis 1.** There is a psychometric scale valid for measuring socio-technical factors in fully online universities. According to the socio-technical systems theory, this scale has four sub-scales: ICT, learning tasks, students, and organization.

**Hypothesis 2.** There is a psychometric scale valid for measuring employability factors existing in students enrolled in fully online universities. According to the literature related to employability, this scale has fourteen sub-scales: educational social capital; media empowerment; knowledge acquisition; knowledge conversion; literacy; digitalness; collaboration; resilience; proactivity; identity; openness; motivation; organizational culture; and employment security.

![Figure 1. Model for the Socio-Technical E-learning Employability System of Measurement (STELEM) framework.](image)

### 3. Methodology

#### 3.1. Items for the Socio-Technical Fully Online University Scale

Several groups of items were designed for this research, according to their factors. Table 1 shows the four dimensions considered in socio-technical systems [49], which were adapted to a fully online university: ICT, learning tasks, students, and organization. The sixteen items defined to measure the socio-technical factors in the case study are shown as well, according to many authors, who served as guidelines for the design of the items.
These items had to do with the four socio-technical factors:

- **ICT**: digital content, various ICT, devices, and adaptation.
- **Learning tasks**: well-defined, specific, time-saving, and educational resources.
- **Students**: needs, support, usability, and habits.
- **Organization**: interactions, non-hierarchical structure, adaptation, and open culture.

**Table 1.** Dimensions, items, and references for the socio-technical fully online university scale.

| Dimensions            | Items                                                                 | References |
|-----------------------|----------------------------------------------------------------------|------------|
| Question:             | The whole completed online education was designed to...                |            |
| ICT                   | - Allow all types of digital content                                  | [50–53]    |
|                       | - Allow various information and communication technologies            |            |
|                       | - Access with more digital devices                                    |            |
|                       | - Agile adaptation to technological changes                            | [50–53]    |
| Learning tasks        | - Help learning through well-defined tasks                            | [54–56]    |
|                       | - Focus student attention on specific tasks and actions               |            |
|                       | - Establish a time-saving order to complete the tasks                 |            |
|                       | - Give access to more educational resources                           | [50–53]    |
| Students              | - Be flexible and adaptable to the needs of students                  | [50,52–54,56–63] |
|                       | - Offer great diversity of helping and personal supporting            |            |
|                       | - Give usability (ease of use for students)                           | [50,52–54,56–63] |
|                       | - Make recommendations regarding study habits                         |            |
| Organization          | - Solve problems with interactions without hierarchies               | [50,51,54,56,58,60] |
|                       | - Maintain a non-hierarchical communicative structure                 |            |
|                       | - Adapt continuously to educational and pedagogical changes           | [50,51,54,56,58,60] |
|                       | - Have an open culture (freedom, creativity, and cooperation)         |            |

Answers (Likert scale):
Strongly disagree (1), Disagree (2), Neither agree nor disagree (3), Agree (4), Strongly agree (5)

### 3.2. Items for the Online Students’ Employability Scale

Table 2 shows the dimension that was taken into account for measuring issues related to educational social capital. A list of references was used to define items relating to the highest level of education successfully completed by family, close friends, and close co-workers.

**Table 2.** Dimensions, items, and references for the online students’ employability scale: educational social capital subscale.

| Dimensions              | Items                                | References |
|-------------------------|--------------------------------------|------------|
| Question:               | Highest level of education successfully completed in your ...            |            |
| Educational social capital | - Family                            |            |
|                         | - Close friends                      | [64–79]    |
|                         | - Close co-workers                   |            |

Answers (Likert scale):
Primary, Secondary, Post-secondary non-tertiary, Graduate (Bachelor), and Postgraduate (Master, etc.).

As before, Table 3 shows the dimension related to the media empowerment subscale and its corresponding list of references about public participation, social activity, integration, citizenship, media content creation, media use, media knowledge, and balanced media use.
Table 3. Dimensions, items, and references for the online students’ employability scale: media empowerment subscale.

| Dimensions          | Items                                                                 | References |
|---------------------|----------------------------------------------------------------------|------------|
| Question:           | With regard to the media and the news, the online education finished helped to... |            |
| Media empowerment   | –Active participation in civil and political life                     | [80–98]    |
|                     | –Acting socially against aspects of life that do not work properly.   |            |
|                     | –Feeling more integrated into groups, communities, associations, etc.  |            |
|                     | –Gaining more knowledge about my rights as a citizen.                  |            |
|                     | –Creating own messages and content related to news.                   |            |
|                     | –Using more media                                                    |            |
|                     | –Knowing more media                                                  |            |
|                     | –Using the media effectively                                         |            |

Answers (Likert scale):
Strongly disagree (1), Disagree (2), Neither agree nor disagree (3), Agree (4), Strongly agree (5)

Table 4 shows the dimension related to the knowledge acquisition subscale and its corresponding list of authors related to knowledge on when, how, where, if, how much/many, and why.

Table 4. Dimensions, items, and references for the online students’ employability scale: knowledge acquisition subscale.

| Dimensions          | Items                                                                 | References |
|---------------------|----------------------------------------------------------------------|------------|
| Question:           | The online training helped you to incorporate knowledge about...      |            |
| Knowledge acquisition| –Knowing when                                                        | [99,100]   |
|                     | –Knowing how                                                         | [45]       |
|                     | –Knowing where                                                       | [101–114]  |
|                     | –Knowing if                                                          |            |
|                     | –Knowing how much/many                                               |            |
|                     | –Knowing why                                                         |            |

Answers (Likert scale):
Strongly disagree (1), Disagree (2), Neither agree nor disagree (3), Agree (4), Strongly agree (5)

Table 5 shows the dimension related to the knowledge conversion subscale and its corresponding list of references related to knowledge on combination, externalization, internalization, and socialization.

Table 5. Dimensions, items, and references for the online students’ employability scale: knowledge conversion subscale.

| Dimensions          | Items                                                                 | References |
|---------------------|----------------------------------------------------------------------|------------|
| Question:           | The online training helped you to transform knowledge through...    |            |
| Knowledge conversion| –Combination (synthesizing, generating and sharing documents, etc.)  | [115–123] |
|                     | –Externalization (expressing ideas in texts, words, information, formulas, etc.) |          |
|                     | –Internalization (updating and adding new knowledge, experimenting and making them my own, etc.) |          |
|                     | –Socialization (learning from other people, sharing and exchanging ideas, etc.) |          |

Answers (Likert scale):
Strongly disagree (1), Disagree (2), Neither agree nor disagree (3), Agree (4), Strongly agree (5)

Table 6 shows the dimensions related to five employability subscales that are very useful to employability measurement, according to a list of their corresponding references:

- Literacy: about writing, reading, and written expression
- Digitalness (digitality): about computers, ICT abilities, and know digital
- Collaboration: about teamwork, cooperation, learning from peers, and leadership
- Resilience: about self-confidence, self-esteem, self-efficacy, adaptation, work-life balance, and flexibility.
- Proactivity: about identifying labor market demands, labor market dynamics, job offers, handling a job interview, writing a c.v., job searching, a critical analysis of my profile, and closing sales.

Table 6. Dimensions, items, and references for the online students’ employability scale.

| Dimensions   | Items                                         | References |
|--------------|-----------------------------------------------|------------|
| Question:    | The completed online education developed skills oriented to... |           |
| Literacy     | -Writing                                      | [100]      |
|              | -Reading                                      | [101]      |
|              | -Written expression                           | [111]      |
|              | Digitalness                                   | [112]      |
| Digitalness  | -Computers                                    | [124–131]  |
|              | -ICT abilities                                | [101]      |
|              | -Know digital                                 | [45]       |
|              | Collaboration                                 | [111,112]  |
| Collaboration| -Teamwork                                     | [126]      |
|              | -Cooperation                                  | [100,101]  |
|              | -Learn from peers and fellow students         | [45]       |
|              | -Leadership                                   | [60]       |
| Resilience   | -Self-confidence                              | [111]      |
|              | -Self-esteem                                  | [112]      |
|              | -Self-efficacy                                | [111]      |
|              | -Adaptation to circumstances                  | [112]      |
|              | -Work-life balance                            | [112]      |
|              | -Flexibility                                  | [112]      |
| Proactivity  | -Identifying labor market demands             | [100]      |
|              | -Understanding labor market dynamics          | [148]      |
|              | -Analyzing job offers according to my profile | [45]       |
|              | -Handling a job interview                     | [149]      |
|              | -Writing a cover letter and an adapted c.v    | [150]      |
|              | -Persisting in my job search                  | [151]      |
|              | -A critical analysis of my profile            | [100]      |
|              | -Closing sales                                | [148]      |

Answers (Likert scale):
Strongly disagree (1), Disagree (2), Neither agree nor disagree (3), Agree (4), Strongly agree (5)

Table 7 shows the dimensions related to two employability subscales and their corresponding list of references:
- Identity: about teams coordinating, assumptions of a key role, developing new projects, new tasks, and new responsibilities.
- Openness: about job searching, getting a job, changing job or sector, and wage increases
Table 7. Dimensions, items, and references for the online students’ employability scale: identity and openness subscales.

| Dimensions | Items | References |
|------------|-------|------------|
| **Identity** | -Coordinating teams and problem management | [126] |
| | -Assumption of key role in decision-making | [141,151] |
| | -Developing new projects, actions, strategies, etc. | [155,156] |
| | -Assumption of new tasks or projects with high visibility | [155,156] |
| | -Assumption of new roles or responsibilities | |
| **Openness** | -Job searching | [141,151] |
| | -Getting a job | [157–159] |
| | -Changing job or sector | [157–159] |
| | -Wage increases | |

Answers (Likert scale):
None (1), Some (2), Quite a bit (3), A extreme amount (4), All (5)

Table 8 shows the dimensions related to three employability subscales and their corresponding list of references:

- **Motivation**: about technical, personal, and instrumental skills, continuous training, ICT for mobility, and knowledge intensive work.
- **Organizational culture**: about companies and continuous learning, open workplaces, formal, informal, and technological structures, relationships, people, and social capital.
- **Employment security**: part-time, temporary jobs, and variable pay

Table 8. Dimensions, items, and references for the online students’ employability scale: identity and openness subscales.

| Dimensions | Items | References |
|------------|-------|------------|
| **Motivation** | -Technical skills will be important | [141–148] |
| | -Personal skills will be important | [132] |
| | -Instrumental skills will be important | [149,150] |
| | -Work will need continuous training | [160–166] |
| | -Work will require more ICT for mobility | |
| | -Work will be very knowledge intensive | |
| **Organizational culture** | -Companies will create conditions for continuous learning, relationships, etc. | [160] |
| | -Workplaces will be much more open, flexible, informal, etc. | [167–176] |
| | -Formal and informal structures, and technologies will be equally important | |
| | -People, culture and relationships will be important | |
| | -Who I work with will be more important than what job I do | |
| | -Social capital will be a key factor for professional development | |
| **Employment security** | -Part-time jobs will replace full-time jobs | [177–182] |
| | -Temporary jobs will replace fixed jobs | [160] |
| | -Variable pay will replace fixed pay | |

Answers (Likert scale):
Strongly disagree (1), Disagree (2), Neither agree nor disagree (3), Agree (4), Strongly agree (5)

3.3. Fieldwork and Sample

A questionnaire was designed with all these items. A blueprint (the test specification) was used as a tool for designing the questionnaire [183], which was externally validated by a professor at the
University of Barcelona, who was an expert in educational research methodology. A pilot process with the online questionnaire was made with a sample of 300 students from the database of the UOC Experimentation Laboratory at the eLearn Center.

After a pilot study, and taking into account that the subjects of the analysis were UOC alumni, the UOC Alumni Department sent official invitations to 55,298 alumni. These subjects of analysis were clearly the alumni of an online university because of the research topic: socio-technical e-learning systems and employability. The fieldwork was carried out between May and June 2016. Thus, 550 answers (49.5% women and 50.5% men, average age = 46 years old) were validated, with a response rate = 1.0%, according to other surveys with alumni [184,185]. Some reasons that explain this rate are: alumni use email addresses that are different from those from the UOC, alumni work in companies and no longer have relations with the UOC, fieldwork was developed during the pre-vacational season, and the duration of the questionnaire could have been excessive for people who are no longer studying at the UOC and who are workers. The maximum error margin of ±4.16% (p = q = 0.50, confidence level of 95.5%, and a finite population).

3.4. Data Analysis

In order to test the hypotheses, the software IBM SPSS Statistics for Windows version 22.0, R version 3.4.0 [186] and the R package lavaan version 0.5–23 were used [187]. The measurement model was reflective (the constructs were the cause of the items) in the four STS constructs (ICT, learning tasks, students, and organization), according to the approach for technological factors [188], and taking into account that their items were homogeneous [189]. The employability scale, as a latent variable, was reflective, according to the importance of how highly its items correlated among them and several guidelines [136,190].

The total sample (n = 550) was randomly divided into two subsets to perform an exploratory factor analysis (n = 300) and confirmatory factor analysis (n = 250), meeting the usual requirements of the minimum number of individuals to be analyzed: 150 subjects for both factorial analyses [191,192]. Because of its importance, other more restrictive conditions were also satisfied: population of 300 or more, and a theoretical model sub-sample of 200 or more [193,194].

4. Results

4.1. Structural Validity and Reliability of the Socio-Technical Fully Online University Scale

Table 9 shows the results of the exploratory and confirmatory factor analyses. A Principal Component Analysis (PCA) (rotation method: Varimax with Kaiser Normalization) showed an acceptable four-factors (ICT, learning tasks, students, and organization) structure (KMO = 0.939, with a significant Bartlett’s test, p = 0.000), with factor loadings ranging from 0.541 to 0.849, communalities higher than 0.667, and 81.819% of the total variance explained. The reliability analysis of the four compounded factors showed a Cronbach’s α of 0.960 (four factors together), 0.950 (ICT), 0.909 (learning tasks), 0.913 (students), and 0.901 (organization).

A Confirmatory Factor Analysis (CFA) with the Diagonally Weighted Least Squares (DWLS) estimation method tested that measures were consistent with the four theoretical factors, which had valid estimations for their items and their four latent variables (p < 0.000). Global fits (CFI = 0.999; TLI = 0.998; RMSEA = 0.049; SRMR = 0.039; NNFI = 0.998; RFI = 0.996; NFI = 0.997; IFI = 0.999; RNI = 0.999) were fine as well [195,196].
### Table 9. Exploratory and confirmatory factor analyses: socio-technical fully online university scale.

| Items                                              | Exploratory Factor Analysis | Confirmatory Factor Analysis | DWLS Estimator | Covariances |
|----------------------------------------------------|-----------------------------|------------------------------|-----------------|-------------|
|                                                   | Rotated Component Matrix    | Latent Variables             | Variances       | F1          | F2 | F3 | F4 |
| ICT                                               |                             |                              |                 |             |
| Access with more digital devices                   | 0.849                       | 1.00                         |                 |             |
| Allowing all types of digital content              | 0.821                       | 1.001 ***                    | 0.811 ***       | -           |
| Allowing various ICT                              | 0.782                       | 1.062 ***                    |                 |             |
| Agile adaptation to technological changes          | 0.755                       | 1.037 ***                    |                 |             |
| Learning Tasks                                    |                             |                              |                 |             |
| Helping learning through well-defined tasks        | 0.832                       | 1.00                         |                 |             |
| Focusing student attention on specific tasks       | 0.810                       | 1.038 ***                    | 0.767 ***       | 0.586 ***   | - |
| Establishing a time-saving order                   | 0.678                       | 0.952 ***                    |                 |             |
| Giving access to more educational resources        | 0.563                       | 0.988 ***                    |                 |             |
| Students                                           |                             |                              |                 |             |
| Offering great diversity of help and support       | 0.818                       | 1.00                         |                 |             |
| Being flexible and adaptable to their needs        | 0.795                       | 0.937 ***                    | 0.784 ***       | 0.581 ***   | 0.576 *** | - |
| Recommendations regarding study habits             | 0.748                       | 0.916 ***                    |                 |             |
| Giving usability (ease of use for students)        | 0.735                       | 1.001 ***                    |                 |             |
| Organization                                       |                             |                              |                 |             |
| Non-hierarchical communicative structure           | 0.827                       | 1.00                         |                 |             |
| Solving problems without hierarchies              | 0.824                       | 1.034 ***                    | 0.774 ***       | 0.573 ***   | 0.602 *** | 0.553 *** | - |
| Open culture (freedom, creativity, etc.)           | 0.713                       | 0.915 ***                    |                 |             |
| Adapting continuously to educational changes       | 0.541                       | 1.011 ***                    |                 |             |
| Statistics                                         |                             |                              |                 |             |
| KMO = 0.939                                       |                             |                              |                 |             |
| χ² Bartlett = 4723.026                             |                             |                              |                 |             |
| P-value = 0.000                                    |                             |                              |                 |             |
| Comunalities > 0.667                               |                             |                              |                 |             |
| Total Variance = 81.819%                           |                             |                              |                 |             |
| Cronbach’s alpha: F1 = 0.950; F2 = 0.909; F3 = 0.913; F4 = 0.901; | | | | |
| NRNI = 0.997                                       |                             |                              |                 |             |
| NFI = 0.997                                        |                             |                              |                 |             |
| IFI = 0.999; RFI = 0.996; NFI = 0.997               |                             |                              |                 |             |
| RMSEA = 0.04; SRMR = 0.039                         |                             |                              |                 |             |
| χ² = 153.808; p = 0.000                           |                             |                              |                 |             |

Source: own elaboration. ***: P(>|z|) < 0.001.

### 4.2. Structural Validity and Reliability of the Online Students’ Employability Scale

#### 4.2.1. Exploratory Factor Analysis

Table 10 shows the results of the Exploratory Factor Analysis (EFA). A PCA (rotation method: Varimax with Kaiser normalization) showed an acceptable fourteen-factors (openness; resilience; proactivity; motivation; identity; employment security; organizational culture; collaboration; literacy; digitalness; media empowerment; knowledge conversion; knowledge acquisition; and educational social capital) structure (KMO = 0.927, with a significant Bartlett’s test, p = 0.000), with factor loadings ranging from 0.543 to 0.890, communalities higher than 0.536, and 74.801% of the total variance explained. The reliability analysis of the four compounded factors showed a Cronbach’s α of 0.969 (fourteen factors together), 0.913 (openness), 0.908 (resilience), 0.945 (proactivity), 0.842 (motivation), 0.938 (identity), 0.819 (employment security), 0.869 (organizational culture), 0.852 (collaboration), 0.918 (literacy), 0.879 (digitalness), 0.945 (media empowerment), 0.909 (knowledge conversion), 0.922 (knowledge acquisition), and 0.691 (educational social capital).
Table 10. Exploratory factor analysis: online students’ employability scale.

| Items                                | Exploratory Factor Analysis | Rotated Component Matrix |
|--------------------------------------|----------------------------|--------------------------|
|                                      | F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 | F9 | F10 | F11 | F12 | F13 | F14 |
| OPENNESS TO CHANGES AT WORK          |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Getting a job                        | 0.838 |
| Job searching                        | 0.799 |
| Changing of job or sector            | 0.792 |
| Wage increases                       | 0.644 |
| WORK AND CAREER RESILIENCE           |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Work-life balance                    | 0.676 |
| Adaptation to circumstances          | 0.665 |
| Self-efficacy                        | 0.585 |
| Self-confidence                      | 0.570 |
| Self-esteem                          | 0.551 |
| Flexibility                          | 0.543 |
| WORK AND CAREER PROACTIVITY          |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Analysis of job offers               | 0.796 |
| Understanding labor market           | 0.768 |
| Identifying labor market demands     | 0.765 |
| Handling a job interview             | 0.751 |
| Writing a cover letter and a cv      | 0.734 |
| Persistence in job search            | 0.671 |
| Critical analysis of my profile      | 0.642 |
| Closing sales                        | 0.578 |
| CAREER MOTIVATION                    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Instrumental skills will be important| 0.766 |
| Technical skills will be important   | 0.724 |
| Personal skills will be important    | 0.697 |
| Work will be knowledge intensive     | 0.669 |
| Work will need continuous training   | 0.609 |
| Work will require ICT for mobility   | 0.598 |
Table 10. Cont.

| Items                                           | Exploratory Factor Analysis | Rotated Component Matrix |
|--------------------------------------------------|-----------------------------|--------------------------|
|                                                  | F1  | F2  | F3  | F4  | F5  | F6  | F7  | F8  | F9  | F10 | F11 | F12 | F13 | F14 |
| WORK IDENTITY                                    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Assumption of new tasks or projects              | 0.781|     |     |     |     |     |     |     |     |     |     |     |     |     |
| Developing new projects, etc.                    | 0.762|     |     |     |     |     |     |     |     |     |     |     |     |     |
| Coordinating teams and problems                  | 0.720|     |     |     |     |     |     |     |     |     |     |     |     |     |
| Assumption of role in decision-making            | 0.718|     |     |     |     |     |     |     |     |     |     |     |     |     |
| Assumption of new responsibilities               | 0.712|     |     |     |     |     |     |     |     |     |     |     |     |     |
| EMPLOYMENT SECURITY                              |     |     |     |     |     |     |     |     |     | 0.890| |     |     |     |
| Temporary jobs will replace fixed jobs           |     |     |     |     |     |     |     |     |     | 0.843| |     |     |     |
| Part-time jobs will replace full-time jobs       |     |     |     |     |     |     |     |     |     | 0.778| |     |     |     |
| Variable pay will replace fixed pay              |     |     |     |     |     |     |     |     |     |       | |     |     |     |
| ORGANIZATIONAL CULTURE                           |     |     |     |     |     |     |     |     |     |     | 0.824| |     |     |     |
| People will be important                         |     |     |     |     |     |     |     |     |     |     | 0.725| |     |     |     |
| Important who I work with                        |     |     |     |     |     |     |     |     |     |     | 0.704| |     |     |     |
| Social capital will be a key factor              |     |     |     |     |     |     |     | 0.631| |     |     |     |     |     |     |
| Workplaces will be open, etc.                    |     |     |     |     |     |     |     |     | 0.613| |     |     |     |     |     |
| Conditions for learning, etc.                    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Formal, informal, and technologies will be       |     |     |     |     |     |     |     |     |     |     |     |     |     | 0.568|
| equally important                                |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| COLLABORATIVE SKILLS                             |     |     |     |     |     |     |     |     |     |     |     | 0.808| |     |     |
| Teamwork                                         |     |     |     |     |     |     |     |     |     |     | 0.783| |     |     |     |
| Cooperation                                      |     |     |     |     |     |     |     |     |     |     | 0.637| |     |     |     |
| Learning with peers                              |     |     |     |     |     |     |     |     |     |     |     | 0.606| |     |     |
| Leadership                                       |     |     |     |     |     |     |     |     |     |     |     |       | |     |     |
| LITERACY SKILLS                                  |     |     |     |     |     |     |     |     |     |     |     |     | 0.859| |     |
| Writing                                          |     |     |     |     |     |     |     |     |     |     |     | 0.793| |     |     |
| Reading                                          |     |     |     |     |     |     |     |     |     |     |     |     | 0.739| |     |
| Written expression                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
Table 10. Cont.

| Items                              | Exploratory Factor Analysis | Rotated Component Matrix |
|------------------------------------|----------------------------|--------------------------|
|                                    | F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 | F9 | F10 | F11 | F12 | F13 | F14 |
| DIGITALNESS                        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Computers                          |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.724 |
| ICT abilities                      |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.709 |
| Know digital                       |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.675 |
| MEDIA EMPOWERMENT                  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Using more media                   |    |    |    |    |    |    |    |    |    |    |    |    | 0.802 |    |
| Knowing more media                 |    |    |    |    |    |    |    |    |    |    |    | 0.788 |    |
| Active participation in civil life |    |    |    |    |    |    |    |    |    |    |    | 0.755 |    |
| Using the media effectively        |    |    |    |    |    |    |    |    |    |    |    | 0.755 |    |
| Acting socially                    |    |    |    |    |    |    |    |    |    |    |    | 0.753 |    |
| Feeling more integrated into groups|    |    |    |    |    |    |    |    |    |    |    | 0.722 |    |
| Gaining knowledge about my rights  |    |    |    |    |    |    |    |    |    |    | 0.720 |    |
| Creating own messages and content  |    |    |    |    |    |    |    |    |    |    | 0.680 |    |
| KNOWLEDGE CONVERSION               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Internalization                    |    |    |    |    |    |    |    |    |    |    |    | 0.739 |    |
| Combination                        |    |    |    |    |    |    |    |    |    |    |    | 0.723 |    |
| Externalization                    |    |    |    |    |    |    |    |    |    |    |    | 0.715 |    |
| Socialization                      |    |    |    |    |    |    |    |    |    |    |    | 0.603 |    |
| KNOWLEDGE ACQUISITION              |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Knowing how                        |    |    |    |    |    |    |    |    |    |    |    | 0.707 |    |
| Knowing when                       |    |    |    |    |    |    |    |    |    |    |    | 0.684 |    |
| Knowing if                         |    |    |    |    |    |    |    |    |    |    |    | 0.674 |    |
| Knowing why                        |    |    |    |    |    |    |    |    |    |    |    | 0.669 |    |
| Knowing how much/many              |    |    |    |    |    |    |    |    |    |    |    | 0.658 |    |
| Knowing where                      |    |    |    |    |    |    |    |    |    |    |    | 0.598 |    |
| EDUCATIONAL SOCIAL CAPITAL         |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Friends’ highest education level   |    |    |    |    |    |    |    |    |    |    |    | 0.769 |    |
| Family’s highest education level   |    |    |    |    |    |    |    |    |    |    |    | 0.684 |    |
| Co-workers’ highest education level|    |    |    |    |    |    |    |    |    |    |    | 0.677 |    |

Statistics

KMO = 0.927, χ² Bartlett = 18,768.891
p-value = 0.000. Comunalities > 0.536. Total Variance = 74.801%
Cronbach’s alpha: F1 = 0.913; F2 = 0.908; F3 = 0.945; F4 = 0.842; F5 = 0.938; F6 = 0.819; F7 = 0.869; F8 = 0.852; F9 = 0.918; F10 = 0.879; F11 = 0.945; F12 = 0.909; F13 = 0.922; F14 = 0.691; total = 0.969

Source: own elaboration.
4.2.2. Confirmatory Factor Analysis

Table 11 shows the results of a CFA with the Diagonally Weighted Least Squares (DWLS) estimation method: the measures were consistent with the fourteen theoretical factors, which had valid estimations for their items and their fourteen latent variables \( p < 0.000 \). Global fits (\( CFI = 0.993; \) \( TLI = 0.992; \) \( RMSEA = 0.063; \) \( SRMR = 0.067; \) \( NNFI = 0.992; \) \( RFI = 0.984; \) \( NFI = 0.985; \) \( IFI = 0.993; \) \( RNI = 0.993 \)) were fine as well [195,196].

Table 11. Confirmatory factor analysis: online students’ employability scale.

| Items                                      | Confirmatory Factor Analysis DWLS Estimator | Latent Variables | Variances |
|--------------------------------------------|--------------------------------------------|------------------|-----------|
| OPENNESS TO CHANGES AT WORK                |                                            |                  |           |
| Getting a job                              | 1.000                                      |                  |           |
| Job searching                              | 1.008 ***                                  |                  | 0.845 *** |
| Changing of job or sector                  | 0.891 ***                                  |                  |           |
| Wage increases                             | 0.983 ***                                  |                  |           |
| WORK AND CAREER RESILIENCE                 |                                            |                  |           |
| Work-life balance                          | 1.000                                      |                  |           |
| Adaptation to circumstances                | 1.160 ***                                  |                  |           |
| Self-efficacy                              | 1.183 ***                                  |                  | 0.600 *** |
| Self-confidence                            | 1.249 ***                                  |                  |           |
| Self-esteem                                | 1.199 ***                                  |                  |           |
| Flexibility                                | 1.184 ***                                  |                  |           |
| WORK AND CAREER PROACTIVITY                |                                            |                  |           |
| Analyzing of job offers                    | 1.000                                      |                  |           |
| Understanding labor market                 | 1.027 ***                                  |                  |           |
| Identifying labor market demands           | 1.060 ***                                  |                  |           |
| Handling a job interview                   | 1.082 ***                                  |                  | 0.803 *** |
| Writing a cover letter and a cv            | 1.045 ***                                  |                  |           |
| Persistence in job search                  | 0.929 ***                                  |                  |           |
| Critical analysis of my profile            | 0.957 ***                                  |                  |           |
| Closing sales                              | 0.729 ***                                  |                  |           |
| CAREER MOTIVATION                          |                                            |                  |           |
| Instrumental skills will be important      | 1.000                                      |                  |           |
| Technical skills will be important         | 1.074 ***                                  |                  |           |
| Personal skills will be important          | 1.240 ***                                  |                  | 0.489 *** |
| Work will be knowledge intensive           | 0.996 ***                                  |                  |           |
| Work will need continuous training         | 0.854 ***                                  |                  |           |
| Work will require ICT for mobility         | 1.135 ***                                  |                  |           |
| WORK IDENTITY                              |                                            |                  |           |
| Assumption of new tasks or projects        | 1.000                                      |                  |           |
| Developing new projects, etc.              | 0.968 ***                                  |                  | 0.901 *** |
| Coordinating teams and problems            | 0.939 ***                                  |                  |           |
| Assumption of role in decision-making      | 1.015 ***                                  |                  |           |
| Assumption of new responsibilities         | 0.964 ***                                  |                  |           |
| EMPLOYMENT SECURITY                        |                                            |                  |           |
| Temporary job will replace fixed jobs      | 1.000                                      |                  | 0.575 *** |
| Part-time job will replace full-time jobs  | 1.053 ***                                  |                  |           |
| Variable pay will replace fixed pay        | 1.034 ***                                  |                  |           |
| ORGANIZATIONAL CULTURE                     |                                            |                  |           |
| People will be important                   | 1.000                                      |                  |           |
| Important who I work with                  | 0.646 ***                                  |                  |           |
| Social capital will be a key factor        | 0.886 ***                                  |                  | 0.745 *** |
| Workplaces will be open, etc.              | 0.796 ***                                  |                  |           |
| Conditions for learning, etc.              | 0.954 ***                                  |                  |           |
| Formal, informal, and technologies will be equally important | 0.868 *** | |           |
Table 11. Cont.

| Items                  | Confirmatory Factor Analysis | DWLS Estimator |
|------------------------|-----------------------------|----------------|
|                        | Latent Variables            | Variances      |
| COLLABORATIVE SKILLS   |                             |                |
| Teamwork               | 1.000                       |                |
| Cooperation            | 0.992 ***                   | 0.725 ***      |
| Learning with peers    | 0.988 ***                   |                |
| Leadership             | 0.983 ***                   |                |
| LITERACY SKILLS        |                             |                |
| Writing                | 1.000                       |                |
| Reading                | 1.038 ***                   | 0.875 ***      |
| Written expression     | 0.981 ***                   |                |
| DIGITALNESS            |                             |                |
| Computers              | 1.000                       |                |
| ICT abilities          | 1.106 ***                   | 0.677 ***      |
| Know digital           | 1.181 ***                   |                |
| MEDIA EMPOWERMENT      |                             |                |
| Using more media       | 1.000                       |                |
| Knowing more media     | 0.950 ***                   |                |
| Active participation in civil life | 0.942 *** |                |
| Using the media effectively | 0.955 *** | 0.934 ***        |
| Acting socially        | 0.952 ***                   |                |
| Feeling more integrated into groups | 0.911 *** |                |
| Gaining knowledge about my rights | 0.936 *** |                |
| Creating own messages and content | 0.815 *** |                |
| KNOWLEDGE CONVERSION   |                             |                |
| Internalization        | 1.000                       |                |
| Combination            | 1.086 ***                   | 0.604 ***      |
| Externalization        | 1.136 ***                   |                |
| Socialization          | 1.084 ***                   |                |
| KNOWLEDGE ACQUISITION  |                             |                |
| Knowing how            | 1.000                       |                |
| Knowing when           | 1.037 ***                   |                |
| Knowing if             | 0.957 ***                   | 0.772 ***      |
| Knowing why            | 0.915 ***                   |                |
| Knowing how much/many  | 0.906 ***                   |                |
| Knowing where          | 1.022 ***                   |                |
| EDUCATIONAL SOCIAL CAPITAL |                         |                |
| Friends’ highest education level | 1.000                  |                |
| Family’s highest education level | 0.663 *                 | 0.720 *        |
| Co-workers’ highest education level | 0.705 *                 |                |
| Statistics             |                             |                |
| CFI = 0.993; TLI = 0.992 |                |                |
| RMSEA = 0.083; SRMR = 0.067 |                    |                |
| NNFI = 0.992; RFI = 0.984; NFI = 0.985 | |                |
| IFI = 0.993; RNI = 0.993 |                |                |
| $\chi^2 = 4,353.675, p = 0.000$ |            |                |

***: $P(>|z|) < 0.001$; *: $P(>|z|) < 0.05$

5. Discussion

5.1. Overview of Key Findings

The educational process between students’ enrollment and exit from higher education systems can be recognized as a black-box [197]. In this sense, the research has added new empirical evidence in terms of its inputs (students) and outputs (employability), which are interrelated as a system of e-learning and employability [198]. Thus, the research has proved that there are two psychometric scales valid for measuring lifelong e-learning for employability. On the one hand, there is a scale related to socio-technical factors in fully online universities, which has four sub-scales: ICT, learning tasks, students, and organization. On the other hand, there is a scale for measuring employability according to fourteen necessary factors related to skills necessary in order to be employable in
labor markets: educational social capital; media empowerment; knowledge acquisition; knowledge conversion; literacy; digitalness; collaboration; resilience; proactivity; identity; openness; motivation; organizational culture; and employment security.

In this way, these scales help to open the black-box of lifelong e-learning to employability by deepening many latent dimensions that exist in the literature. The approach takes into account the highly opaque process of skills acquisition, which exists in distance learning [199]. Moreover, the set of employability skills analyzed is useful for studying the black-boxed relationships between training and economics [200], learning management systems [201], knowledge in higher education [202], and entrepreneurship education programs [203]. Some of the sub-scales are related to factors that influence users’ demand for lifelong learning in higher education: motivation, conflicts/difficulties and career-development [204].

Considering the fact that people’s working life is increasing because of the consequences of the financial crisis and its large impact on labor supply [205], the number of students in formal and non-formal training will rise in the future. This is why the findings are useful for measuring successful lifelong e-learning strategies that are aimed toward employability. From that perspective, the STELEM framework needs information about other variables related to human and social capital related to employability and education. In this sense, Table 12 shows items related to socio-demographic characteristics, as well as educational experience, work experience, and social capital, which are key dimensions and factors in employability issues [141].

**Table 12.** Human and social capital related to employability.

| Indicators                                      |
|------------------------------------------------|
| **SOCIO-DEMOGRAPHIC CHARACTERISTICS**          |
| • Age                                           |
| • Gender                                        |
| • Number of adults in the household             |
| • Number of children under 18 in the household  |
| • Number of inhabitants in the city             |
| **EDUCATIONAL CAPITAL**                        |
| • Highest level of education successfully completed (ISCED 2011) |
| • STEM education: Economy and Business, Computers, Multimedia and Telecommunications, Health, and Psychology and Education |
| • Non-STEM education: Arts and Humanities, Law and Political Sciences, Languages, Information and Communication, Psychology and Education, and Others |
| **WORK EXPERIENCE CAPITAL**                    |
| Past:                                           |
| • Year of starting as a worker                  |
| • Labor status when e-learning began            |
| • Occupation (ISCO) when e-learning began       |
| Present:                                        |
| • Labor status                                  |
| • Occupation (ISCO)                            |
| • Working hours                                 |
| • Duration of employment contract               |
| • Variable pay                                  |
| • Firm size                                     |
| • Activity sector of firm                       |
| • Knowledge worker                              |
| Career:                                         |
| • Career path                                   |
| • Career path during e-learning                 |
| • Career pattern                                |
| **SOCIAL CAPITAL**                              |
| • Number of close friends                       |
| • Number of close co-workers                    |
Specifically, several references have been used to define this list: highest level of education successfully completed ISCED 2011 [206]; science, technology, engineering, and mathematics (STEM) disciplines and non-STEM studies [207]; career paths and patterns [208–212]; knowledge worker [213–215]; and social capital [67,143,216,217].

5.2. Strengths and Limitations

Relationships between education and employment are contemporaneous with maturing information and communication technologies, according to the large number of terms in the field of education that relate to employment: adult vocational education, further education, pre-service training, in-service training, retraining, vocational education [218]. In this context, several approaches and frameworks can be integrated, since they change only slightly in their terminologies [219]. In this way, the STELEM framework offers a point of view that integrates many aspects and issues related to lifelong e-learning and employability. It presents an instrument for measuring skills outcomes, which always have a multitude of problems in how they are assessed [220].

The STELEM framework has two reflective psychometric scales and a list of indicators that are valid for defining a formative index. Although there are two types of measurement models [221], which are methodologically and psychometrically different [190], this kind of combination between reflective and formative latent variables is valid in human capital measurement [222].

The scale of employability takes into account various aspects related to skills that undergraduates are aware that they have to develop, such as communication, management, self and career management, and interpersonal abilities [223]. It has to do with the labor crisis, the heterogeneity and individuality of workers in a service economy, falling labor movements, and job loss as a generator of capital and value [224]. Moreover, it includes a media empowerment sub-scale that is a good approach to lifelong learning needs related to ethics and politics existing in western countries [225].

Nevertheless, the research has some limitations. Answers from an online self-reported questionnaire linked to interviewees’ own behavior could be biased [226]. On the one hand, the sample of online students at the UOC cannot be generalized to any online university, either. On the other hand, the way of working at UOC could be different to that of other open universities. Moreover, this questionnaire was aimed to find out several e-learning and employability skills’ latent variables in alumni, but future research on the pre-professional identity of graduates must also be conducted for employability estimations [227].

Because culture is important for e-learning adoption [228], this framework takes into account an important variable related to media empowerment and organizational culture, but it needs further research and indicators related to cultural values and situations. It is also important to measure the black-box formed by students that are organized, since they can be considered as a system [198]. Thus, this is another line of future research linked to indicators or latent constructs related to students’ opinions and behaviors as a whole. In this sense, it will be very interesting to study other issues tied to the quality of courses, which can be viewed from the point of view of system flexibility [51]. The socio-technical system approach can help here, in addition to being useful for obtaining knowledge on students’ satisfaction, in the same way that STS is useful in obtaining information on job satisfaction [229].

Another issue that has to be overcome is a focus on employability that depends on individual aspects, which is false [230]. In this sense, it is necessary to think about how to add indicators related to macro level factors, such as globalization, labor markets, regulatory and welfare regimes, and employment police, which are very important to young people, older workers, and migrants [231]. The STELEM framework includes indicators related to external context (employment security, organizational culture, and career motivation), but this approach from macro levels should be improved. From another point of view, there are many historical definitions and meanings of employability, such as dichotomic, socio-medical, manpower policy, flow, labor market performance, initiative, and interactive employability [232], and the word has two dimensions: absolute/internal
and relative/external to the individual [233]. Thus, relationships and activities beyond learning and work are important as well [234]. Finally, another approach to be considered has to do with employers’ point of view on employability [235].

6. Conclusions

During the recent past decades, globalization, the economic crisis, ICT development, and labor markets have been demanding more and more skills and abilities from people and workers. In this way, the development of employability skills via fully online universities must adopt a systemic approach to aspects of the socio-technical systems related to e-learning and to the micro, meso, and macro level factors that are related to individual employability. By adding empirical findings to relationships existing between human capital theory and lifelong online education, the research explained here has proposed a framework for a Socio-Technical E-learning Employability System of Measurement (STELEM). The STELEM framework contributes to the development of many employability skills demanded in the 21st century, such as educational social capital, media empowerment, knowledge acquisition and conversion, literacy, digitalness, collaboration, resilience, proactivity, identity, openness, motivation, organizational culture, and employment security. Moreover, it uses a holistic approach for understanding online education institutions as a whole system based on their ICT, learning tasks, as well as their student-centered and organizational factors. The research provides two new psychometrical scales that are useful for the evaluation, monitoring, and assessment of relationships and influences between socio-technical e-learning organizations and employability skills development. Moreover, it proposes a set of indicators related to human and social capital, which is valid in employability contexts. All these approaches and results are issues that should be considered in any future citizens and workers training plan. In this sense, this framework can be useful as an instrument for modeling public initiatives and labor policies related to employment and social inclusion by means of lifelong online training.

Acknowledgments: Juan-Francisco Martínez-Cerdá acknowledges the support of a doctoral grant from the Universitat Oberta de Catalunya (UOC).

Author Contributions: Juan-Francisco Martínez-Cerdá and Joan Torrent-Sellens conceived the research. Juan-Francisco Martínez-Cerdá designed the questionnaire and the fieldwork, collected the data, and performed the statistical analysis. Juan-Francisco Martínez-Cerdá and Inés González-González wrote the manuscript. Joan Torrent-Sellens and Pilar Ficapal-Cusí contributed literature review and results. Inés González-González and Pilar Ficapal-Cusí reviewed and significantly contributed to the editing of the manuscript. Joan Torrent-Sellens supervised the overall research.

Conflicts of Interest: The authors declare no conflict of interest.

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