RUNNING HEAD: Self-Efficacy Configurations & Wellbeing

Self-Efficacy Configurations and Wellbeing in the Academic Context: A Person-Centred Approach

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Abstract

The aim of the present study was to identify self-efficacy configurations in different domains (i.e., emotional, social, and self-regulated learning) in a sample of university students using a person-centred approach. Results from a two-cohort sample (N=1,650) assessed at the beginning of their first year supported a 4-cluster solution: 1) Highly Self-Efficacious students, with high levels of self-efficacy in all domains; 2) Low Self-Efficacious students, with low levels of self-efficacy in all domains; 3) Learning and Socially Self-Efficacious students, with a medium-high level of self-regulated learning, medium level of social, and medium-low level of emotional self-efficacies; and 4) Emotionally Self-Efficacious students, with a medium-high level of emotional, medium-low level of social, and low level of self-regulated learning self-efficacies. The association of these configurations with wellbeing indicators, concurrently and one year later, provides support for the validity of the cluster solution. Specifically, by adopting the informative hypothesis testing approach, results showed that the first and second groups have the best and the worst wellbeing levels, respectively. Furthermore, whereas the other two groups did not differ with respect to depression, Learning and Socially Self-Efficacious students have higher life satisfaction than the last group. These results were confirmed both concurrently and over time.

Keywords: Self-efficacy, Wellbeing, University, Person-centred Approach, Cluster analysis.

Highlights

- Findings confirmed the conjoint interplay of different self-efficacy dimensions
- Four configurations were identified in two-cohort sample of university students
- Emotional, social and learning self-efficacies do not necessarily ‘move together’
- Configurations were associated with wellbeing both concurrently and over time

1. Introduction

The importance of self-efficacy (SE) for academic success has been well documented (Richardson, Abraham, & Bond, 2012). Moreover, SE contributes to students' wellbeing and the quality of their academic experience (Zajacova, Lynch, & Espenshade, 2005). Studies have mainly investigated the role of SE in relation to academic activities (e.g., Chemers, Hu, & Garcia, 2001) while overlooking SE in managing other important challenges that students must face during education. Students must not only plan and organise learning activities but also, for example, manage their negative emotions during evaluation situations and establish and maintain supportive relationships with others to achieve their academic goals (Newby-Fraser & Schlebusch, 1997).

In the present study, drawing on the person-centred approach (Magnusson, 1999), we examined the conjoint interplay of three SE dimensions in promoting students' wellbeing. In particular, we considered emotional, social, and self-regulated learning SEs in line with the extensive literature supporting their protective roles across contexts (e.g., Bandura, Barbaranelli, Caprara, & Pastorelli, 1996; Richardson et al., 2012). By adopting the person-centred rather than the variable-centred approach, we aim to: (1) identify groups of freshmen characterised by different SE configurations and (2) examine how these are associated, concurrently and over time, with depression and life satisfaction.

This approach can be particularly informative given the domain-specific nature of SE (Bandura, 1997). Indeed, personal beliefs in different domains will not necessarily 'move together' and, thus, they can result in distinct self-organising patterns. Indeed, some students may perceive themselves as able to manage their social interactions but neither their activities related to self-regulated learning nor their negative emotions. The analysis of the association between SE configurations and wellbeing will help in identifying how groups of students can rely on different perceived capabilities to adapt themselves to their academic context. In line

with the principle of equifinality (Moreira, Cloninger, Dinis, Sa, & Oliveira, 2015) and the basic principles of the person-centred approach (Magnusson & Torestad, 1993), it is possible that a group of students may compensate a perceived lack of competence in a specific domain with a stronger perceived competence in a different one. Consequently, the adoption of the person-centred approach may help researchers to better appreciate whether and to what extent different configurations show different profiles in some outcomes, but similar profiles in others. In sum, the focus on individuals – rather than on variables relationships - could allow the understanding of qualitatively inter-individual differences derived from distinct SE patterns.

Although several studies have extensively adopted the person-centred approach to examine how different students' configurations are associated with academic outcomes (e.g. Moreira, Dias, Machado Vaz, & Machado Vaz, 2013), a similar perspective has not been previously adopted in relation to SE. Furthermore, whereas the role of SE for self-regulated learning in relation to students' wellbeing has been widely examined, there is a general lack of empirical evidence regarding emotional and social SE. To the best of our knowledge, no previous studies have investigated the concurrent and longitudinal relationship between SE configurations and wellbeing by using a person-centred approach.

1.1 Self-efficacy and Wellbeing in Academic Settings

Self-efficacy, namely domain-specific 'belief in one's capabilities to organise and execute the courses of action required to produce given attainments' (Bandura, 1997, p.3), can be viewed as the expression of self-regulatory skills in specific domains of individual functioning. In this study, we focused on SEs associated with three specific self-regulatory competences: emotional, social, and self-regulated learning.

Emotional SE refers to perceived capabilities in managing negative emotions associated with stressful events, ranging from fear and anxiety to self-conscious emotions such as shame and guilt (Caprara, Di Giunta, Pastorelli, & Eisenberg, 2013). Individuals reporting high levels in this domain are more likely to cope proactively with difficulties and life challenges, are more satisfied (Lightsey, Maxwell, Nash, Rarey, & McKinney, 2013), and are less depressed (Caprara, Gerbino, Paciello, Di Giunta, & Pastorelli, 2010). Overall, researchers have generally investigated this dimension within the general population, leaving quite unexplored the specific academic context and the role of emotional SE in relation to students' wellbeing. However, we consider this dimension as pivotal. Indeed, students are under near-constant pressure and evaluation, and they are required to handle anxiety related to deadlines, exams, and so on.

Social SE refers to perceived capabilities to build adaptive relationships with others, establish a friendship network, and be capable of self-promotion (Hermann & Betz, 2006). Within the academic setting, social SE has been proved to hinder students' depression (Wei, Russell, & Zakalik, 2005) and foster the pursuit of their goals (Zajacova et al., 2005). Students with high social SE have higher capabilities to identify external resources to cope with stress (Smith & Betz, 2000). In particular, the perceived capability to pursue help-seeking and help-giving can be particularly critical to maintain effort and motivation in difficult times (Poortvliet & Darnon, 2014). Overall, although an SE dimension related to social resource seeking was included in the original Bandura scale (Bandura et al., 1996), few studies have explored it in the academic context in relation to student wellbeing.

SE in self-regulated learning refers to students' beliefs about their abilities to regulate learning processes and actively orient courses of actions towards satisfactory academic results consistently with standards (Zimmerman, 2000). Students with high SE in this domain perceive difficulties as opportunities to improve and develop their skills, and they are less

prone to perceive academic pressures as sources of stress (Chemers et al., 2001). Overall, results have consistently highlighted its relevant role in relation to university students' wellbeing.

2. The Present Study

The present study, using a person-centred approach, investigates the SE configurations and tests their concurrent, longitudinal, and discriminant validity. Based on previous studies on personality types and adjustment, we anticipated that the optimal number of groups will range from three, which represents the most frequent solution in the literature (Asendorpf, 2015), to five clusters, as found in some studies (Herzberg & Hoyer, 2006). Given the domain-specific nature of SE, we hypothesised some clusters to have high levels in one domain along with low levels in others. However, because SEs are expected to be highly correlated, we also anticipated to identify two opposite clusters characterised by high and low levels in all of the domains. Moreover, as anticipated above, we expected these clusters to show different wellbeing profiles.

3. Method

3.1 Participants

Participants were nursing students involved in a broader ongoing two-cohort longitudinal project. For the purpose of the present study, two-time data points were considered. The first wave corresponds to the beginning of the first university year (T1), and the follow-up occurred at the beginning of the second year (T2). For both cohorts, all students enrolled in the first year were invited to participate (Cohort 1 T1 N=1,072, Cohort 2 T1 N=999). T1 was gathered in 2011 for Cohort 1 (870 participants, response rate=81.2%, 66.3% females, M_{age}=21.84, SD_{age}=4.65), and in 2012 for Cohort 2 (780 participants, response rate=78.1%,

66.9% females, M_{age}=21.70, SD_{age}=4.46). The participation rate after one year was 57.6% of the total Cohort 1 (499 participants, 70.3% females, M_{age}=21.68, SD_{age}=4.59) and 60.4% for Cohort 2 (471 participants, 69% females, M_{age}=21.46, SD_{age}=4.11). No cohort effects were detected related to demographics.

3.2 Procedure

The research received ethical approval from the review board of the university in which the research took place. Students collectively completed a pencil-and-paper questionnaire after signing an informed consent document. A research assistant was present at each wave to ensure setting control. Students' participation was rewarded by a brief tailored personality profile to be discussed upon request in a meeting with a registered psychologist.

3.3 Measures

SEs were measured at T1 and depression and life satisfaction at both T1 and T2.

Emotional SE was assessed by considering two scales. Specifically, we selected 3 items referring to the regulation of anxiety and despondency in the face of difficulties (Caprara & Gerbino, 2001; sample item 'Control anxiety in facing a problem') and 4 items from the Shame/Embarrassment Emotional SE (Caprara et al., 2013; sample item 'Contain your shame after having made a fool of yourself in front of many people').

Social SE was measured by adapting 3 items developed by Bandura et al. (1996; sample item 'Get lecturers to help me when I need it').

SE beliefs for self-regulated learning was measured by 3 items developed by Bandura et al. (1996; sample item 'Get myself to study when there are other interesting things to do').

All SE items were introduced by the stem 'How do you feel able to…', and the response format was on a 5-point scale (from 1 'I am not able at all' to 5 'I am completely able').

Depression was assessed by the 12-item Major Depression Inventory (Bech, Rasmussen, Olsen, Noerholm, & Abildgaard, 2001) on a 4-point Likert scale (from 1 ‘not at all’ to 4 ‘all the time’). Participants were asked to indicate the occurrence of a list of symptoms during the last two weeks (sample item ‘Have you felt lacking in energy and strength?’).
Life satisfaction was assessed by 4 items of the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; sample item ‘The conditions of my life are excellent’) on a 7-point scale (ranging from 1 ‘I totally disagree’ to 7 ‘I totally agree’).

3.4 Data Analysis

Little’s (1988) test was implemented to test missingness completely at random. Construct validity of the SE was assessed by using confirmatory factor analysis positing an oblique four-factor model. Goodness of fit was assessed with a multi-faced approach according to Kline’s recommendations (2015). Measurement invariance across cohorts and waves was tested through a series of hierarchically nested models (Meredith, 1993) by examining $\Delta\chi^2_{(\Delta df)}$ and ΔCFI. Reliability was assessed by Cronbach's alpha, Composite Reliability (CR), and Maximal Reliability (MR) (Raykov & Marcoulides, 2011).

In accordance with the person-centred approach guidelines of Bergman et al. (2003), SE configurations were derived separately for each cohort by adopting a cluster analytic procedure. As recommended by Asendorpf et al. (2001), we firstly applied a hierarchical clustering procedure (i.e., Ward Method with squared Euclidean distance) extracting three-, four-, and five-cluster solutions. By using a bootstrapping procedure on 200 artificial samples, the same hierarchical procedure was then replicated, and subjects were finally reclassified into non-hierarchical partitions (i.e., k-means algorithm) based on the centroids derived from the original sample. The number of clusters to be retained was determined by comparing the hierarchical and non-hierarchical bootstrapped partitions for each cluster

solution. Specifically, the average Cohen's κ (Mκ) and the average Adjusted Rand Index (ARI) were used to identify the optimal cluster solution. Finally, subjects were reassigned in the original sample by a k-means procedure to increase within-cluster homogeneity. Between-cohort invariance of the final cluster solution was assessed by evaluating the Average Squared Euclidian Distance (ASED, Bergman, Magnusson, & El Khouri, 2003). If the cohort invariance conditions were met, data from the two cohorts were merged, and the selected cluster solution was replicated on the entire sample. Mean differences across groups in SEs were tested by univariate ANOVAs.

To test whether clusters concurrently and longitudinally discriminate differences in the wellbeing variables, a multi-group structural equation modelling (MG-SEM) has been examined. Because these differences were found to be significant, a series of informative hypotheses were tested (see Van de Schoot, Hoijtink, & Jan-Willem, 2011).

4. Results

4.1 Preliminary Results

Little's test (1988) was non-significant for both Cohort 1 ($\chi^2_{[47]}$=56.31, p=0.17) and Cohort 2 ($\chi^2_{[47]}$=46.20, p=0.50), supporting missingness completely at random. Thus, Full Information Maximum Likelihood was used to handle missing data (Arbuckle, 1996). The results of CFA on SEs confirmed the four-factor structure of the scale in both Cohort 1 ($\chi^2_{[59]}$=210.28, p<0.001, RMSEA=0.054 (90% CI 0.046 - 0.062), CFI=0.96, TLI=0.95) and Cohort 2 ($\chi^2_{[59]}$=243.35, p<0.001, RMSEA=0.063 (90% CI 0.055 - 0.072), CFI=0.95, TLI=0.93). Specifically, one factor measures anxiety/despondency emotional SE, one shame/embarrassment emotional SE, one social SE, and one SE for self-regulated learning. Results of cohort invariance of SE and cohort and longitudinal invariance of wellbeing

indicators attested that constructs were measured similarly between cohorts and across time points (see Supplemental Materials).

Table 1 presents descriptive statistics, reliability coefficients, and zero-order correlations separately for both cohorts. All measures were reliable, and the magnitude of correlations was very similar between cohorts.

[Table 1]

4.2 Cluster Analysis

Results supported the 4-cluster solution in both cohorts (Cohort 1: M_{κ}=0.62, SD=0.10 and M_{ARI}=0.42, SD=0.09; Cohort 2: M_{κ}=0.65, SD=0.09 and M_{ARI}=0.44, SD=0.07; see Supplemental Materials). After implementing a non-hierarchical procedure, the homogeneity coefficients for each cluster in both cohorts were less than 1, suggesting substantial intra-cluster similarity between subjects (Bergman et al., 2003). In addition, after detecting no significant multivariate differences between cohorts both for means ($F_{[4]}$=0.99 , p=0.41) and covariances ($F_{[10]}$=0.63 , p=0.79), data from the two cohorts were merged into a single data file. Hence, subjects' membership in clusters was determined by applying a non-hierarchical cluster analysis using centroids derived from hierarchical partitions calculated on the entire sample.

Overall, clusters can be described as follows (see Figure 1):

- Cluster 1 (N=340, 20.6%): Highly Self-Efficacious students (H-SE) are characterised by very high levels in all SE domains. This cluster includes students who perceive themselves as highly able to manage negative emotions, social interactions, and academic activities.
- Cluster 2 (N=422, 25.6%): Low Self-Efficacious students (L-SE) are characterised by very low levels in all SE domains. This cluster mirrors cluster 1 and includes

students who perceive themselves as poorly able to manage their negative emotions, social interactions, and academic activities.

- Cluster 3 (N=442, 26.8%): Learning and Socially Self-Efficacious students (LS-SE) are characterised by medium-high level of SE for self-regulated learning, medium social SE, and medium-low levels in both emotional SEs. This cluster includes students who perceive themselves as quite able to manage their academic activities and social interaction but are barely able to master their negative emotions.
- Cluster 4 (N=446, 27.0%): Emotionally Self-Efficacious students (E-SE) are characterised by medium-high levels in both emotional SEs, medium-low social SE, and low level of SE in self-regulated learning. This cluster mirrors cluster 3 and includes students who perceive themselves as sufficiently able to master their negative emotions but unable to manage their academic activities and barely able to manage social interactions.

[Figure 1]

4.3 Cluster Profiles in Wellbeing Dimensions

Results of the MG-SEM (Table 2) suggested that clusters significantly differ in wellbeing indicator latent scores. Specifically, compared with the H-SE cluster, all others showed higher levels of depression and lower levels of satisfaction at both time points.

[Table 2]

To better explore the differences between intermediate clusters, a series of *post hoc* informative hypotheses have been tested (see van de Schoot et al., 2011).

Specifically, for each wellbeing dimension, we tested the following:

- Two ‘full gradient’ models (model 1 and model 2). In model 1, we posited that cluster 1 (H-SE) has higher levels of wellbeing, followed by cluster 4 (E-SE), cluster 3 (LS-SE), and finally cluster 2 (L-SE); in model 2, we reversed the order between cluster 4 (E-SE) and 3 (LS-SE):
  - H_{model1}: $\mu_{cl2}>\mu_{cl3}>\mu_{cl4}>\mu_{cl1}$ (depression);
    $\mu_{cl1}>\mu_{cl4}>\mu_{cl3}>\mu_{cl2}$ (life satisfaction);
  - H_{model2}: $\mu_{cl2}>\mu_{cl4}>\mu_{cl3}>\mu_{cl1}$ (depression);
    $\mu_{cl1}>\mu_{cl3}>\mu_{cl4}>\mu_{cl2}$ (life satisfaction).
- A ‘partial gradient’ model (model 3) that posited no differences between the intermediate clusters (cluster 3 and 4):

H_{model3}: $\mu_{cl2}>\mu_{cl4}=\mu_{cl3}>\mu_{cl1}$ (depression);
$\mu_{cl1}>\mu_{cl3}=\mu_{cl4}>\mu_{cl2}$ (life satisfaction).

Prior to testing these hypotheses, missing data were imputed following the procedure described in the Supplemental Materials. Models were evaluated considering two distinct criteria: the Bayes Factor (BF) and the Posterior Model Probability (PMP). As shown in Table 3, model 2 for life satisfaction at both T1 and T2 and model 3 for depression at both T1 and T2 showed the best fit. Results confirmed that the H-SE cluster has the most adjusted profile, and the L-SE cluster has the least. In addition, whereas the LS-SE cluster and E-SE cluster do not differ in relation to depression, the LS-SE cluster scored higher than the E-SE cluster in life satisfaction at both T1 and T2.

[Table 3]

5. Discussion

The results of this study, for the first time in the SE literature, showed the relevance of adopting a person-centred approach. The findings provided support for four clusters characterised by different SE configurations. Specifically, the H-SE and L-SE clusters have particularly extreme levels of SEs (the highest and lowest in all SE domains, respectively). These two configurations confirm the strong relationships among SE beliefs and compose 50% of the total sample. The remainder two clusters, E-SE and LS-SE, are characterised by intermediated levels of SEs. In particular, the E-SE cluster has medium-high emotional SEs, medium-low social SE, and low self-regulated learning. In contrast, the LS-SE cluster has medium-low emotional SEs, medium social SE, and medium-high self-regulated learning.

These intermediate clusters suggested that although the two emotional SEs tend to have a similar profile, this is not the case for the self-regulated learning and social SE. This also attested that SE beliefs do not necessarily 'move together': indeed, some students perceive themselves to be able to regulate their negative emotions but not learning and social behaviour in the academic environment; conversely, other students perceive themselves to be able to manage social and learning activities but not their negative emotions. This result supports literature highlighting that emotional regulation implies processes that are different from those related to behavioural regulation (i.e., social and learning behaviour). Specifically, the former involves the regulation of internal negative affect (Gross & John, 2003), whereas the other two involve the regulation of processes mainly related to the execution of plans of action (Bandura, 1997).

The examination of the concurrent and prospective relationships between SE configurations and wellbeing provides further support of the interplay among SEs. Indeed, different SE configurations tend to have different levels of wellbeing; however, this is not always the case. Whereas the two extreme configurations (H-SE and L-SE clusters) clearly

showed opposite levels of depression and life satisfaction, the two intermediate clusters (LS-SE and E-SE) differ only with respect to the latter. Thus, H-SE represents the most protective and adaptive configuration, while the L-SE cluster represents the most compromised and at risk. Furthermore, the two intermediate clusters also have intermediate levels of wellbeing, but the LS-SE configuration has a higher level of life satisfaction than E-SE, concurrently and over time.

In line with the educational literature (Chemers et al., 2001), these findings suggest that in relation to students' life satisfaction, their perceived capabilities to manage social and learning-related behaviour are particularly relevant. However, the results also suggest that in relation to depression, students may compensate for their perceived lack of competence in some domains with their perceived strengths in others. For example, students in the E-SE cluster may compensate for their difficulties in regulating their learning activities with a better capability in managing negative emotions derived from failing at a learning task. Similarly, students in the LS-SE cluster may compensate for their difficulties in managing negative emotions related to the anticipation of a failure or negative external evaluation by optimising efforts to control their learning behaviour.

With regard to possible benefits of the person-centred approach in terms of interventions, the present findings suggest that the 'one size fits all' approach may not always be the best option, and the heterogeneity of individual functioning must be considered. Indeed, interventions should be tailored in relation to the specific students' profiles of functioning. For example, interventions targeting students with lower levels of social and self-regulated learning SEs should take advantage of interventions aimed at developing planning capabilities, time management strategies, and teamwork skills. Moreover, students perceiving themselves as less able to manage negative emotions should benefit from

interventions specifically aimed at developing emotional regulation competencies in stressful and evaluating situations.

The present study has a number of limitations. In the follow-up, there was a decrease in sample size that may have partially reduced the strength of the findings. However, missingness completely at random was supported. In addition, this study relies only on self-reported data, which are generally affected by common method bias phenomena. Finally, although data were collected in a single specific context, results were consistent with existing literature on self-regulated learning. Future studies should replicate the findings by using a more heterogeneous sample. In addition, further studies should include other potential variables that could influence students' wellbeing. These limitations are counterbalanced by some relevant strengths, including the longitudinal and two-cohort study design, the large sample size, and the implementation of a quite rigorous methodological approach along with the adoption of a latent variable framework.

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Table 1.

Descriptive statistics, Correlations and Reliability Coefficients

	Descriptive		Reliability			Correlations						
	Mean	**SD**	**MR**	**CR**	**Alpha**	**1.**	**2.**	**3.**	**4.**	**5.**	**6.**	**7.**
COHORT 1												
1. AD-ESE_T1	3.11	.79	.79	.70	.75							
2. SE-ESE_T1	3.06	.83	.84	.82	.80	.52**						
3. SOC-SE_T1	3.66	.69	.85	.81	.82	.19**	.28**					
4. SRL-SE_T1	3.34	.84	.83	.81	.85	.25**	.17**	.30**				
5. D_T1	1.74	.47	.86	.85	.85	-.34**	-.27**	-.18**	-.22**			
6. D_T2	1.78	.49	.89	.86	.87	-.26**	-.14**	-.09	-.18**	.52**		
7. LS_T1	4.91	1.25	.81	.80	.79	.20**	.23**	.20**	.23**	-.39**	-.31**	
8. LS_T2	4.72	1.27	.80	.77	.82	.17**	.15**	.10*	.22**	-.32**	-.40**	.59**
COHORT 2												
1. AD-ESE_T1	3.14	.80	.81	.80	.77							
2. SE-ESE_T1	3.06	.81	.82	.80	.80	.55**						
3. SOC-SE_T1	3.69	.67	.83	.82	.83	.21**	.25**					
4. SRL-SE_T1	3.41	.84	.83	.82	.84	.23**	.21**	.30**				
5. D_T1	1.73	.45	.88	.86	.84	-.36**	-.29**	-.21**	-.26**			
6. D_T2	1.73	.46	.88	.87	.86	-.26**	-.27**	-.16**	-.15**	.50**		
7. LS_T1	4.93	1.25	.84	.85	.79	.22**	.25**	.21**	.19**	-.38**	-.25**	
8. LS_T2	4.79	1.28	.85	.81	.83	.20**	.20**	.26**	.19**	-.27**	-.43**	.52**

Note. AD-ESE =Self-efficacy in mastering anxiety and despondency; SE-ESE=Self-efficacy in mastering shame and embarrassment; SOC-SE=Socially Self-efficacy; SRL-SE=Self-efficacy in self-regulated learning; D=Depression; LS=Life satisfaction; SKEW=Skewness; KURT=Kurtosis; CR=Composite reliability; MR=Maximal reliability. *p<.05, **p<.001

Table 2.

Results of MG-SEM. Latent Mean Differences in Wellbeing Indicators between Cluster-based Groups

	Clusters			
	H-SE	L-SE	LS-SE	E-SE
DEP_T1	@0	1.07 [.87 − 1.29]	.67 [.45 − .88]	.58 [.38 − .77]
DEP_T2	@0	.76 [.51 − .94]	.46 [.23 − .70]	.45 [.21 − .70]
LS_T1	@0	-.94 [-1.17 − -.71]	-.48 [-.69 − -.26]	-.59 [-.81 − -.37]
LS_T2	@0	-.79 [-1.06 − -.51]	-.51 [-.76 − -.26]	-.67 [-.94 − -.39]

Note. Cluster 1 has been chosen as the reference group, fixing its latent mean to 0 in each MG-SEM. Differences are presented in a completely standardised metric [99% confidence interval]. Differences in each latent variable can be read as the standardized distance of each cluster from the reference group mean. DEP=Depression; LS=Life Satisfaction. H-SE=Highly Self-Efficacious students; L-SE=Low Self-Efficacious students; LS-SE=Learning and Socially Self-Efficacious students; E-SE=Emotionally Self-Efficacious students.

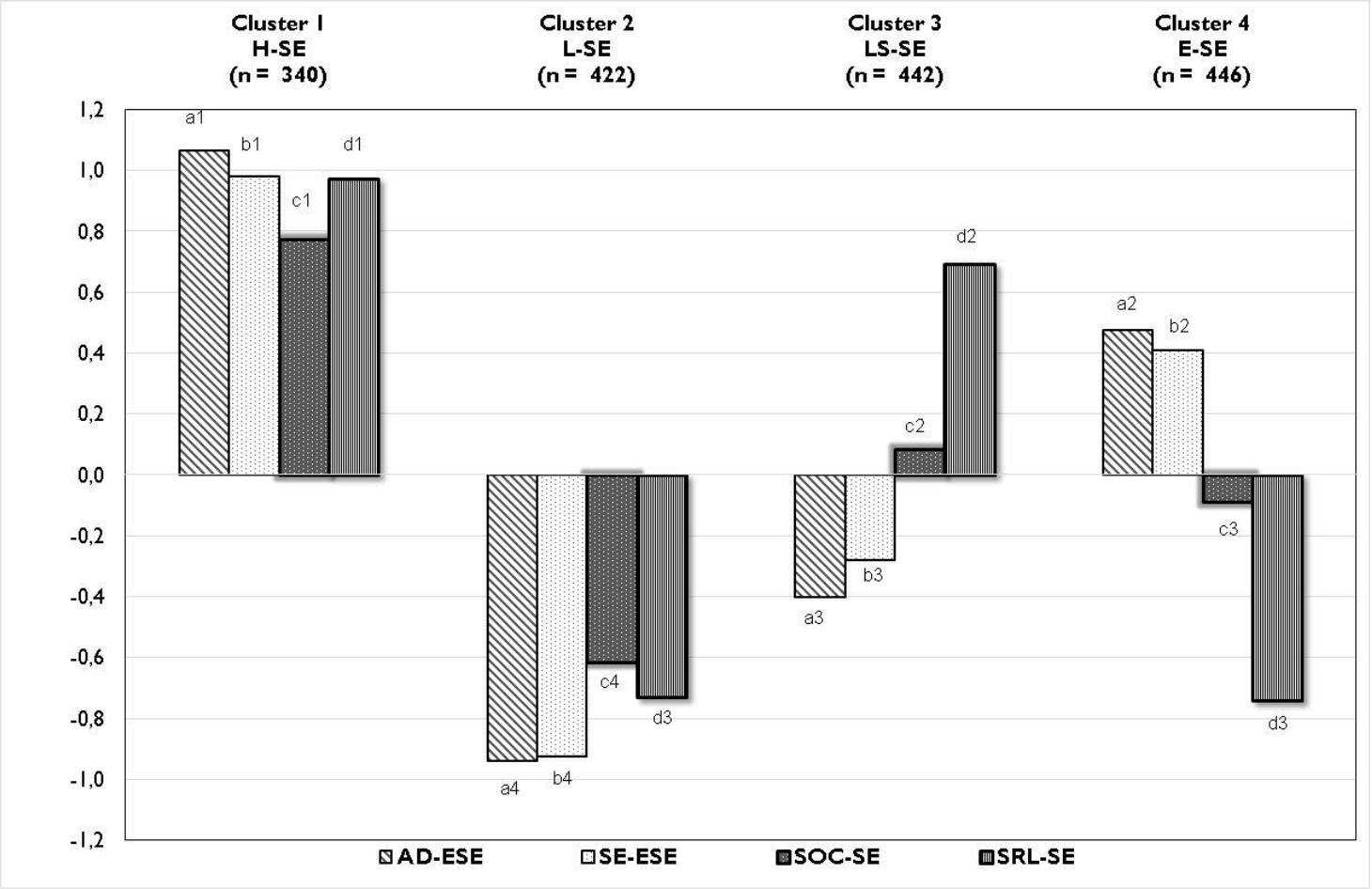
Table 3.

Model Evaluation of the Tested Informative Hypotheses

	MODEL_1	MODEL_2	MODEL_3
DEP_T1	10.94 (.12)	12.75 (.14)	**66.63 (.73)**
DEP_T2	13.42 (.16)	10.36 (.12)	**60.64 (.71)**
LS_T1	1.00 (.03)	**22.72 (.38)**	14.65 (.57)
LS_T2	.39 (.01)	**22.76 (.74)**	6.45 (.21)

Note. MODEL_1&2=Alternative 'full gradient' models; MODEL 3= 'Partial gradient' model. In each cell, the Bayes factor associated with the tested model is reported against the unconstrained model, in which group means have been estimated without imposing any equality/inequality between them. In parenthesis, Posterior Model Probability associated with its relative Bayes Factor is indicated. The best-fitting model is indicated in bold.

Figure 1. Final 4-Cluster Solution.



Note. Plotted cluster centroids were previously standardized. H-SE=Highly Self-Efficacious students; L-SE=Low Self-Efficacious students; LS-SE=Learning and Socially Self-Efficacious students; E-SE=Emotionally Self-Efficacious students; AD-ESE =Self-efficacy in mastering anxiety and despondency; SE-ESE=Self-efficacy in mastering shame and embarrassment; SOC-SE=Social Self-efficacy; SRL-SE=Self-efficacy in self-regulated learning. Different subscripts indicate significant differences between clusters.