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Motivational Orientation Profiles and Study Well-Being among Higher Education Students

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Abstract: A person-centered approach was applied to identify the motivational orientation profiles in a sample of 1533 higher education students in Finland at different years of their studies. We also explored the extent to which study engagement and study burnout relate to motivational orientation profiles, and we examined the association between motivational orientation profiles and academic achievement (i.e., study credits). Three groups of students with distinctive motivational orientation profiles—mastery-oriented, moderation-oriented, and avoidance-oriented—were identified using latent profile analysis. The results showed that high study engagement and academic achievement, in terms of study credits, were associated with the mastery-oriented group. High study burnout was associated with the avoidance-oriented group. The moderation-oriented students reported average levels of motivation relative to the two other groups. The study also considered the importance of motivational orientation, study well-being, and academic achievement across different years of study, seeing this as relevant and beneficial, as motivational issues may be crucial during studying, not only upon entering higher education.

Keywords: motivational orientation profile; study well-being; study year; higher education; person-centered approach

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1. Introduction

Previous studies suggest that motivational factors, such as achievement goals [1], self-concept, interest, task value [2], self-efficacy beliefs [3], and approach-versus-avoidance behaviors [4], differentiate between students in learning situations. In addition, research on motivation (e.g., [5]) has highlighted the value of using person-centered analysis (i.e., a cluster analysis or latent profile analysis) over a variable-centered analysis to examine patterns of motivation (e.g., [6]). This approach allows us to differentiate and model multiple achievement goals among higher education students and their relationship to well-being. Higher education refers to the demanding context in which students study to achieve a degree.

Previous studies on motivational orientations coming from the cognitive, emotional, social, and behavioral perspectives, and describing a three-part model of motivation [7], have mostly focused on school-age [8] and younger children [9]. Some studies have considered self-determination theory (SDT; [5,10,11]) and self-efficacy beliefs [12,13] among older students. However, studies investigating motivational orientations among higher education students and across different study years (i.e., from the first to the fifth study years) seem to be lacking (exceptions are longitudinal studies, e.g., those by [14]), even though it is to be expected that students' motivations will play an important role in their mastering the challenges presented during each year of their studies. Second, there is little evidence to show whether the motivational orientations of higher education students vary across the years of their studies [15] or how study well-being is associated with

these variations [16], as well-being has been found to deteriorate through the years of higher education due to increased stress and burnout [17]. Therefore, the importance of students' individual motivational orientations in learning and the lack of research on motivation across study years in higher education warrant the need for the current study. This study aims to bridge these gaps by (1) identifying the motivational orientation profiles of higher education students across five years of study (from the first to the fifth study years), (2) exploring the extent to which study engagement and study burnout relate to motivational orientation profiles, and (3) examining the association between motivational orientation profiles and academic achievement.

1.1. Motivational Orientation in Higher Education Students

The theoretical background of this study comes from motivational orientation theory [7], which explores how individuals approach and engage with tasks on the basis of their underlying motivational orientations. This theory emphasizes that people possess distinct motivational orientation profiles which influence their attitudes and behaviors in different learning tasks and contexts [7,18]. This theory highlights how these orientations shape behaviors and responses to challenges. For example, individuals with a mastery approach orientation are driven by a desire to learn and excel, while those with a performance approach orientation focus on achieving success to gain recognition. Conversely, mastery avoidance individuals seek to avoid failure, while performance avoidance individuals aim to prevent negative judgment. Furthermore, the role of the social dimension (i.e., combining individual learning into productive and interpersonally regulated collaborative learning) underscores individual differences in motivational orientation profiles (see [18,19]). For instance, in a learning situation, motivational orientation refers to a student's general disposition to act similarly in a future situation with similar cues [7]. Thus, this study aims to extend the research on the connection between the number of years of study [8] and the emotional, behavioral, cognitive, and sociocultural motivational factors influencing higher education students in learning and task demands. Consequently, the study responds to the call for research focusing on the individual and on the characteristics of learning situations in order to better understand students' motivation at each year of study.

According to Ford [20] and Reeve [21], motivation includes personal goals, emotions, and agency beliefs. Further, it plays an important role in academic performance by energizing, maintaining, directing, and regulating individuals' behaviors, as well as by prompting the avoidance of failure and preventing negative emotional activation/judgments in learning situations [20,21]. Authors such as Jeno and colleagues [10] claim that, in addition to academic skills, students' motivation is crucial if they are to adapt successfully to the progressively challenging requirements of higher education. Widely employed conceptualizations of motivation focus on students' behavioral approaches to learning tasks, including mastery-related behavior [22], goal orientation [23], and intrinsic-versus-extrinsic motivation, as proposed by SDT [24]. Despite conceptual distinctions, these all emphasize a fundamental difference between task-focused and non-task-focused goal orientation. Learners who are task-focused endeavor to understand the task on hand, acquire the necessary skills, and apply problem-focused coping strategies [25]. In contrast, learners with a low task-focus tend to alleviate their intrapsychic state, such as fear of failure, and restore their well-being through emotion-focused coping strategies [26]. Moreover, the social context, that is, relatedness to significant others (e.g., [24]), and feelings of security and appreciation by them (cf. "co-agency" in [27], see also [28]) are closely associated with learning and studying, and may support task focusing to some extent. Therefore, the current study will identify the behavioral, emotional, cognitive, and social dimensions of higher education students' motivation [19] in relation to the person-in-context view of motivation [29].

Based on motivational orientation theory and on the above distinctions in motivation and the adaptations of students to different learning situations, a three-part model of motivational orientations [7,8] was applied in this study to examine motivation in higher education students. Following the three-part model, task approach, task avoidance, and social belonging (initially

conceptualized as task, ego-defensiveness, and social dependence) orientations are the core constructs of this research. These orientations highlight the adaptive focus (task, self, and others), functional system (approach or avoidance), coping strategies, emotional expression, and quality of cognitive performance as the core motivators of students' activities in learning situations [6,30]. Thus, in addition to the psychological theories of motivational–emotional tension and conflicts [31], the three-part model of motivation and coping behaviors is based on the social–psychological communication theories of co-orientation cf., [32]. Therefore, the three-part model [7] extends the work of previous studies, for example those on intrinsic and extrinsic motivation, to the importance of significant others in learning activity and task demands, as follows. First, the task approach refers to findings that students who accept the challenge of learning activities and focus on mastering, exploring, understanding, and solving the task at hand are likely to have a strong positive valence. This also creates a sense of competence, within which people will act successfully in a particular learning task and receive positive feedback on their actions. Thus, the task approach is closely related to self-efficacy beliefs [3], which refer to students' willingness to approach a task based on their cognitive self-evaluation and the beliefs that they can master the task, adapt to the requirements of the learning activity, and achieve their goals. As a motivational construct factor [2], self-efficacy beliefs determine the way in which individuals act, the effort they expend, and their perseverance and resilience [13]. Further, self-efficacy beliefs can be seen as a subjective perception of one's own ability to manage learning situations. Second, social belonging is exemplified by a group of students who focus on seeking social-belonging approval and reinforcing social affiliations, which may be their major task-approach goal. Hence, social belonging connected to the basic psychological needs of SDT [33] supports motivation in learning situations. Third, task avoidance is exemplified by a group of students who may have negative valence in learning situations, and whose goal will be to protect themselves from perceived threats to their well-being. More specifically, task avoidance may involve the activation of challenging emotions in which, for instance, anxiety relates to extrinsic motivation [11], which can be caused by fear of failure in academic contexts and the diverting of cognitive energy away from the task [6]. In addition to the activation of challenging emotions, task-irrelevant behavior and minimal effort also refer to students' unfavorable motivational behaviors, which are linked to a low evaluation of study, and may involve the minimal use of time and effort [34] and include substitute activities. Therefore, increasing task avoidance with its many dimensions may decrease both the task approach and social belonging.

Previous findings indicate that higher education students' motivational orientations vary in the way they approach different learning situations [30]. Mäkinen and colleagues [35] identified three study orientation profiles among first-year university students: Students (38%) with a strong study orientation rated highly for interest in studying, deep learning, and social interaction. Students (35%) with a work–life orientation rated highly for interest in work–life, systematic planning of studies, and deep learning. To them, social interaction was not important, and they had low anxiety levels. The third group, composed of uncommitted students (27%), showed a lack of study-related goals, low importance for social relationships, and high levels of anxiety. In addition, building on self-efficacy theory, Trigwell and colleagues [36] examined the associations between self-efficacy beliefs and learning approaches among university students. Their study showed that university students with higher self-efficacy beliefs tended to perceive teaching practices as being of higher quality, adopted a deeper approach to learning, and achieved stronger academic outcomes. Moreover, Tuominen-Soini and colleagues [16] found that close to one in ten secondary education students belonged to the group with a task-avoidant profile. These students could identify the goals of learning and success in study but were reluctant to invest effort in achieving these goals and did not expect to succeed. Other studies [12] confirmed that while most students rate values and motivational beliefs in academic subjects highly, some students minimize the effort required. Although minimal effort among higher education students has been little studied, passivity and the activation of challenging emotions, such as anxiety and low self-esteem, have been identified [37].

1.2. Motivational Orientations and Study Well-Being

Students' goals, emotions, and agency beliefs relating to their motivational orientations are significantly associated with both their learning and their emotional well-being [38]. Students' motivational orientations indicate whether they accept challenges and engage in problem solving or avoid tasks due to the activation of challenging emotions [19]. Murtonen and colleagues [30] found that higher education students who consider their study subjects to be relevant to their future work are more task-oriented, use a deeper approach to learning, and experience fewer difficulties in learning subject skills. Vansteenkiste and colleagues [11] found that high school students who rated their motivation to be of high quality displayed more optimal learning outcomes, whereas students who rated themselves as having poorer quality motivation displayed higher scores for test anxiety and procrastination.

In this study, higher education students' motivation was central to their learning, while well-being was defined in relation to the educational context. We focused on study engagement, burnout, and academic achievement (i.e., study credits, such as the European Credit Transfer and Accumulation System, ECTS), considering these to be crucially associated with study well-being at university. Study well-being consists of study-related engagement characterized by vigor, dedication, and absorption [17]. Vigor involves high energy levels, mental resilience, the willingness to apply effort to learning tasks, and persistence in the face of difficulty. Dedication is associated with meaning, enthusiasm, inspiration, pride, and challenge. Absorption refers to full concentration and enjoyment in studying.

Study well-being can also be defined in relation to burnout: the emotional exhaustion resulting from study requirements, cynical and disconnected attitudes toward study, and feelings of inadequacy as a student all contribute to burnout [17]. A study examining trends in student achievement goals and study burnout [39] suggests that a performance-focused tendency is positively associated with exhaustion, while a mastery orientation is negatively associated with it. An avoidance orientation is positively associated with cynicism and inadequacy. Success-oriented students rate more exhaustion and greater feelings of inadequacy than mastery-oriented students.

Salmela-Aro and Read [17] examined higher education students' perceived study engagement and study burnout patterns. They identified four engagement- and burnout-related profiles and showed that students with the most positive engagement experienced the least burnout, while students in the burnout group had relatively low academic engagement. They also found that students' engagement in studying decreased across study years, while perceived study burnout increased. Allowing for developmental differences during higher education, Müller and colleagues [40] found that while students' motivational profiles remained relatively stable, autonomy and competence both showed significant declines. They found that social belonging between students was significantly and positively related to study motivation.

Although earlier studies have investigated the patterns of motivation and well-being among school-aged children, less is known about motivational orientation profiles among higher education students. Consequently, in this study, we explored the extent to which study-related well-being (based on [17]) is related to the motivational orientation profiles of higher education students.

1.3. Aims of the Present Study

In this study, the motivational orientations of higher education students were assessed cross-sectionally across five years of study. A person-centered approach was adopted to investigate the students' motivational orientations in learning situations, considering behavioral, emotional, cognitive, and social factors. Sub-groups of students who were similar in terms of their motivational orientation profiles were identified. Second, the study aimed to explore the role of study engagement and study burnout in relation to the students' motivational orientation profiles. Third, the association between motivational orientation and academic achievement was explored.

Based on developmental studies (e.g., [14]), we assumed that higher education students differ in the ways in which they typically approach a learning situation or task (H1). Studies (e.g., [6]) suggest that motivational orientation theory may explain why some students fail to behave in a task-oriented manner, and these researchers contend that students' previous experiences, goals, and emotions will all impact their situational performance. Other studies (e.g., [17,35]) suggest that well-being factors are indicators of the students' motivational orientation profiles (H2). Furthermore, we assumed that the number of students in each motivational orientation profile group would change across the years of the study, as study engagement has been found to decrease and study burnout to increase with time [17]. Finally, we hypothesized that task-oriented motivation was positively associated with academic achievement (study credits), and that students' achievements would be linked to their intention to persist in education [41] (H3).

2. Materials and Methods

2.1. Participants and Procedure

The study sample consisted of 1533 students (356 men, 1151 women, and 26 others), with a mean age of 25.46 years (SD = 6.59), all pursuing university studies in the southern part of Finland. Seven faculties were represented: education 13.7%, humanities 17.4%, law 5.9%, medicine 14.9%, science and engineering 20.9%, social sciences 14.5%, and economics 12.7%. The sample was fairly representative of Finland's university student population, although women were overrepresented.

All participants were provided with preliminary information about the study and asked to complete a questionnaire. The survey was conducted electronically in April and May of 2019. The questionnaire was sent four times with three reminders. Participating students gave their informed consent by responding to the questionnaire. The ethical guidelines for scientific research provided by the University of Turku's Ethics Committee and the Academy of Finland were observed.

The study year (i.e., number of years of studies) was determined by asking the students to write down their current study year. We coded the study years as follows: 1 = 1st year (beginning), 2 = 2nd year, and 3 = 3rd year (bachelor's level); 4 = 4th year and 5 = 5th year (master's level). Of the 1533 students who responded, 412 were first-year students, 370 were second-year, 315 were third-year, 244 were fourth-year, and 192 were fifth-year students.

2.2. Measures Used

2.2.1. Assessment of Motivation

The students' motivation was rated using a validated motivational orientation model with six subscales [42] based on theoretical and empirical work on motivational orientation [6,7,19]. According to the model for confirmatory factor analysis of motivational orientations, the data fitted well (χ^2 [260, N = 1533] = 1124.31, $p < 0.001$, CFI = 0.95, RMSEA = 0.047, SRMR = 0.041) [43]. In addition, testing across the five years of the study for the model structure (Model 1, M1) (χ^2 [1300, N = 1533] = 2360.49, $p < 0.001$, CFI = 0.94, RMSEA = 0.052, SRMR = 0.055), equal loadings (Model 2, M2) (χ^2 [1376, N = 1533] = 2445.45, $p < 0.001$, CFI = 0.93, RMSEA = 0.050, SRMR = 0.061), equal intercepts (Model 3, M3) (χ^2 [1452, N = 1533] = 2540.88, $p < 0.001$, CFI = 0.93, RMSEA = 0.049, SRMR = 0.062), and the model's ability to compare [M2-M1 = $\Delta\chi^2$ (76) = 84.96, $p = 0.23$; M3-M1 = $\Delta\chi^2$ (152) = 180.38, $p = 0.06$; M3-M2 = $\Delta\chi^2$ (76) = 95.42, $p = 0.07$] all indicated sufficient measurements of variance for the resultant model.

Motivational orientation was measured by the 25 items comprising six subscales (see Supplementary Table S1). The *task approach scale* comprised seven items assessing students' tendency to approach and explore their studies in terms of goal orientation, interest, and willingness to understand tasks (e.g., "to set own goals when studying" [44], and "I am eager to try to solve task so that I can learn more" [30]). The scale for *self-efficacy beliefs* comprised four items assessing students' tendency to master learning tasks and their agency beliefs (e.g., "I feel confident that I can do things well on my study" [45], "manage own learning success

[grades]" [44], and "When I get ready to start a task, I am usually certain that I will succeed in it" [46]). Social relatedness was measured on the scale for *social belonging*, which comprised three items assessing students' need to belong in the academic community and to work with the people there (e.g., "I feel I belong to the student community," "I experience a warm feeling with the people that I study with" [45]). Task avoidance orientation was measured by scales for *task-irrelevant behavior* and *activation of challenging emotions.* The task-irrelevant behavior scale comprised four items assessing students' tension as expressed through avoidance behavior (e.g., "What often occurs is that I find something else to do when I have a difficult task in front of me" [46], and "I postpone the approach of task demands" [47]). Activation of challenging emotions was measured by four items assessing students' tendency to become anxious and stressed, based on fear of failure (e.g., "In lectures I often worry that I don't understand or that I don't know the right answers" [48], and "pressure of study assignments, with deadlines, creates stressful situations" [44]). The scale for *minimal effort* comprised three items assessing students' tendency to strive to complete study tasks easily or to avoid tasks (e.g., "I try to get away with as little effort as possible in my studies" [48]). All items were rated on a five-point scale (1 = never; 5 = very often). Cronbach's alpha reliabilities were 0.81 for task approach, 0.81 for task-irrelevant behavior, 0.80 for activation of challenging emotions, 0.90 for social belonging, 0.81 for self-efficacy beliefs, and 0.78 for minimal effort. In addition, McDonald's omega reliabilities were 0.81 for task approach, 0.82 for task-irrelevant behavior, 0.81 for activation of challenging emotions, 0.90 for social belonging, 0.82 for self-efficacy beliefs, and 0.79 for minimal effort.

2.2.2. Study Engagement

Study engagement was measured using the *schoolwork engagement scale* [17] (see Supplementary Table S2). The scale consists of nine items measuring three components of study engagement in higher education: vigor ("When I study, I feel that I am bursting with energy"), dedication ("I am enthusiastic about my studies"), and absorption ("Time flies when I'm studying"). All items were rated on a six-point scale (1 = completely disagree; 6 = strongly agree). The Cronbach's alpha was 0.95.

2.2.3. Study Burnout

Study burnout was measured using the *school burnout inventory* [17] (see Supplementary Table S3). The scale consists of nine items measuring three components of study burnout in higher education: exhaustion ("I feel overwhelmed by my study work"), cynicism ("I feel that I am losing interest in my studying"), and inadequacy ("I often have feelings of inadequacy in my study work"). All items were rated on a six-point scale (1 = completely disagree; 6 = strongly agree). The Cronbach's alpha was 0.88.

2.2.4. Academic Achievement

The students were asked to provide their student numbers so that their academic achievements could be collected. The accumulation of study credits (ECTS) was determined at the end of the academic year. When a student had studied for several years, the sum of all study credits was used. The student numbers were deleted after this process and were not linked to the rest of the questionnaire. The total score for study credits varied from 0 to 524, with a mean score of 155 (SD = 88), ranging from the first to the fifth academic year.

2.3. Analysis Strategy

We used Mplus software, version 8.4 and the estimation of maximum likelihood with robust standard errors (MLR) method to estimate all models in the study [49]. Using latent profile analysis (LPA), we identified students with similar patterns of motivation (i.e., similar combinations of task approach, self-efficacy beliefs, social belonging, task-irrelevant behavior, activation of challenging emotions, and minimal effort). The validity of the solution was ensured by using 1000 and 100 as random start values in carrying out LPA as a mixture [50]. First, we computed LPA models to identify distinctive motivational

orientation profiles across the 1st, 2nd, 3rd, 4th, and 5th years of study. Second, to explore the extent to which study engagement and study burnout as covariates related to motivational orientation profile, multinomial logistic regression was computed in Mplus with an auxiliary R3STEP-method [51] to maintain the structural integrity of the measurement models as latent motivational orientation profiles. Third, to examine the association between motivational orientation profiles and academic achievement, the LPA with an auxiliary BCH method [52] was performed.

We used the log-likelihood (Log L.) value (for which a higher number indicates a better fit), the Akaike information criterion (AIC), and the Bayesian information criterion (BIC) to compare models for motivational orientation profile groups. The AIC and BIC guides for choosing between competing statistical models showed that the smaller the value, the more parsimonious the model [50]. The entropy value and the probability estimate of students belonging to a particular group were also used, with values close to 1, or at least 0.8, indicating high levels of precision and reliability of classification [53]. Furthermore, a significant result from the parametric bootstrapped likelihood ratio test (BLRT) supported the G-group solution in comparison with the G-1-group solution. Consequently, the results for a particular model of higher education students' motivational orientation groups were shown to be better than those for a model with one less group. Finally, the interpretability of the results was also considered when deciding on the number of motivational orientation profiles.

3. Results

The descriptive statistics for motivational orientations, study engagement, study burnout, and study credits are presented in Table 1, together with the ANOVA test and post hoc results for differences between the higher education students' self-ratings. Due to the multiplicity of items, we used mean scores here; more detailed descriptive statistics are available on request from the first author.

Table 1. Descriptive statistics for motivational orientations, study engagement, and study burnout among students across five years of study.

	All Years (Range)	1st	2nd	3rd	4th	5th	*F* (4, 1528)	Post Hoc
M (SD)								
Task approach	3.56 (0.59) (1–5)	3.64 (0.59)	3.62 (0.59)	3.46 (0.61)	3.49 (0.60)	3.52 (0.57)	5.84 **	1 > 3, 1 > 4, 2 > 3
Self-efficacy beliefs	3.60 (0.68) (1–5)	3.68 (0.63)	3.57 (0.70)	3.54 (0.71)	3.61 (0.72)	3.61 (0.65)	2.45 *	1 > 3
Social belonging	3.59 (1.03) (1–5)	3.68 (0.99)	3.66 (1.02)	3.45 (1.06)	3.57 (1.05)	3.55 (0.99)	2.78 *	1 > 3
Task-irrelevant behavior	3.00 (0.80) (1–5)	2.88 (0.76)	3.02 (0.81)	3.09 (0.84)	3.05 (0.82)	2.99 (0.77)	3.36 *	1 < 3
Activation of challenging emotions	3.01 (0.89) (1–5)	2.92 (0.86)	3.15 (0.88)	3.03 (0.94)	3.01 (0.90)	2.90 (0.84)	4.23 *	1 > 2, 2 > 5
Minimal effort	3.06 (0.80) (1–5)	2.96 (0.78)	3.00 (0.77)	3.19 (0.82)	3.19 (0.83)	3.02 (0.77)	5.92 **	1 > 3, 1 > 4, 2 > 3, 2 > 4
Study engagement	4.83 (1.25) (1–7)	5.14 (1.16)	4.83 (1.26)	4.62 (1.26)	4.64 (1.30)	4.72 (1.22)	10.48 **	1 > 2, 1 > 3, 1 > 4, 1 > 5
Study burnout	2.89 (1.06) (1–6)	2.58 (1.00)	2.99 (1.02)	3.03 (1.08)	3.03 (1.11)	2.95 (1.04)	12.85 **	1 < 2, 1 < 3, 1 < 4, 1 < 5

Note N = 1533. * Statistically significant differences at the 0.05 level (2-tailed). ** Statistically significant differences at the 0.01 level (2-tailed). Only the significant post hoc results are included in the table.

At the end of the first study year, students rated their task approach, self-efficacy beliefs, and social belonging significantly more highly than students did at the end of their third study year. Students at the end of the first study year perceived significantly lower levels of task-irrelevant behavior, minimal effort, and activation of challenging emotions than students did at the end of their third study year. Additionally, at the end of the first study year, students rated their study engagement as being significantly higher and their study burnout as being significantly lower, compared to students in all other study years (Table 1).

The correlations for all variables are shown in Table 2. These correlational results demonstrate different patterns of association for task approach, task-irrelevant behavior, social belonging, self-efficacy beliefs, activation of challenging emotions, and minimal effort. Thus, they provide support for convergent and discriminant validity at each year of the study. For instance, the task approach was negatively related to study burnout and task-irrelevant behavior, and it was positively related to self-efficacy beliefs, social belonging, and study engagement. Self-efficacy beliefs had the highest negative relation to study burnout. Task-irrelevant behavior, activation of challenging emotions, and minimal effort were similarly (and positively) related to each other and to study burnout; activation of challenging emotions was less positively related to study burnout.

Table 2. Concurrent correlations among motivational orientations, study engagement, study burnout, and study credits across different years of study.

	1	2	3	4	5	6	7	8	9
1. Task approach	-								
2. Self-efficacy beliefs	0.44 **	-							
3. Social belonging	0.12 **	0.25 **	-						
4. Task-irrelevant behavior	−0.44 **	−0.45 **	−0.14 **	-					
5. Activation of challenging emotions	−0.16 **	−0.56 **	−0.18 **	0.39 **	-				
6. Minimal effort	−0.54 **	−0.23 **	−0.09 **	0.45 **	0.12 **	-			
7. Study engagement	0.59 **	0.52 **	0.31 **	−0.48 **	−0.30 **	−0.45 **	-		
8. Study burnout	−0.28 **	−0.62 **	−0.34 **	0.49 **	0.63 **	0.25 **	−0.55 **	-	
9. Study credits	−0.02	0.13 **	0.04	−0.07 **	−0.08 **	0.02	0.00	0.00	-

Note N = 1533. ** Correlation is significant at the 0.01 level (2-tailed).

3.1. Motivational Orientation Groups across Five Years of Study

3.1.1. Latent Profile Analysis

The first aim of the study was to examine motivational orientation groups across five years of higher education. To identify these groups, we conducted LPAs for each year and across all five years. The resultant model fit values (Log L., AIC, and BIC), entropy values, class proportions, average latent class posterior probabilities for consecutive groups (1, 2, 3, and 4), and LR statistics tests (BLRT) are presented in Table 3. To choose the smallest possible number of groups, we used criteria that could be guided by (1) fit values, (2) distinguishability of the latent groups (i.e., entropy and average latent class posterior probabilities), (3) latent group sizes (class proportions), and (4) the theoretical justification and interpretability of the latent groups [50]. Considering the models across all years of study, entropy, average latent class posterior probabilities, and BLRT supported a three-group solution. The Log L. and AIC values did not clearly support one model as being superior at all years, despite doing so in the first year. However, while minimum values were not found, the differences diminished when comparing changes seen in the two-group to three-group models with changes seen in the three-group to four-group models across all years studied (Table 3). These results suggest that the three-group model of motivational orientation profiles provides a parsimonious fit for the data at each study year and also across all five years of study as a whole (Table 3). The two-group solution was rejected because most of the class proportions were close to 50%, indicating heterogeneous groups with both low and high motivational orientations. The four-group solution was rejected based on BIC, entropy, and BLRT values at each year because one profile group had less than 10%, with posterior probabilities lower than 0.8, which made it difficult to interpret and justify theoretically. Thus, the three-group solution was chosen for the final model.

The analysis of all five years yielded three profiles: *mastery-oriented* (12% of all responding students), *moderation-oriented* (52%), and *avoidance-oriented* (36%), as shown in Figure 1. The *mastery-oriented* students had the strongest study orientation (i.e., task approach, self-efficacy beliefs, and social belonging), accompanied by the least task avoidance (i.e., task-irrelevant behavior, activation of challenging emotions, and minimal effort) compared to the other groups. The *avoidance-oriented* group rated the highest levels of task-irrelevant

behavior, activation of challenging emotions, and minimal effort. The *moderation-oriented* students had average levels of the six factors measured.

Table 3. Information criteria estimates, distinguishability estimates, class proportions, and BLRT values for the series of five study years.

	Log L.	AIC	BIC	Entropy	Class Proportions	Average Latent Class Posterior Probabilities	BLRT (*p*)
1st year							
1	−2852.96	5729.91	5778.17	1.00	1.00	1.00	-
2	−2643.23	5336.46	5436.98	0.73	0.40/0.60	0.89/0.94	0.00
3	−2584.37	5244.73	5397.53	0.79	0.10/0.64/0.26	0.85/0.94/0.85	0.00
4	−2550.00	5202.01	5407.08	0.72	0.44/0.26/0.15/0.14	0.88/0.88/0.70/0.89	0.07
2nd year							
1	−2643.85	5311.70	5358.66	1.00	1.00	1.00	-
2	−2449.38	4948.76	5046.60	0.77	0.65/0.35	0.96/0.90	0.00
3	−2401.32	4878.64	5027.35	0.80	0.11/0.27/0.62	0.83/0.88/0.94	0.00
4	−2361.77	4825.53	5025.12	0.76	0.41/0.19/0.17/0.22	0.89/0.90/0.80/0.87	0.00
3rd year							
1	−2330.72	4685.44	4730.47	1.00	1.00	1.00	-
2	−2189.95	4429.90	4523.71	0.73	0.51/0.49	0.94/0.92	0.00
3	−2140.79	4357.58	4500.17	0.77	0.39/0.51/0.10	0.92/0.90/0.79	0.00
4	−2046.43	4194.86	4386.24	0.72	0.37/0.22/0.27/0.14	0.92/0.91/0.86/10.00	0.00 [a]
4th year							
1	−1783.43	3590.86	3632.82	1.00	1.00	1.00	-
2	−1659.45	3368.90	3456.33	0.73	0.47/0.53	0.92/0.92	0.00
3	−1622.31	3320.63	3453.52	0.76	0.14/0.43/0.43	0.88/0.89/0.92	0.00
4	−1565.43	3232.85	3411.21	0.75	0.32/0.09/0.48/0.11	0.90/0.84/0.94/10.00	0.00 [a]
5th year							
1	−1322.90	2669.81	2708.90	1.00	1.00	1.00	-
2	−1234.63	2519.26	2600.70	0.74	0.40/0.60	0.90/0.95	0.00
3	−1203.02	2482.04	2605.83	0.81	0.52/0.10/0.40	0.92/0.96/0.89	0.00
4	−1159.04	2420.09	2586.22	0.80	0.07/0.33/0.08/0.49	0.96/0.89/10.00/0.93	0.16
1–5 years							
1	−10,995.07	22,014.15	22,078.17	1.00	-	-	-
2	−10,255.70	20,561.39	20,694.77	0.71	0.44/0.56	0.90/0.93	0.00
3	−10,092.11	20,260.23	20,462.96	0.74	0.36/0.53/0.12	0.88/0.90/0.80	0.00
4	−9954.17	20,010.33	20,282.42	0.70	0.23/0.44/0.23/0.11	0.86/0.89/0.75/0.81	0.00 [a]

Note. Log L. = Log-likelihood; AIC = Akaike information criterion; BIC = Bayesian information criterion; BLRT = bootstrapped likelihood ratio test. [a] The solution was not trustworthy, even after increasing the starts.

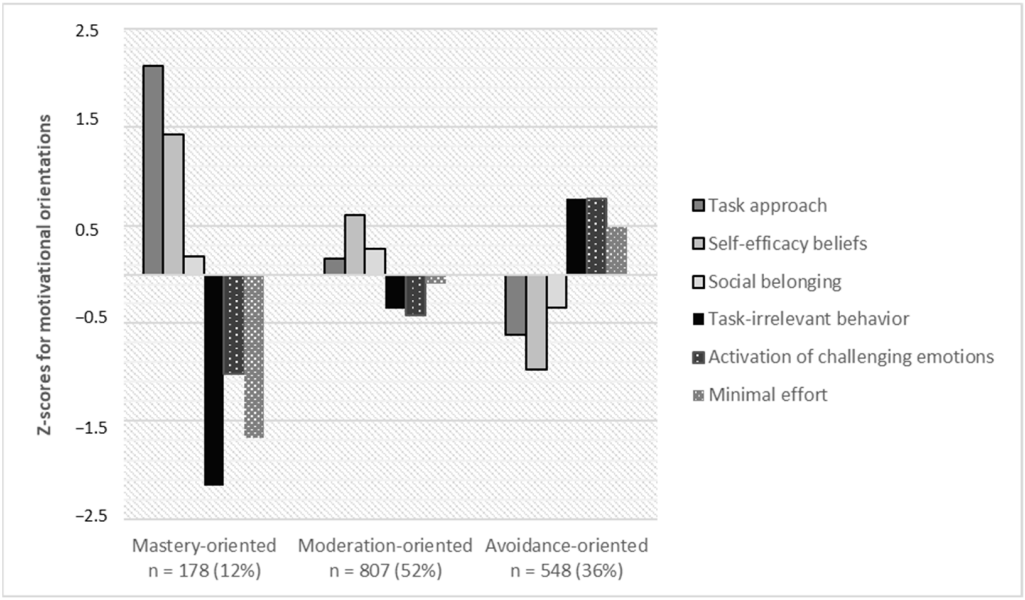

Figure 1. Latent motivation groups of higher education students based on the three-class model across five years of study.

3.1.2. Associations with Years of Study

Figure 2 shows the proportions of students by motivational orientation profile at different years of the study. According to the LPA with the auxiliary DCAT method [51], the motivational orientation profiles were found to be statistically different across all years of the study ($\chi^2 = 28.80$, $p < 0.001$). The number of students in the *mastery-oriented* group increased from the first to the third years of study, decreased from the third to the fifth years, and was smallest in the second and fifth years. In the second and fifth years of study, roughly every tenth student identified as mastery-oriented, whereas in the third year, it was close to every fifth. The largest differences in the proportions of the *avoidance-* and *moderation-oriented* groups can be seen from the first to the fifth years: here, the number of students in the *moderation-oriented groups* decreased, whereas students in the *avoidance-oriented* groups increased, comprising over 40% of all students by the fourth and fifth years.

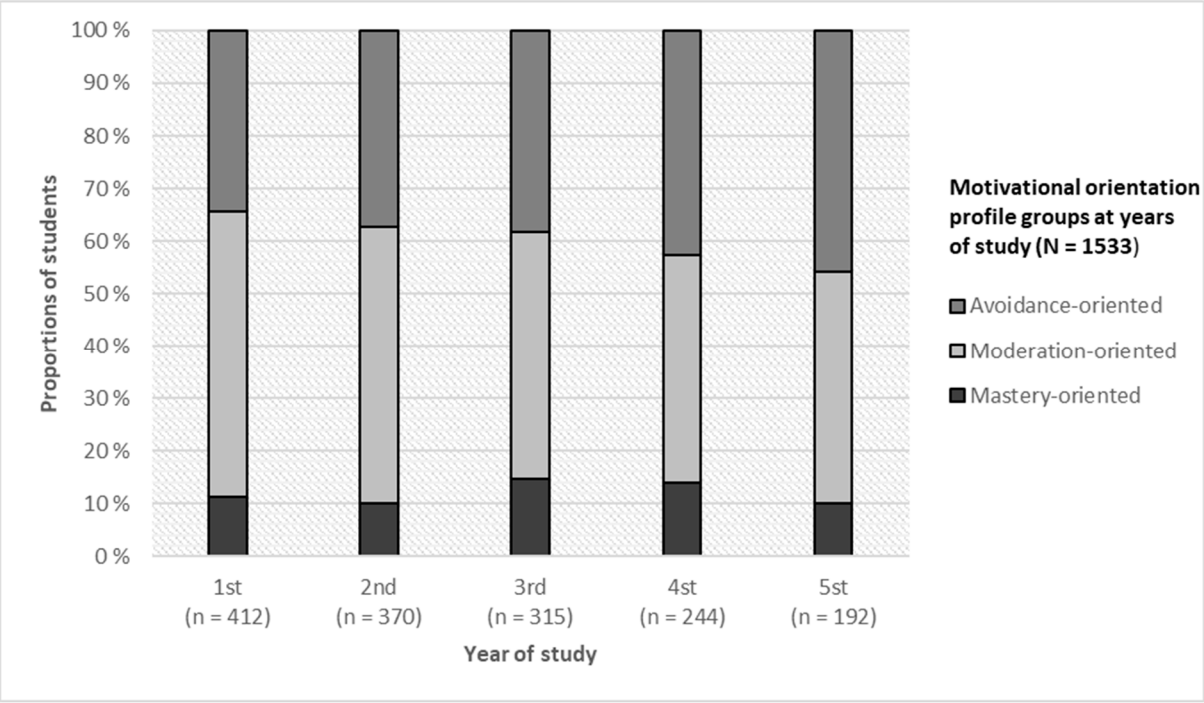

Figure 2. Proportions of students in different years in the three motivational orientation groups.

3.1.3. Study Engagement and Burnout in Relation to Motivational Orientation Groups

The next aim of the study was to investigate the extent to which study engagement and burnout related to students' motivational orientations. To this end, multinomial logistic regression analyses were carried out for the motivational orientation group variables.

These results showed that, across all years of study, the higher the level of study engagement students had, the likelier they were to be in the *mastery-oriented* (B = 4.01, $p < 0.04$) rather than the *avoidance-oriented* group (B = −2.0, $p < 0.01$). The results showed, further, that the higher the level of study burnout students rated themselves as having, the less likely it was that they would be in the *mastery-oriented group* (B = −1.12, $p < 0.01$) relative to the *avoidance-oriented* group (B = 2.28, $p < 0.01$).

3.1.4. Motivational Orientation Groups and Associations with Academic Achievement

The final aim was to explore what effect motivational orientations had on academic achievement. Table 4 presents the results of the LPA with an auxiliary BCH method and shows that motivational orientation profile groups differed in academic achievement. Students in the *mastery-oriented* group had higher levels of study credits than those in the *avoidance-oriented* group in each year of study, Further, differences existed among *mastery-oriented* and *moderation-oriented* groups at the third, fourth, and fifth years of

study. Conversely, the *avoidance-oriented* group had lower levels of study credits than the *moderation-oriented* group across years of study.

Table 4. Differences between motivational orientation profile groups as to study credits among students in each year of study.

	Chi Square			
Study Credits (ECTS)	**Overall**	**Mastery- vs. Avoidance-Oriented [a]**	**Mastery- vs. Moderation-Oriented [a]**	**Avoidance- vs. Moderation-Oriented [a]**
First year (n = 412)	5.31 *	−0.69 (0.13)/−1.02 (0.07) *	−0.69 (0.13)/−0.84 (0.04) [ns.]	−1.02 (0.07)/−0.84 (0.04) *
Second year (n = 370)	14.48 **	−0.07 (0.17)/−0.52 (0.07) **	−0.07 (0.17)/−0.19 (0.06) [ns.]	−0.52 (0.07)/0.19 (0.06) *
Third year (n = 315)	7.75 *	0.30 (0.07)/−0.08 (0.12) *	0.30 (0.07)/0.21 (0.05) *	−0.08 (0.12)/0.21 (0.05) *
Fourth year (n = 244)	23.63 ***	1.07 (0.08)/0.52 (0.08) ***	1.07 (0.08)/0.82 (0.07) *	0.52 (0.08)/0.82 (0.07) **
Fifth year (n = 192)	5.85 *	1.60 (0.08)/0.90 (0.08) *	1.40 (0.08)/1.30 (0.36) *	0.90 (0.08)/1.30 (0.36) *

Note. Chi square (χ^2) tests used * $p > 0.05$, ** $p > 0.01$, and *** $p > 0.001$. [a] Standardized scores; [ns.] Non-significant.

4. Discussion

In this study, we deployed the person-centered approach to explore the motivational orientation profiles of higher education students cross-sectionally across five years of study. Second, to establish the role of study well-being (defined by study engagement and study burnout), we examined the relationship between well-being and the motivational orientation profile. Third, we investigated the association between motivational orientation profiles and academic achievements.

The results indicate that higher education students display various motivational orientation profiles within that context. This corroborates other evidence [19,30] suggesting that a three-group model was theoretically and empirically justified and was appropriate for classifying higher education students' motivational orientations. The three groups were labeled *mastery-oriented*, *moderation-oriented*, and *avoidance-oriented*, each representing a different profile of motivational orientations. A three-group model was favored over a two-group model, as many students had average scores on all motivational orientations (H1). A three-group model made it possible to distinguish between students with different motivational foci (study task vs. non-study task) and different ways of coping with challenges (approach vs. avoidance) when describing the general domain and global assessment of motivational orientations. These arguments are consistent with the results of research by Mäkinen and colleagues [35], who examined study orientations and found that higher education students evidenced three different motivational profiles. Future research ought to consider studying the task- and situation-specific coping strategies of students' emotional, behavioral, social, and cognitive dimensions.

Students with a *mastery-oriented* profile indicated acceptance of challenges, willingness, ability to understand and master learning tasks, and agency beliefs. This profile reflected behavioral (task-oriented), cognitive (problem solving and planning; [21]) and emotional (self-efficacy beliefs) engagement during study activities [3]. Students with an *avoidance-oriented* motivational orientation profile had a non-task orientation rather than a task orientation. Task avoidance included postponing task demands, substituting activities, expressing negative feelings, demonstrating tension, and having self-deprecatory thoughts. The proportion of students with an avoidance-oriented profile group varied across the study years (from 32% to 45%). Students in this group lacked self-determination and genuine interest in their learning activities, and they failed to internalize the demands of their studies. The students with a *moderation-oriented* motivational orientation profile rated themselves as having levels of task approach, self-efficacy beliefs, and social belonging close to and slightly above the average, with close to and slightly below average levels of task-irrelevant behavior, activation of challenging emotions, and minimal effort. Almost half the students across all years of the study evidenced a *moderation-oriented* motivational orientation profile. It might seem that students in this group neither take responsibility for nor avoid their tasks. They rated self-efficacy beliefs and social support highly. While the results from the moderation-oriented group may be a valid reflection of their goals, they may also reflect the manner in which the questionnaire was constructed.

The results also showed that the year of study contributed to the higher education students' motivational orientation profiles. This is a significant finding, and previous studies confirm it when the factors that make up the profiles are considered separately. It became evident that task-avoidance behavior increased, and task-oriented behavior decreased, with additional years of study. The increasing study demands, such as study skills and economic issues [54] related to professional development, possibly increase the level of avoidance-oriented motivation. Moreover, avoidance-oriented students may procrastinate [11] and lack the confidence needed to apply useful strategies in the completion of tasks. This result supports a previous cross-sectional study conducted among university students that found a decrease in study engagement and an increase in the activation of challenging emotions, such as burnout, during later years of study [17]. Importantly, prior research suggests that students' vulnerability may prompt negative developmental cycles that cumulatively increase task avoidance [7] and shunt them off the learning track, making it difficult for them to graduate from higher education [17]. While transitions may occur due to students' life situations, study requirements (increasing self-direction is needed as studies progress) and personality factors make it crucial for higher education to offer support services beyond the first year [55]. For example, counseling interviews could take place with students following each year of study to evaluate their study motivation, study success, and well-being. A deeper understanding of these phenomena in higher education requires longitudinal research [17].

The results show that the *moderation-oriented* group was balanced between task-oriented and task-avoidant behaviors. For these students, the highest score was for social belonging, followed by task approach and self-efficacy beliefs. However, the association between task approach and social belonging is not clear, and an understanding of this association is needed. Learning situations that provide optimal levels of challenge, social support, and social belonging to a group may enhance students' task-oriented motivations [24] and engage them in study.

The second aim of the study was to explore the extent to which students' study engagement and burnout were linked to motivational orientations across the years of higher education. The results showed that study engagement was closely associated with motivational orientation: the higher the study engagement, the likelier it was that students would be in the *mastery-oriented* group. If a student is deficient in study engagement, it can lead to difficulties, resistance, and task-avoidant behavior, along with a lack of desire to invest effort, or any sense of meaning or focus in relation to study tasks. The outcomes of this study indicated that higher education students' study engagement scores relate closely to task-oriented behavior. It can be assumed that study engagement enables students to direct vigor, resilience, dedication, and absorption toward their study tasks, leading to self-efficacy beliefs, exploration, and mastery of challenging aspects.

The results also show that study burnout is associated with higher education students' motivational orientation profiles. For example, the higher students scored for study burnout, the likelier they were to be in the *avoidance-oriented* group. This result supports an earlier study [16], in which students with less task-approach behavior and study engagement experienced higher study burnout. Furthermore, our findings showing increased *avoidance-oriented* motivation across the years are in accord with a study by Salmela-Aro and Read [17] which showed that higher education students experience more burnout in the later years of study. Increasing avoidance can be attributed to feelings relating to accountability as graduation approaches, with concerns about competence in relation to working life. This result verifies our hypothesis and strengthens the validity of the measures used (H2).

The final aim was to explore how the motivational orientation profiles of higher education students are associated with academic achievements, as scored by study credits. According to our hypothesis, the results suggest that students with a *mastery-oriented* motivational orientation profile were best adapted to academic achievement, whereas those with an *avoidance-oriented* profile exhibited significantly lower levels of study credits (H3). These results support the findings of Ryan and Deci [24], who suggest that students' positive perceptions of their competence and mastery become a driving force increasing

task-oriented motivational behavior. Bruinsma [56] shows that higher education students with a deep information-processing approach earn more study credits across all years of study, while students with negative self-perceptions and low levels of social belonging exhibit task-avoidant motivational behavior.

The present study has some limitations and implications for future research directions. First, our study was cross-sectional; hence, additional evidence describing the longitudinal effects of motivational orientation among Finnish higher education students would be valuable. A greater understanding of students' coping strategies could be facilitated by focusing on the bifurcation of task approach and task avoidance. Another limitation involves the generalization of results that are based on Finnish higher education. These results may differ in countries with different educational systems. Thus, the study should be repeated in other situations. A third limitation involves the role that the teacher plays in supporting students' motivation and well-being, which was not the research focus of this study. Finally, earlier studies have found that different teaching methods and environments affect students' motivational behaviors and learning. Future research on motivational profiles might consider students' approaches in different disciplines. Furthermore, given that the response rate was quite low, we must stress that the results cannot be generalized to the entire population from whom the sample was drawn. The possible existence of a group of students who did not respond increases the possibility of selection bias.

5. Conclusions

The results indicate the importance of being aware of the different motivational orientation profiles that higher education students adopt when approaching study tasks. From a theoretical perspective, our results add to previous studies by showing that motivational orientations differ across the early, middle, and later years of study and are significantly associated with higher education students' study well-being and academic achievements. Although the start of higher education is typically seen as a positive phase for all students, students with different motivational orientation profiles may exhibit tendencies across all years that decrease task-oriented behaviors and increase task-avoidance behaviors.

It is important that motivation and well-being factors are discerned across learning situations. This can provide practical guidelines for educators in deploying measures that will direct students toward appropriate preventive actions and instill positive learning approaches. With a view to preventive work, it would be valuable to identify sufficiently early those students who have difficulties maintaining motivation and understand the psychosocial dimensions that form their motivational orientation, so that they can be helped and supported in a timely manner.

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