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Person-Centered Insights into Academic Burnout

Abstract

This quantitative study explored the profiles of academic burnout among students using Latent Profile Analysis (LPA). This study seeks to identify distinct burnout profiles in the Polish university student population. Using the Maslach Burnout Inventory-Student Scale (MBI-SS) adapted for Polish students, we analyzed data from 939 students across various disciplines and years of study, focusing on exhaustion, cynicism, and inefficacy. After using LPA ones were identified: minimal, moderate, and elevated risk of burnout, highlighting the variance in how burnout manifests among students. The findings underscore the importance of tailoring interventions to the specific needs of each burnout profile.

Keywords: academic burnout, students burnout, burnout profiles, education, person-centered approach, latent profile analysis

Introduction

Burnout has been a widely discussed topic in the context of workplace stress. According to Maslach's model (Maslach, 1993), the most frequently cited in this area, burnout is a syndrome characterized by emotional exhaustion, depersonalization, and a diminished sense of personal accomplishment. This syndrome

may occur in individuals who work closely with others (Maslach, 1993, p. 19). The classification proposed by the World Health Organization ICD-11 aligns with Maslach's concept of burnout, defining it as a syndrome resulting from workplace stress which has not been adequately managed. This syndrome is characterized by three dimensions: feelings of energy depletion or exhaustion, increased mental distance from one's job, feelings of negativism or cynicism related to one's career, and a sense of inefficacy and lack of accomplishment (WHO, 2023).

Burnout has evolved from a linear progression of stages to a more comprehensive understanding of multidimensional constructs. Initial models proposed that job stressors would lead to individual strain and defensive coping, resulting in exhaustion, cynicism, and reduced personal accomplishment. However, these dimensions did not consistently progress linearly, suggesting that asynchronous development may be possible (Cherniss, 1980; Maslach, 1982).

Recent discourse suggests a simplified trend, reducing burnout to mere exhaustion (Leiter & Maslach, 2016). However, such an approach overlooks the complexity of the phenomenon encompassing a broad spectrum of experiences, which, beyond overwhelming workload, includes a loss of connection to one's work and a cynical attitude towards one's job responsibilities. Acknowledging the multidimensional character of burnout, Leiter and Maslach (2016) advocated for personalized approaches.

It was assumed that burnout symptoms do not always progress simultaneously and may exhibit distinct profiles characterized by varying exhaustion, cynicism, and inefficacy combinations. Adopting a holistic viewpoint that takes into consideration all aspects of burnout is crucial to comprehend its intricate nature. Doing so can enhance our understanding of burnout and help devise more effective strategies to tackle its underlying causes and mitigate its impact on individuals and organizations.

Person-centered approach (LPA) delves into distinct patterns of burnout symptoms across individuals, allowing for more holistic and accurate categorization into subgroups with shared characteristics. This method not only offers a deeper understanding of the multifaceted nature of burnout, but also facilitates the development of targeted interventions tailored to specific profiles, thereby enhancing the efficacy of prevention and treatment strategies (Chirkowska-Smolak et al. 2023; Leiter & Maslach, 2016; Portoghese et al, 2018; Schaufeli & Salanova, 2007). LPA has proven effective in identifying unique burnout profiles, offering insights into the personalized nature of burnout and informing more nuanced intervention approaches (Boone et al. 2022; Chirkowska-Smolak et. al. 2023; Gillet et al. 2021; Hendrix et al. 2024;

Kalamara et al. 2022; Luna et al. 2023; Salmela-Aro & Read, 2017; Tikkanen et al. 2021; Tomaszek et al. 2024).

This statistical technique identifies latent subgroups in a population which are not immediately apparent, thus making it possible for researchers to uncover nuanced patterns of burnout experiences among individuals

Practically, the fact that LPA can discern between individuals experiencing varying levels of exhaustion, cynicism, and inefficacy highlights its utility in both academic and professional settings. Our research leveraged LPA to explore the coherence of burnout constructs among students, a group increasingly recognized as vulnerable to burnout (Bakker & Mostert 2024; Madigan et al. 2023; March-Amengual et al. 2022). Burnout, traditionally linked to occupational stress, has broadened to include the academic realm, recognizing students' vulnerability as regards tasks mirroring professional demands (Aguayo-Estremera et al., 2024; Asikaien et al. 2022; Cano et al. 2024; Chirkowska-Smolak et al. 2023; Gomez-Urquiza et al. 2023; Portoghese et al. 2018; Salmela-Aro & Read, 2017; Schaufeli et al. 2002). The resemblance of academic tasks to professional ones — requiring collaboration, task completion, and independent progress monitoring — exposes students to psychosocial risks akin to workplace stressors, potentially leading to burnout (Helve, 2016; Schaufeli et al. 2002).

Highlighting the value of LPA in dissecting student burnout, seminal research by Portoghese et al. (2018) involving 7,757 Italian students, Asikaien et al. (2022) research conducted on 538 Finnish students and by Chirkowska-Smolak et al. (2023) studying 1,519 Polish students, showcases the capability of LPA to delineate intricate burnout profiles within academic and personal settings. The research conducted by Portoghese et al. uncovered patterns similar to those identified by Leiter and Maslach, with two distinct profiles, namely "burned out" and "engaged", displaying consistent outcomes across the three dimensions of burnout. Furthermore, a third profile, referred to as "overextended", was characterized by high levels of exhaustion while exhibiting moderate scores in the other dimensions. It is essential to point out that this study did not identify profiles primarily characterized by cynicism or inefficacy, which differs from the patterns observed by Maslach and Leiter. Additionally, the study conducted by Chirkowska-Smolak et al. (2023) identified four unique burnout profiles, ranging from low to moderate (below average), medium (above average), and very high, with extremely high scores on the cynicism scale. These findings highlight the intricacy of burnout and challenge its one-dimensional nature to some extent, supporting the notion that burnout can be a more cohesive construct, as demonstrated by the diverse profiles revealed through LPA. However, the diversity in burnout manifestations identified through LPA

challenges simplistic interpretations and affirms profound implications of this method for understanding and addressing burnout in nuanced and population-specific ways.

This study aims to identify distinct burnout profiles and to shed light on its intricate nature and adopt a more tailored approach to prevention and reduction strategies, ultimately leading to improved student well-being and heightened organizational (academic) efficiency.

Research Methodology

Before initiating the research project, the approval was obtained from the Ethics Committee [blinded] University. The study was designed according to ethical standards, utilizing non-invasive research techniques, specifically self-assessment questionnaires, to collect data from participants. They were informed of the study objectives through a comprehensive cover letter accompanying the research materials.

Sample

The research cohort consisted of 939 individuals, among whom 69% were female. This gender distribution can be attributed to the predominance of participants from fields of study typically associated with women. The sample was varied, encompassing a range of academic disciplines, such as the social sciences, humanities, life sciences, and technical majors, representing multiple educational paths. This study involved students from diverse Polish universities, both public and private, while students from [masked for revision] in Poznań constituted the majority of the subjects.

Instruments and Procedures

To evaluate academic burnout, the Maslach Burnout Inventory-Student Scale (MBI-SS), developed by Schaufeli et al. (2002) and adapted for Polish students by Chirkowska-Smolak et al. (2023) was used. This scale, which closely mirrors the structure of the general version while catering specifically to the student population, comprises 15 (in original version 16) items distributed across three critical subscales. These subscales, designed to assess the key dimensions of burnout, were as follows:

1. Exhaustion (EX): Measuring feelings of fatigue resulting from academic demands. This subscale originally contained five items, such as "I feel used up at the end of the day at university." The Polish version included

four items to capture the unique exhaustion experienced by students accurately.

2. Cynicism (CY): Evaluating students' cynical attitudes and lack of identification with their studies, this subscale comprises five items, such as "I doubt the significance of my studies." This reflects the aspect of disengagement in students' burnout.

3. Professional/Academic Inefficacy (EF): Representing feelings of incompetence in the student role, which consists of six items (reverse-scored) to measure perceived lack of effectiveness or achievement in academic endeavours, such as "During class, I feel confident that I am effective in getting things done." The scale for professional efficacy contains positively worded items; therefore, reverse scoring was necessary for the analysis to maintain the interpretative logic. Consequently, a high score on this scale indicates a high level of inefficacy or a sense of burnout, which is consistent with the interpretation of high scores on exhaustion and cynicism. Responses were recorded on the Likert scale ranging from 0 (never) to 6 (every day), allowing nuanced reactions to each item.

In line with the person-centered approach and the Latent Profile Analysis approach, the procedure assumed that the score of each subscale was analysed separately, with each participant being assigned to a specific profile based on their responses.

The reliability of the subscales was found to be good, with Cronbach's alpha coefficients indicating internal solid consistency: 0.84 for exhaustion, 0.90 for cynicism, and 0.90 for professional/academic inefficacy. This high level of reliability underscores robustness of the scale in measuring the distinct components of academic burnout among students.

Data Analysis

Our investigation commenced with the execution of Confirmatory Factor Analysis (CFA) to validate the hypothesized three-factor structure of burnout. This initial step ensured that the empirical data robustly supported the theoretical framework of our study. Following CFA, we assessed the adequacy of the derived model. For this purpose, we applied quality of fit indices, such as the Confirmatory Fit Index (CFI) and the Tucker-Lewis Index (TLI), which range from 0 to 1, with the values exceeding 0.95, indicating a satisfactory fit. The Root Mean Square Error of Approximation (RMSEA) was also employed, where the value below 0.05 suggests a good model fit to the analyzed data. Similarly, the Standardized Root Mean Square Residual (SRMR) value lower than 0.05 indicates a well-fitted model.

By leveraging the factors obtained from the CFA, we conducted the Latent Profile Analysis (LPA) and evaluated a series of models that differed in the number of profiles. This process incorporates several statistical criteria: Log-Likelihood (LogLik), Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), sample-size adjusted BIC (SABIC), and entropy value. The model featuring variable variances and covariances emerged as the best fit for our data, allowing for free estimation of variances and covariances between profiles (Ferguson, Moore, Hull, 2020). The complexity of this model provides a deeper understanding of the variable properties relevant to estimating the potential profiles and their interrelations.

It is worth mentioning that the differences between the obtained models were minimal. We conducted a Multivariate Analysis of Variance (MANOVA) to facilitate the comparison. Our subsequent step involved identifying any statistically significant differences, necessitating post-hoc analysis using Tukey's Honestly Significant Difference (HSD) test.

Results

The factor analysis results indicate that the model is adequate and has an excellent fit, as evidenced by the Confirmatory Fit Index (CFI) value of 0.983 and Tucker-Lewis Index (TLI) value of 0.977. The Root Mean Square Error of Approximation (RMSEA) and Standardized Root Mean Square Residual (SRMR) values of 0.036 and 0.035, respectively, further support the conclusion that the fit indices are quite favorable, suggesting that the CFA model is correct and well-suited to the data. The model used for CFA is illustrated in Figure 1.

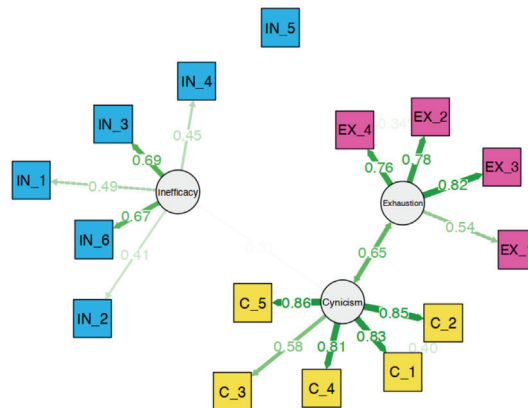**Figure 1.** Graphical presentation of the CFA model

Table 1. Fit measures for solutions with different numbers of latent profiles

Number of profiles	LogLik	AIC	BIC	SABIC	Entropy
3 profiles	**-3203**	6465	**6605**	6513	0,5473
4 profiles	-3169	6417	6606	6482	0,6484
5 profiles	-3141	**6380**	6617	**6461**	**0,6516**

The analysis following the Confirmatory Factor Analysis (CFA) involved utilizing the values obtained for the Latent Profile Analysis (LPA). The fit quality measures for the indicators in Table 1 indicate minor differences between the models comprising three, four, or five latent profiles. However, the model with three profiles was deemed the best fit. A MANOVA was then performed, revealing significant differences in all cases, regardless of the number of profiles (Pillai's trace test value = 0). A post hoc comparison (HSD test) was conducted to determine the differences between specific profiles. The profiles differed in all characteristics in the scenarios assuming the existence of three and four profiles. The option with five profiles demonstrated five distinct profiles for exhaustion and cynicism, while four profiles emerged in the inefficacy dimension. Therefore, the three-profile model was deemed to be the most appropriate. The details of this model, along with the means and standard deviations of the variables used to create the profiles, are presented in Table 2 and illustrated in Figure 2.

Table 2. Results of the three-profile LPA model (means and standard deviations for variables within profiles)

	Profile 1 (n = 375)	Profile 2 (n= 251)	Profile 3 (n = 313)	Total (n = 939)
Exhaustion	3,040 (0,986)	4,320 (0,966)	3,967 (1,012)	3,690 (1,130)
Cynism	2,044 (0,504)	3,836 (1,102)	4,220 (0,900)	3,250 (1,297)
Inefficacy	3,329 (0,710)	4,882 (0,491)	3,785 (0,779)	3,900 (0,926)

To sum up, the study results demonstrated an excellent model fit for analyzing burnout, with high values for the Confirmatory Fit Index and Tucker-Lewis Index and low values for RMSEA and SRMR. The Latent Profile Analysis (LPA) revealed minor differences between three, four, or five latent profile models, identifying the three-profile model as the most fitting. Significant differences across profiles were confirmed through MANOVA, with post-hoc comparisons revealing distinct burnout characteristics among the profiles. The three-profile

model's detailed variance in exhaustion, cynicism, and inefficacy provides insights into the multidimensional nature of student burnout.

Figure 2. Line graph with 95% confidence intervals comparing profiles (values are presented as standardized scores (z-score)
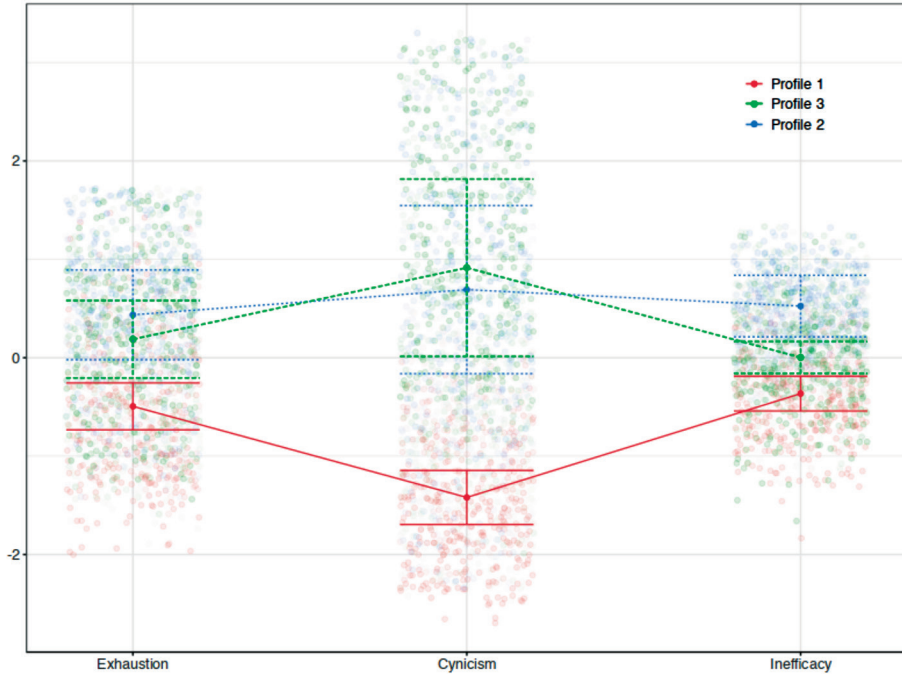
Discussion

This research aimed to investigate and analyze various profiles of academic burnout experienced by students at Polish universities using the Latent Profile Analysis (LPA) method.

Our study uncovered three primary profiles that varied in the severity of the critical dimensions of burnout. These profiles illustrate the different combinations of burnout dimensions that can coexist, highlighting the complex nature of this phenomenon. Through LPA, we identified one synchronous profile and two asynchronous profiles characterized by either lowered or heightened scores on the cynicism dimension.

Profile 1. Minimal burnout: Most students (39.9%) in this category exhibited low scores across all three dimensions, with the lowest score on the cynicism

scale. This suggests resilience to burnout, possibly it is due to a stable academic environment and social support. However, it remains to be seen whether this resilience persists as they face increasing academic and life challenges, along with a sense of minor efficacy. Identification with the university and field of study and the absence of cynical attitudes related to academic learning may play a significant role in this profile.

Profile 2. Moderate burnout: This group, comprising 26.7% of the respondents, displays higher levels of exhaustion, cynicism, and inefficacy. Increased educational burden and expectations may make them more vulnerable to full-blown occupational burnout.

Profile 3. Elevated risk of burnout: This group (33.3% of the population) exhibited higher rates of cynicism, which may indicate a growing distance from the educational process and studying. Despite the elevated level of exhaustion, inefficacy indicators remained moderate, suggesting maintenance of some degree of control over the learning process. This may also indicate the complexity of student experiences related to burnout.

This differentiation reveals that individuals experiencing burnout are not merely exhausted but may also feel disillusioned and detached, pointing to a crisis of meaning or values in their academic pursuits. These findings suggest that the root causes of burnout extend beyond simple work overload, delving into the quality of social relationships, engagement with meaningful work, and availability of critical resources within the academic environment.

Our research findings, obtained with the application of Latent Profile Analysis (LPA), emphasize the diversity within burnout experiences and refute the notion that a single dimension can adequately evaluate the whole spectrum of the syndrome. This perspective highlights the significance of considering taking into account varying performance on different dimensions to comprehend their unique contributions to the overall burnout experience. In our study, while we identified both standard synchronous and distinct asynchronous burnout profiles, a nuanced examination revealed that these asynchronous profiles did not conform to the one-dimensional high score patterns reported in previous research. Specifically, although we did not find profiles characterized solely by high scores in exhaustion or inefficacy as identified by other authors, our analysis underscored the unique role of cynicism in shaping burnout profiles. Notably, two profiles emerged with varying degrees of cynicism—markedly heightened in one and substantially lower in another—yet the differences were less pronounced than one standard deviation. This finding suggests a specific, albeit subtler, variation in how cynicism contributes to burnout, distinguishing our results from previous studies' results.

Through a more in-depth analysis of burnout profiles, universities can take specific, evidence-based actions to address students who exhibit heightened cynicism, which indicates detachment from their academic pursuits. By recognizing this group of students as distinct, universities can implement such interventions as:

1. Mentorship programs: Establishing mentorship opportunities that connect students with faculty and peers can significantly reduce feelings of isolation and detachment. These relationships provide a supportive network, fostering a sense of belonging and engagement with the academic community.
2. Stress management and coping workshops: Offering workshops focused on developing effective stress management techniques and coping mechanisms can help students navigate academic pressures more effectively, potentially reducing cynicism toward their studies.
3. Curricular adjustments based on student feedback: actively seeking and incorporating student feedback into curricular decisions can make academic content more relevant and engaging, addressing students' interests and career goals.
4. Experiential learning opportunities: Integrating real-world applications of academic content through internships, service learning, or project-based assignments can reinvigorate students' interest and motivation, making their academic journey more meaningful.

These tailored strategies underscore the importance of a nuanced understanding of burnout profiles for developing personalized support systems that enhance student well-being and academic success. Using Latent Profile Analysis (LPA) to identify distinct burnout profiles substantiates the argument for a person-centered approach in burnout analysis. This methodology reveals the heterogeneity of burnout manifestations among students and challenges the efficacy of uniform intervention strategies (Schaufeli et al. 2002).

Our study displays a limitation in its cross-sectional design and focus on Polish university students, which may diminish the possibility to generalize its findings. To better understand the development and dynamics of occupational burnout, it is necessary to conduct further research using a longitudinal approach to provide valuable data on the evolution of occupational burnout and its impact on health and well-being. Future research should explore the longitudinal development of burnout profiles, providing insights into how these profiles evolve and showing the effectiveness of targeted interventions. Additionally, expanding the study to include diverse academic and cultural contexts would enhance the general character of the findings.

Conclusions

Our analysis indicated that burnout among students is a complex and multifaceted phenomenon. Identifying and understanding various burnout profiles are essential for developing effective preventive, therapeutic, and organizational interventions. Our research underscores the importance of an integrated approach to comprehending individual burnout trajectories. Furthermore, the findings imply the necessity for tailored interventions as distinct burnout profiles suggest that a universal solution to burnout is unlikely to be effective.

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