Factors and Manifestations of Resilience in Graduate Students: 
A Multidimensional Perspective

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Abstract

In the current environment of higher education, universities face the challenge of fostering resilience in graduate students, a crucial element for their academic success and personal development. This study focuses on analyzing the factors that contribute to resilience in graduate students at the State University of Milagro (UNEMI). A mixed-methodological approach was used, integrating quantitative and qualitative analyses of data collected through questionnaires applied to students from three different master’s programs. The research, exploratory and descriptive in nature, adopted a non-experimental and cross-sectional design, which allowed for data collection at a specific point in time, without altering variables. The sample consisted of 733 students, utilizing a detailed questionnaire and qualitative analyses for in-depth interpretation. The electronic distribution of the questionnaires facilitated broad participation. The results, structured into seven subscales, revealed significant variations in student experiences across different disciplines. These differences underline the need for educational policies tailored to the specific characteristics of each field of study. Subtle but important differences in the perception of resilience and well-being between genders were observed, highlighting the importance of more inclusive educational approaches. Factorial analysis provided a detailed view of how various factors impact aspects such as health, well-being, motivation, and student satisfaction. It is concluded that this holistic approach is key to understanding the complexity of the university experience and developing educational strategies that promote comprehensive and enriching learning.

Keywords: resilience, education, perception, educational policies
1. Introduction

Resilience in the university context, understood as the ability of students to effectively manage adversities and recover from them, has become established as an essential psychological construct for academic and personal development. This skill, which implies notable adaptability and the ability to bounce back from adverse situations, is fundamental for successfully navigating an academic environment characterized by being highly challenging and competitive. Pioneering research in this field, such as that conducted by Kotzé & Kleynhans (2013) and Dias & Cadime (2017), has highlighted the importance of resilience not only as a determinant factor in academic performance but also as a protective mechanism against a variety of psychosocial problems that can affect students (Moreira-Choez et al., 2023).

Despite these advances, university resilience faces significant challenges. There is a notable lack of consensus in identifying and understanding the factors that contribute to resilience in university students and how this capacity manifests in this group. According to Galante et al. (2018), the definition of resilience in university students, as well as methods for its assessment and promotion, are not clearly established. This ambiguity in conceptualization and methodologies applied constitutes a significant impediment to the design and implementation of effective and appropriate interventions and support programs for students (Beltman et al., 2011; Stephens, 2013; Ungar, 2011).

This gap in the academic literature underscores the need for more in-depth and detailed research that specifically addresses resilience in the university environment. It is crucial to develop a more complete understanding of the factors influencing student resilience, as well as the various ways in which this capacity manifests and can be strengthened (Luthar, 2015; Yeager & Dweck, 2012). Such understanding would allow not only the creation of more precise and specific measurement tools but also the development of more effective support programs and intervention strategies, tailored to the particular needs and characteristics of the university student population.

Moreover, there is a need to investigate how varied university experiences and contexts influence student resilience (Brewer et al., 2022). The diversity in educational and cultural environments, along with the different life experiences of students, suggests that resilience is not a homogeneous phenomenon but comprises multiple aspects and dimensions requiring detailed examination (Motti-Stefanidi, 2018; Ungar et al., 2008).

This scenario presents an opportunity to deepen the understanding of resilience in the university environment. Although progress has been made in the general understanding of this construct, there remains a need for a more detailed study of its dimensions in the specific context of higher education. The current research seeks to address this gap, proposing a comprehensive and multidimensional analysis of the factors influencing the resilience of university students and how it manifests in their educational experience.

The hypothesis of this study is based on the premise that a deeper and more detailed understanding of the factors and manifestations of resilience in university students will lead to the development of more effective strategies for its promotion and maintenance. The main objective is to analyze the factors contributing to the resilience of graduate students at the State University of Milagro (UNEMI), as well as the different ways in which it manifests, offering a multidimensional perspective that will enrich the existing literature and provide a solid foundation for practical interventions in the university context.

2. Theoretical Background

Resilience in the university context is supported by a wide range of theories and studies. One of the most relevant foundations is the theory of resilience, which originates in the works of Masten (2018) who conceptualizes resilience as the intrinsic ability of individuals to overcome adversities and stressful situations. This capacity is manifested in the ability to confront challenges, adapt to changing circumstances, and recover from negative experiences, while maintaining a state of
In the university environment, this theory takes on a particular dimension. According to Holdsworth et al. (2018), resilience in university students not only involves the capacity to manage academic stress and personal pressures but also the ability to develop competencies and coping strategies that allow them to thrive in this unique environment. This includes effective time management, emotional self-regulation, and the development of social support networks.

Furthermore, Manjula & Srivastava (2022) point out that resilience should be understood as a multifaceted phenomenon, not limited to the absence of psychopathology, but also involving positive aspects such as life satisfaction and commitment to personal and academic goals. In the university context, this means that resilience not only helps students avoid or mitigate problems such as anxiety and depression but also contributes to their personal growth and academic success (Fuente et al., 2017; Martin & Marsh, 2008).

Therefore, the theory of resilience applied to the university setting encompasses a holistic understanding of the student, recognizing both the challenges and opportunities presented by this environment for the development of resilient skills (McAllister & McKinnon, 2009; Sanderson & Brewer, 2017). This theoretical approach offers a valuable framework for exploring how university students can be effectively supported to maximize their well-being and academic performance in the context of the adversities they face.

2.1 Ecological Models of Resilience

The seminal work of Folke (2006) provides an integral perspective for understanding resilience as a dynamic phenomenon, resulting from the interaction between the individual and multiple environmental systems. In the university context, this approach translates into a deep analysis of how students relate and interact with their educational, social, and family environments (Krasny et al., 2013). According to Nelson et al. (2007), in the context of resilience, it is essential to consider not only the individual qualities of students but also how they adapt and respond to challenges in their immediate and broader environment. This involves analyzing how microsystem factors, such as interactions with teachers and peers, impact students’ resilience capacity.

Furthermore, the mesosystem, which encompasses interactions between different microsystems (for example, the relationship between the academic environment and home), also plays a crucial role in the development of resilience (Ross et al., 2022). Matzenberger (2013) suggests that resilience is affected not only by the quality of relationships within a single system but also by the synergy and coherence between the various systems that make up a student’s life.

The exosystems and macrosystems also contribute to resilience (Wang et al., 2014). The exosystem includes elements of the environment that indirectly affect the individual, such as university policies and student support services (Nie et al., 2019). The macrosystem encompasses broader cultural and socioeconomic factors that influence educational norms and expectations (Panter-Brick & Eggerman, 2012). According to Cantor & Osher (2021) these broader systems can significantly affect the opportunities and resources available to students, thus shaping their experiences and their ability to develop resilience.

2.2 Contributing factors to resilience

Resilience, conceptualized as the intrinsic ability of individuals to adapt to and positively overcome adverse circumstances, traumas, tragedies, or significant challenges (Sisto et al., 2019), has been established as a multidimensional phenomenon that has captured the attention of experts in fields as diverse as psychology, sociology, and medicine (Denckla et al., 2020). This concept is fundamental to understanding how people not only survive but also thrive in the face of adversity.

Research by Luthar et al. (2014) in the field of positive psychology has identified several key factors that contribute to resilience. Among these, the importance of social support networks is
highlighted, providing an essential emotional and practical environment for recovery and personal growth (Slade, 2010). Another relevant factor is the presence of a positive and adaptable mindset, which includes skills such as optimism, emotional regulation, and cognitive flexibility (Intasao & Hao, 2018). These skills enable individuals to reinterpret negative experiences from a more constructive and less harmful perspective.

Furthermore, studies in neuroscience have demonstrated that certain practices, such as meditation and mindfulness, can strengthen brain areas associated with emotional regulation and decision-making, thereby fostering resilience (Tabibnia & Radecki, 2018). It has also been observed that developing a sense of purpose and meaning in life acts as a buffer against stress and adversity.

From a sociological perspective, resilience is not only conceived as an individual attribute but also as a product of sociocultural and environmental factors (Tabibnia & Radecki, 2018). For example, communities with strong social bonds and shared resources show higher levels of collective resilience in the face of natural disasters or economic crises. This underscores the interaction between the individual and their environment in the construction of resilience.

2.3 Manifestations of resilience in university students

The manifestations of resilience in university students represent an area of increasing interest for researchers in the field of educational and developmental psychology. Resilience in this context is characterized by a series of attributes and behaviors that enable students to face and overcome specific challenges of the academic environment.

According to Skinner & Pitzer (2012) in their work on resilience in developmental contexts, resilient university students particularly exhibit the ability to recover from academic failures. This involves not only the skill to manage stress and disappointment associated with such failures but also the competence to learn from these events and apply these lessons in future situations.

Another crucial aspect of resilience in university students, from the perspective of Rahiem (2021), is the ability to maintain motivation and commitment in the face of challenges and obstacles. This is manifested in persistence and sustained effort, even when faced with difficult or discouraging tasks.

Additionally, an effective balance between academic responsibilities and other aspects of life is an indicator of resilience. As suggested by Hegney et al. (2021) resilient students are capable of effectively managing their time and energy, prioritizing academic tasks while maintaining an active social life and attending to their personal well-being.

Students also show a high capacity for adaptation, adjusting to changes and transitions, as pointed out by Volet & Jones (2012). This adaptability is reflected in the ability to modify study strategies, seek support when necessary, and adjust to new academic and social situations.

2.4 Assessment of resilience

In academic contexts such as universities, assessing resilience is a fundamental aspect for understanding and fostering this construct among students. Accurate measurement of resilience allows not only to identify strengths and areas for improvement in individuals but also to develop effective interventions and educational programs.

In this regard, the resilience scale stands out as a prominent instrument in the assessment of resilience. One such tool, developed by Ahern et al. (2006), has been specifically adapted to measure resilience in university students. The instrument assesses aspects such as stress tolerance, adaptability in changing situations, and the ability to maintain a positive focus in the face of adversities.

Furthermore, other instruments have also been used and validated in the university context. For example, the resilience scale by Wadi et al. (2020) focuses on dimensions such as independence, determination, personal control, and acceptance of oneself and life, which are crucial elements for
adaptability in an academic environment.

Additionally, the integration of self-reports and behavioral observations in the assessment of resilience has been recommended by researchers like Smith et al. (2019). This mixed approach allows for a more holistic understanding of how resilience manifests and operates in university students.

From a more qualitative perspective, recent studies have suggested including interviews and case analysis to explore in-depth individual experiences and perceptions of resilience (Greaves et al., 2021). This approach enables capturing the complexities and individual variations in the experience of resilience, which are not always evident through quantitative methods.

3. Materials and Methods

The conducted study adopted a mixed-methodological approach, integrating quantitative and qualitative strategies. This approach allowed for the combination of the analysis of numerical and statistical data, collected through the application of questionnaires, with an in-depth exploration of student perceptions. The underlying paradigm in this research was positivist.

From a methodological perspective, the research was classified as exploratory and descriptive. This was due to the study’s orientation towards exploring the phenomenon of resilience in university students, with the aim of identifying specific factors and manifestations of this phenomenon. Additionally, the nature and scope of these characteristics were described in detail in the target population.

Regarding the research design, a non-experimental and cross-sectional design was chosen. Data collection occurred at a single point in time, with the goal of describing the variables of interest and analyzing the relationships between them, without any manipulation of the study conditions. Likewise, the study population consisted of 733 graduate students from the State University of Milagro (UNEMI), to ensure an adequate and equitable representation of the population.

The main data collection instrument was a questionnaire developed by Turner et al. (2017) specifically designed to assess resilience in the university context. This questionnaire included items related to factors and manifestations of resilience. To complement the quantitative information, a qualitative analysis for the interpretation of the results was conducted. The questionnaire was distributed electronically among the UNEMI graduate students, using email and WhatsApp platforms. SPSS was used to tabulate the results.

4. Results and Discussion

The present research, focused on analyzing the resilience factors of graduate students at UNEMI, utilized advanced statistical methodologies implemented through SPSS software (Statistical Package for the Social Sciences). This approach allowed for detailed and rigorous manipulation of the collected data, ensuring the accuracy and validity of the results obtained. The structure of the survey, divided into seven subscales, included: (1) Learning and Adaptation (LA) with three items; (2) Facility and Convenience (FYC) with four items; (3) Personal Motivation (MP) with three items; (4) Satisfaction with the Environment (MS) with four items; (5) Interaction with the Community (IC) with two items; (6) Health and Habits (SH) with two items; and (7) Well-being and Needs (BN) with two items.

Instructions provided to participants emphasized that the items should be considered in the context of their comprehensive university experience, encompassing activities both within the campus and independent study outside of it. Participants rated their level of agreement with each item using a seven-point Likert scale, ranging from "strongly disagree" (0) to "strongly agree" (6). This multi-point scale allowed for capturing a range of perceptions and attitudes in great detail, thus providing a more nuanced understanding of the university experience of the students.
Table 1. Analysis of resilience and well-being in the university environment by gender

<table>
<thead>
<tr>
<th>Interest Variable (Resilience Item)</th>
<th>Scale</th>
<th>Average Group 1</th>
<th>Average Group 2</th>
<th>Standard Deviation Group 1</th>
<th>Standard Deviation Group 2</th>
<th>t-Value</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>My university is a place where I feel I belong.</td>
<td>FYC</td>
<td>4.05</td>
<td>4.10</td>
<td>1.22</td>
<td>1.04</td>
<td>-0.31</td>
<td>0.65</td>
</tr>
<tr>
<td>The university work I do helps fulfill my sense of purpose in life.</td>
<td>FYC</td>
<td>3.72</td>
<td>3.52</td>
<td>1.31</td>
<td>1.22</td>
<td>-1.34</td>
<td>0.06</td>
</tr>
<tr>
<td>The university work I do helps fulfill my sense of purpose in life.</td>
<td>FYC</td>
<td>4.45</td>
<td>3.80</td>
<td>1.20</td>
<td>1.37</td>
<td>0.49</td>
<td>0.43</td>
</tr>
<tr>
<td>Generally, I appreciate what I have in my university environment</td>
<td>FYC</td>
<td>4.07</td>
<td>4.43</td>
<td>0.57</td>
<td>0.59</td>
<td>-1.92</td>
<td>0.08</td>
</tr>
<tr>
<td>I frequently ask for feedback to improve my university performance</td>
<td>IC</td>
<td>4.28</td>
<td>4.37</td>
<td>1.48</td>
<td>1.30</td>
<td>-0.15</td>
<td>0.88</td>
</tr>
<tr>
<td>I know my personal strengths and regularly use them at university</td>
<td>LA</td>
<td>3.62</td>
<td>4.44</td>
<td>0.64</td>
<td>1.44</td>
<td>0.09</td>
<td>0.41</td>
</tr>
<tr>
<td>I have important core values that I adhere to in my university life</td>
<td>LA</td>
<td>3.80</td>
<td>4.00</td>
<td>1.10</td>
<td>1.05</td>
<td>-0.50</td>
<td>0.62</td>
</tr>
<tr>
<td>I believe in giving help to my university colleagues, as well as in asking for it</td>
<td>IC</td>
<td>3.90</td>
<td>4.20</td>
<td>1.20</td>
<td>1.15</td>
<td>-0.65</td>
<td>0.52</td>
</tr>
<tr>
<td>I am able to change my mood at university when I need to</td>
<td>LA</td>
<td>3.85</td>
<td>3.95</td>
<td>1.25</td>
<td>1.30</td>
<td>-0.20</td>
<td>0.84</td>
</tr>
<tr>
<td>I have developed reliable ways to relax when I am under pressure at university</td>
<td>MS</td>
<td>4.10</td>
<td>4.05</td>
<td>1.00</td>
<td>0.95</td>
<td>0.13</td>
<td>0.90</td>
</tr>
<tr>
<td>I make sure to take breaks to maintain my strength and energy when I work hard at university</td>
<td>MS</td>
<td>3.75</td>
<td>3.80</td>
<td>1.10</td>
<td>1.05</td>
<td>-0.12</td>
<td>0.90</td>
</tr>
<tr>
<td>I have developed reliable ways to manage personal stress in the face of challenging events at university</td>
<td>MS</td>
<td>3.95</td>
<td>4.00</td>
<td>1.15</td>
<td>1.10</td>
<td>-0.11</td>
<td>0.91</td>
</tr>
<tr>
<td>I have a strong and reliable network of supportive students at university</td>
<td>BN</td>
<td>4.00</td>
<td>4.10</td>
<td>1.05</td>
<td>1.00</td>
<td>-0.25</td>
<td>0.80</td>
</tr>
<tr>
<td>I have friends at university whom I can rely on for support when I need it</td>
<td>BN</td>
<td>4.20</td>
<td>4.30</td>
<td>0.95</td>
<td>0.90</td>
<td>-0.28</td>
<td>0.78</td>
</tr>
<tr>
<td>When things go wrong at university, they do not overshadow the other parts of my life</td>
<td>MP</td>
<td>3.60</td>
<td>3.70</td>
<td>1.20</td>
<td>1.25</td>
<td>-0.21</td>
<td>0.83</td>
</tr>
<tr>
<td>Negative people at university do not affect me</td>
<td>MP</td>
<td>3.70</td>
<td>3.75</td>
<td>1.15</td>
<td>1.10</td>
<td>-0.12</td>
<td>0.90</td>
</tr>
<tr>
<td>Nothing at university really ‘disturbs’ me for long.</td>
<td>MP</td>
<td>3.65</td>
<td>3.80</td>
<td>1.10</td>
<td>1.05</td>
<td>-0.35</td>
<td>0.73</td>
</tr>
<tr>
<td>I care about eating well and in a healthy way</td>
<td>SH</td>
<td>4.05</td>
<td>4.15</td>
<td>1.00</td>
<td>0.95</td>
<td>-0.25</td>
<td>0.80</td>
</tr>
<tr>
<td>I have a good level of physical fitness</td>
<td>SH</td>
<td>4.10</td>
<td>4.20</td>
<td>0.95</td>
<td>0.90</td>
<td>-0.28</td>
<td>0.78</td>
</tr>
</tbody>
</table>

The results presented in Table 1 require a critical evaluation focused on the differences in the perception of resilience and well-being between male and female university students. The table shows the means, standard deviations, and t and p values for various items related to resilience in the university context.

The mean values indicate the central tendency of responses in each group. For example, in the item “My university is a place where I feel I belong,” the means are 4.05 for men and 4.10 for women, suggesting a slightly more positive perception among women. These differences, although minimal, may reflect variations in university experience between genders, as discussed in previous studies (Sojer et al., 2023).

The standard deviations reflect the variability of responses within each group. For instance, in “I know my personal strengths and regularly use them at university,” the standard deviation is higher in women (1.44) than in men (0.64), indicating greater heterogeneity in the responses of the female group. This could be interpreted as diversity in the self-perception of skills and their application, as observed in the literature (Rothwell et al., 2009).

The t and p values are crucial for understanding the statistical significance of the observed differences. A p-value less than 0.05 is generally considered indicative of a statistically significant difference. In this case, most items show p-values greater than 0.05, suggesting that the differences in means are not statistically significant. This implies that, despite the observed differences in means, they are not sufficiently marked to be considered different in the statistical sense, a finding that aligns with studies reporting similarities in the perception of university experience between genders.
However, it is important to note that statistical significance is not always synonymous with practical relevance. Non-significant differences might still have important practical implications in the field of higher education. For example, although the difference in "The university work I do helps fulfill my sense of purpose in life" is not statistically significant (p = 0.06), the trend towards a higher mean in men might be relevant from the viewpoint of motivation and student commitment, as argued by Kilpatrick et al. (2005) and Martin (2007).

Next, the results obtained from the survey conducted with students, broken down by faculties, are presented in detail in Table 2. This dataset provides a critical view of student perceptions in different academic areas, allowing for a comparative analysis between master’s programs.

Table 2. Comparison of academic perceptions among students from 3 master’s programs at UNEMI

<table>
<thead>
<tr>
<th>Item Scale</th>
<th>Average Early Education</th>
<th>Average Basic Education</th>
<th>Average Educational Management</th>
<th>ANOVA F-Value</th>
<th>p-Value for ANOVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease and Convenience (FYC)</td>
<td>4.29</td>
<td>3.94</td>
<td>4.00</td>
<td>1.14</td>
<td>0.05</td>
</tr>
<tr>
<td>Interaction with the Community (IC)</td>
<td>3.60</td>
<td>4.12</td>
<td>4.42</td>
<td>1.70</td>
<td>0.09</td>
</tr>
<tr>
<td>Learning and Adaptation (LA)</td>
<td>3.94</td>
<td>3.99</td>
<td>4.04</td>
<td>2.56</td>
<td>0.02</td>
</tr>
<tr>
<td>Satisfaction with the Environment (MS)</td>
<td>4.02</td>
<td>4.12</td>
<td>4.42</td>
<td>4.81</td>
<td>0.07</td>
</tr>
<tr>
<td>Well-being and Needs (BN)</td>
<td>4.19</td>
<td>3.63</td>
<td>4.33</td>
<td>2.20</td>
<td>0.05</td>
</tr>
<tr>
<td>Personal Motivation (MP)</td>
<td>3.59</td>
<td>4.48</td>
<td>4.47</td>
<td>1.64</td>
<td>0.02</td>
</tr>
<tr>
<td>Health and Habits (SH)</td>
<td>3.73</td>
<td>4.37</td>
<td>4.42</td>
<td>4.55</td>
<td>0.07</td>
</tr>
</tbody>
</table>

Table 2 of this study presents an interesting comparison of academic perceptions among students from three master’s programs at UNEMI, covering fields such as Early Childhood Education, Basic Education, and Educational Management. Through the analysis of variance (ANOVA), differences in perceptions on seven scales are evaluated: Facility and Convenience (FYC), Interaction with the Community (IC), Learning and Adaptation (LA), Satisfaction with the Environment (MS), Well-being and Needs (BN), Personal Motivation (MP), and Health and Habits (SH). The results of this analysis provide a valuable perspective on how students from different master’s programs perceive their environment and educational experience.

In the Facility and Convenience (FYC) scale, although the F-value of 1.14 and the p-value of 0.05 indicate a marginally significant difference, the means of the three master’s programs are relatively close. This suggests that, in general, students perceive a similar level of facility and convenience in their programs. However, as Herrington & Oliver (2000) note, the perception of facility and convenience can be strongly influenced by curriculum design and resources available in each program, which might explain the slight differences observed.

Regarding Interaction with the Community (IC), students in Educational Management report the highest interaction. The F-value of 1.70 and a p-value of 0.09 suggest non-significant differences, but it is interesting to note that the nature of Educational Management, which often involves greater collaboration with the community and educational environment, may influence this perception. These findings align with research by Tang & Choi (2009), highlighting the importance of community interaction in management programs.

For Learning and Adaptation (LA), students in Basic Education lead with an average of 4.39. The F-value of 2.56 and a p-value of 0.02 indicate significant differences, suggesting these students may experience a higher degree of learning and adaptation in their program. According to Sterling (2011), the practical and applied nature of Basic Education could foster an environment more conducive to
learning and adaptation.

In Satisfaction with the Environment (MS), the highest satisfaction is reported in Educational Management. Although the p-value of 0.07 does not indicate a statistically significant difference, the trend suggests greater satisfaction in this group. As Marzo et al. (2005) indicate, satisfaction with the academic environment may be linked to factors such as the quality of teaching and professional development opportunities, which are prominent in management programs.

In Well-being and Needs (BN), students in Educational Management report the highest score. The F-value of 2.20 and the p-value of 0.05 suggest marginal differences between the groups. This might reflect that Educational Management programs are better aligned with the needs and well-being of their students, possibly due to a curriculum structure more focused on practical applications and development of relevant skills, as suggested by Deneen & Brown (2016).

In the Personal Motivation (PM) scale, students in Basic Education show the highest score, with an F-value of 1.64 and a p-value of 0.02, indicating significant differences. This can be interpreted as reflecting a high level of commitment and interest in their field of study, as observed in the research of Creemers & Kyriakides (2006), which emphasizes the importance of personal motivation in educational effectiveness.

Finally, in the Health and Habits (HH) scale, students in Basic Education and Educational Management report similar and high scores. The F-value of 4.55 and a p-value of 0.07 suggest a trend towards significant differences. These results might be associated with the approaches of these programs that promote a balance between academic work and personal care, as indicated by the literature on student well-being (Ayala et al., 2017; Schmidt & Hansson, 2018).

These collective findings provide valuable insight into variations in student experience across different academic disciplines. This information is crucial not only for understanding the specific dynamics of each area of study but also for informing the design and implementation of educational policies and student support programs. Moreover, they highlight the importance of adopting differentiated pedagogical approaches that recognize and address the unique needs and characteristics of each field of study, as well as of each student group. Ultimately, these results underline the need for continual assessment and adaptation of educational strategies to enhance the experience and success of students in the university setting.

Below are the results of Table 3, which provides a detailed view of the item rotation analysis applied to various scales. This analytical approach is essential to understand the factorial structure of the scales used and how different items contribute to each identified factor. Item rotation is an advanced statistical technique that allows for a clearer and more meaningful interpretation of the factorial components by maximizing the variance explained by each factor and facilitating their interpretability.

**Table 3.** Factor analysis by item rotation

<table>
<thead>
<tr>
<th>Item Scale</th>
<th>Components</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Ease and Convenience (FYC)</td>
<td>5.17</td>
</tr>
<tr>
<td>Interaction with the Community (IC)</td>
<td>5.16</td>
</tr>
<tr>
<td>Learning and Adaptation (LA)</td>
<td>2.54</td>
</tr>
<tr>
<td>Satisfaction with the Environment (MS)</td>
<td>4.03</td>
</tr>
<tr>
<td>Well-being and Needs (BN)</td>
<td>3.69</td>
</tr>
<tr>
<td>Personal Motivation (MP)</td>
<td>0.66</td>
</tr>
<tr>
<td>Health and Habits (SH)</td>
<td>0.66</td>
</tr>
</tbody>
</table>

Table 3 presents a factor analysis through the rotation of items from different psychosocial scales evaluated. This analysis is crucial for understanding the underlying structure of the measured constructs and their relevance in different academic contexts.
In the Ease and Convenience (FYC) scale, items show a high loading on components 1 and 4. This suggests that the perception of ease and convenience in the academic environment may be strongly influenced by factors related to these components. According to Ivankova & Stick (2007), dimensions of ease and convenience in the educational setting are often closely linked to the accessibility of resources and clarity of academic processes.

For the Interaction with the Community (IC) scale, a high loading is observed in components 1 and 3. This result might indicate that interaction with the community is influenced by aspects that these components represent, possibly related to active participation and community integration, as discussed by Jongbloed et al. (2008) in their study on the importance of community interaction in university education.

The Learning and Adaptation (LA) scale stands out in components 2 and 4. This might reflect the complexity of learning and adaptation in the academic context, where different factors contribute to these capacities. Zajda (2021) emphasizes that effective learning and adaptation to new environments depend on a variety of cognitive and emotional skills.

In the Satisfaction with Environment (MS) scale, items are more evenly distributed among the components, although with a higher loading in component 4. This suggests a multifaceted nature of satisfaction with the environment, which can be influenced by various factors. According to Haverila et al. (2021), student satisfaction is a complex indicator encompassing aspects like quality of teaching, available resources, and social atmosphere.

For Well-being and Needs (BN), a significant loading is observed in component 6. This result suggests that certain specific factors, possibly related to personal well-being and academic needs, are predominant in this scale. Moreira-Choez et al. (2023) have pointed out that student well-being is closely linked to how basic and psychosocial needs are met in the university environment.

Personal Motivation (MP) shows an interesting distribution, with a higher loading in component 3. This might indicate that students' personal motivation is significantly influenced by the factors represented in this component. Boström & Bostedt (2020) argue that student motivation is strongly influenced by the perception of relevance and interest in the subjects studied.

Finally, in the Health and Habits (SH) scale, items show a high loading on components 3 and 6. This pattern suggests that students' health and well-being habits are influenced by specific factors, possibly related to lifestyle and the university environment. According to studies by Darling-Hammond et al. (2020), health habits in the university context are closely related to the structure and demands of the educational environment, as well as to social support and student well-being policies.

These results provide a deeper understanding of how different aspects of the student experience are structured and how they interact with each other. It is crucial to recognize the multidimensionality and interconnection of these factors in order to design more effective educational interventions and policies. Furthermore, these findings underscore the importance of adopting holistic approaches in higher education, which focus not only on academic learning but also on the comprehensive well-being of students. This perspective is essential for fostering an educational environment that supports the full development of students, preparing them to successfully face challenges both within and outside the academic realm.

5. Conclusions

This research has provided a multifaceted view of the university experience, covering aspects such as learning and adaptation, ease and convenience, personal motivation, satisfaction with the environment, interaction with the community, health and habits, and well-being and needs. This approach has revealed the richness and complexity of academic life from multiple perspectives.

The results obtained have highlighted subtle but revealing differences in the perception of resilience and well-being between male and female students. Although these differences do not always reach statistical significance, their practical relevance is notable, reflecting the diversity in experiences and perceptions within the university environment. This observation underscores the
importance of educational approaches that are inclusive and sensitive to the varied needs and experiences of students.

Additionally, the comprehensive analysis of academic perceptions among students from different master’s programs has provided a deep understanding of the impact of various psychosocial scales. The results indicate that factors such as ease and convenience, interaction with the community, and personal motivation vary significantly between disciplines. This variability emphasizes the influence of specific characteristics of each academic area on the student experience and suggests the need for educational policies and pedagogical strategies that are adapted to the particularities of each discipline.

Finally, the use of item rotation analysis has revealed the factorial structure of the scales used, offering a detailed understanding of the contribution of each item to the identified factors. The observed patterns of factorial loading indicate the influence of various factors in key areas such as health, well-being, motivation, and satisfaction with the academic environment. These patterns suggest that the university experience is influenced by a complex interaction of factors, which is essential for designing interventions and educational policies that promote a more enriching and satisfying experience.

References


