UNIVERSITÀ DEGLI STUDI DI NAPOLI "FEDERICO II"

DIPARTIMENTO DI STUDI UMANISTICI

CORSO DI DOTTORATO IN

Mind, Gender and Language

Coordinatore: Prof. Dario Bacchini

XXXVI CICLO

ESSERE ENGAGED ALL'UNIVERSITA' IN TEMPI DI RAPIDI CAMBIAMENTI ACCADEMICI

UN'ANALISI DELLA RELAZIONE TRA ENGAGEMENT DEGLI STUDENTI, FUNZIONAMENTO PSICOLOGICO E RISCHIO DI DROPOUT IN UNA PROSPETTIVA DI GENERE

BEING ENGAGED AT UNIVERSITY IN TIMES OF SWIFT ACADEMIC CHANGE

ANALYZING THE RELATIONSHIP BETWEEN STUDENTS' ENGAGEMENT, PSYCHOLOGICAL FUNCTIONING AND RISK OF DROPOUT IN A GENDER PERSPECTIVE

Settore Scientifico Disciplinare M-PSI/08

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Anno accademico 2022/2023

A Dario,
Che ha reso il mio cuore blu
Andandosene quando
Stavamo appena sbocciando.

Only flowers in my building.

CONTENT TABLE

INTRODUCTION

University students represent a peculiar and particularly interesting population for clinical and health psychology research. The reasons for this interest are several. Firstly, dropout rates in 2019 reached 33% in 23 countries of Europe (OECD, 2019), a percentage that was similar to other extra-European countries. Although, this rate tended to slightly decrease to 32% in 2022 (OECD, 2022), the dropout remains a relevant phenomenon that needs to be monitored and counteracted upon, especially in light of the European goal to reduce the dropout rates below 10% (European Commission, 2020). Secondly, university students report high levels of psychological distress, which represents an important issue for public health (Strepparava et al., 2017). In fact, 20% of students report a severe symptomatology and 70% report subclinical manifestations (Stallman, 2010). Finally, the outbreak of COVID-19 posed new and unpredictable challenges. On one hand, the need for social distancing and the containment measures required that the universities and the other higher education institutions quickly reorganized their activities (Heng & Sol, 2021). In fact, online learning became for the first part of the pandemic the mean that allowed the continuity of the learning experience and avoided the disruption of the academic project. On the other hand, the pandemic posed new challenges also from a mental health perspective (Capone et al., 2020; Hamza et al., 2021). Most of the services addressed to university students, such as psychological counselling and academic tutoring, transitioned on the online (Savarese et al., 2020; Liu et al., 2020), with the objective to promote persistence and academic success and to support students' psychological health during some very uncertain and fast changing times.

Dropout cannot be considered a circumscribed event, contrarily it represents a process gradually unfolding over time (Alrashidi et al., 2016) and academic success and persistence in the project are phenomena that cannot be considered independently from the students' mental health (Kift et al., 2021). This is much relevant in light of the contingency of COVID-19 outbreak. The contextual transformations, forced by the pandemic, assumed a burden that affects students' mental health (Grubic et al., 2020) and that impact a population that is already at risk with regard to psychological health.

In this perspective, Student Engagement, or also defined Academic Engagement represents a relevant construct to observe with an innovative lens these

questions and this research project aimed at delving deeper into the topic studying the university students' engagement in relationship with academic outcomes, as the intention to leave the university, psychological functioning, as psychological distress and reflective functioning, also considering a gender perspective.

In this perspective, the aim of this research project was twofold: considering 3 independent times, selected on the basis of the different learning environment (online, blended and face-to-face mode) due to the pandemic unfolding: 1. to analyze the structural relationship between the construct of main interest of this project, namely academic engagement, with psychological distress, reflective functioning, and intention to dropout, considering a gender perspective; 2. to identify students' profiles in terms of the above-mentioned variables. Therefore, this dissertation will be divided into two parts.

In the first part, that comprises two chapters, contextual references and theoretical background are discussed.

In the first chapter, a description of the contingency of the COVID-19 pandemic is reported. In particular, this chapter aimed at discussing both the unfolding of the events connected to the pandemic and the impact that the outbreak of COVID-19 had on the higher education, globally and with specific reference to the Italian context. On one hand, the chapter presented the impact that the pandemic had on different aspects of the academic life, namely the organizational aspects, the effects on the mental health of students, the consequences in terms of students' retention and persistence. On the other hand, the chapter provided a discussion of the 'new normality', namely the challenges and the strategies of the higher education in the post-COVID.

The second chapter provided an overview of the theoretical background that represented the basis of the project. Specifically, the development of the constructs of Student Engagement or Academic Engagement is discussed. Therefore, the vary approaches and models present in literature are analyzed, with a specific focus on the conceptualization proposed by the SInAPSi Academic Engagement Model (Freda et al., 2021). Moreover, a literature review of the relationship between the construct and the other variables considered in this dissertation, namely psychological distress, reflective functioning and intention to dropout. A theoretical background for each of

the afore-mentioned variables is also presented.

The second part of the dissertation is dedicated to the research, and it is divided into 3 chapters that report two empirical studies carried out during the three years of this PhD course with the supervision of Professor Giovanna Esposito. The first study was based on a variable-centered approach, while the second study was based on a person-centered approach. This choice was guided by the idea to use approaches that rely on complementary logic in order to acquire valuable information, which is not very common in the research literature on the topic. In this way, this project aimed at contributing to the scientific discourse on the topic. Given that both studies were conducted on the same samples of Italian university students, Chapter 3 is dedicated to the description of the three samples, recruited in three different times characterized by different mode of fruition of the academic activities, namely during online learning, during blended mode, and during the return to a face-to-face mode. In this chapter, the three samples are described, and preliminary statistical analysis are performed, to compare the samples in terms of socio-demographic, academic and psychological variables.

In Chapter 4, the first study is reported. The aim of this study was to analyze and verify the structural relationships between academic engagement, psychological distress, students' ability to mentalize, intention to dropout, considering also the academic gender congruence. Specifically, the mediating role of engagement and distress is verified through Structural Equation Models. Objective of the study was to evaluate if the structural relationship changed in the three different samples and if the academic gender congruence impacted on the structural configuration.

In Chapter 5, a second study is reported. In this study, a Multiple-Group Latent Class Analysis was performed in order to identify students' profiles and evaluate their prevalence in the three samples. Preliminary conversion into categorical variables of the constructs of interest in this project was conducted, therefore, class extraction was carried out and an evaluation of classes characteristics and prevalence was performed, in order to identify at-risk or resourceful groups.

The final part of the dissertation is dedicated to the conclusive considerations in relation to the studies performed, with specific focus on theoretical and clinical implications and in relation to future perspective both in terms of research and with

reference to the interventions aimed at promoting academic engagement and reflective functioning, reducing psychological distress and intention to dropout, in consideration of the gender perspective.

PART I

THE THEORETICAL BACKGROUND

This part of the dissertation has the objective to provide a framework both from a historical-contextual and a theoretical perspective. Chapter 1 intends to briefly describe the years of Covid-19 pandemic in Italy and its impact on the Higher Education. Chapter 2 aims at offering the theoretical background of the studies that focus on the construct of main interest for this dissertation, namely Academic Engagement.

CHAPTER 1

HIGHER EDUCATION IN TIMES OF CHANGES

THE COVID-19 PANDEMIC OUTBREAK AND ITS IMPACT ON THE ACADEMIC LIFE

1.1   THE OUTBREAK OF COVID-19: WHAT HAPPENED?

The outbreak of COVID-19, caused by the novel coronavirus SARS-CoV-2, unfolded as a global health crisis with profound implications for societies worldwide. First identified in Wuhan, China, in late 2019, the virus quickly spread internationally, leading the World Health Organization (WHO) to declare it a pandemic in March 2020. Italy emerged as an early and severe hotspot, particularly in the northern regions.

The COVID-19 pandemic in Italy unfolded as a multifaceted crisis, with significant implications for public health, society, and the everyday lives of its citizens. As the virus rapidly spread in early 2020, Italy became one of the hardest-hit countries, experiencing a surge in cases, particularly in the Lombardy region.

In February and March 2020, Italy faced a rapid increase in COVID-19 cases, leading to overwhelmed hospitals. The healthcare system struggled to cope with the surge in critically ill patients, resulting in shortages of Intensive Care Unit beds, ventilators, and protective equipment for healthcare workers.

In response to the escalating crisis, the Italian government implemented strict nationwide lockdown measures in March 2020. These measures included:

- Stay-at-Home Orders: Citizens were instructed to stay home except for essential activities, such as grocery shopping and medical emergencies.
- Business Closures: Non-essential businesses, including retail shops and restaurants, were closed to curb the spread of the virus.
- Travel Restrictions: Movement between regions and travel outside the country were restricted, and public transportation was limited.
- Closure of Schools and Universities: Educational institutions, including

schools and universities, transitioned to remote learning.

As infection rates began to decrease, Italy adopted a phased approach to reopening. Restrictions were gradually lifted, allowing businesses to reopen, albeit with safety protocols in place. However, the process was cautious, with periodic adjustments based on the evolving public health situation.

After the summer 2020, contagions began to increase again, new measures of containment were required with further closures and limitation to the circulation of citizens both in national and international territory.

An easing of the containment measures was achieved during the summer 2021, when people were required to be vaccinated and to show in order to move freely a "Green Pass", which was a certificate of vaccine or recent contagion, that indicated that one was not at risk of diffusing the virus. In this scenario, during the academic year 2021/2022 attending university required the exhibition of this certificate and the academic activities were provided both online and face-to-face (blended mode).

It was only in December 2022, after almost three years, that the emergency state was declared officially over, and every activity return to be in a full face-to-face mode.

1.2 THE HIGHER EDUCATION DURING AND AFTER THE COVID-19 EMERGENCY

The COVID-19 pandemic has had a profound impact on higher education institutions worldwide. Universities and colleges have faced numerous challenges in adapting to the "new normal" of remote and online learning (Bozkurt, 2022). Institutions had to quickly transit from traditional face-to-face classes to virtual classrooms in order to ensure the continuity of education (Neuwirth et al., 2020). This shift has required universities to implement various tools and strategies to overcome the difficulties posed by the pandemic. In response to the pandemic, higher education institutions have utilized a range of technologies and teaching methods, including video conferencing platforms, online learning management systems, and virtual collaboration tools (Bertling et al., 2020). Moreover, the impact of COVID-19 on higher education goes beyond just the mode of instruction. It has also affected the overall operation and functioning of universities, including research activities, student support services, and academic life in general (Aristovnik et al., 2020; Ślaski et al.,

2020).

The pandemic has also had a significant impact on the well-being and mental health of students. Recent studies revealed a significant concern for students' mental health in many countries of the world (Nurunnabi et al., 2020; Pandya & Lodha, 2022; Salimi et al., 2023; Sarasjärvi et al., 2022; Son et al., 2020). Moreover, studies have shown that the disruption caused by COVID-19, including the shift to remote learning and social isolation, has contributed to increased levels of anxiety and stress among students (Leal Filho et al., 2021). Additionally, faculty members have also been affected by the pandemic, with implications for student learning and university climate (Sinko et al., 2023).

1.2.1. THE IMPACT OF THE PANDEMIC ON HIGHER EDUCATION FROM AN ORGANIZATIONAL POINT OF VIEW

The organizational impact of COVID-19 on higher education has been substantial worldwide, with institutions facing unprecedented challenges in adapting to the new normal. Italy, in particular, experienced unique circumstances due to the severity of the pandemic's impact on the country (Migliorini et al., 2021). Understanding the organizational changes and responses is crucial for navigating future disruptions and ensuring the resilience of higher education systems.

The pandemic forced a rapid transformation in the organizational structure of higher education institutions worldwide. The immediate shift to remote learning highlighted the importance of robust digital infrastructure and the need for institutions to enhance their technological capabilities. Challenges related to technological disparities among students, faculty training, and cybersecurity became significant considerations (Hodges et al., 2020). Universities globally had to accelerate the adoption of online teaching tools and platforms to ensure continuity in education.

Financial strains emerged as a critical organizational concern. The decline in international student enrollments, reduced state funding, and increased demands for financial aid created budgetary challenges for institutions (Altbach & Wit, 2020).

Italy, as one of the countries most affected by the pandemic early on, faced specific organizational challenges in its higher education sector. In fact, the Higher Education Institutions remained closed for the entire academic year 2020/2021,

maintaining the online mode to provide academic activities, even when other activities in other sectors returned to a face-to-face mode. An easing of the containment measures was achieved during the summer 2021, when students were required to be vaccinated and to show the "Green Pass" in order to access university; therefore, during the academic year 2021/2022, giving the obligatory exhibition of this certificate to attend, the academic activities were provided both online and face-to-face (blended mode), to grant the fruition also to students who could not get the vaccine.

In December 2022, after almost three years, the emergency state was declared officially over, and also university return to be in a full face-to-face mode.

In this scenario, it is important to note that the Italian higher education system is known for its emphasis on in-person interactions and experiential learning and had to rapidly adapt to virtual modalities. This organizational shift required institutions to reassess their pedagogical approaches, invest in educational technology, and provide faculty development programs to ensure effective online teaching. This abrupt closure of universities and the transition to online learning posed logistical challenges for institutions that were not fully prepared for the digital shift. Agasisti and colleagues (2021) highlighted the need for Italian universities to invest in digital infrastructure and training to enhance their organizational resilience.

1.2.2. *THE PSYCHOLOGICAL IMPACT OF COVID-19 ON STUDENTS' MENTAL HEALTH: A GLOBAL AND ITALIAN PERSPECTIVE*

The COVID-19 pandemic has not only disrupted the traditional fabric of higher education but has also profoundly affected the mental health of students worldwide. The psychological toll of the pandemic has been a critical concern, with students facing unprecedented challenges that extend beyond academic adjustments.

Students worldwide experienced a shift in their lives as the pandemic unfolded. The sudden transition to remote learning, social isolation, economic uncertainties, and health concerns created a perfect storm for heightened stress, anxiety, and depression among students.

The COVID-19 outbreak has impacted almost all sectors of society, including higher education. Indeed, all classes were suspended because of social distancing, and students had to follow lessons using online platforms during the lockdown (Aristovnik

et al., 2020). These changes had a significant impact on students' lifestyle, academic performance, and mental health. Cao et al. (2020) found that the initial stages of the pandemic witnessed a surge in psychological distress among students globally. The uncertainties surrounding the virus, coupled with the abrupt changes in educational formats, led to a heightened sense of vulnerability and anxiety. The blurring of boundaries between home and academic spaces disrupted routines, making it challenging for students to establish a balance and contributing to feelings of isolation. Most students have negative perceptions about e-learning and believe that it does not greatly impact their learning (Abbasi et al., 2020). Approximately 50% of students reported a decrease in study hours and their academic performance, over 10% of students delayed graduation or dropped out from classes, about 40% of working students lost their job (Aucejo et al., 2020), and approximately 55% of students reported increasing concern about the exam outcomes (Quintiliani et al., 2021). Moreover, the loss of traditional academic life, extracurricular activities, and face-to-face interactions deprived students of essential social support networks. These social connections for students' mental well-being are very relevant and the pandemic-induced isolation could have led to a sense of loneliness and exacerbate pre-existing mental health conditions (Son et al., 2020).

Regarding mental health issues, students reported an increased level of stress, anxiety, and depression during the COVID-19 pandemic (Husky et al., 2020; Liu et al., 2020; Son et al., 2020) and an increase in suicidal thoughts (Patsali et al., 2020). Moreover, students reported difficulty concentrating on academic work and negative changes in their sleep and dietary patterns (Son et al., 2020). Some studies found significant sex differences: female students showed more anxiety than male students (Wang & Zhao, 2020), and they were at more risk of developing depression in comparison to males. Moreover, females reported more sleep and sexual problems (Patsali et al., 2020). Some factors contributed to increased stress, anxiety, and depression among university students, such as worry about health, disruption of the daily routine, decreased social interaction (Son et al., 2020), and a history of self-injury and suicidal attempts (Patsali et al., 2020).

Financial concerns added another layer of stress. Job losses, economic downturns, and uncertainties about the future created a significant psychological

burden (Wang et al., 2020). The impact was not limited to students' personal lives but also extended to their academic experiences, as they grappled with the challenges of remote learning. The shift to online education introduced new stressors, including technical difficulties, reduced engagement, and the absence of face-to-face interactions with instructors. The sudden adaptation to digital learning platforms added a technological dimension to the psychological challenges faced by students globally (Hodges et al., 2020).

In Italy, the psychological impact on students mirrored the global experience but was also influenced by the specific dynamics of the country. Italy faced early and severe outbreaks of the virus, imposing stringent lockdown measures that significantly impacted daily life.

Di Consiglio et al. (2021) specifically explored the mental health impact on Italian university students. The findings revealed increasing symptomatology during lockdown, that decreased after its lifting. Accordingly, Meda and colleagues (2021) found that students showed higher levels of depressive symptoms during lockdown, emphasizing the need for targeted mental health interventions. In this perspective, Italy's cultural emphasis on close-knit social structures could have made the abrupt shift to remote learning particularly challenging, as the sense of community integral to Italian universities was disrupted. In fact, the Italian higher education system, known for its emphasis on personal relationships between students and faculty, saw a breakdown in the traditional support networks. The absence of physical classrooms, informal gatherings, and shared learning experiences contributed to a sense of disconnection among students.

1.2.3. *Navigating Educational Waters: The Impact of COVID-19 on Students' Retention and Persistence Worldwide and in Italy*

The COVID-19 pandemic has reshaped the landscape of higher education, introducing challenges that have significantly impacted students' retention and persistence globally. The sudden transition to remote learning, economic uncertainties, and disruptions to campus life have created hurdles for students, affecting their ability to persist in and complete their educational journeys.

The pandemic's impact on students' retention and persistence has been

profound and varied on a global scale. Students faced unprecedented disruptions to their academic experiences, which, in turn, influenced their ability to stay enrolled and progress toward degree completion.

The sudden shift to online learning posed challenges for student engagement, with some students struggling to adapt to the new format (Salas-Pilco et al., 2021). The lack of in-person interactions, university resources, and a sense of community contributed to a decline in student motivation and connection, potentially affecting their persistence in academic programs.

Financial strains resulting from the pandemic further exacerbated the situation. Job losses, reduced income, and increased financial burdens impacted students' ability to afford tuition and cover basic living expenses. The economic fallout disproportionately affected vulnerable student populations and represented a stressor for students, potentially leading to higher dropout rates (Brooks et al., 2020).

Institutional responses to the pandemic, including changes in academic policies, availability of support services, and communication strategies, played a crucial role in influencing students' decisions to persist or withdraw. Universities worldwide had to adapt quickly to these changing circumstances, and the effectiveness of their responses influenced students' experiences and decisions regarding their academic paths.

In response to the challenges posed by COVID-19, institutions have implemented various strategies to support students' retention and persistence.

Academic support services, including virtual tutoring, counseling, and online resources, have become crucial components of institutional responses for both academic and psychological support. In this perspective, on one hand, higher education institutions quickly operated a transition of services for students from the face-to-face to the online mode, especially regarding psychological support (Esposito et al., 2023); on the other hand, government destined conspicuous sum of public funds for the support of the psychological well-being of university students in the post-pandemic times, as the Italian Ministry of University and Research did in the last year.

Financial aid and emergency assistance programs have been instrumental in supporting students facing economic hardships. Institutions have explored options to alleviate financial burdens, such as offering scholarships, emergency grants, and

flexible payment plans, since economic problems are strictly correlated to intention to leave the university (Tinto, 1975).

Additionally, institutions have invested in technology and training for faculty to enhance the quality of online education. Improving the effectiveness of virtual learning experiences can contribute to maintaining student engagement and reducing dropout rates (Salas-Pilco et al., 2021).

As higher education continues to evolve in the aftermath of the pandemic, the lessons learned from these experiences can inform future strategies to support students' retention and persistence and to counteract the dropout rates.

1.2.4. EMBRACING THE "NEW NORMALITY": THE POST-COVID LANDSCAPE IN HIGHER EDUCATION WORLDWIDE AND IN ITALY

The COVID-19 pandemic has left an indelible mark on higher education, prompting a reevaluation of traditional models and necessitating adaptive strategies for the post-pandemic era. "We cannot return to the world as it was before" (UNESCO, 2020), therefore it is necessary to recognize challenges and opportunities, and to redefine norms and adapt to the new normal. It is safe to assume that among all the uncertainties that there will not be a return to normal, but rather a searching for a new normal, which will be quite different from anything that we have known before. Therefore, it is important for universities and other higher education institutions to adapt the frame for change-making accordingly (Neuwrith et al., 2021).

The pandemic accelerated the adoption of technology in education (Lee & Han, 2021), leading to a widespread embrace of online and hybrid learning models. Institutions are reimagining the balance between in-person and virtual instruction, recognizing the flexibility and accessibility that hybrid models offer (Seaman et al., 2021). On one hand, this shift prompts considerations of equitable access to technology and the digital divide. On the other hand, the whole architecture of higher education has changed, with the online mode very much present in the academic life. Although this conversion to online teaching and learning may seem like a temporary adjustment due to the contingency of the pandemic, and many of the academic actors, both students and faculty, are likely to forecast that things will return to normal at some point, Neuwrith and colleagues (2021) proposed that the challenges posed by the

pandemic provides a critical and unique learning opportunity. Most of the students and the faculty in the world experienced this transition as an emergency and, therefore, unplanned, but the technology-based education is arrived to stay indefinitely in academic life of both students and faculty, it is plausible to assume. The questions regard how it is possible, especially in Italian context with its cultural specificities, to embed this mode in a way that could be enriching for students, rather than a hinder to a positive academic experience.

Moreover, the pandemic underscored the importance of student and faculty well-being (Morales-Rodriguez et al., 2021). Post-COVID, there is a heightened focus on mental health support services, creating inclusive and supportive learning environments, and fostering a sense of community. Institutions are investing in resources to address the mental health challenges exacerbated by the pandemic.

CHAPTER 2

ACADEMIC ENGAGEMENT
A THEORETICAL FRAMEWORK AND RELATIONSHIPS WITH GENDER AND PSYCHOLOGICAL VARIABLES

2.1   INTRODUCTION

Over the past seventy years, scholars and educators have increasingly focused on the concept of "engagement" as a means to address disinterest, prevent student boredom, boost motivation, enhance participation in school-related activities, elevate academic achievement, and comprehend positive student development. Various studies (Appleton, Christenson, & Furlong, 2008; Carter et al., 2012; Fredricks et al., 2004; Li & Lerner, 2011; National Research Council & Institute of Medicine, 2004; Upadyaya & Salmela-Aro, 2013) underscore the significance of engagement in understanding the gradual process of student dropout. As dropping out is not an instantaneous event but a gradual process, researchers and educators view engagement as a crucial theoretical model for intervening and comprehending potential dropouts, aiming to enhance positive performance and encourage school completion. The last decade has witnessed a surge in scholarly discourse on engagement in higher education, reflecting a contemporary shift towards fostering interactive and participatory learning experiences. Recent literature emphasizes the multifaceted nature of engagement, including cognitive, emotional, and behavioural dimensions (Fredricks, Blumenfeld, & Paris, 2004). Recognizing the benefits for academic success, personal development, and essential skills for future careers, institutions globally prioritize fostering active and meaningful engagement (Carini, Kuh, & Klein, 2006; Kahu, 2013). With higher education evolving due to technological advancements, diverse student demographics, and varied pedagogical approaches, the understanding and promotion of student engagement have become paramount. A comprehensive review of literature (Trowler & Trowler, 2010) revealed positive

correlations between high engagement levels and desirable outcomes such as academic achievements, retention rates, and overall satisfaction with the educational experience. This chapter aims to explore the theoretical frameworks shaping the evolving understanding of student engagement in higher education and provide an overview of its relationships with students' psychological functioning, academic outcomes, and gender differences.

2.2 WHAT IS ENGAGEMENT? OVERVIEW OF THE CONSTRUCT DEFINITIONS

Engagement is a complex term that emphasizes students' various patterns in motivation, cognition, and behaviour (Appleton et al., 2008; Baron & Corbin, 2012; Fredricks et al., 2004; Phan & Ngu, 2014a; Sharma & Bhaumik, 2013). Researchers have investigated the construct extensively in the last seven decades, and the literature generally reflects substantial variations in its terms, definitions, and coverage (Appleton et al., 2008; Baron & Corbin, 2012; Fredricks et al., 2004; Klem & Connell, 2004; Sharma & Bhaumik, 2013; Upadyaya & Salmela-Aro, 2013). Different researchers have offered various terms and coverage of engagement such as school engagement (e.g., Fredricks et al., 2004), study engagement (e.g., Schaufeli et al., 2002), student course engagement (e.g., Handelsman et al., 2005), and academic engagement (e.g. Freda et al., 2021). Here and after, the term that will be used to refer to the construct will be academic engagement or simply engagement.

Despite their variations, some similar themes have been noted between the definitions across the researchers. For example, some definitions (Audas & Willms, 2002; Skinner et al., 2009; Skinner et al., 1990; Willms, 2003) emphasized students' participation and identification with school and school-related activities. Other definitions (Newmann et al., 1992; Wehlage et al., 1989) drew a link between engagement and students' psychological investment in learning. While Kuh (2003) defined concept focusing upon the link between engagement and energy, Schaufeli and colleagues (2002) emphasized students' motivational mindset related to their study activities that is characterized by dedication, vigor, and absorption. Christenson and colleagues (2008), in turn, have outlined a general definition of the notion, involving aspects mentioned in the earlier definitions and emphasizing students' participation, commitment, investment, and identification with schooling and school-related

activities. Finally, while a lot of terms and definitions have been proffered, it is possible to broadly define engagement as a positive and proactive process that captures students' quality of participation, investment, commitment, and identification with university and academic-related activities to enhance students' performance.

Academic engagement has become focal points in educational research and practice. As discussed above, the terms used, and their definitions have evolved over time. Definitions are many and vary, and the approaches and the models that describe it are numerous, too.

Historically, academic engagement was often narrowly defined in terms of students' participation in classroom activities, their attentiveness, and compliance with academic tasks (Astin, 1984; Tinto, 1997). It primarily focused on observable behaviours such as attending classes, submitting assignments, and actively participating in discussions. Academic engagement, over time, was viewed through the lens of students' commitment to their studies, time spent on academic tasks, and the overall investment in the learning process.

As the field of education evolved, so did the conceptualization of academic engagement. Psychological perspectives introduced a deeper understanding, emphasizing students' cognitive and emotional investment in learning. According to Fredricks, Blumenfeld, and Paris (2004), engagement comprises three dimensions: behavioural engagement (participation in academic tasks), emotional engagement (positive or negative reactions to learning), and cognitive engagement (investment of mental effort in understanding and mastering content).

The definitions of academic engagement are diverse and dynamic, reflecting the evolving nature of education and the multifaceted aspects of the learning process. From traditional perspectives focused on observable behaviours to contemporary models incorporating cognitive, emotional, and socio-cultural dimensions, the understanding of engagement has matured.

2.3   APPROACHES AND PERSPECTIVES ON ENGAGEMENT

Engagement is complex and multifaceted; an overarching 'meta-construct' that aims to draw together diverse threads of research contributing to explanations of student success (Fredricks et al., 2004). While the scholars agree it is important, there

is debate over the exact nature of the construct; a key problem is a lack of distinction between engagement, its antecedents, and its consequences. While there is some overlap, four relatively distinct approaches to understanding engagement can be identified in the literature: the behavioural perspective, which focuses on students' behaviour and on effective teaching practice; the psychological perspective, which views engagement as an internal individual process; the sociocultural perspective, which considers the critical role of sociocultural context; and finally, a holistic perspective, which strives to draw the strands together. Focusing on higher education, this paragraph describes these four approaches and aims to clarify the construct of engagement and clearly differentiate it from its antecedents and consequences.

2.3.1. BEHAVIOURAL PERSPECTIVE

The most widely accepted view of engagement in higher education literature emphasizes student behaviour and teaching practice. Following dissatisfaction with college ranking systems and the measurement of quality in higher education in the United States in the late 1990s, a project was set up to develop a new measurement tool (Kuh, 2009a). Academic engagement was seen as an evolving construct that captures a range of institutional practices and student behaviours related to student satisfaction and achievement including time on task, social and academic integration, and teaching practices (Kuh, 2009a). On the institution part, the emphasis was on how institutions can affect engagement, drawing from the Seven Principles of Good Practice in Undergraduate Education proposed by Chickering and Gamson (1987). The Seven Principles are the following:

- Develop reciprocity and cooperation among students;
- Encourage active learning;
- Give prompt feedback;
- Emphasize time on task;
- Communicate high expectations;
- Respect diverse talents and ways of learning.

Therefore, the attention was on the way the institutions could facilitate the academic outcomes.

Within this perspective, on the student part, academic engagement is defined

as the 'time and effort students devote to educationally purposeful activities' (Australian Council for Educational Research 2010b). Encourage contact between students and faculty.

The behavioural perspective is closely related to the National Survey of Student Engagement (NSSE, 2016), which is the survey used to measure engagement within this approach. The NSSE (2016) is composed of 20 main questions with a total of 87 items, organized in four themes: (a) academic challenge; (b) learning with peers; (c) experiences with faculty; (d) campus environment.

According to the developers, the NSSE items and scales are theoretically and empirically derived with good psychometric properties – strong face and construct validity, and good reliability (Kuh, 2001). Although the NSSE has proved to be dependable (Fosnacht & Gonyea, 2018), it has also been criticized for its focus on students' habits more than on the psychological features that underline the engagement construct (Wefald & Downey, 2009). More importantly, the NSSE's predictive validity is disputed with a relative paucity of research relating the data to objective outcomes such as GPA and retention (Gordon et al., 2008). One such study across 14 institutions found very weak associations between academic success and the NSSE benchmarks (Carini et al., 2006). Finally, the validity of the student responses is also cause for concern. The survey's authors claim the NSSE satisfies the criteria by which self-report data are most likely to be valid (Kuh, 2001). However, the reliability of student responses regarding the skills they have acquired or used must be questioned in light of research showing students struggle to understand academic terms used in the formulation of items (Australian Council for Educational Research, 2010). Porter (2011) points out that even apparently simple items referring to actions such as 'had serious conversations with students' are open to interpretation – which conversations are serious? Problems with memory storage and recall, in particular the frequency of events across a year, the context of the question, and social desirability bias are all potential limitations to the validity of the data (Porter, 2011). Moreover, the NSSE assesses some markers of engagement, such as involvement in collaborative, reflective and integrative learning, and other indicators that are not properly academic engagement markers, but specifically facilitating contextual factors (or facilitators), such as supportive environment and teaching techniques. The lack of distinction

between proper engagement markers and facilitators makes difficult for researchers to have a greater degree of theoretical accuracy and to evaluate the impact of contextual factors on engagement (Zhoc et al. 2019). Therefore, NSSE may be considered an evaluation of students' educational experiences more than a measure capable of explain theoretically academic engagement (Steele and Fullagar 2009).

The reliance on surveys for measurement is a key limitation of the behavioural perspective. Firstly, a single survey instrument spanning all disciplines is problematic when there is evidence that teaching and learning vary across disciplines (Nelson Laird et al., 2008). For example, how is the number of assigned readings or length of written assignments, both items in the academic challenge scale, relevant to a design or mathematics student? This problem has led to claims that mathematics and science students are less engaged (Ahlfeldt et al., 2005), while others have argued that engagement is qualitatively different across disciplines (Brint et al., 2008). A second limitation of using a survey instrument is that it is a single wide angled snapshot and as such misses much of the complexity of the construct: Engagement is both dynamic and situational. Finally, surveys obscure the participant voice with no opportunity for a perspective that does not fit the predefined questions (Bryson et al., 2010). Longitudinal, qualitative measures may be more effective tools.

Due to its development as a tool for institutional improvement and comparison (Coates, 2010; Kuh, 2009a), the definition of student engagement within the behavioural perspective is limited and unclear. This restricts its usefulness as a research perspective for understanding student engagement. Blending institutional practices with student behaviour has resulted in a lack of clear distinction between the factors that influence engagement, the measurement of engagement itself, and the consequences of engagement. For example, there is considerable overlap between items included in the active learning engagement scale and the higher order thinking outcome measure. Much of the focus is on institutional practices such as support services; while these are important influences on engagement, they do not represent the psychological state of engagement (Wefald & Downey, 2009). By focusing only on elements the institution can control, a wide range of other explanatory variables are excluded, such as student motivation, expectations, and emotions.

The behavioural approach does incorporate students' thinking processes as

well as behaviour, as evidenced by subscales such as level of academic challenge and active and collaborative learning. However, learning is also emotional (Christie et al., 2008) and, except for a single item assessing overall satisfaction, the students' emotions are not measured. That affect is an important part of engagement is illustrated by the finding that international students, traditionally high scorers on the NSSE, on a Coping and Comprehension scale showed signs of struggle and of being overwhelmed (Krause, 2005). Interestingly, while tutors see engagement as cognitive, students see it as predominantly affective (Solomonides & Martin, 2008). By failing to measure how students are feeling, the behavioural perspective misses valuable information that would give a much richer understanding of the student experience.

This is not to suggest there is no value in the behavioural approach. It explains part of the complex and multidimensional picture of engagement, in particular the relationships between teaching practice and student behaviour. A particular strength is the inclusion of more distal consequences of engagement with questions about how their time as a student has contributed towards broader life skills such as understanding people of different ethnicities, developing personal values, and contributing to the welfare of the community. A second strength is the popularity of the approach allowing exploration of the impact of a wide range of variables on student engagement such as missions (Kezar & Kinzie, 2006), expenditure (Pike et al., 2006), and learning communities (Zhao & Kuh, 2004). New models of engagement are also being proposed such as Coates' (2007) four-way typology of academic engagement styles: intense, collaborative, independent, and passive, linked to the common distinction between social and academic engagement. However, the behavioural perspective's understanding of engagement is too narrow; a problem that the psychological perspective tries to overcome.

2.3.2. PSYCHOLOGICAL PERSPECTIVE

The psychological perspective of engagement is particularly dominant in the school literature and views engagement as an internal psychosocial process that evolves over time and varies in intensity. However, it has extensively applied also to the higher education context (Marôco et al., 2016; Esposito et al., 2021). A key strength of this approach, in comparison to the behavioural perspective, is the distinction

between engagement and its antecedents. Various overlapping dimensions of engagement have been proposed including behaviour, cognition, emotion, and conation, with earlier work often defining engagement as just one of these, and later theorists suggesting engagement is a combination.

One the most relevant model of engagement in a psychological perspective is the one proposed by Fredricks and colleagues (2004) that defined engagement as composed by three dimensions: behavioural, cognitive, and emotive or affective.

The behavioural dimension, paralleling parts of the behavioural perspective just discussed, has three elements: positive conduct and rule following including attendance; involvement in learning including time on task and asking questions; and wider participation in extracurricular activities (Fredricks et al., 2004). For example, participation identification model by Finn (1993) argues that participation in both the classroom and wider school leads to success, which then develops a sense of belonging which, in a perpetual cycle, further increases participation.

The cognitive dimension is illustrated by Newmann and colleagues (1992) defined engagement as 'a student's psychological investment in and effort directed towards learning, understanding, or mastering the knowledge skills or crafts'. This cognitive dimension most commonly refers to students' self-regulation and effective use of deep learning strategies (Fredricks et al., 2004), as touched on in the behavioural perspective. However, within the psychological perspective, cognition also incorporates individual characteristics such as motivation, self-efficacy, and expectations (Jimerson et al., 2003).

The affective dimension of engagement is a strength of the psychological approach: as 'there is an emotional intensity attached to the experience of learning that is often overlooked' (Askham, 2008). Some consider engagement to be synonymous with attachment, focusing predominantly on whether students feel they belong (Libbey, 2004).

Others consider more immediate emotions such as enjoyment and interest in the task (Furlong et al., 2003). The affective dimension highlights the distinction between instrumental and intrinsic motivation. With the former, the student is motivated to engage cognitively and behaviourally as a means to an end – high grades or a qualification for example. With the latter, the student is motivated by their pleasure

and interest in the learning. There is a tendency in the literature to privilege the intrinsic over the instrumental approach. For example, Bryson and Hand (2008) describe the instrumental approach as false engagement, while Nystrand and Gamoran (1991) distinguish between procedural engagement, the more superficial and often task based activity, and substantive engagement, a more sustained psychological investment in learning.

Drawing on older philosophical constructions of the human mind, a few theorists have suggested that conation, the will to succeed, is a separate dimension of engagement (Corno & Mandinach, 2004; Harris et al., 2004). A much less researched and theorized concept, conation is considered to have six attributes: belief, courage, energy, commitment, conviction, and change (Riggs & Gholar, 2009). Most theorists however consider the three dimensions of behaviour, cognition, and affect adequately capture engagement (Fredricks et al., 2004), with recent studies supporting the view that the dimensions are facets of a single meta construct (Archambault et al., 2009; Wang & Holcombe, 2010).

The key limitations of the psychological perspective center on a lack of definition and differentiation between the dimensions. Clear definition of the construct of engagement is essential for shared understanding, but the review by Jimerson and colleagues (2003) review shows that, of the 45 articles examined, 31 did not explicitly define the terms. In addition, not only is there considerable overlap with previously studied constructs such as motivation, learning approaches, and values (Fredricks et al., 2004), there is also overlap between the different dimensions (for example effort often appears in both behavioural and cognitive measures).

There is also disagreement on the relationships between the dimensions. For example, Newmann and colleagues (1992) suggest a student can complete their work and learn well without being emotionally engaged in the topic while Gibbs and Poskitt (2010) argue that both behavioural and emotional engagement are necessary prerequisites for cognitive engagement.

These problems of definition have also led to inconsistencies in measurement. While there is some use of direct observation and teachers' rating scales (Chapman, 2003), like the behavioural perspective, most measures are student surveys, raising concerns over the validity of the responses (Roth & Damico, 1996). It is often unclear

which aspects of engagement are being measured with some surveys focusing on single dimensions and others claiming to be a single general measure of engagement (Fredricks et al., 2004). In addition, the context of the engagement, for example school, peer, or classroom, is often unspecified (Furlong et al., 2003). More recently developed measures are attempting to overcome some of these limitations by measuring all three dimensions based on clearer operational definitions (Appleton et al., 2006; Archambault et al., 2009; Fredricks et al., 2005). All surveys have the problems discussed earlier of limiting the participants' voices and failing to capture the dynamic nature of engagement.

Despite these issues, the psychological perspective has much to recommend it. Psychology in the past has tended to treat feeling and thinking as if they were entirely separate processes but is more inclined now to see them as 'inseparable, interwoven dimensions of human social life' (Forgas, 2000). Viewing academic engagement as multidimensional recognizes this and enables a rich understanding of the individual's experience (Fredricks et al. 2004). Moreover, engagement as a psychological process is considered to be malleable, varying in intensity and responsive to the environment, suggesting that there is much that can be done to improve engagement, although more longitudinal and intervention research is needed to support this (Fredricks et al., 2004). The final, and most important, benefit of the psychological perspective is that it does not conflate the state of being engaged with its antecedents or its consequences, a problem that is rife in other perspectives. However, in positioning engagement so clearly within the individual, there is a danger of downplaying the critical importance of the situation. Engagement is fundamentally situational – it arises from the interplay of context and individual.

In general, psychological literature on academic engagement enlighted three overarching features. First, engagement is a multifaceted construct, which refers to students' thoughts, feelings and behaviour (Fredricks, Blumenfeld & Paris, 2004). Second, engagement is a contextual and personal concept (Kahu, 2013), embedded in and influenced by the socio-cultural context. Finally, it is a dynamic process (Lawson & Lawson, 2013), which can fluctuate along with the interactional and contextual factors.

2.3.3. SOCIOCULTURAL PERSPECTIVE

The sociocultural perspective on student engagement focuses on the impact of the broader social context on student experience. In particular, theorists have explored explanations for the polar opposite to engagement, alienation, 'a subjectively undesirable separation from something outside oneself' (Geyer, 2001). Mann (2001) identifies contextual factors such as disciplinary power, academic culture, and an excessive focus on performativity that can all lead to the disconnection of students within higher education. Similarly, Thomas (2002) argues that institutional habitus results in an inherent social and cultural bias within educational institutions in favor of dominant social groups, leading to poor retention of non-traditional students. The experience of starting university is variously described for some students as a culture shock (Christie et al., 2008), learning shock (Griffiths et al., 2005), and akin to being 'a fish out of water' (Thomas, 2002), illustrating the powerful barrier this cultural difference represents to engagement for many students. This perspective on education is particularly common within feminist literatures examining women's alienation within the university culture (e.g. Grace & Gouthro, 2000; Stalker, 2001).

A related constructivist approach argues that higher education needs to take an ontological turn and institutions need to 'engage the whole person: what they know, how they act, and who they are' (Dall'Alba & Barnacle, 2007). Solomonides and Reid (2009) have proposed a relational model of student engagement that locates the sense of being, similar but deeper than the affective dimension of engagement discussed previously, at the center. Barnett and Coate (2005) take the concept of ontological engagement a step further and argue that it entails a project of active citizenship and engagement with the political nature of the world. This ontological approach is well represented in the literature on student identity. The challenges of renegotiating their identity within a culture where they are positioned as the 'other' has been examined with many groups of non-traditional students such as older students (e.g. Askham, 2008), working class women (e.g. Christie et al., 2005), and ethnic minorities (e.g. Johnson et al., 2007). These groups are often described as not having the necessary social, cultural, and academic capital to easily fit into the university culture (Lawrence, 2006). While potentially a less challenging process, more traditional students may also experience identity struggles and a sense of being an outsider in the world of academia

(Mann, 2001).

The wider socio-political context also influences student engagement. McInnis (2001) asserts that the term disengagement is misleading as it implies a deficit on the part of the students. Recent declines in academic engagement are due to societal changes such as market driven changes in universities, changes in societal values, increases in flexibility of delivery and online courses, and generational differences. The 'commodification of education' (Smith, 2007) and, in particular the widening participation initiative and the later introduction of student loans and higher fees, has impacted on non-traditional students in particular (Christie et al., 2005). Krause (2005) also notes that generational changes have meant shifts in the meaning of university study and therefore the nature of student engagement.

The sociocultural perspective offers important ideas on 'why' students become engaged or alienated at university, with a particular emphasis on non-traditional students. It highlights the need for the institutions to consider not just the student support structures but also the institution's culture and the wider political and social debates impacting on academic engagement. It adds therefore a critical and often neglected piece to the task of understanding engagement.

2.3.4. HOLISTIC PERSPECTIVE

A few authors are striving to draw together these diverse strands of theory and research on academic engagement. For example, researchers in the UK have proposed a more holistic definition: 'The conception of engagement encompasses the perceptions, expectations and experience of being a student and the construction of being a student' (Bryson et al., 2009). In line with the constructivist approach discussed earlier, they argue for a wider focus that incorporates the notion of 'becoming', arguing that universities should be about more than getting qualifications (Bryson & Hand, 2008). Engagement in their view is a dynamic continuum with different locations (task, classroom, course, institution), and thus not measurable by surveys but best understood through in-depth qualitative work.

Like the psychological approach, a key strength of this work is the recognition of the importance of emotion. For example, findings highlight the critical importance of the teacher's disposition and in particular the need for warmth and respect to foster

a sense of belonging (Bryson & Hand, 2007; Kember et al., 2001). Bryson and Hand (2007) suggest staff need to consider three levels of engagement – discourse with students, enthusiasm for the subject, and professionalism with the teaching process. However, they also note that while individual staff are important, a wider institutional approach is needed that provides the necessary resources and supports both students and staff to be engaged (Hand & Bryson, 2008).

In striving to take a more holistic view, this approach makes the same mistake as the behavioural perspective in that it fails to distinguish between engagement and its antecedents.

For example, student expectations are included within the definition of engagement, and while this has been found to be an important influence on the student experience (e.g. Christie et al., 2008), to enable a better understanding, such antecedents need to be clearly distinguished from the state of being engaged. Bryson and colleagues (2010) suggest engagement is both a process and an outcome - that the former is what institutions do and should be labelled 'engaging students' whereas the latter is what students do and should be labelled 'students engaging'. A clearer distinction would be to recognize that what is considered to be the process is not engagement, instead it is a cluster of factors that influence academic engagement (usually the more immediate institutional factors), whereas the outcome is engagement – an individual psychological state with the three dimensions discussed earlier of affect, cognition, and behaviour.

In another attempt at integrating the research, Zepke and colleagues (2010b) have proposed a conceptual organizer for student engagement which identifies six research perspectives: motivation, transactional engagement with teachers and with each other, institutional and non-institutional support, and active citizenship. This organizer successfully draws together many of the influences on engagement identified in the other perspectives: institutional support and interactions with staff from the behavioural perspective; active learning and academic challenge from the cognitive dimension of the psychological perspective; and the influence of external circumstances, touching on the sociocultural perspective. Also included is student motivation as expressed by the three needs proposed by Self Determination Theory (SDT): autonomy, competence, and relatedness (Deci & Ryan, 2000). The organizer

has enabled comparison of the relative strengths of these influences. For example, teachers were found to be a stronger influence than student motivation or external factors (Zepke et al., 2010b), while competence needs were more important than either relatedness or agency (Zepke et al., 2010a). The findings have also been translated into very specific proposals for action by institutions (Zepke & Leach, 2010b).

As with the other perspectives, the limitation of this approach centers on issues of definition, categorization, and scope. The authors acknowledge the contrasting behavioural and psychological definitions of engagement but leave this issue unresolved. If the organizer aims to clarify what influences student engagement, then a clear definition is essential. There is also some confusion between antecedents and consequences of engagement. While the first five items are all influences on academic engagement, the indicators of the final perspective, active citizenship, suggest this is an outcome of engagement; for example, 'students are able to live successfully in the world' (Zepke et al., 2010a). Finally, in limiting the consideration of individual characteristics to the needs proposed by SDT, the conceptual organizer excludes other important antecedents such as personality, academic skills, and expectations. Also missing is the critical influence of the wider socio-political culture.

In summary, each perspective provides valuable insights into the complex construct of engagement, emphasizing different facets such as behaviour, internal psychological processes, sociocultural context, and a holistic understanding of the student experience. However, challenges related to definition, measurement, and differentiation between antecedents and consequences persist.

In fact, while these theoretical frameworks provide valuable insights into the conceptualization of academic engagement, it is essential to acknowledge the challenges and critiques associated with their application, that could be summarized as follows:

1. **Contextual Variability:** the effectiveness of these frameworks may vary across different institutional contexts, disciplines, and student populations.

2. **Dynamic Nature of Engagement:** engagement is not a static phenomenon; it evolves over time.

3. **Cultural Sensitivity:** Cultural differences can influence the

applicability of certain frameworks.

4.   **Overemphasis on Quantitative Measures:** Some critics argue that the overemphasis on quantitative measures of engagement may oversimplify the complexity of engagement.

2.3.5. *THE SINAPSI ACADEMIC ENGAGAMENT MODEL*

This project is based on a specific model of academic engagement of recent development, The SInAPSi Academic Engagement Model (Freda et al., 2021). This model was developed in the attempt to respond to the need of overcoming limitations and recognizing the role of other variables that are becoming increasingly central in the educational engagement research field. First, it is possible to note that engaged attitudes, in their different nuances, can work not only by drawing a positive profile of achievement of goals, but also by preventing certain inappropriate conditions, such as disaffection, boredom, drop-out or scarcity of results, excessive extension of normal study time (Jang et al., 2016). Many studies have demonstrated the association between engagement, successful achievements (Phan, 2014) and students' willingness to exert effort towards learning (Alrashidi et al., 2016). In particular, it was proven that engagement helps students to deal with the university difficulties, enhances their motivation and involvement in university-related activities, prevents the intention to drop-out, supports the academic achievements and the learning process (Abbott-Chapman et al., 2014; Gilardi & Guglielmetti, 2011; Girelli et al., 2018a; Girelli et al., 2018b; Klem & Connell, 2004). In other words, by becoming more aware of the difficulties they are encountering during their academic trajectory, engaged students may increase their ability to sustain the efforts to deal with these difficulties and to affect their own performance (Ajzen, 1991; Perry, 2003; Perry et al., 2005) as well as to persist in their choice of attending university (Girelli et al., 2018a, 2018b; Hardrè & Reeve, 2003).

Second, many authors increasingly acknowledge that, as in any human experience, the role of social relations, contextual frames and shareable experiences by means of which students interact and confront each other cannot be ignored in a dynamic conceptualization of engagement (Alivernini et al., 2019; Braxton et al., 2000; Cavicchiolo et al., 2019a; De Luca Picione et al., 2020; Kahu, 2013; Shernoff et

al., 2016).

In particular, social dimensions allow us to acknowledge processual and relational aspects of engagement, as an activity that develops itself over time through transitions, experiences and sharing with others (wherein the most significant figures are teachers, fellow students, but also families and friends) (Cavicchiolo et al., 2019b; Girelli et al., 2019). The social dimension is acknowledged in the engagement model developed by Finn and Zimmer (2012), who added to the tripartite conceptualization of Fredricks and colleagues also the social relationships established at the university with both other students and faculty members. The social relationships with peers may have a significant impact on students' motivation and adjustment to the educational contexts (Cavicchiolo et al., 2019a). Similarly, the relationship with faculty members not only has a great relevance on students' self-regulation (Williams & Deci, 1996) but also may nurture and contribute to develop students' inner motivational resources to prevent drop-out (Girelli et al., 2018a, b; Hardrè & Reeve, 2003). Within this perspective, engagement processes are characterized by the ability to modulate one's own position within complex social systems with many and different actors. The reflexive ability to differentiate social relations in a flexible way can be considered as one of most relevant aspects of engaged students. Moreover, according to Christenson and colleagues (2012), engagement cannot be conceptualized as a set of attributes of a single student, but rather as a modifiable state of being that is strongly influenced by the ability of the school, family and peers to provide consistent expectations and support for learning. Consequently, engagement should not be considered an individual quality of the student, but, rather, all 'engaging processes' are connected to the relational processes that develop over time and the students build the sense of their participation in life university and position their selves within different kinds of social relations with peers and teachers (Zhoc et al., 2019).

Third, and final, some authors suggest that academic engagement concerns the ongoing development of skills and competences in the awareness and reflective use of the academic training relationship, the ability to position itself in the university context in a manner consistent with one's own objectives, and to integrate the university project and its value into the wider life and work (Freda et al., 2016). This is relevant for the perspective of this work and for its aims of research in as much as it leads to

consider the relevance of values, as social meanings that provide symbolic resources to achieve results in academic context. In particular, values allow students to share symbolic frames (Esposito et al., 2016; Salvatore, 2016) that orient and mediate their actions, behaviours, choices and sense of belonging in-between different contexts (university, family, leisure time, extra-academic activities).

Summarizing, starting from the above critique review of the literature on the different academic engagement perspectives, we will conceptualize academic engagement using the following tentative dimensions:

1) Perception of the capability to persist in the university choice, which refers to the awareness of the encountered (or to be encountered) difficulties and of the resources needed to overcome them; in this perspective, this dimension is strictly connected to the intention to drop out;

2) Value of university and sense of belonging, which refers to the recognition of the worth of the university choice, of the relevance of the choice to enroll in the life project, and the perception of a sense of belonging to the context;

3) Value of university course, which refers to the recognition of the relevance of the chosen academic course for the professional future; this dimension is connected with the belief that the chosen academic course represents an opportunity, a source of interest and a chance for personal growth;

4) Relationships with university peers, that refers to the possibility to create good and meaningful relationship with other students; this dimension refers also to the possibility to consider the group of peers at university as a relevant relational net, not only for academic purpose (studying together) but also as support source;

5) Relationships with university professors, that refers to the feeling of being "seen" as a person by the faculty members; it also refers to the perception of availability and interest of the professors, and to be respected by them;

6) Integration between university and relational net, which refers to the balance between academic and private life and the recognition of the need to share with family and friends the enthusiasm for the academic project.

This model considers in depth the relationship between students and the context. In fact, in this model engagement is conceived as a catalyst of positive processes for university students with short-term effects (positive influence on

academic performance) and long-term effects (persistence in the academic context), relevant factor for students' achievement and well-being independently from the potential drop-out risk and for its malleability (Fredricks et al., 2019).

Student-university relationship is not conceived as a unidirectional process, exclusively dependent from the student, but as a circular process which sees both parts as active agents that meet in a contextual and relational field. Student-university relationship is, therefore, conceptualized as a virtuous circle: on one hand, university poses itself as a reliable and trustful reference point for the students, and on the other, students develop trust toward university, which results into engagement processes. In this perspective, students and university actively participate and engage in the co-construction of their relationship.

2.4. ACADEMIC ENGAGEMENT AND RELATIONSHIP WITH PSYCHOLOGICAL AND ACADEMIC VARIABLES

2.4.1. ACADEMIC OUTCOMES

Most of the studies that aimed to analyze academic engagement in the university context have focused on the relationship between the construct and academic outcomes. Academic outcomes in educational settings encompass a broad range of measures that reflect students' progress, achievement, and engagement in their academic pursuits. These outcomes are crucial for assessing the effectiveness of educational programs and interventions, as well as for guiding policy decisions aimed at improving educational quality and student success.

Among the academic outcomes, the most studied are achievement and academic performance, drop-out, graduation rates, persistence, retention, career post-university.

Academic achievement refers to students' attainment of learning objectives and mastery of subject matter. This can be assessed through various measures such as standardized tests, grades, and evaluations of coursework and assignments (Duckworth & Yeager, 2015). Test scores provide valuable data for monitoring educational progress and identifying areas for improvement (Hanushek & Woessmann, 2008).

Retention rates indicate the percentage of students who continue their enrollment from one academic year to the next, while graduation rates reflect the percentage of students who successfully complete their educational program within a specified timeframe (Avery & Kane, 2004). Persistence refers to the students' passage from one level of education to another (Dynarski et al., 2013).

Dropout rates represent the percentage of students who disengage from their educational path before completing their program of study. High dropout rates can have significant consequences for individuals and society, including reduced economic opportunities and social mobility (Rumberger & Lim, 2008).

Ultimately, academic success should prepare students for successful careers and participation in the workforce. Academic outcomes may therefore include measures of post-graduation employment, earnings, and career advancement (Carnevale et al., 2013).

Some of these outcomes are referred specifically to the student's behaviour or intentions, such as achievement, academic performance, other are referred to the institutions point of view, such as graduation rates. The same phenomenon of drop-out can be considered both in the category of student's behaviour and in the category of institution's point of view, nevertheless with different terms (Behr et al., 2020). To comprehensively discuss the phenomenon of university dropouts and the factors influencing them, it is essential to define the concept of dropping out and examine the most relevant theories associated with it. Larsen and colleague (2013) delve into the various dimensions and interpretations of the term "university dropout", typically understood as discontinuing studies at a university without obtaining a degree. The act of dropping out from university encompasses diverse meanings, often interchangeably referred to as "drop-out", "failure", "non-completion", or "withdrawal". While the former terms depict the process of a student leaving university with negative connotations and involuntarily, "withdrawal" emphasizes a more voluntary departure. From a student's perspective, these terms are commonly used, whereas from an institutional standpoint, "attrition" is preferred. Conversely, positive equivalents include "persistence", "completion" (from students' viewpoint), "retention", or "graduation" (institutional viewpoint). Psychologically driven theories particularly concentrate on favorable outcomes. In both theoretical and empirical investigations,

the various terms denoting negative and positive results are frequently utilized interchangeably. Moreover, the phenomenon of dropout can be categorized based on students' reasons for discontinuing their studies and the extent to which it is voluntary. For instance, from a student's viewpoint, dropping out due to academic failure would typically be considered involuntary. Similarly, financial difficulties or personal issues might also prompt a student to drop out voluntarily, as might the availability of more promising job opportunities (Larsen et al., 2013). Voluntary dropout could thus be seen as a reassessment of an unfavorable decision due to limited career prospects or a mismatch between the study content and students' preferences. These various motivations for dropping out are evidently influenced by diverse factors and incentives.

According to Tinto (1975), involuntary dropout is often a consequence of inadequate academic integration, such as poor grades, whereas voluntary dropout primarily stems from social isolation within the university setting. In empirical research, many of these determinants indicating voluntary or involuntary dropout are explored.

Furthermore, a distinction should be made based on the level at which dropout occurs. Students might change their field of study (within the same subject area or across different subject areas), the type of degree pursued, the institution, or they might exit the university system altogether. Depending on the viewpoint, such as that of the student or the faculty, these different types of drop-out could be perceived as transfers (e.g., between fields) or as complete withdrawals. The former is sometimes referred to as "re-selection" or "institutional departure", while the latter as "de-selection" or "system departure".

In this context, drop-out should also be distinguished based on its timing. Several studies suggest that dropout at various stages of study may be driven by different factors, such as the challenges students face during the integration process. In empirical research, analyzing a single field of study or institution often considers changing fields or institutions as dropout instances. However, broader studies define drop-out as exiting the higher education system, albeit with the caveat that it may not capture cases where drop-out students later re-enroll. Additionally, many studies focus on the early semesters of university, reflecting institutional interests in preventing early

dropout to support at-risk students promptly.

The choice of drop-out definition for analysis depends on the research question and the available dataset. For instance, analyzing student dropout from a macro perspective using nationwide survey data might favor the definition of "system departure", whereas focusing on the consequences for a faculty using university administrative data might favor the definition of "institutional departure".

Nevertheless, given that the decision to withdraw from university is very rarely a specific event and more often a gradual and unfolding phenomenon (Alrashidi, Phan & Ngu, 2016), studies should follow students from the enrollment and monitor the levels of academic engagement. Given that this is only possible with the cooperation of the institutions, a possible way is the evaluation of the intention to drop-out, which could be considered an antecedent of actual withdrawal.

Among the presented outcomes, the most studied in relationship with academic engagement are academic achievement or success, persistence or retention, and intention to drop-out.

A recent meta-analysis (Lei, Cuo & Zhou, 2018), which examined 69 independent studies involving approximately 200,000 students, showed a moderate positive correlation between engagement and academic success, with a larger effect size for the behavioural dimension. Several studies (Kift, 2015; Kuh et al., 2008; Thomas, 2012; Zepke, 2019) have demonstrated the crucial role of engagement in academic persistence. Furthermore, some studies have highlighted negative correlations between engagement and the intention to drop-out of university studies (Esposito et al., 2021; Marôco et al., 2020).

2.4.2. RELATIONSHIP WITH PSYCHOLOGICAL FUNCTIONING

Psychological Distress. The tripartite model of negative emotionality (Lovibond & Lovibond, 1998) is a psychological framework that conceptualizes distress as dependent on three distinct but interrelated aspects of negative emotionality: depression, anxiety, and stress.

The first component, *depression*, refers to a persistent feeling of low mood, sadness, and a lack of interest or pleasure in daily activities. Individuals experiencing depressive symptoms may exhibit changes in appetite and sleep patterns, low energy

levels, and feelings of worthlessness or guilt.

The second component focuses on *anxiety*, representing heightened levels of arousal and excessive worry. Anxiety involves feelings of nervousness, restlessness, and an exaggerated sense of apprehension about future events. Individuals with high anxiety scores may experience physical symptoms such as muscle tension, increased heart rate, and difficulty concentrating.

The third component is *stress*, referring to the body's physiological and psychological response to external demands or pressure. Stress encompasses feelings of being overwhelmed, irritable, and unable to cope with life's challenges. Physical manifestations of stress may include headaches, sleep disturbances, and changes in appetite.

While the tripartite model highlights the independence of depression, anxiety, and stress, it also acknowledges their interconnectedness. Individuals may experience these components simultaneously, and their interactions can contribute to the overall negative emotional state. For instance, chronic stress might lead to symptoms of depression, and heightened anxiety can exacerbate stress levels. The tripartite model provides a nuanced understanding of how these components interact, allowing for a more comprehensive assessment of negative emotionality.

In relation to the association between Psychological Distress and engagement, studies in the literature have primarily focused on the relationship between the construct and well-being in general (Passeggia et al., 2023) or in terms of life satisfaction and the impact of this relationship on academic success, remaining an area of research that is still young and expanding (Boulton et al., 2019). Few studies have investigated the relationship between engagement and specific psychological outcomes, demonstrating how this construct is correlated with a decrease in depressive symptoms (Li & Lerner, 2011), suicidal thoughts and self-harming behaviours (Marraccini & Brier, 2017), and greater life satisfaction (Lewis et al., 2011). In general, studies also found that a poor engagement is linked to psychological distress in university students (Choate et al., 2022), and students' engagement has been found to have a significant impact on their psychological distress, with higher levels of engagement correlating with lower levels of anxiety (Asghar, 2014). Several factors, such as optimism, health values, and religiousness have been identified as protective

factors against psychological distress (Burris, 2009), and engagement can play a role in reducing psychological distress, it is one of the factors that need to be considered in addressing this issue. In fact, low levels of student engagement are often associated with psychological distress, particularly academic stress. When students feel disengaged or disconnected from their academic pursuits, it can lead to increased stress levels. Academic stressors such as exam pressure, assignment deadlines, and a lack of interest in coursework can contribute to feelings of anxiety and emotional exhaustion (Misra & Kean, 2000).

Reflective Function (RF). It represents the operationalization of the construct of *mentalizing* (Fonagy et al., 1998). It is the imaginative ability to interpret one's own and others' behaviours on the basis of intentional mental states, such as desires, wishes, needs, opinions (Fonagy & Bateman, 2006). Mentalizing is an interactive ability (Luyten et al., 2020), as it develops in the context of interaction with others. Its optimal development depends on the quality of attachment relationship and it, in turns, plays a pivotal role in the development of secure attachment. Specifically, the early attachment relationships with caregivers reflect the degree to which one's subjective experiences are properly mirrored by attachment figures through a contingent and marked response. Over time, children internalize these reflective processes, enabling them to develop a stable sense of self and others.

Mentalizing is a multidimensional capacity which is composed by four polarities (Fonagy & Luyten, 2009): a) automatic/controlled; b) self/other; c) external/internal; d) cognitive/affective. Automatic mentalizing refers to an implicit, non-verbal and reflexive process of recognition and understanding of mental states, while controlled mentalizing refers to an explicit, verbal and reflective process. The self/other polarity is referred to the object of the mentalizing process, which can be focused on one's own or others' mental states. Similarly, the external/internal dimension refers to the focus of mentalizing, which can be on the external cues regarding mental state (e.g., face expressions, behaviours, etc.) or on inner cues about mental states (e.g., motives, desires, etc.). Cognitive mentalizing refers to the capacity of perspective taking and understanding of the representational nature of mental states, while affective mentalizing regards emotional empathy, subjective self-experience, and mentalized affectivity. A genuine mentalizing involves a balance between these

dimensions and a flexible use of them depending on the requests of a particular social context. Mentalizing has both *trait* and *state* features and the persistent imbalance between dimensions may be a sign of potential failure in mentalizing (Fonagy & Luyten, 2018). Typically, mentalizing can be reduced in contexts that trigger strong emotions and experiences of insecurity which convey negative representations of the self. Such experiences may convert adaptive modes of mentalizing functioning into inflexible and non-mentalizing modes that ultimately turn into rigid and stereotypical interpretations of one's relationship with contexts (Esposito, Karterud, & Freda, 2019; Esposito et al., 2020, Freda & Esposito, 2020). Thus, with the increased level of arousal in a given context, the balance between polarities may be lost.

Fonagy and Bateman (2019) emphasize the importance of mentalization in understanding psychopathology, especially in conditions characterized by impaired interpersonal functioning. Mentalization deficits are implicated in various mental health disorders, such as borderline personality disorder (BPD). Individuals with BPD often struggle with regulating emotions and maintaining stable relationships, which may be linked to difficulties in mentalizing. Nevertheless, recent literature also underlined its function in salutogenesis (Lyuten et al., 2020) In fact, the central role of this construct in adapting to the context in clinical and non-clinical samples is widely recognized (Luyten et al., 2020; Shwartzer et al., 2020a; 2020b). In this perspective, mentalizing is a psycho-social competence to be developed and promoted with individuals who face difficult developmental tasks and crises (Marchetti, 2014). Therefore, treatments that are based on mentalizing promotion could be beneficial also for those subjects defined as high functioning individuals, whose mentalizing capacity is not impaired by the presence of a psychopathology but may be reduced in specific contexts or relationships (Fuggle et al., 2015). High functioning individuals may temporarily present some imbalances between the mentalizing polarities with regard to a specific context or relationship that may trigger strong emotions. Indeed, restoring mentalization with high functioning individuals may aim to renovate individuals' sense of agency, i.e. their sense of being the responsible author of one's own actions. In fact, RF represents a construct that, in addition to its established role in therapeutic processes, has recently attracted research attention in the educational context; in fact, some studies have shown the relationship between RF and academic performance both

in compulsory schooling (Twemlow et al., 2006; Valle et al., 2016) and at the university level (Esposito et al., 2020, 2023). In this perspective, the academic context, like other educational contexts, elicits and is "imbued" with emotions (Pekrun & Linnenbrink-Garcia, 2012), therefore, genuine interpretation of mental states can prove to be protective factors for the university student population and be associated with engagement. This relationship has never been tested but it has been theorized for the scholastic context by Fonagy (2022). Specifically, the ability to mentalize allows people to perceive the world as more predictable, and it is positively correlated with psychological wellbeing (Hayden et al., 2018) and negatively correlated with distress (Antonsen et al., 2016), also in university students' population (Esposito et al., 2020; 2023). Fonagy (2022) posits that the ability to mentalize has an impact on the academic engagement, which in turns impacts on the persistence of students. However no empirical validation of this relationship has ever been performed.

2.4.3. GENDER DIFFERENCES

Gender differences in the engagement of university students have been a subject of growing interest in contemporary educational research. Understanding how male and female students navigate and interact with the academic environment is crucial for fostering inclusive and effective educational practices. The current literature on gender differences in university student engagement sheds light on various aspects, encompassing academic, social, and emotional dimensions. Research shows conflicting results (Zhao, Carini & Kuh, 2005): some studies found that gender had no impact on the engagement of students (Babakova, 2019; Jackling et al., 2011; Krasodomska & Godawska, 2021); some indicate that females are more engaged than males starting from secondary school (Driessen & van Langen, 2013; Kessels et al., 2014; Lam et al., 2012) and that this difference persists even with access to university (Kinzie et al., 2007); while others show that males are more likely to exhibit higher levels of engagement (Hu & Kuh, 2002). What hypotheses can be proposed for this discrepancy? On one hand, the multidimensional and relational nature of the construct can offer a key to interpreting these results: males and females may be engaged in different ways (Kinzie et al., 2007; Zhao, Carini & Kuh, 2005). On the other hand, assessing gender differences based solely on membership can be reductionist: so, how

to overcome this reductionism?

To overcome reductionism related to assessing gender differences solely based on belonging to one of the two genders, Tison, Bateman and Culver (2011) propose the use of a new indicator, Gender Composition, an index that refers to the ratio of the number of male (or female) students to the total number of students in the degree program, based on data obtained from national databases. In this perspective, it is not solely the fact to belong to the female or male group to be relevant, but how much the gender the students identify in is represented in the degree course they chose. However, while this method seems to integrate membership in the gender group with the composition of the context, it does not take into account students' perceptions of how the context is experienced. For example, a female student that attend a classically masculine degree course, such as engineering, or a male student attending a classically feminine course, such as nursing or pedagogy, could perceive a gender incongruence with the context if the course is perceived respectively as traditionally masculine or feminine. On the other hand, if the course is not perceived as traditionally of the other gender, the student could perceive a gender congruence with the context. Therefore, in this dissertation, the evaluation of Academic Gender Congruence is proposed, namely the match between students' perceptions of themselves in terms of gender (traditionally male or female), including, for example, their appearance and interests, and the perception of the gender composition of context, in this specific case the gender composition of their degree course. This assessment method allows overcoming the dichotomy of male/female categories and evaluating the perception of the context composition, which informs on how the student perceive both themselves and the context in term of gender.

PART II

THE RESEARCH

In this part of the thesis, two studies, with a complementary logic, will be described. The first study has a variable-centered approach and aims at verifying the structural relationships between the construct of main interest of this project, namely the Academic Engagement (AE), and other psychological variables, such as reflective functioning, perception of congruence, psychological distress and academic outcomes, such as intention to leave university, in three samples of Italian university students, in three different times of covid-19 pandemic (1. second lockdown with exclusively online learning, 2. post lockdown with blended learning, and 3. post covid-19 emergency with a return in face-to-face learning). The second study has a person-centered approach and aims at identifying profiles of students based on AE in the same samples of the first study. Main objective of this study is to explore whether each of the three times was characterized by specific profiles of students in terms of AE and the presence of similar "at risk" profiles which may benefit from the development of specific interventions. This second study intends to overcome the limitation of a variable-centered approach, that is a valuable method to verify the mediating role of AE, nevertheless, it assumes that all participants belong to the same group and does not allow to identify differences among the participants (Spurk et al., 2020).

In order to understand the composition of the three samples, in Chapter 3 descriptive and inferential statistics of the samples will be presented and differences between the samples will be discussed. Moreover, the research design, all the measures and their psychometric properties will be presented. Therefore, in chapter 3 and 4, respectively, a study with multigroup structural equation model and a study with multiple group latent class analysis will be presented.

CHAPTER 3

DESCRIPTIVES AND INFERENTIAL STATISTICS

DATA COLLECTION AND ANALYSIS PROCEDURES

3.1 PRESENT STUDIES

This chapter has the main objective to describe the research design and the three samples involved in this research project, which comprises two studies that will be presented in chapter 4 and 5. Both studies aimed at analyzing the relationships between the construct of main interest of this project, namely the Academic Engagement (see chapter 1 for an overview), and variables referred to psychological level (psychological distress, reflective functioning, and academic gender congruence) and academic outcome (intention to dropout). Moreover, inferential analysis will be performed in order to identify differences between the three samples recruited in three different times (1. second lockdown with exclusively online learning, 2. post lockdown with blended learning, and 3. post covid-19 emergency with a return in face-to-face learning).

Specifically, this chapter answers to the following research questions:

1. What is the composition in terms of socio-demographic data and what are the characteristics of the three samples involved in this project in terms of academic and psychological variables of interest to this project?

2. In what terms the three samples involved are similar or different regarding socio-demographic, academic and psychological variables under study?

3.2 MATERIALS AND METHODS

3.2.1. DATA COLLECTION, PARTICIPANTS AND PROCEDURES

The present project was based on a repeated cross-sectional research design. The same set of questionnaires was administered to three different samples of Italian university students in three different phases of learning fruition: during the second lockdown (T1: April – June 2021), when lessons were only online for every university in Italy; after the second lockdown (T2: April – June 2022), when university provided blended learning modality and students could choose to attend either online or face-to-face; after the Covid-19 emergence ended (T3: April – June 2023), when attendance returned to be only face-to-face.

The set of questionnaires was administered through the online service Microsoft Forms and sharing the relative links on informal channels (such as Facebook groups addressed to university students in Italy).

The participants recruited represented a convenience sample. The inclusion criteria for the participation were as follows:

a) To be at least 18 years old;

b) To be enrolled in an Italian university in first or second cycle courses, namely bachelor, Master, or single-cycle degree courses[1];

c) To be enrolled in any other higher education course which could be considered equivalent to a degree courses; this included conservatory students and other artistic and musical higher education courses[2].

The exclusion criteria included:

a) To be under 18 years old;

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[1] The Italian University System is organized in three cycles: first cycle, which concludes with a bachelor's degree; a second cycle, which concludes with a Master's degree; and a third cycle, which concludes with a PhD degree. The single-cycle degree coincides with a combination of first and second cycles. The study courses are structured in credits. A university credit (CFU) is usually equivalent to 25 hours of study by a student, including individual study in the total. The average quantity of academic work performed by a full-time student in one year is by convention measured as 60 CFUs. The CFU system is equivalent to the ECTS system. For a bachelor's degree, students are required to gain 180 CFUs; for a Master's degree, students, who have already gained the bachelor's degree, are required to gain 120 CFUs. Finally, in a single-cycle course, students will gain a Master's degree after a 5 year study course (6 years for the medical course) which combine bachelor's and Master's CFUs acquisition, for a total of 300 CFUs (360 CFUs for medical course).
For further information on the Italian Higher Education System, please see https://www.cimea.it/EN/pagina-il-sistema-italiano-d-istruzione-superiore
[2] The Italian higher education system is divided into two large sectors: the University sector (see note 1) and the Higher Education for Fine Arts, Music and Dance sector, known as the AFAM sector. The Italian non-university sector is primarily composed of Higher Education for Art, Music and Dance (AFAM) institutions, which are organized in three cycles and based on the CFAs system. Therefore, AFAM qualification are equivalent to university sector degrees.

b) To be enrolled in foreign university;

c) To be enrolled in *post-lauream* courses or third cycle courses (such as PhD courses or I and II level university *post-lauream* courses).

A total of N= 1213 students responded to the set of questionnaires, specifically N= 479 for T1, N= 362 for T2, and N= 372 for T3. A total number of N= 36 respondents were excluded from the analysis, as they did not provide their consent (N= 27) or did not meet the inclusion criteria (N= 9). Specifically, the participants who did not meet the inclusion criteria were students enrolled in *post-lauream* courses. Therefore, the three recruitment phases provided final samples of N= 462 participants in T1, N= 355 in T2, and N= 360 in T3, for a total N= 1177 participants, an appropriate final sample for the hypotheses testing for both Structural Equation Model and Latent Profile Analysis.

Each of the time point for recruitment was set in the second term of the academic year in order to include in the sample also representatives from the first-year cohort, and it was characterized by a different modality of attendance for university students. Specifically, in T1 all the students were forced to attend lessons and other academic activities only online, independently from the previous modality provided by the institutions (only online or only face-to-face), considering the contingency related to the covid-19 anti-contagion instructions. In T2, students could choose whether to attend online or in presence in the institutions that pre-covid-19 provided only face-to-face modality. In T3, the state of emergency related to covid-19 outbreak was revoked; therefore, each institution could return to the elected modality of fruition that was provided ante covid-19 outbreak. This design aimed at analyzing whether structural relationships between latent variables and the emergence of latent groups could be influenced by the specificity of the contextual contingency, given the contextual and relational nature of main interest construct of this project, namely the Academic Engagement (Kahu, 2013).

Each participant of each sample provided their informed consent to participation and was informed about the data would be treated. Specifically, students were informed that survey responses would be anonymous, that all data would be treated as aggregated and only for research purpose, and that all data would be stored accordingly with General Data Protection Regulation 2016/679. Moreover, the

research project was approved by the Research in Psychology Ethical Committee of University of Naples Federico II (prot. 16-2021).

3.2.2. MEASURES

The set of questionnaires aimed at collecting socio-demographic data, academic data, and psychological variables will be presented in the following paragraphs.

SOCIO-DEMOGRAPHIC AND ACADEMIC STATUS

Socio-demographic data that were collected referred to age, gender, working status, and geographic area. Academic data referred to information about the type of university (public, private or online), year of course, type of course (bachelor, master or single-cycle), the number of ECTSs gained so far.

All the questions for this and following part of the survey were obligatory; therefore, there are no missing values, except for the variable "year of course" for T1 and T2. About N= 30 respondents misunderstood the request, therefore, their answers could not be included in the analysis for this variable.

PSYCHOLOGICAL VARIABLES

In a second part of the survey, measures for the psychological, academic and contextual functioning were administered identically in the three time points.

In order to measure the *Academic Engagement* (AE) of students coherently with the theoretical background of the project, it was administered the *SInAPSi Academic Engagement Scale* (SAES, Freda et al., 2021), a 29-item self-report measures that evaluates AE on 6 dimensions: *perception of capability to persist in the academic choice* (4 items, all negative; e.g. "I would leave university immediately if I had an alternative."); *university value and sense of belonging* (6 items, all positive; e.g. "Attending university is a great opportunity for me."); *university course value* (7 items, all positive; e.g. "I find my studies very relevant to my professional projects."); *integration between university and relational net* (3 items, all positive; e.g. "I talk about my professional projects with my family."); *relationships with university peers* (5 items, all positive; e.g. "I have created meaningful friendships with some of my

fellow students."); *relationships with university professors* (4 items, all positive; e.g. "My teachers respect me as a person"). Each scale measures AE dimensions on a 5-point Likert scale, from 1 (not at all) to 5 (totally). Therefore, this scale allows to identify low (1-2.5 scores), medium (2.5-3.5), and high (above 3.5) levels of engagement. Recent study demonstrated a second order factor constituted by 5 of the 6 dimensions and that the subscale that the dimension *perception of capability to persist in the academic choice* could also serve as a proximal score for intention to dropout (Passeggia et al., 2023); therefore, hereafter this scale will be addressed as *intention to dropout*. McDonald's omega ranges in these samples were ω_{T1}= .799-.915, ω_{T2}= .820-.917, ω_{T3}= .819-.939.

In order to measure the *Psychological Distress* (PD) of students, the *Depression Anxiety Stress Scale 21* (DASS-21; Lovibond & Lovibond, 1995; Italian validation by Bottesi et al., 2015), a 21-item self-report which assesses general distress on a 4-point Likert scale from 0 (never happened to me) to 3 (almost always happened to me). It comprises 3 dimensions: *depression* (7 items, all negative; e.g. "I felt down-hearted and blue"); *anxiety* (7 items, all negative; e.g. "I felt I was close to panic"); *stress* (7 items, all negative; e.g. "I found it difficult to relax"). The scale yields both a single score for each dimension and a total score for general distress. Moreover, both single and total scores are comparable with cut-off values in order to assess the level of severity of distress on 5 anchor points: normal, mild, moderate, severe, and extremely severe (see Table 1 for ranges for each dimension). For comparison, each subscale score is computed as twice the sum of the related items. Therefore, General distress index is computed as the sum of each doubled dimension score and could range from 0 to 126.

Table 3.1. Severity ranges for DASS-21 dimensions

	Depression	*Anxiety*	*Stress*
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extremely	+28	+20	+34

severe	

For general distress index, Lovibond and Lovibond (1995) suggested that scores above 60 should be marked as severe distress.

McDonald's omega ranges in these samples were ω_{T1}= .871-.945, ω_{T2}= .882-.937, ω_{T3}= .891-948.

In order to evaluate students' *mentalizing ability*, it was administered the *Reflective Functioning Questionnaire* (RFQ; Fonagy et al., 2016; Italian validation by Morandotti et al., 2018), an 8-item self-report that measures mentalizing operationalization, namely reflective functioning (RF), on 2 dimensions which reflect hypo- and hyper-mentalizing: *certainty about mental states* (6 items; e.g. "People's thoughts are a mystery to me") and *uncertainty about mental states* (6 items; e.g. "I always know what I feel"). Recent studies (Muller et al., 2022; Woźniak-Prus et al., 2022; Horváth et al., 2023) showed that the scale presented several problems referred to item content, scoring procedure and dimensionality. The main critics yielded by this measure refers to the two-factor structure which does not reflect both into item content and actual bi-dimensionality. In fact, these studies suggested that RFQ might be measuring a single dimension related to hypomentalizing and uncertainty about mental states, therefore, to a maladaptive mentalizing ability. As for the interpretation of the scores, Muller and colleagues (2022) suggested that both low, which indicate high hypermentalization, and high levels, which indicate high hypomentalization, on the unidimensional RFQ are supposed to be maladaptive, marking the high ends of the U-shape when inspecting a maladaptive criterion. By contrast, middle levels are supposed to reflect genuine mentalizing ability. Therefore, in this project a monofactorial structure will be tested.

McDonald's omega value in these samples were ω_{T1}= .1.074, ω_{T2}= .1.052, ω_{T3}= .904.

In order to evaluate the perception of *academic gender congruence*, an index has been computed on the basis of students' responses to the *Traditional Masculinity and Femininity Scale* (TMF; Kachel, Steffens & Niedlich, 2016), which is a 6-item self-report measuring gender identity and roles on a 7-point Likert scale from 1 (totally masculine) to 7 (totally feminine), with a neutral anchor point at 4 (neither masculine

nor feminine). This scale evaluates gender identity in terms of appearance, attitudes, interests, behaviours and ideals. In order to evaluate whether students felt a congruence between their gender identity and their perception of the gender composition of their degree course, the students were also asked to rate on the same Likert scale the following sentence: "Traditionally, I would consider my degree course…", in order to obtain a score for the perception of course degree gender composition from 1 (totally masculine) to 7 (totally feminine). Therefore, scores were grouped into 3 categories: masculine, neutral and feminine. If gender identity category (for example, feminine) corresponded to the degree course gender composition perception (for example, feminine, too), students received the code *congruence*; if there was no correspondence between the two indicators (for example, gender composition perception was coded as masculine or neutral), students received the code *incongruence*.

McDonald's omega value of TMF in these samples were ω_{T1}= .938, ω_{T2}= .954, ω_{T3}= .963.

3.2.3. DATA ANALYSIS

Statistical analyses were performed with the softwares SPSS29, R 4.3.1, and Jamovi. After the internal consistency of each measure used was acceptable (with $\omega \geq$ .75), scoring procedures were applied to obtain a synthetic index for each subscale or a total index. Therefore, descriptive analyses were performed in order to answer research question 1 and 2.

First of all, preliminary analyses to verify if the samples differed in terms of socio-demographic features were carried out. Thus, a Chi-square test (χ^2) was performed. Therefore, *Analysis of Covariance* (ANCOVA) using socio-demographic and academic variables as covariates emerged as relevant in preliminary analyses were performed. This process had the objective to reduce any distortions related to samples differences. Finally, post-hoc tests were performed (Bonferroni's method) to verify differences between samples.

3.3 RESULTS

3.3.1 DESCRIPTIVES AND PRELIMINARY ANALYSES FOR THE TOTAL SAMPLE

Considering the whole sample, participating students (N= 1177; mean$_{age}$= 22.76; SD= 3.06; range= 18-56) were mainly female (72.4%), not working students

(76.6%) from South Italy (87%). Most of them were enrolled in a public university (94%), in a bachelor's degree (60.7%), in a socio-humanistic degree course (55%) and mostly in course (86.7%).

In T1, participating students (N= 462; mean$_{age}$= 22.5; SD= 3.488; range= 18-56) were mainly female (78%), not working students (84%) from South Italy (87%). Most of them were enrolled in a public university (93%). Moreover, 61% of the participants in T1 were enrolled in a bachelor's degree course and 54% of them were third year students. Master's degree students were 24% of participants and they were mainly attending second year (54.5%), while single-cycle degree course students were 13% of participants and were fairly distributed among the years of course. As for out-of-course students, they represented about 5% of the sample and they were mainly enrolled in a bachelor's degree course (60%). In figure 1, a graphic reproduction of students' distribution is reported.
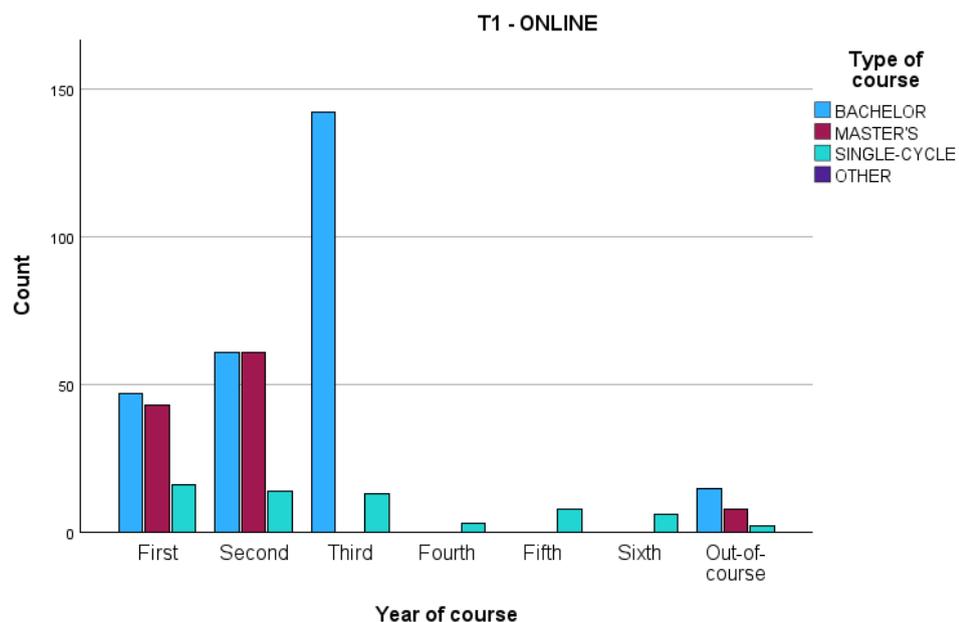
Figure 3.1 Students' distrubution per academic year and type of degree course in T1

Students in this sample gained on average N= 87.76 ECTSs.

In T2, participating students (N= 357; mean$_{age}$= 23; SD= 3.044; range= 19-48) were mainly female (69%), not working students (73%) from South Italy (70%) . Most of them were enrolled in a public university (99%). Moreover, 59% of the participants in T2 were enrolled in a bachelor's degree course and 55% of them were third year students. Master's degree students were 29% of participants and they were mainly

attending second year (74%), while single-cycle degree course students were 19% of participants and were mainly attending third (35%) or fifth year of course (30%). As for out-of-course students, they represented about 13% of the sample and they were mainly enrolled in a bachelor's degree course (83%). In figure 2, a graphic reproduction of students' distribution is reported.
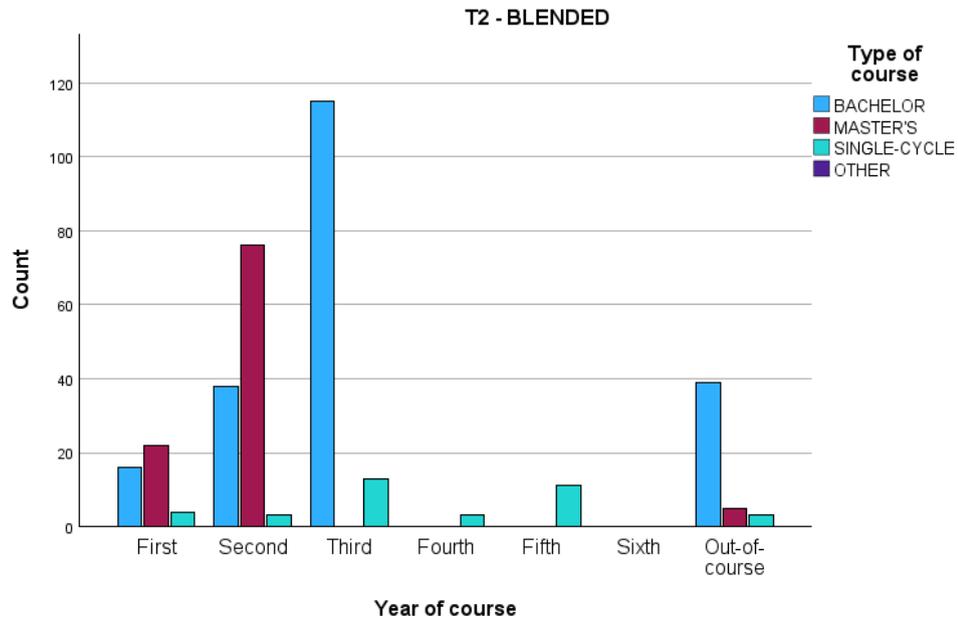
Figure 3.2 Students' distrubution per academic year and type of degree course in T2

Students in this sample gained on average N= 97.66 ECTSs.

In T3, participating students (N= 360; mean$_{age}$= 22.85; SD= 2.428; range= 18-33) were mainly female (69%), not working students (71%) from South Italy (79%). Most of them were enrolled in a public university (92%). Moreover, 62% of the participants in T3 were enrolled in a bachelor's degree course and 42% of them were third year students. Master's degree students were 27.5% of participants and they were mainly attending second year (56%), while single-cycle degree course students were 11% of participants and were mainly attending first (28%) or fifth year of course (20.5%). As for out-of-course students, they represented about 22.5% of the sample and they were mainly enrolled in a bachelor's degree course (86%). In figure 3, a graphic reproduction of students' distribution is reported.
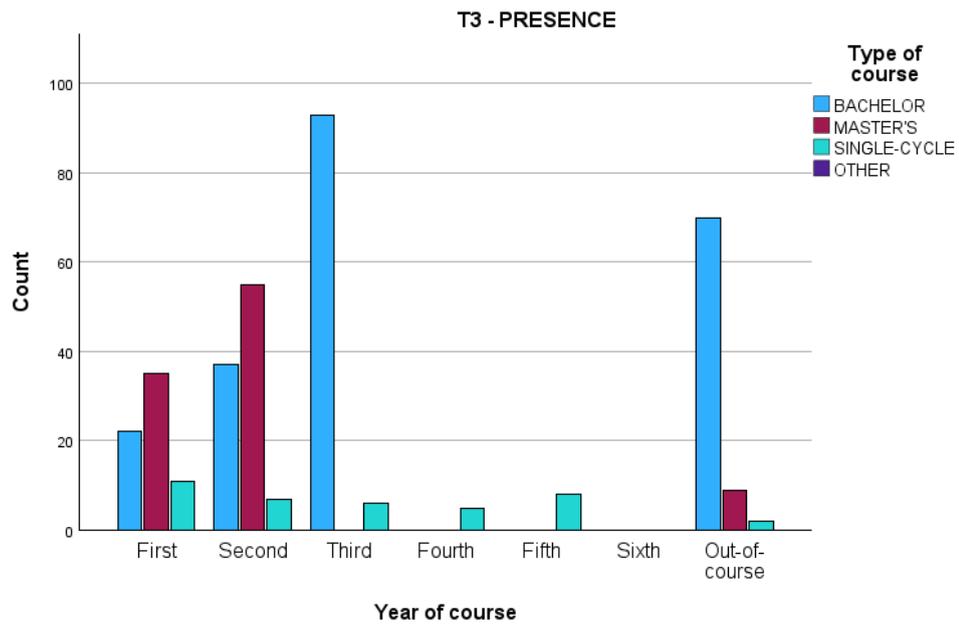
Figure 3.3 Students' distrubution per academic year and type of degree course in T3

Students in this sample gained on average N= 94.58 ECTSs.

A Chi-square test with contingency tables was performed, matching the recruitment time points (T1, T2, and T3) and socio-demographic and academic variable (see Table 2.2).

Table 3.2 Contingency table with Chi square test

	T1	T2	T3	χ^2
	n	*N*	*n*	
Gender				
Female	359	243	250	
Male	103	110	109	12.666*
Other	0	2	1	
Field of study				
Scientific-technological	102	144	107	
Socio-humanistic	279	157	211	38.317*
Medical	81	54	42	
Type of course				

Bachelor	281	211	222	
Master	117	107	99	4.324
Single-cycle	64	37	39	
Academic status				
In course	414	301	279	
Out-of-course	25	47	81	48.336*

Note: Results are based on nonempty rows and columns in each innermost subtable.
*Significant for $p < .05$

Results in Table 2.2 showed that the three samples were significantly different concerning gender, occupational status, type of university, field of study and year of course. Moreover, ANOVA showed that the three samples presented significant differences in terms of ECTSs number (F= 3.173; p= .042; η^2= .005), but not in terms of mean age (F= 2.997; p= .050; η^2= .005)

Descriptive statistics with reference to the psychological variables are presented in Table 2.3.

Table 3.3 Descriptive statistics for psychological variables

	T1	T2	T3
	Mean (SD)	Mean (SD)	Mean (SD)
DASS			
Stress	22.64 (9.34)	35.55 (8.83)	22.57 (9.08)
Anxiety	13.95 (9.95)	27.46 (9.71)	16.57 (10.32)
Depression	18.26 (10.68)	31.34 (9.99)	18.89 (10.54)
General Distress	54.85 (26.90)	94.35 (25.00)	58.03 (27.08)
RF			
Uncertainty	4.10 (1.15)	4.00 (1.13)	3.84 (1.24)
SAES			
Intention to dropout	1.96 (.82)	2.12 (.87)	2.32 (.98)
University value	4.19 (.67)	4.11 (.68)	3.91 (.87)
Degree course value	4.10 (.77)	3.91 (.80)	3.88 (.90)
Integration	3.57 (1.03)	3.45 (1.03)	3.53 (1.03)
Relationship with peers	3.62 (.96)	3.50 (.95)	3.44 (1.02)
Relationship with	3.27 (.80)	3.22 (.82)	3.44 (.96)

professors

As showed in the Table 2.3, T1 and T3 presented moderated levels of anxiety, stress and depression, and scores below 60 in the total index of general distress. In T2, for all the distress dimensions extremely severe levels were registered and scores for general distress were above 60, signaling a severe distress. In terms of mentalizing ability, in all three samples, students showed medium level of uncertainty, which could be interpreted as genuine levels of mentalizing ability. Regarding the academic engagement levels, university value and degree course value are the dimensions that presented the highest scores in all three samples, while relationship with professors presented the lowest score in all three times.

Table 3.4 Frequencies and percentages for Congruence

	T1	T2	T3	χ^2
	N (%)	*N (%)*	*N (%)*	
Congruence				
Incongruent	228 (49.4%)	190 (53.5%)	163 (45.3%)	4.859
Congruent	234 (50.6%)	165 (46.5%)	197 (54.7%)	

With reference to congruence (see Table 2.4), in the three samples, students were equally distributed in the two reference categories.

3.3.2 COMPARISONS FOR TIME OF ADMINISTRATION

In order to compare the samples considering the psychological variables, an ANCOVA was performed, controlling for the socio-demographic and academic variables that were found to be significantly different between the samples, namely gender, field of study, academic status and ECTSs. In Table 2.5 ANCOVA results and post-hoc comparisons relating to the Time are presented. Specifically, results suggested that the three samples presented differences especially with reference to psychological distress, uncertainty of mental states, and congruence, while for academic engagement only two dimensions showed differences between the times, namely perception of capability and university value.

Specifically, ANCOVA regarding *Stress*, *Anxiety, Depression*, and *General Distress* showed that students reported significantly higher levels in all of the dimensions and in the total index in T2 than in T1 and T3. Moreover, stress levels were also significantly higher in T3 than in T1.

Regarding *Uncertainty*, ANCOVA showed that in T3 registered levels were significantly lower than in T2.

Regarding *Intention to Dropout*, ANCOVA showed that students felt significantly less capable to persist in T3 than in T1 and T2.

Regarding *University Value*, ANCOVA showed that students attributed significantly more value to the academic choice in T1 and T2 than in T3.

Regarding *Relationship with Peers*, ANCOVA showed that students valued in significantly more relationships with other university colleagues in T1 than T3. ANCOVA regarding *Degree Course Value*, *Integration*, and *Relationship with Professors* showed no statistically significant difference between times.

Regarding *Congruence*, in Table 2.6, Chi-square test showed that there was no significant difference in the frequency of students who perceived congruence between their personal identity and the gender composition of their degree course in the 3 times of administration.

Table 3.5 ANCOVA and Post-Hoc results for psychological variables related to Time of administration

Variable	T	Mean (DS)	F	Post-Hoc comparison (sig.)		
				T1 vs. T2	T2 vs. T3	T1 vs. T3
Stress	1	22.64 (9.43)	232.806***	<.001	<.001	.861
	2	35.55 (8.83)				
	3	22.57 (9.08)				
Anxiety	1	13.95 (9.95)	194.576***	<.001	<.001	<.001
	2	27.46 (9.71)				
	3	16.57 (10.32)				
Depression	1	18.26 (10.68)	178.132***	<.001	<.001	.127
	2	31.34 (9.99)				
	3	18.89 (10.54)				

General Distress	1	54.85 (26.90)	252.882***	<.001	<.001	.584
	2	94.35 (25.00)				
	3	58.03 (27.08)				
Uncertainty	1	4.10 (1.15)	3.031*	.616	.077	.017
	2	4.00 (1.13)				
	3	3.84 (1.24)				
Intention to dropout	1	1.96 (.82)	9.619***	.056	.021	<.001
	2	2.12 (.87)				
	3	2.32 (.98)				
University value	1	4.19 (.67)	6.004**	.197	.042	.001
	2	4.11 (.68)				
	3	3.91 (.87)				
Degree Course value	1	4.10 (.77)	2.074	.055	.656	.143
	2	3.91 (.80)				
	3	3.88 (.90)				
Integration	1	3.57 (1.03)	0.622	.327	.331	.970
	2	3.45 (1.03)				
	3	3.53 (1.03)				
Relationship with peers	1	3.62 (.96)	3.086*	.054	.762	.024
	2	3.50 (.95)				
	3	3.44 (1.02)				
Relationship with professors	1	3.27 (.80)	0.109	.725	.655	.907
	2	3.22 (.82)				
	3	3.44 (.96)				

Note: Post-Hoc comparisons were based on Bonferroni's correction; p<.05*; p<.01**; p<.001***

Table 3.6 Chi-square test of Congruence for Time of administration

	χ^2	P
Congruence		
Congruent Incongruent	4.859	.088

Summarizing the results, it is possible to note that T2 was characterized by severe levels of distress, but by genuine levels of mentalizing ability; T1 was characterized by higher levels of engagement, specifically the dimensions of university value and relationships with peers, lower levels of intention to dropout, and higher levels of uncertainty, although still at levels that could be considered as genuine mentalizing; T3 was characterized by higher levels of intention to dropout and lower levels of uncertainty.

3.4   DISCUSSIONS

Covid-19 outbreak in 2020 posed a series of challenges to the general population, with major concerns related to the medical safety and attention toward anti-contagion practices (WHO, 2020). Limitation in people circulation were needed to avoid any occasion of virus diffusion, and also university and higher education agencies had to deal with this contingency. Many challenges are inherent in the higher education context, but covid-19 represented an unprecedent crisis. Higher education agencies had to align with the recommendations, transitioning towards online learning modality. This shift has most certainly impacted academic life as we knew it, reducing social opportunity with peers and faculty members to the screen. It could have also yielded concerns about psychological and mental health of students, reinvigorating an already rich research interest.

Purpose of this project was to understand the role of a pivotal construct, namely the Academic Engagement, in three cross-sectional waves, during lockdown, with lessons provided only online (T1), immediately after lockdown, with lessons provided in a blended mode (T2), and after the medical emergency was declared over, when lessons were provided again in a face-to-face mode (T3). In this chapter, description and preliminary analyses to investigate any differences between the samples that have been involved in the project were presented.

Regarding the comparison between the times, results showed that the samples were statistically different in some dimensions, and some trends are identifiable. Specifically, in terms of academic engagement, results showed that the three samples were statistically different only in term of value attributed to the academic choice and

in terms of relationships with university colleagues. Both dimensions showed to be significantly higher in T1 compared to T3 and value of university choice also in T2 compared to T3. Regarding the first dimension, we could argue that in really uncertain times, as the covid-19 lockdowns were, the quick and effective re-organization of the universities in providing continuity in education for students (Rashia et al., 2020) offered a safe space, a window to the world when going out was not an option, at least in the western countries, where there are less technological discrepancies. In this perspective, the university choice may have been hyper-invested as it was the only context reachable from home for students. Regarding the dimension of relationship with peer colleagues, higher levels of engagement are fostered in environments that promote emotional and social development, which passes through relationships between academic actors (Kahu & Nelson, 2018). One could argue that social distancing and the impossibility to reach and share university spaces with colleagues could have hindered positive and meaningful relationships and that students felt disconnected and isolated from the academic experience (Dotson et al., 2022). Nevertheless, social isolation was a shared situation for university students and during the second lockdown also a less unknown one; moreover, colleague relationships, also mediated by screen, could have offered the needed social support for the students.

Regarding the perception of capability to persist, which is considered a proxy variable for intention to dropout students felt more capable to maintain their academic project in T1 and in T2 compared to T3. In line with colleague relationships, intention to drop-out during second lockdown was lower, suggesting that the reduced uncertainty connected to the not so new mode of online attendance and contingent social distancing allowed to focus on its increasing advantages in terms of time management for study activities. Moreover, as it could be hypothesize that the university and the related activities were hyper-invested, in line with results regarding the value of university choice, the intention to leave the university could have been buffered by the perception of the higher education as a context that 'keeps the students in mind' and thinking of them offers services (especially considering the transition online also of services as counselling and mental health services for students), reorganizes itself and keeps in touch with them; while in T3, the return to face-to-face mode could have underlined the unpredictability of the academic future in the new

situation, similar, but different from the pre-COVID, therefore, T3 was characterized by more intention to leave the university.

In terms of mentalizing abilities, results showed that, in all the three samples, students referred medium levels of uncertainty, congruent with genuine mentalizing. In this perspective, we may observe that university students could be considered "average mentalizer". It was also possible to observe that the samples differed in these levels, which remained medium, but tended to be significantly lower in T3 compared to T1, suggesting a mild tendency to certainty of mental states when the health crisis was declared over. In this perspective, it could be possible to argue that non-optimal levels of reflective functioning, that slightly tend to certainty, and therefore to rigid and more inflexible models of mind, could impact on the intention to leave the university. In fact, rigidity in models of mind and hypermentalization are connected to a tendency to jump to conclusion (Bateman & Fonagy, 2019). In terms of psychological distress, we observed that both single dimensions and total index tended to be lower in T1 and T3 than in T2. This trend may be interpreted as a response towards a new adjustment to a new situation. In fact, if in T1 online learning was a year-old practice to which students could have finally adjusted, the partial re-opening of university may have represented a new critical switch point for students, with for some of them a new modality of attendance of academic activities, the blended learning. This new way of being at university could have put on students' shoulders the weight of the choice: to be in presence or to be online now is a choice and students must make it, while during T1 they were forced to be in the online mode. A hypothesis may be to link this possibility to make a choice to the responsibility of making it. In this perspective, the forced transition to the online mode of attendance could have taken off students' shoulders the responsibility of their own involvement and behaviour. Therefore, in T2 students may have experienced higher levels of stress, anxiety, and depression as a response to the fact that the modality of attendance was up to them and not a prescription from the institution. Moreover, blended time was also still characterized by unpredictability related to the length of the covid 19 emergency.

Some of the results yielded by these analyses could sound counterintuitive. In fact, it could have been more plausible to expect higher level of distress during the

phase of the second lockdown, with the impossibility to move freely and to engage in social situations that were not online, as highlighted by recent studies (Di Consiglio et al., 2021; Meda et al., 2021). Studies on the general population (Di Blasi et al., 2021; Gullo et al., 2023) highlighted that lockdown represented a catalyst for psychological distress, that reached clinical cutoffs. It is possible to hypothesize that in the academic context, in light of the quick reorganization of the activities, the continuity that was granted by the shift to the online mode may have acted as a buffer for distress. In fact, during the online mode the levels of intention to dropout were the lowest, while in T3 the highest.

Taken altogether, these results could suggest that online attendance during second lockdown could have had a protective function. This is an innovative finding as most of the research highlighted the challenges and the negative impact on students' mental health of covid-19 social distancing enforcement and online learning transition (Di Consiglio et al., 2021; Meda et al., 2021). These findings, instead, seem to suggest that during the second lockdown the online learning offered containment to students, a safety net during uncertain times. Nevertheless, these interpretations are founded on only descriptive analysis, therefore they constitute only hypothesis that should be verified through analysis that allow to test casual relationships between the variables under study.

CHAPTER 4

THE MEDIATING ROLE OF ACADEMIC ENGAGEMENT

A STRUCTURAL EQUATION MODEL TO INVESTIGATE RELATIONSHIP

BETWEEN PSYCHOLOGICAL AND ACADEMIC VARIABLES

4.1.   PRESENT STUDY

Higher education as all the other public and private agencies in 2020 had to face the challenges posed by the outbreak of Covid-19 pandemic. In Italy, Universities and other Higher Education institutions responded quickly and efficiently to the contingency providing almost immediately an alternative mode to offer lessons and academic activities. As the pandemic changed its consequences and the effort needed to face it, also universities adapted aiming at a gradual return to normality.

During the last 20 years, psychological research in higher education has focused on three main topics: the psychological distress and mental health of university students; the quality of their relationship with the academic context, namely their academic engagement; and the gender differences.

Regarding the first main topic, research showed an increasing interest of the scientific community for the levels of psychological distress of the university student population, often comparing their mental health with the one of other populations, such as medical staff, workers and general population. This interest was amplified by the Covid-19 outbreak.

Regarding the second main topic, academic engagement has a long history of interest in the scientific research, both from a pedagogical and a psychological point of view. This very complex and multidimensional construct gained its top tier position in the investigation of higher education research in light of its characteristics: it is malleable, therefore it can be actively modified through ad hoc interventions

(Fredricks, 2019); it has a relational and contextual nature, therefore it depends not only on the student's personal characteristics, but most and foremost also on the contextual and other academic actors' characteristics (Kahu & Nelson, 2018); it is dynamic, therefore it is subject to change overtime (Lawson & Lawson, 2013); lastly, but more importantly, it has been found pivotal for academic success and persistence of university students (Trowler & Trowler, 2010).

Regarding the third main topic, the main question around this topic regards "are there differences linked to gender regarding the university experience and academic engagement?". Most of studies yielded mixed results in response to this question. Some researcher proposed that the reason for these inconclusive findings regards, on one hand, the multidimensionality of the construct; on the other, the limitations of the binary gender system and the lack of attention to the gender characteristics of the context. In this perspective, it has been advised to shift to a focus on the gender composition of the context (Tison, Bateman & Culver, 2011), as it overcome the limits of the binary gender system and could yield clearer results.

In this perspective, this chapter has the main objective of investigating the intersection between these three main topics. In particular, this study aimed at evaluating, through a variable-centered approach, the relationships between psychological and academic variables in the three samples widely described in Chapter 3, taking into account the different mean of academic fruition in the different times of administration. Specifically, this study aimed at analyzing the structural relationships between the construct of main interest of this project, namely the Academic Engagement, and psychological distress, reflective functioning, and intention to dropout, considering also, instead of the binary gender system, the academic gender congruence, namely the congruence between individual gender identity perception and perception of the degree course gender composition.

The model that is proposed in this study is depicted in Figure 1. It considers mentalizing abilities of the students, measured in terms of uncertainty of mental states (UNCERT), as a predictor for Academic Engagement (ENGAGE), that mediates the relationship with the Psychological Distress (DISTRESS) and the Intention to Dropout (DROPOUT). This relationship has never been tested but it has been theorized for the scholastic context by Fonagy (2022). Specifically, the ability to mentalize allows

people to perceive the world as more predictable, and it is positively correlated with psychological wellbeing (Hayden et al., 2018) and negatively correlated with distress (Antonsen et al., 2016), also in university students' population (Esposito et al., 2020; 2023). Fonagy (2022) posits that the ability to mentalize has an impact on the academic engagement, which in turns impacts on the persistence of students. In this perspective, this study could be considered the first empirical validation of this theoretical model. Moreover, few study has focused on the relationship between academic engagement and psychological distress (Boulton et al., 2019). Given the relevance that the issue concerning students' mental health increased during the pandemic, this study aimed also at verifying whether academic engagement could negatively predict psychological distress. Finally, given the continuous changes in academic fruition due to Covid-19 anticontagion restriction, this study proposed to investigate whether changing the mode of fruition the relationships hypothesized would differ, and whether the model was invariant across the groups based on Academic Gender Congruence (CONGRUENCE). This variable allows to evaluate whether students felt the context to be 'similar' to them in terms of gender and this study aimed at evaluating whether it could have an effect on the structural relationships between the variables.

Specifically, this chapter answers to the following research questions:

1. Has the Academic Engagement a mediating role between reflective functioning, psychological distress and intention to dropout?

2. Is the mediating role of Academic Engagement dependent from the mode of academic fruition, namely during the online mode of the second lockdown, the blended and the return to the face-to-face mode?

3. Is the mediating role of Academic Engagement independent from the perception of congruence with the degree course gender composition?
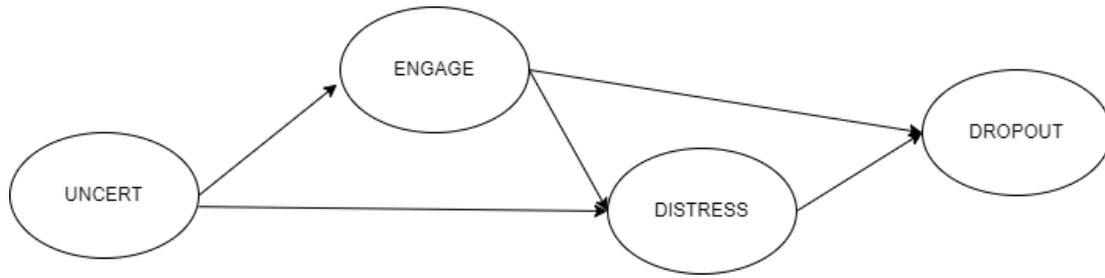
Figure 4.1 Hypothesized model tested

4.2. MATERIALS AND METHODS

4.2.1. DATA COLLECTION, PARTICIPANTS AND PROCEDURES

The present project was based on a repeated cross-sectional research design. The same set of questionnaires was administered to three different samples of Italian university students in three different phases of learning fruition: during the second lockdown (T1: April – June 2021), when lessons were only online for every university in Italy; after the second lockdown (T2: April – June 2022), when university provided blended learning modality and students could choose to attend either online or face-to-face; after the Covid-19 emergence ended (T3: April – June 2023), when attendance returned to be face-to-face. The detailed description of samples, data collection procedures, and measures is provided in Chapter 3.

Before the recruitment of the participants, an a priori power analysis was performed to identify the appropriate sample size for the carrying out a Structural Equation Model (Soper, 2021). Based on the number of observed variables (66) and latent variables (13) of the hypothesized model, considering an effect size = .30, an α = .05, and an expected power = .80, sample size computing suggested a minimum number of 200 participants for each of the samples as appropriate for the analysis, for a total of 600 participants.

A total of N= 1213 students responded to the set of questionnaires, specifically N= 479 for T1, N= 362 for T2, and N= 372 for T3. A total number of N= 36 respondents were excluded from the analysis, as they did not provide their consent (N= 27) or did not meet the inclusion criteria (N= 9). Therefore, the three recruitment phases provided final samples of N= 462 participants in T1, N= 355 in T2, and N= 360 in T3, for a total N= 1177 participants, an appropriate final sample for the hypotheses

testing for Structural Equation Model to identify whether the structural relationships between the considered variables could be influenced by the specificity of the contextual contingency (the mode of fruition of the academic activities), given the contextual and relational nature of main interest construct of this project, namely the Academic Engagement (Kahu, 2013).

4.2.2. MEASURES

The set of questionnaires aimed at collecting socio-demographic data, academic data, and psychological variables.

Relevant for this study are the measure proposed in the second part of the survey presented in Chapter 3, measures for the psychological, academic and contextual variables that were administered identically in the three time points.

In order to measure the *Academic Engagement* (AE) of students coherently with the theoretical backgroud of the project, the *SInAPSi Academic Engagement Scale* (SAES, Freda et al., 2021).

In order to measure the *Psychological Distress* (PD) of students, the *Depression Anxiety Stress Scale 21* (DASS-21; Lovibond & Lovibond, 1995; Italian validation by Bottesi et al., 2015).

In order to evaluate students' *mentalizing ability*, the *Reflective Functioning Questionnaire* (RFQ; Fonagy et al., 2016; Italian validation by Morandotti et al., 2018).

In order to evaluate the perception of *congruence with gender composition*, an index has been computed on the basis of students' responses to the *Traditional Masculinity and Femininity Scale* (TMF; Kachel, Steffens & Niedlich, 2016), which allowed to obtain an index of *Academic Gender Congruence*, as described in Chapter 3, based on 2 categories: congruence and incongruence.

4.2.3. DATA ANALYSIS

Statistical analyses were performed with the softwares SPSS29 and R 4.3.1. After the internal consistency of each measure used was acceptable (with $\omega \geq .75$), scoring procedures were applied to obtain a synthetic index for each subscale or a total index. Preliminary analyses to verify if the samples differed in terms of socio-

demographic features were carried out and already presented in Chapter 3. The descriptive analyses presented in the current chapter were performed clustering the samples according to the categories of *congruence with gender composition*. Therefore, Confirmative Factorial Analyses (CFAs) for each measure and 3 Multigroup Structural Equation Models (MG-SEM), one for each time of administration and using *Congruence with gender composition* as grouping variable, were performed using "lavaan" package of R software (Rosseel, 2012). The estimator used was Diagonally Weighted Least Square (DWLS) for ordinal data, which provides more accurate parameter and a more robust model fit to the variable type and non-normality (Li, 2016; Mîndrilă, 2010). As scaling factor, effect coding was used, as it entails constraining factor loadings to average to unity, and indicator intercepts to average to zero and it can be very useful for factor scaling, particularly with multiple-group analyses (Little, Slegers, & Card, 2006). Some of the advantages of using effect coding are: 1) it is possible to make weaker invariance assumptions; 2) it uses a single indicator; and 3) factors are scaled like the indicators, which could facilitate with results interpretation. Fit of models has been evaluated with the following fit indexes: Chi-square test, Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). A good fit is indicated by non-significant Chi-square test, CFI > .90, TLI > .90, RMSEA < .06, and SRMR < .08 (Hu & Bentler, 1999).

4.3. RESULTS

4.3.1 CONFIRMATIVE FACTORIAL ANALYSES

As preliminary step, CFA for each measure was performed. As argued by Thompson (2004), CFAs is a helpful and also necessary step before SEM, as it allows to detect measurement model issue prior to the test of structural relationships between the constructs.

CFA FOR SINAPSI ACADEMIC ENGAGEMENT SCALE

CFA results for SInAPSi Academic Engagement Scale was performed considering 5 (UNIVERSITY VALUE, DEGREE COURSE VALUE, INTEGRATION, PEERS, and PROFESSORS) of the 6 scales of the measure, excluding the scale *perception of capability to persist*, which has been evaluated

independently, following Passeggia and colleagues (2023), considering it as a proximal indicator of intention to dropout.

Given the multidimensionality of the scale, first order and a second order model have been tested. Fit results for the first order model were optimal (χ^2= 1759.214; CFI= .993; TLI= .992; RMSEA= .069; SRMR= .048). Fit results for the second order model were optimal as well (χ^2= 2021.360; CFI= .992; TLI= .991; RMSEA= .074; SRMR= .054). These results suggested the feasibility of a second order model. Moreover, Hetero-trait Mono-trait indications suggest that the hypothesis of discriminant validity is acceptable, given that the HMTM for each subscale was below .90. Specifically, for STRESS-ANXIETY= .855; STRESS-DEPRESSION= .885; ANXIETY-DEPRESSION= .808.

Table 4.1 Factor loading for First order model of SInAPSi Academic Engagement Scale

Latent variables	Indicator	Estimate	Std.Err	Z	sig
UNIVERSITY	Item 2	1.005	0.013	76.436	<.001
VALUE	Item 13	0.871	0.018	47.918	<.001
	Item 14	1.039	0.012	87.537	<.001
	Item 18	1.045	0.012	87.101	<.001
	Item 19	1.051	0.011	98.389	<.001
	Item 23	0.989	0.013	74.267	<.001
DEGREE	Item 9	0.960	0.009	104.514	<.001
COURSE	Item 10	1.012	0.008	126.544	<.001
VALUE	Item 11	1.087	0.008	142.390	<.001
	Item 12	1.079	0.008	141.313	<.001
	Item 26	0.888	0.013	67.946	<.001
	Item 27	0.983	0.010	100.886	<.001
	Item 29	0.991	0.008	128.517	<.001
INTEGRATION	Item 15	0.956	0.015	62.094	<.001
	Item16	0.982	0.014	72.580	<.001
	Item 17	1.062	0.016	67.532	<.001
PEERS	Item 3	1.130	0.015	75.994	<.001

	Item 4	1.040	0.015	70.640	<.001
	Item 21	1.094	0.015	70.640	<.001
	Item 22	1.091	0.014	75.631	<.001
	Item 28	0.645	0.030	21.223	<.001
PROFESSORS	Item 5	0.953	0.015	62.370	<.001
	Item 6	1.012	0.014	71.519	<.001
	Item 7	1.017	0.016	65.494	<.001
	Item 8	1.018	0.015	68.134	<.001

Table 4.2 Factor loading for Second order model of SInAPSi Academic Engagement Scale

Latent variables	Indicator	Estimate	Std.Err	Z	sig
UNIVERSITY VALUE	Item 2	1.005	0.013	76.537	<.001
	Item 13	0.871	0.018	47.785	<.001
	Item 14	1.040	0.012	87.380	<.001
	Item 18	1.045	0.012	86.908	<.001
	Item 19	1.051	0.011	98.039	<.001
	Item 23	0.989	0.013	74.263	<.001
DEGREE COURSE VALUE	Item 9	0.960	0.009	104.178	<.001
	Item 10	1.012	0.008	126.108	<.001
	Item 11	1.087	0.008	142.168	<.001
	Item 12	1.079	0.008	141.217	<.001
	Item 26	0.888	0.013	67.758	<.001
	Item 27	0.983	0.010	100.924	<.001
	Item 29	0.992	0.008	128.543	<.001
INTEGRATION	Item 15	0.957	0.016	61.555	<.001
	Item16	0.981	0.014	72.242	<.001

	Item 17	1.062	0.016	66.984	<.001
PEERS	Item 3	1.128	0.015	75.563	<.001
	Item 4	1.040	0.015	70.326	<.001
	Item 21	1.095	0.015	74.812	<.001
	Item 22	1.091	0.014	75.266	<.001
	Item 28	0.646	0.031	21.149	<.001
PROFESSORS	Item 5	0.953	0.015	62.195	<.001
	Item 6	1.012	0.014	71.515	<.001
	Item 7	1.017	0.016	65.509	<.001
	Item 8	1.018	0.015	68.036	<.001
ENGAGEMENT					
UNIVERSITY VALUE		1.307	0.023	57.210	<.001
DEGREE COURSE VALUE		1.284	0.021	61.116	<.001
INTEGRATION		0.816	0.027	29.936	<.001
PEERS		0.756	0.026	29.479	<.001
PROFESSORS		0.838	0.026	31.688	<.001

Finally, analysis of invariance using the Time as grouping variable suggested that Configural invariance was verified (ΔCFI= .000; ΔRMSEA= .000), but Metric invariance was not verified ((ΔCFI= -.003; ΔRMSEA= .001), as the CFI difference was above .001 in absolute value.

CFA FOR INTENTION TO DROPOUT

Fit indexes for Intention to dropout (DROPOUT INTENTION), which has been measured with the subscale Perception of capability to persist of the SInAPSi Academic Engagement Scale, were optimal (χ^2 = 0.084; CFI = 1.00; TLI = 1.001; RMSEA = .00; SRMR= .001).

Table 4.3 Factor loading for Intention to Dropout

Latent variables	Indicator	Estimate	Std.Err	z-value	sig
DROPOUT INTENTION	Item 1	0.749	0.018	41.659	<.001
	Item 20	0.811	0.016	50.870	<.001
	Item 24	0.796	0.016	51.347	<.001
	Item 25	0.746	0.017	43.418	<.001

Finally, analysis of invariance using the Time as grouping variable suggested that Configural invariance was verified (ΔCFI= .000; ΔRMSEA= .000), but Metric invariance was not verified ((ΔCFI= -.002; ΔRMSEA= .022), as the CFI and the RMSEA differences were above .001 in absolute value.

CFA FOR DEPRESSION ANXIETY STRESS SCALE

CFA for Depression Anxiety Stress Scale was performed testing both a first order and a second order model, given the multidimensionality of the measure, consisting of three subscales (STRESS, ANXIETY, DEPRESSION) and an overarching dimension (GENERAL DISTRESS). Fit results for the first order model were optimal (χ^2= 236290.606; CFI= .997; TLI= .996; RMSEA= .059; SRMR= .039). Fit results for the second order model were optimal as well (χ^2= 236290.606; CFI= .997; TLI= .996; RMSEA= .059; SRMR= .039). These results suggested the two models were equivalent and that a second order model is feasible. Moreover, Hetero-trait Mono-trait indications suggest that the hypothesis of discriminant validity is acceptable, given that the HMTM for each subscale was below .90. Specifically, for STRESS-ANXIETY= .855; STRESS-DEPRESSION= .885; ANXIETY-DEPRESSION= .808.

Table 4.4 Factor loading for First order model of Depression Anxiety Stress Scale

Latent Variable	Indicator	Estimate	Std.Err	Z	Sig
STRESS	Item 1	0.852	0.011	80.766	<.001
	Item 6	0.774	0.013	59.792	<.001
	Item 8	0.821	0.012	71.372	<.001
	Item 11	0.806	0.013	62.607	<.001
	Item 12	0.852	0.010	85.659	<.001
	Item 14	0.835	0.012	71.517	<.001
	Item 18	0.774	0.013	57.594	<.001
ANXIETY	Item 2	0.706	0.018	39.462	<.001
	Item 4	0.842	0.011	79.440	<.001
	Item 7	0.755	0.015	50.276	<.001
	Item 9	0.840	0.012	72.479	<.001
	Item 15	0.847	0.010	83.512	<.001
	Item 19	0.840	0.010	80.693	<.001
	Item 20	0.842	0.011	77.991	<.001
DEPRESS	Item 3	0.8789	0.010	98.599	<.001
	Item 5	0.745	0.016	48.210	<.001
	Item 10	0.848	0.010	89.469	<.001
	Item 13	0.891	0.010	107.613	<.001
	Item 16	0.853	0.010	89.590	<.001
	Item 17	0.860	0.010	98.726	<.001
	Item 21	0.851	0.010	90.495	<.001

Table 4.5 Factor loading for Second order model of Depression Anxiety
Stress Scale

Latent Variable	Indicator	Estimate	Std.Err	Z	Sig
STRESS	Item 1	0.852	0.011	80.765	<.001
	Item 6	0.774	0.013	59.792	<.001
	Item 8	0.821	0.012	71.372	<.001
	Item 11	0.806	0.013	62.607	<.001
	Item 12	0.852	0.010	85.659	<.001
	Item 14	0.835	0.012	71.517	<.001
	Item 18	0.774	0.013	57.594	<.001
ANXIETY	Item 2	0.706	0.018	39.462	<.001
	Item 4	0.842	0.011	79.440	<.001
	Item 7	0.755	0.016	50.276	<.001
	Item 9	0.840	0.012	72.479	<.001
	Item 15	0.847	0.010	83.512	<.001
	Item 19	0.840	0.010	80.693	<.001
	Item 20	0.842	0.011	77.991	<.001
DEPRESS	Item 3	0.879	0.010	98.599	<.001
	Item 5	0.745	0.016	48.210	<.001
	Item 10	0.848	0.010	89.469	<.001
	Item 13	0.891	0.010	107.613	<.001
	Item 16	0.853	0.010	89.590	<.001

Latent Variable	Indicator	Estimate	Std.Err	Z	Sig
	Item 17	0.860	0.010	98.726	<.001
	Item 21	0.851	0.010	90.495	<.001
GENERAL DISTRESS					
STRESS		3.874	0.443	8.753	<.001
ANXIETY		1.864	0.087	21.313	<.001
DEPRESS		2.331	0.138	16.886	<.001

Finally, analysis of invariance using the Time as grouping variable suggested that Configural invariance was verified (ΔCFI= .000; ΔRMSEA= .000), but Metric invariance was not verified ((ΔCFI= -.002; ΔRMSEA= -.001), as the CFI difference was above .001 in absolute value.

CFA FOR REFLECTIVE FUNCTIONING SCALE

Fit indexes for Reflective Functioning Questionnaire (UNCERT) were optimal (χ^2 = 120.607; CFI = 0.980; TLI = 0.972; RMSEA = .065; SRMR= .056).

Table 4.6 Factor loading for Reflective Functioning Questionnaire

Latent Variable	Indicator	Estimate	SE	Z	Sig
UNCERT	Item 1	0.563	0.028	20.116	<.001
	Item 2	-0.405	0.029	-13.961	<.001
	Item 3	0.991	0.031	32.127	<.001
	Item 4	1.487	0.036	41.218	<.001
	Item 5	1.306	0.034	37.943	<.001

Latent Variable	Indicator	Estimate	SE	Z	Sig
	Item 6	1.386	0.035	40.132	<.001
	Item 7	1.130	0.035	32.610	<.001
	Item 8	1.386	0.035	39.205	<.001

Finally, analysis of invariance using the Time as grouping variable suggested that Configural invariance was verified (ΔCFI= .000; ΔRMSEA= .000), but Metric invariance was not verified ((ΔCFI= -.007; ΔRMSEA= -.010), as the CFI and RMSEA differences were above .001 in absolute value.

CFA FOR TRADITIONAL MASCULINITY AND FEMININITY SCALE

Fit indexes for Traditional Masculinity and Femininity Scale (TMF) were optimal (χ^2 = 57.527; CFI = 0.995; TLI = 0.991; RMSEA = .068; SRMR= .036).

Table 4.7 Factor loading for Traditional Masculinity and Femininity Scale

Latent Variable	Indicator	Estimate	SE	Z	sig
TMF	Item 1	1.088	0.020	55.433	<.001
TMF	Item 2	1.109	0.020	55.191	<.001
TMF	Item 3	0.831	0.017	49.270	<.001
TMF	Item 4	0.919	0.018	52.359	<.001
TMF	Item 5	0.946	0.018	53.347	<.001
TMF	Item 6	1.107	0.020	55.199	<.001

Finally, analysis of invariance using the Time as grouping variable suggested that Configural invariance was verified (ΔCFI= .000; ΔRMSEA= .000), but Metric invariance was not verified ((ΔCFI= -.003; ΔRMSEA= -.042), as the CFI and RMSEA

differences were above .001 in absolute value.

Given that the invariance was not verified for the examined constructs, the testing of structural relationships was not performed using a multigroup approach for time of administration as grouping variable. For each time, a multigroup analysis was conducted using Academic Gender Congruence, to answer to the third research question of this study.

4.3.2. COMPARISON AND PRELIMINARY ANALYSES FOR CONGRUENCE

In order to compare the scores of psychological variables, each sample was divided into two subsamples according to the two categories of congruence. In Table 4.8, comparisons are presented.

Table 4.8 Mean and comparison for Time of administration and Congruence with the gender composition.

	T1		T2		T3	
	C	I	C	I	C	I
Stress	11.42	11.22	17.35	18.14	11.25	11.33
Anxiety	6.89	7.06	12.86	14.48*	8.53	7.99
Depression	9.03	9.23	15.29	16.00	9.38	9.53
General Distress	54.69	55.02	91.01	97.25*	58.30	57.71
Uncertainty	4.08	4.13	3.95	4.03	3.82	3.87
Intention to dropout	1.90	2.02	2.07	2.16	2.26	2.40
University value	4.25	4.14	4.14	4.08	3.94	3.87
Degree Course value	4.12*	3.97	3.99	3.83	3.94	3.82
Integration	3.55	3.58	3.53	3.38	3.53	3.52
Relationship	3.66	3.59	3.41	3.58	3.44	3.45

with peers							
Relationship with professors	3.35*	3.18	3.22	3.22	3.30	3.11	

Note: C= Congruence; I= Incongruence; The symbol '*' indicates the score statistically significantly higher within the time of administration for a α < .05 according to Bonferroni.

Results showed significant differences for *Degree Course value* (p= .030) and *Relationship with professors* (p= .029) in T1, with higher levels for Congruent group, and for *Anxiety* (p= .002) and *General Distress* (p= .019) in T2, with higher levels for Incongruent group. No significant difference between the group was found in T3.

4.3.3   MULTIGROUP STRUCTURAL EQUATION MODEL FOR T1

The fit results of the model tested were optimal (χ^2= 3839.222; CFI= 0.990; TLI = 0.986; RMSEA =0.025; SRMR = 0.071).

With regard to the path analysis, in T1, for the CONGRUENT group, all the paths are significant, indicating a partial mediation of AE and General Distress on Intention to dropout; for the INCONGRUENT group, only the path between Uncertainty and Intention to dropout was non-significant, indicating a total mediation of the AE and General Distress on Intention to dropout.

Table 4.9 Regression coefficients for T1 Model

Group	Dependent	Predictor	Estimate	Std.Err	β	Z	sig
INCONGRUENT	DROPOUT_INTENTION	DISTRESS	0.2417	0.0423	0.2117	5.71	< .001
	DROPOUT_INTENTION	ENG	-0.9062	0.0819	-0.7285	-11.07	< .001
	DROPOUT_INTENTION	UNCERT	0.0637	0.0612	0.0487	1.04	0.299
	ENG	UNCERT	-0.2409	0.0306	-0.2292	-7.88	< .001
	DISTRESS	UNCERT	0.6486	0.0490	0.5665	13.23	< .001
	DISTRESS	ENG	-0.1113	0.0165	-0.1021	-6.73	< .001
CONGRUENT	DROPOUT_INTENTION	DISTRESS	0.1815	0.0392	0.1313	4.64	< .001
	DROPOUT_INTENTION	ENG	-0.8349	0.0753	-0.6815	-11.09	< .001
	DROPOUT_INTENTION	UNCERT	0.1902	0.0562	0.1290	3.38	< .001
	ENG	UNCERT	-0.2375	0.0312	-0.1973	-7.62	< .001
	DISTRESS	UNCERT	0.4133	0.0342	0.3874	12.09	< .001

DISTRESS	ENG	-0.1587	0.0165	-0.1791	-9.62	< .001

Table 4.10 Path analysis for T1 Model

Label	Description	Estimate	SE	β	z	p
IE1	(ENG ⇒ DISTRESS ⇒ DROPOUT_INTENTION)[1]	-0.027	0.005	-0.022	-5.054	< .001
IE2	(UNCERT ⇒ ENG ⇒ DROPOUT_INTENTION)[1]	0.218	0.022	0.167	9.908	< .001
IE3	(UNCERT ⇒ ENG ⇒ DISTRESS ⇒ DROPOUT_INTENTION)[1]	0.006	0.001	0.005	5.461	< .001
IE4	(UNCERT ⇒ DISTRESS ⇒ DROPOUT_INTENTION)[1]	0.157	0.030	0.120	5.302	< .001
IE5	(ENG ⇒ DISTRESS ⇒ DROPOUT_INTENTION)[2]	-0.029	0.007	-0.024	-4.428	< .001
IE6	(UNCERT ⇒ ENG ⇒ DROPOUT_INTENTION)[2]	0.198	0.021	0.134	9.493	< .001
IE7	(UNCERT ⇒ ENG ⇒ DISTRESS ⇒ DROPOUT_INTENTION)[2]	0.007	0.002	0.005	4.404	< .001
IE8	(UNCERT ⇒ DISTRESS ⇒ DROPOUT_INTENTION)[2]	0.075	0.017	0.051	4.438	< .001

Note: 1 is for INCONGRUENT, 2 is for CONGRUENT

Finally, analysis of invariance using the CONGRUENCE as grouping variable suggested that Configural invariance was verified (ΔCFI= .000; ΔRMSEA= .000), but Metric invariance was not verified ((ΔCFI= -.005; ΔRMSEA= -.006), as the CFI and RMSEA differences were above .001 in absolute value.
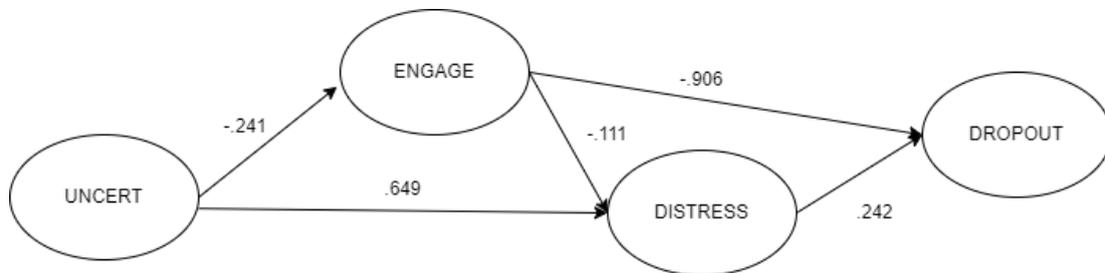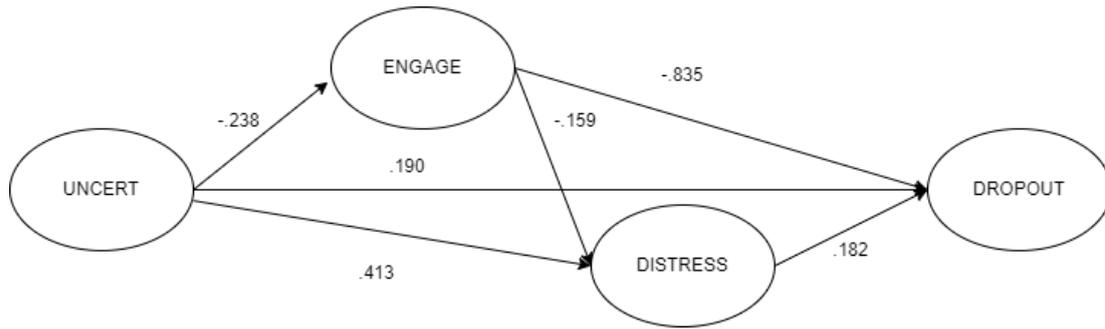

Figure 4.2 Model for Incongruent group in T1

Figure 4.3 Model for Congruent group in T1

4.3.4 MULTIGROUP STRUCTURAL EQUATION MODEL FOR T2

The fit results of the model tested were optimal (χ^2 = 3886.987; CFI= 0.979; TLI = 0.979; RMSEA =0.034; SRMR = 0.093).

With regard to the path analysis, in T2 for the CONGRUENT group all the paths were significant, except for the path DISTRESS → DROPOUT; for the INCONGRUENT group, the paths UNCERT → ENG and UNCERT → DROPOUT, were not significant, indicating a total mediation only of General Distress.

Table 4.11 Regression coefficients for T2 Model

Group	Dependent	Predictor	Estimate	SE	β	Z	p
INCONGRUENT	DROPOUT_INTENTION	DISTRESS	0.3456	0.0451	0.2942	7.671	<.001
	DROPOUT_INTENTION	ENG	-0.8634	0.0456	-0.7529	-18.929	<.001
	DROPOUT_INTENTION	UNCERT	-0.0707	0.0748	-0.0452	-0.946	0.344
	ENG	UNCERT	-0.0201	0.0215	-0.0148	-0.936	0.349
	DISTRESS	ENG	-0.1291	0.0133	-0.1322	-9.728	<.001
	DISTRESS	UNCERT	0.6886	0.0718	0.5169	9.592	<.001
CONGRUENT	DROPOUT_INTENTION	DISTRESS	-0.0778	0.0530	-0.0577	-1.466	0.143
	DROPOUT_INTENTION	ENG	-0.8987	0.0503	-0.7951	-17.858	<.001
	DROPOUT_INTENTION	UNCERT	0.2545	0.0803	0.1615	3.169	0.002
	ENG	UNCERT	-0.2179	0.0325	-0.1562	-6.699	<.001
	DISTRESS	ENG	-0.1710	0.0140	-0.2039	-12.197	<.001
	DISTRESS	UNCERT	0.5340	0.0583	0.4569	9.155	<.001

Table 4.12 Path analysis for T2 Model

Label	Description	Estimate	SE	β	Z	p
IE1	(ENG ⇒ DISTRESS ⇒ DROPOUT_INTENTION)$_1$	-0.045	0.006	-0.039	-7.498	< .001
IE2	(UNCERT ⇒ ENG ⇒ DROPOUT_INTENTION)$_1$	0.017	0.019	0.011	0.936	0.349
IE3	(UNCERT ⇒ ENG ⇒ DISTRESS ⇒ DROPOUT_INTENTION)$_1$	0.001	0.001	0.001	0.958	0.338
IE4	(UNCERT ⇒ DISTRESS ⇒ DROPOUT_INTENTION)$_1$	0.238	0.039	0.152	6.078	< .001
IE5	(ENG ⇒ DISTRESS ⇒ DROPOUT_INTENTION)$_2$	0.013	0.009	0.012	1.409	0.159
IE6	(UNCERT ⇒ ENG ⇒ DROPOUT_INTENTION)$_2$	0.196	0.030	0.124	6.606	< .001
IE7	(UNCERT ⇒ ENG ⇒ DISTRESS ⇒ DROPOUT_INTENTION)$_2$	-0.003	0.002	-0.002	-1.436	0.151
IE8	(UNCERT ⇒ DISTRESS ⇒ DROPOUT_INTENTION)$_2$	-0.042	0.029	-0.026	-1.434	0.152

Note: 1 is for INCONGRUENT, 2 is for CONGRUENT

Finally, analysis of invariance using the CONGRUENCE as grouping variable suggested that Configural invariance was verified (ΔCFI= .000; ΔRMSEA= .000), but Metric invariance was not verified ((ΔCFI= -.011; ΔRMSEA= -.009), as the CFI and RMSEA differences were above .001 in absolute value.
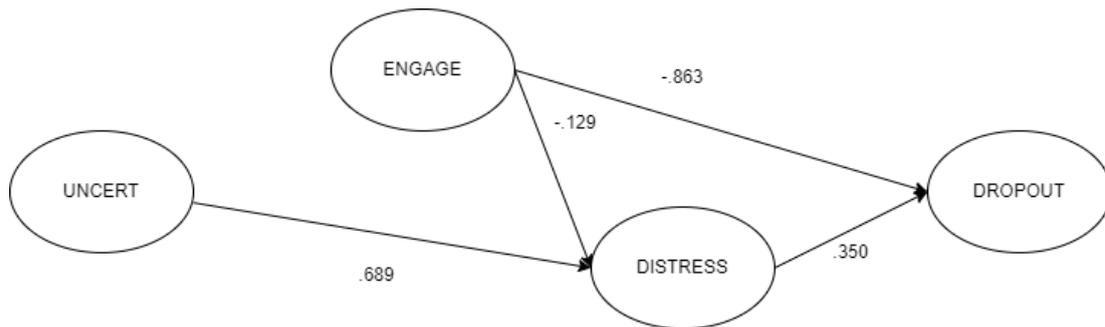

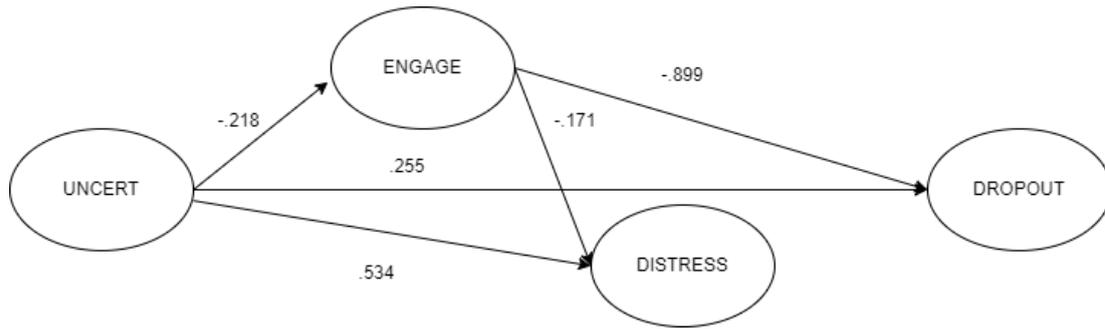*Figure 4.4 Model for Incongruent group in T2*

Figure 4.5 Model for Congruent group in T2

4.3.5 *MULTIGROUP STRUCTURAL EQUATION MODEL FOR T3*

The fit results of the model tested were optimal (χ^2= 4325.510; CFI= 0.990; TLI = 0.990; RMSEA =0.028; SRMR = 0.081).

With regard to the path analysis, in T3, for the CONGURENT group, all the paths are significant, indicating a partial mediation of AE and General Distress on Intention to dropout; for the INCONGRUENT group, the paths UNCERT → ENG and UNCERT → DROPOUT were found to be non-significant, indicating a total mediation only of the General Distress.

Table 4.13 Regression coefficients for T3 Model

Group	Dependent	Predictor	Estimate	SE	β	z	p
INCONGRUENT	DROPOUT_INTENTION	ENG	-0.5365	0.02893	-0.5389	-18.54	<.001
	DROPOUT_INTENTION	DISTRESS	0.3980	0.04327	0.3130	9.20	<.001
	DROPOUT_INTENTION	UNCERT	0.0487	0.03482	0.0577	1.40	0.162
	ENG	UNCERT	-0.0208	0.01148	-0.0245	-1.81	0.070
	DISTRESS	ENG	-0.1395	0.00946	-0.1782	-14.74	<.001
	DISTRESS	UNCERT	0.2910	0.01927	0.4381	15.10	<.001
CONGRUENT	DROPOUT_INTENTION	ENG	-0.4885	0.02729	-0.5779	-17.90	<.001
	DROPOUT_INTENTION	DISTRESS	0.2929	0.04596	0.2395	6.37	<.001
	DROPOUT_INTENTION	UNCERT	0.2781	0.04069	0.3655	6.83	<.001
	ENG	UNCERT	0.2622	0.01744	0.2913	15.04	<.001
	DISTRESS	ENG	-0.0790	0.00911	-0.1143	-8.67	<.001
	DISTRESS	UNCERT	0.3504	0.02197	0.5631	15.95	<.001

Table 4.14 Path analysis for T3 Model

Label	Description	Estimate	SE	β	z	p
IE1	(ENG ⇒ DISTRESS ⇒ DROPOUT_INTENTION)₁	-0.056	0.006	-0.056	-8.947	< .001
IE2	(UNCERT ⇒ ENG ⇒ DROPOUT_INTENTION)₁	0.011	0.006	0.013	1.816	0.069
IE3	(UNCERT ⇒ ENG ⇒ DISTRESS ⇒ DROPOUT_INTENTION)₁	0.001	0.001	0.001	1.844	0.065
IE4	(UNCERT ⇒ DISTRESS ⇒ DROPOUT_INTENTION)₁	0.116	0.014	0.137	8.209	< .001
IE5	(ENG ⇒ DISTRESS ⇒ DROPOUT_INTENTION)₂	-0.023	0.004	-0.027	-6.207	< .001
IE6	(UNCERT ⇒ ENG ⇒ DROPOUT_INTENTION)₂	-0.128	0.011	-0.168	-11.277	< .001
IE7	(UNCERT ⇒ ENG ⇒ DISTRESS ⇒ DROPOUT_INTENTION)₂	-0.006	0.001	-0.008	-5.513	< .001
IE8	(UNCERT ⇒ DISTRESS ⇒ DROPOUT_INTENTION)₂	0.103	0.016	0.135	6.480	< .001

Note: 1 is for INCONGRUENT, 2 is for CONGRUENT

Finally, analysis of invariance using the CONGRUENCE as grouping variable suggested that Configural invariance was verified (ΔCFI= .000; ΔRMSEA= .000), but Metric invariance was not verified (ΔCFI= -.004; ΔRMSEA= -.003), as the CFI and RMSEA differences were above .001 in absolute value.
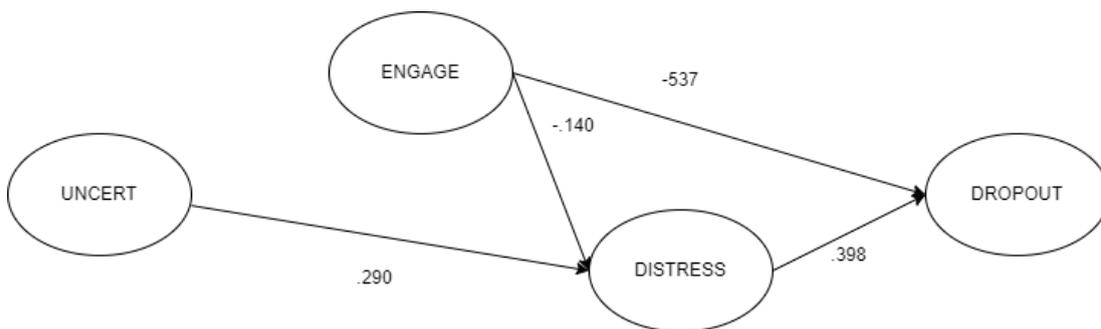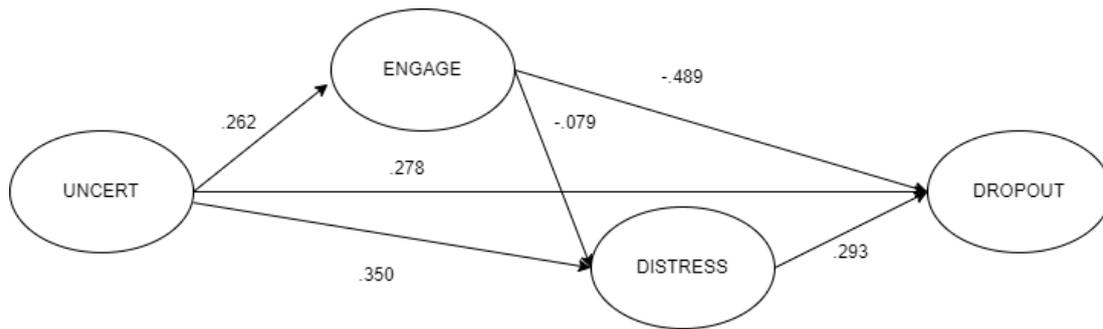

Figure 4.6 Model for Incongruent group in T3

Figure 4.7 Model for Congruent group in T3

4.4 DISCUSSIONS

This study aimed at investigating the relationships between the construct of Academic Engagement, Psychological Distress, Reflective Functioning, Intention to Dropout and Congruence with the Gender Composition through multigroup structural equation models. Specifically, this study proposed to explore whether the hypothesized model was different in the 3 samples and whether there were differences between the students who perceived to be congruent with the gender composition and the ones who perceived to be incongruent.

Preliminary analyses showed that the two subgroups CONGRUENT and INCONGRUENT were statistically different in T1 and T2, but not in T3. In T1, the CONGRUENT group showed higher levels in terms of Degree Course Value and Relationship with Professors, therefore, in terms of academic engagement dimensions. In T2, INCONGRUENT group showed higher levels of Anxiety and General Distress. These findings suggested that the CONGRUENT group, both in T1 and in T2, showed to be more engaged in T1 and less in distress in T2.

Regarding the analyses of Structural Equation Models, results for T1 showed that Academic Engagement partially mediated the relationship between Reflective Functioning, Psychological Distress and Intention to dropout for the CONGRUENT group, while totally mediated, together with Psychological Distress, the relationship between Reflective Functioning and Intention to dropout. In this perspective, it is possible to argue that Academic Engagement maintained its protective role towards Intention to dropout, as showed in literature (Trowler & Trowler, 2010), for CONGRUENT, but especially for INCONGRUENT group, during the online mode of

fruition of academic activities. Nevertheless, psychological well-being was a relevant need, too.

Regarding T2, results showed that for the CONGRUENT group Academic Engagement represented the only partial mediator in the relationship between Reflective Functioning and Intention to dropout. For the INCONGRUENT group Psychological Distress represented the only total mediator for the same relationship. Taken altogether, these results suggest that for the CONGRUENT group the need for relationship with the academic context was more relevant during the blended mode, while for the INCONGRUENT group, contrarily to what could have been expected and what analysis showed for T1, the issues concerning psychological and mental health showed to be more relevant in order to not intend to leave university.

Regarding T3, results showed the same structural relationships showed in T1 for the CONGRUENT group, while for the INCONGRUENT group the same structural relationships showed in T2. These findings suggest that for the INCONGRUENT group, the need for psychological well-being and mental health remain relevant even when universities re-open definitively and the pandemic is declared over. It may be possible to argue that the pandemic took a very hard toll on the university students from a mental health point of view and it may also be possible argue that the pandemic, with social isolation and restriction to counteract the diffusion of Covid-19, could have represented a collective trauma, whose effects are much more visible with the return to the "normality", and these effects are wider for the group of students who does not perceive congruence with the gender composition of their degree course.

In order to answer to the research question of this study, it is possible to observe that the construct of Academic Engagement is a partial mediator in the relationship between Reflective Functioning, Psychological Distress and Intention to dropout (1). Nevertheless, the construct played a mediating role in all 3 samples (2), but only for the CONGURUENT group (3). In this perspective, perceiving the context as congruent in terms of gender representation amplified the effect of Academic Engagement in mediating the relationship.

From a theoretical perspective, this study contributed to verify the mediating role of Academic Engagement. This study suggested, together with what emerged in

the preliminary analyses (see Chapter 3), that this construct is able to play its protective role especially when the psychological distress of students is not extremely severe and that its effect is more appreciable in the group of students who perceived congruence with gender composition. With reference to the research questions of this study, it is possible to argue that the role Academic Engagement is dependent on both time and academic gender congruence. Specifically, globally it has a mediating role both for CONGRUENT and INCONGRUENT in T1, but only for CONGRUENT in T2 and T3. Moreover, the mediating role is partial for CONGRUENT group in T1 and T3, but total for INCONGRUENT group in T1. Contrarily to what could have been expected, in T2 and T3 Academic Engagement had no role for the INCONGRUENT group.

From a clinical perspective, in light of the discussion above, this study suggested that psychological intervention in higher education should be differentiated for different categories of students. For CONGURENT students, Academic Engagement has a pivotal role. In fact, the study suggested, accordingly with the current literature (Wyatt et al., 2017), not to overlook the psychological distress level, in order to achieve favorable outcomes both in terms of mental health and academic experience and quality. This aspect is even more relevant when considering the INCONGRUENT group, for whom, in light of the finding here presented both regarding preliminary analyses and structural models, the interventions should focus especially on the reduction of psychological distress.

From an institutional perspective, this study suggested that more attention must be given to the gender of students, not only in terms of gender differences between male and female students, which surely must be taken into account as in other discipline is attempted to do (e.g. gendered medicine), but also in term of gender composition of the context. In this perspective, institution should invest on the contrast to stereotypes in higher education and promote more inclusive initiatives and policy, especially in synergy with the Secondary School Institutions. It is in fact well established that gender stereotypes are most effectively counteracted from a young age (Kessels et al., 2016).

CHAPTER 5

IDENTIFYING UNIVERSITY STUDENTS' PROFILES

A LATENT CLASS ANALYSIS APPROACH

5.1.   PRESENT STUDY

The research concerning the role of Academic Engagement is mainly focused on the identification of casual relationships between the construct and other academic variables, following a variable-centered approach (Hoi & Le Hang, 2021; Manwaring et al., 2017). Although this approach presents a lot of vantages and perks (it allows to identify predicting and mediating variables that maybe useful for the development of interventions and treatments), it assumes that all the participants belong to the same group, annulling the individual differences (Spurk et al., 2020). A person-centered approach, on the other hand, subdivides the participants on the basis of their characteristics, using such individual different characteristics as a criterium to identify groups. Therefore, a complementary use of these two approaches may inform more about specific phenomena and constructs and, consequently, on the type of interventions to target to specific groups of individuals. Academic Engagement of university students has rarely been investigated through a person-centered approach (Wang et al., 2021), mostly only in relation to cognitive and learning variables, not considering for example the psychological health of the students (Upadyaya et al., 2021) and mostly in the scholastic context, rather than at university (Moreira et al., 2021). In the study of Academic Engagement, this approach may be very useful as it may allow to identify more resourceful or at-risk group of students to whom address specific interventions or treatments aimed at promoting or sustaining and supporting their careers and academic experiences, contrasting the phenomenon of university dropout. Thus, this study posed itself in a complementary logic with respect to the study presented in Chapter 3, in order to enrich the scientific discourse on Academic

Engagement and the implications for targeted interventions in Higher Education.

Thus, the purpose of this study is:

a. to identify latent subgroups of university students in terms of academic engagement, intention to dropout, mentalizing abilities, distress and academic gender congruence;

b. to examine the prevalence of these subgroups in three different times defined by the mode of academic fruition.

5.2. MATERIALS AND METHODS

5.2.1. DATA COLLECTION, PARTICIPANTS AND PROCEDURES

Data collection procedures for this study are the same described in detail in Chapter 3.

Participants were recruited using a snowball sampling procedure, by sharing a link to the questionnaire via social media on informal channels (such as Facebook groups addressed to university students in Italy). The set of questionnaires was administered through the online service Microsoft Forms. Participation was voluntary and students were informed about confidentiality and anonymity issues. Only students who provided their informed consent took part in the study.

Before the recruitment of the participants, an a priori power analysis was performed to identify the appropriate sample size for the carrying out a Latent Class Analysis. The decision about the appropriate sample size was not easy, as recommendations are numerous and not always agree. A solution that is widely accepted requires n= 30 participants for each hypothesized subgroup (Dalmaijer et al., 2020, 2022). In the hypothesis of 3 subgroups, a sufficient sample size would be of N= 90 for each of the time point for data collection, for a total of N= 270 participants. Another solution frequently used requires a sample of at least 300 subjects for robust and accurate results and for adequately functioning (Morgan, 2015; Morovati, 2014; Nylund et al., 2007; Tein, Coxe, & Cham, 2013; Tofighi & Enders, 2008; Yang, 2006).

A total of N= 1213 students responded to the set of questionnaires, specifically N= 479 for T1, N= 362 for T2, and N= 372 for T3. A total number of N= 36 respondents were excluded from the analysis, as they did not provide their consent (N=

27) or did not meet the inclusion criteria (N= 9). Therefore, the three recruitment phases provided final samples of N= 462 participants in T1, N= 355 in T2, and N= 360 in T3, for a total N= 1177 participants, an appropriate final sample for the hypotheses testing for a Multigroup Latent Class Analysis for both the reported recommendation.

This design aimed at identifying whether, given the specificity of the contextual contingency and given the contextual and relational nature of the Academic Engagement, profile of students would be differently distributed in the three time points of data collection.

5.2.2. MEASURES

The set of questionnaires aimed at collecting socio-demographic data, academic data, and psychological variables.

Specifically, *SInAPSi Academic Engagement Scale*, *Intention to dropout Reflective Functioning Questionnaire*, *Depression Anxiety Stress Scale* and *Traditional Masculinity and Femininity Scale* were relevant for this study, respectively to measure Academic Engagement, Reflective Functioning in term of uncertainty of mental states, General Distress and an index of Academic Gender Congruence with the gender composition of the degree course. Details about each measure are described in Chapter 3.

5.2.3. DATA ANALYSIS

Statistical analyses were performed with the softwares SPSS29, R 4.3.1, and Jamovi, which is an open access software that allows to perform statistical analysis using R packages overcoming the difficulty concerning the use of R coding. Specifically, the package 'glca' was used (Kim et al, 2022). After the internal consistency of each measure used was acceptable (with $\omega \geq .75$), scoring procedures were applied to obtain a synthetic index for each subscale or a total index (for Academic Engagement and General Distress). Therefore, those indices have been transformed in categorical variables following two criteria: 1) cut-off already provided by the measures; 2) semantic meaning of the responses on the Likert scales. In this way:

    1. Academic Engagement measured by the SAES could yield 3

categories: Low (when scores were below 2.50), Medium (when scores were below 3.50) and High engagement (when scores were between 3.50 and 5);

2. Intention to dropout was coded as 'YES' (with scores above 3) and 'NO' (with scores below 3);

3. Reflective Functioning was coded following Muller et al (2022) in three categories: Certainty (with scores below 3), Genuine Mentalizing (with scores between 3 and 5), and Uncertainty (with scores above 5);

4. General Distress was coded as 'YES' and 'NO' using the cut-off of 60 suggested by Lovibond & Lovibond (1998); specifically, when distress levels were above the cut-off, the code 'YES' was attributed.

5. For Congruence with the gender composition, the variable was already computed as a nominal variable; specifically, if gender identity category (for example, feminine) corresponded to the degree course gender composition perception (for example, feminine, too), students received the code *congruence*; if there was no correspondence between the two indicators (for example, gender composition perception was coded as masculine or neutral), students received the code *incongruence*.

As a first step, missing data were considered. In particular, in all three data collections there were no missing data with reference to the variables of interest to this study.

Based on the five categorical variables included in this study and above described, sub-groups of individuals characterized by common patterns across the three time points of administration were identified using a Multi-group Latent Class Analysis (MG-LCA). The main advantage of this approach is that the properties of each single item can be studied. In addition, whereas traditional methods of item analysis (e.g., factor analysis) assume that the population under study is homogeneous, LCA enables researchers to detect population heterogeneity with respect to solution strategies. Moreover, problems associated with the use of strategy self-report questionnaires are avoided. In the following section, we provide a short description of the LCA method (for a more detailed discussion, see, e.g., Clogg, 1995; Eid, Langeheine,& Diener, 2003; Langeheine & Rost, 1988).

LCA is a technique for the analysis of categorical outcomes (e.g., dichotomous test items as in the MRT), which assumes that the associations between items can be explained by the existence of several subgroups that cannot be observed directly (therefore called latent classes). Thus, LCA is a typological rather than a dimensional approach. Within one latent class, participants are assumed to have identical patterns of solution probabilities (i.e., the solution probability of a given item is the same for all individuals belonging to the same class). Between classes, however, there are differences with respect to the response probabilities. Hence, LCA is able to detect typological differences with respect to solution strategies. For assessment purposes, an individual can be assigned to the latent class for which her or his assignment probability is maximum. Following Collins and Lanza (2010), a model testing process was run by testing multiple models with varying levels of classes. Specifically, due to the exploratory nature of the study, the process started with a 2-class model and continued by adding a class at time up to when the model showed that adding a class worsened the model fit rather than improving it. In order to evaluate the goodness-of-fit of the models the following fit indices were observed: Bayesian Information Criterion (BIC), Sample-size-adjusted BIC (ssBIC), Akaike's Information Criterion (AIC), consistent AIC (CAIC) Log-likelihood (LL) and Log-likelihood Ratio Test (LLRT), the G^2, and entropy (Mulaik et al., 1989). For Log-likelihood, BIC, ssBIC, AIC and CAIC, the lower the value the better the fit (Min et al., 2022); for the G^2 a low value represents a better fit model (Lanza & Rhoades, 2013). Further, entropy was observed as a measure of classification uncertainty, with considering models having entropy lower than .80 as characterized by too much uncertainty in the classification of individuals in profiles (Celeux & Soromenho, 1996; Tein et al., 2013). Nevertheless, it is important to note that AIC proved to be not a good indicator in LCA (Yang, 2006), and therefore, decision in model selection will be mainly made on the basis of the most performing indices in LCA, namely BIC, which outperformed AIC and ssBIC in several testing, and CAIC, which is found to better perform in comparison to the other ICs indices with larger samples (N ~ 1000) (Nylund et al., 2007). When the model best describing the patterns in the data was identified, the consistency and interpretability of the emerging profiles was checked too (Collins & Lanza, 2010).

5.3. RESULTS

5.3.1. DESCRIPTIVES AND PRELIMINARY ANALYSES

Descriptives for the samples are widely described in Chapter 3. In this paragraph, frequency distribution of the categorical variables will be presented.

In Table 5.1, frequencies and percentages for each variable are reported.

As already shown in Chapter 3, for Congruence, students who received the code Congruent represented most of the sample for T1 and T3, while Incongruent represented most of the sample for T2. Regarding the whole sample, the two groups are fairly equivalent.

Regarding Distress, as it is shown, in T2 students not in distress were only the 7.61% of the sample, while in T1 and T3 they represented most of the sample. With regard to the whole sample, the group with distress is slightly more frequent.

Regarding Reflective Functioning, in all 3 times Genuine Mentalizing represented the most frequent category, indicating that most of the students were average mentalizers. Similarly, for the whole sample, genuine mentalizers are more frequent.

With regard to Dropout Intention, as shown in Table 5.1, the majority of students in all 3 times and in the whole sample had not intention to leave university, but the percentage of students intending to abandon university is higher in T3.

Concerning Academic Engagement, students that reported low levels were the smallest percentage for all 3 times, while the ones reporting high levels are the wider parts of the samples in all the times of administration and in the whole sample.

Table 5.1 Frequencies and percentages for Congruence, Distress, RF, Intention to dropout and Academic Engagement

		Time of administration			
		T1 (%)	T2 (%)	T3 (%)	Total (%)
CONGRUENCE	NOT CONGRUENT	228 (49.35%)	190 (53.52%)	163 (45.27%)	581 (49.36%)
	CONGRUENT	234 (50.56%)	165 (46.48%)	197 (54.72%)	596 (50.64%)

DISTRESS	NO DISTRESS	280	27	212	519
		(60.61%)	(7.61%)	(58.89%)	(44.10%)
	DISTRESS	182	328	148	658
		(39.39%)	(92.39%)	(41.11%)	(55.90%)
UNCERT	CERTAINTY	96	75	105	276
		(20.78%)	(21.13%)	(29.17%)	(23.45%)
	GENUINE MENTALIZING	264	214	188	666
		(57.14%)	(60.28%)	(52.22%)	(56.59%)
	UNCERTAINTY	102	66	67	235
		(23.38%)	(18.59%)	(18.61%)	(19.96%)
DROPOUT_INT	NO	412	310	290	1012
		(89.18%)	(87.32%)	(80.56%)	(85.98%)
	YES	50	45	70	165
		(10.82%)	(12.68%)	(19.44%)	(14.02%)
ENG	LOW	10	10	31	51
		(2.17%)	(2.82%)	(8.61%)	(4.33%)
	MEDIUM	137	133	119	389
		(29.65%)	(34.47%)	(33.06%)	(33.05%)
	HIGH	311	210	209	730
		(68.18%)	(59.72%)	(58.33%)	(62.02%)

5.3.2 COMPARISON BETWEEN TIMES

In order to compare the samples considering the psychological variables, a χ^2 test was performed. In Table 5.2 results are presented. Specifically, results suggested that the three samples presented differences for *Distress*, *Uncertainty*, *Academic Engagement* and *Intention to dropout*. Regarding *Academic Gender Congruence*, Chi-square test showed that there was no significant difference in the frequency of students who perceived congruence between their personal identity and the gender composition of their degree course in the 3 times of administration.

Table 5.2 Pearson Chi-Square Test for the variables Distress, Reflective Functioning, Intention to dropout, Academic Engagement, and Congruence

Pearson Chi-Square Tests		
		Time of administration
CONGRUENCE	Chi-square	4.859
	df	2
	Sig.	.088
DISTRESS	Chi-square	274.797
	df	2
	Sig.	<.001[*]
UNCERT	Chi-square	11.032
	df	4
	Sig.	.026[*]
DROPOUT_INT	Chi-square	13.239
	df	2
	Sig.	.001[*]
ENG	Chi-square	29.244
	df	4
	Sig.	<.001[*]

Results are based on nonempty rows and columns in each innermost subtable.

*. The Chi-square statistic is significant at the .05 level.

5.3.3. IDENTIFICATION OF LATENT CLASSES

In order to select the best-fitting and sounder model, AIC, CAIC, BIC, ssBIC, LL, G^2 and entropy were compared. Models with 2, 3, and 4 classes were tested. As shown in Table 4.9, LL, AIC, ssBIC, and G^2 suggested to accept the 4-class model, CAIC and BIC suggested to accept the 3-class model. Given the superiority of BIC

and CAIC as ICs indices in model selection (Nylund et al., 2007), according to these indices the best fitting model was the one with 3 classes.

Table 5.7 Fit indices for tested models

Class	LL	LLRT	AIC	CAIC	BIC	ssBIC	Entropy	df	G²
2	-3976		7986	8089	8072	8562	1.000	198	430
3	-3915	.031	7884	8048	8021	8409	0.836	188	308
4	-3886	.015	7846	8072	8035	8320	0.838	178	252

Between the two models, the 3-class one was preferred on the basis of this criterium.

5.3.4. *INVARIANCE TEST*

To evaluate if the classes had the same meaning in the 3 samples, the invariance is considered for the chosen model. Specifically, CAIC and BIC fit indices, which are the most accurate and performative indicators in LCA, are better for invariant model than for the non-invariant model (Table 5.8), especially entropy, which is below the acceptable threshold of .80 for the invariant model. In this case, it is possible to accept the hypothesis of invariance, and assume that classes have the same meaning in each group.

Table 5.8 Absolute model fit for measurement invariance

Model	LL	LLRT	AIC	CAIC	BIC	ssBIC	Entropy	df	G²
1	-3915		7884	8048	8021	8409	0.838	188	308
2	-3844	.037	7826	8244	8175	8138	0.799	146	166

Nota. Model 1: measure invariance=TRUE; Model 2: measure invariance=FALSE.

5.3.5 *DESCRIPTION OF THE LATENT CLASSES*

Class prevalences were observed. When considering the total sample, 43.1% of participants belonged to the class 1, which was named "*grasping*", characterized by non-distress, genuine mentalizing, no intention to dropout, high engagement, and

congruence. Furthermore, 16.6% of the participants belonged to class 2, which was named "*at risk*" and whose main characteristics are presence of distress, intention to dropout, medium engagement, and incongruence, despite the presence of a genuine mentalizing ability. The remaining participants (40.3%) belonged to the third class, "*resisting*"; this group presented genuine mentalizing, no intention to dropout, high engagement, and congruence, but members of this group were more likely to report a condition of distress, indicating a condition of risk. When considering each sample, it is possible to note that in T1, the class "*grasping*" represented the 57.4% of the sample, the "*at risk*" represented 12%, and "*resisting*" represented the 30.6%. In T2, students belonging to the "*grasping*" class were the 6.6% of the sample, the "*at risk*" class represented the 15.3%, while the "*resisting*" class was the 78.1%. In T3, the "*grasping*" class was the 51.9% of the sample, students belonging to the "*at risk*" class were the 24.1%, and the "*resisting*" group represented the 24% of the sample.
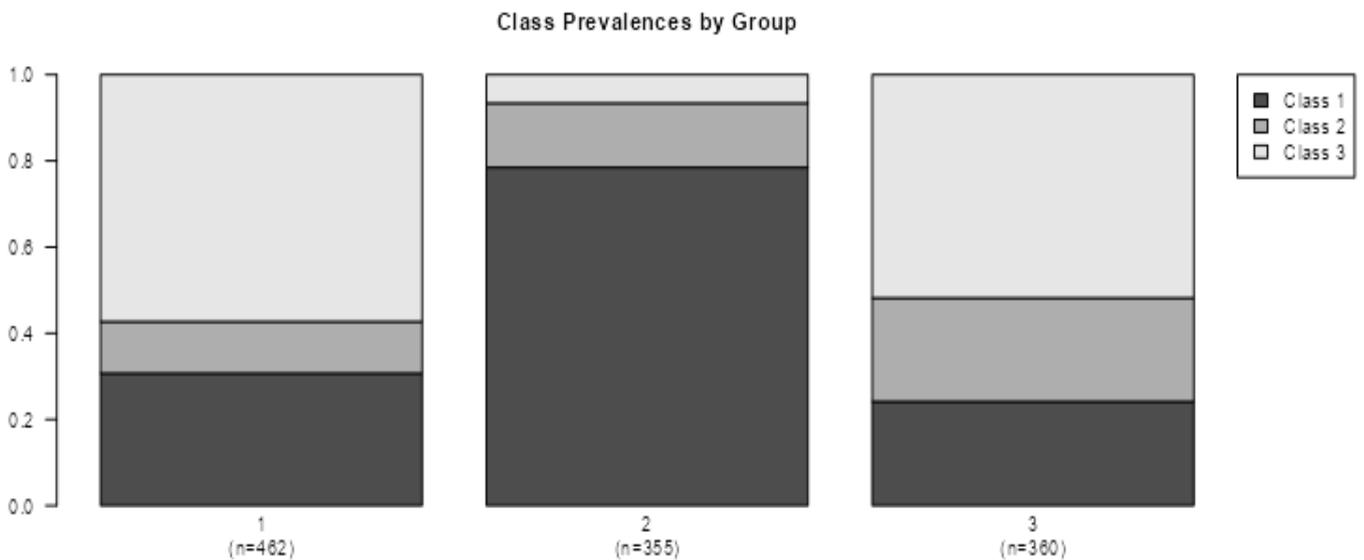

Figure 5.1 Class prevalences by Time

5.4 DISCUSSIONS

This study aimed at identifying classes of students who attended university during and after the Covid-19 pandemic. The study used the Multi-group Latent Class Analysis (MG-LCA) in order to group students recruited in 3 different time points, namely during the second lockdown and the online learning mode (T1); after the

second lockdown and during the blended mode (T2); and when the medical emergency was declared over, and the academic activities returned to a face-to-face mode (T3). Classes of students were identified on the basis of 5 categorical variables: Academic Engagement, Psychological Distress, Reflective Functioning, Intention to Dropout, and Academic Gender Congruence with the gender composition of the degree course. The analysis yielded 3 classes that were named as following: the "grasping", composed of congruent students who can be defined wanting to stay at the university, with a positive relationship with the context, not presenting distress and with genuine mentalizing abilities; the "at risk" class, composed of incongruent students who intended to leave the university, with a medium quality of the relationship with the context, presenting distress and with genuine mentalizing abilities; the "resisting", composed of congruent students who presented distress, but did not want to leave university, maintaining a positive relationship with the context and presenting genuine mentalizing abilities. These classes presented a different prevalence in the 3 times. While the "grasping" was the most prevalent class for both T1 and T3, in T2 the most prevalent class was the "resisting". It is also possible to observe that the "at risk" class was the least prevalent in T1 and T2, while in T3 it presented a prevalence similar to "resisting" class. Globally, these 3 classes showed some peculiarities: in none of the classes the students were hypo- or hyper-mentalizing, but we can define the students as 'average mentalizer'; two of the 3 classes (at risk and resisting) were characterized by the presence of distress, but these classes were among the least prevalent in the T1 and T3; only one of the 3 classes (at risk) presented intention to dropout and incongruence, and it was the least prevalent class in all 3 times. Therefore, looking at the wider picture, it is possible to note that students were generally engaged and able to mentalize. In this perspective, the sample recruited presented a set of resources relevant for their academic experience.

In light of the different prevalences of each class in the 3 times, it could be possible to define each time point, characterized by a specific mode of academic fruition, with a specific function of the academic context for the students. In this perspective, T1 could be considered as the time of 'university as a harbor'; in fact, during both the two lockdowns, the quick re-organization of academic activities in the online mode proposed itself to the students as a 'safe harbor' that provided continuity

and a glimpse of normality. Moreover, especially during the second lockdown, procedures were known to everyone and the perks of being online could have been more appreciated as it allowed to continue to live (although virtually) the academic life while being at the same time at home, more protected from the possibility to contract the virus. This is the time characterized by a prevalence of the "grasping" class, composed of students who were anchored, who gripped to academic life and activities, namely who felt highly engaged and did not intend to leave university, who perceived the very same academic context as congruent in term of gender representation, and who did not experience psychological distress or mentalizing dysfunctions.

Contrarily, this class was the least prevalent in T2, which may be defined as the time of the 'two-faced university'. The blended mode was characterized by the prevalence of psychologically distressed students, who, nevertheless, reported to be highly engaged and not to intend to leave university, who perceived the academic context as congruent in term of gender representation, and who did not experience mentalizing dysfunctions, who composed the class of "resisting". These characteristics suggested that "resisting" students, especially in the blended mode, had a positive relationship with the university, just like the "grasping" group, but accompanied by the presence of psychological distress. A possible interpretation of this finding could be in the psychological meaning of the blended mode. The partial re-opening of university may have represented a new critical switch point for students, to which adjust, and which could have put on students' shoulders the weight of the choice: to be in presence or to be online, the two faces of university in that time, now is a choice and students must make it, probably feeling the responsibility inherent this choice. Moreover, being the virus still in circulation, the distress may also partially be due to the preoccupation for one's own health.

Finally, T3 may be defined as the time of 'a new university and a new normality'. This time was characterized by similar prevalences as T1, with one main difference in the prevalence of the "at risk" class, which is more present in T3 that in T1, and within the same sample as prevalent as the "resisting" group. The "at risk" class differed from the "resisting" class as the students who composed it perceived the context as incongruent in terms of gender representation. Therefore, this class, along

with the incongruence, was characterized by students who reported medium levels of engagement and to intend to leave the context, who felt in distress, but report no mentalizing dysfunction. This result confirmed that the engagement represents a sort of antidote to the dropout of students (Fredricks et al., 2004), in fact only the class with medium levels of engagement was characterized also by intention to dropout. Moreover, it is important to note that this very class was the only one characterized also by incongruence, suggesting that also the perception of the contextual gender composition as congruent to one's own perception of gender identity could impact the persistence of university students. In this perspective, in T3 the hyper-investment that distinguished T1, in light of the capacity of the university context to hold and to 'keep in mind the students' shown during the lockdown, left space to the encounter with the psychological difficulties and effects that the pandemic had on students in relation to the university. Moreover, when a context, like the university, is perceived as too different, engagement could be lower and the desire to leave the context could be greater, as research in organizational field suggested (Fjendbo et al., 2022).

CONCLUSIONS

This dissertation aimed at contributing to the scientific discourse regarding university students' quality of academic experience in term of Academic Engagement. In order to achieve this aim, in this thesis two studies have been presented. The first study was based on a variable-centered approach, while the second study was based on a person-centered approach. This choice was guided by the idea to use approaches that rely on complementary logic in order to acquire valuable information, which is not very common in the research literature on the topic. Specifically, the first study, reported in Chapter 4, analyzed and verified the structural relationships between academic engagement, psychological distress, students' ability to mentalize, intention to dropout, considering also the academic gender congruence. Specifically, the mediating role of engagement and distress was verified through Structural Equation Models. Objective of the study was to evaluate if the structural relationship changed in the three different samples and if the academic gender congruence impacted on the structural configuration. In the second study, reported in Chapter 5, a Multiple-Group Latent Class Analysis was performed in order to identify students' profiles and evaluate their prevalence in the three samples and their characteristics in order to identify at-risk or resourceful groups.

The two studies provided some similar results, but they also showed some differences.

The SEM analysis underlined more the role of RF than the Latent Class Analysis. In fact, preliminary analysis highlighted that the students recruited showed to be 'average mentalizers', and in the class analysis all the three group were characterized by genuine mentalizing ability.

Moreover, the SEM analysis highlighted the presence of two groups of students in two different times that need higher levels of engagement or lower levels of distress in order to not intend to leave the university, namely the groups based on the Academic Gender Congruence. Findings showed that the group characterized by academic gender congruence presented more resources to endure in the academic project, while the incongruent group seemed characterized by higher levels of distress, especially in T2. In this perspective, a risk is underlined by the class analysis for this group, which

showed that lower levels of engagement, higher levels of distress and perception of incongruence characterized the group that was defined 'at-risk'.

In a clinical perspective, the two analyses seemed to suggest that two major groups of students are identifiable: incongruent students with higher levels of distress (at-risk students) and congruent students with or without distress (grasping students and resisting students). In this perspective, it is possible to suggest different intervention trajectories: one focused mainly on the academic engagement for congruent students, and one focused also on psychological distress for incongruent students. In the first case, intervention could preferably be aimed at promoting engagement; in the second case, intervention could be aimed at preventing or treating psychological distress.

The second study, in a way supported by the results of the first study, although relying on different logics, underlined that incongruence and distress represent two major risk factors for university dropout, confirming one another the same main result. Moreover, the class analysis underlined also that, although more concerning, the students that presented these risk factors were a small percentage of the three samples. However, their increasing prevalence in T3 suggests paying attention to this group and to develop interventions that consider their risk factors. In fact, given the changes that occurred in higher education and that modified the traditional structure of university, the results of these two studies suggest that there is the need to provide a more structured support to the students in order to facilitate the adjustment to the 'new normality' of the post-COVID.

Finally, a third trajectory is identifiable that could operate more in a preventive perspective focused on academic gender congruence: interventions addressed to Secondary School Institutions aimed at reducing the gender stereotypes related to the academic choice. The underrepresentation of certain categories of students in specific academic contexts (e.g. female students in STEM disciplines, or male students in educational or medical disciplines) and the gender stereotypes on which this underrepresentation is based could be the sources of the perception of incongruence, which according to the studies presented could constitute a risk factor. Gender stereotypes on which incongruence is based, could be counteracted more effectively when students are very young, and their beliefs are more susceptible to change.

The studies presented in this dissertation are no free from limitations.

Firstly, the sampling procedure was not probabilistic, but the students recruited represented a convenience sample. Therefore, it was not possible to control for students' characteristics, such as geographic area, type of degree course, year of degree course or field of study. Future studies on the topic should perform a probabilistic sampling to shed a light on the impact of these features that refers to the contextual aspects of the academic experience.

Secondly, the research design of both studies is repeated cross-sectional, therefore, the three samples recruited in the three times are independent and no longitudinal inference could be made. In this perspective, results do not allow to investigate the evolution and to identify developmental trajectories of the variables under study.

Thirdly, the studies presented, although with complementary logics, were both quantitative. In the analysis of a complex experience such as the academic one, it could be more informative to combine both quantitative and qualitative methods, in order to take into consideration also the subjective experiences of the students.

Finally, the studies presented considered the intention to leave the context rather than the actual dropout. Although intention to dropout could be interpreted as an antecedent of dropout, future studies should juxtapose both the intention and the actual act of leaving university. In this perspective, on a structural level, the implementation of institutional, or national, well-thought protocols of evaluation of the variable studied in this dissertation could provide the possibility to extend the understanding of the quality of academic experience and the factor that ensure students' persistence. Moreover, it could allow to identify risk factors in a preventive perspective and in a screening logic. In this way, it could be possible to provide ad hoc interventions to at-risk students. In fact, universities tend to simply report the dropout rates, that depend also from the specificity of the context, not only at an institutional level, but also at a specific study course level.

In light of the discussion above, a dialogue between research and university management is desirable. In fact, it could allow to better understand and to reflectively inform institution with regard to the phenomena analyzed in these studies, in order to power up the virtuous circuit of engagement.

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APPENDIX

SINAPSI ACADEMIC ENGAGEMENT SCALE

(FREDA ET AL., 2021)

On a scale of 1 (not at all) to 5 (totally), indicate how true each statement is true for you.

For some of the following statements relating to university life, you should also consider your experience of virtual classrooms in your answers if you have followed distance learning courses and workshops on online platforms during the recent covid-19 emergency.

Statement	Not at all	Very little	Somewhat	A lot	Totally
1. I'd be better off doing other things than going to university.					
2. Attending university is a great opportunity for me.					
3. I have good relationships with my fellow students.					
4. I have created meaningful friendships with some of my fellow students.					
5. The teachers clarify what they expect from us students					
6. Teachers are usually available to discuss my work.					
7. My teachers respect me as a person					
8. My teachers are interested in my opinions					

and what I say					
9.　　The course of study I am attending will help me to achieve my professional goals.					
10.　　The course of study I am attending is an opportunity for me.					
11.　　The course of study I am attending interests me.					
12.　　I like the course of study I am attending.					
13.　　I take university education seriously.					
14.　　I believe that university is good for me.					
15.　　I discuss my university career with my family.					
16.　　I talk about my professional projects with my friends.					
17.　　 I talk about my professional projects with my family.					
18.　　University study is part of my life project.					
19.　　The university is very important in my life.					
20.　　I would leave university immediately if I had an alternative.					
21.　　I like meeting friends at university.					
22.　　I feel part of a group of friends at university.					

23. Despite the difficulties I sometimes encounter in university life, I think it is worth continuing my studies.					
24. Sometimes I think about leaving university.					
25. In my opinion, university education is not worth all the time, money and effort it requires of me.					
26. I am convinced that my decision to enroll in this university was the right one for me.					
27. I'm sure the degree course I'm attending is the right place for me.					
28. Studying with other students helps me.					
29. I find my studies very relevant to my professional projects.					

	SCORING (MEAN FOR EACH FACTOR)
PERCEPTION OF THE CAPABILITY TO PERSIST IN THE ACADEMIC CHOICE	1, 20, 24, 25
UNIVERSITY VALUE AND SENSE OF BELONGING	2, 13, 14, 18, 19, 23
VALUE OF THE UNIVERSITY COURSE	9, 10, 11, 12, 26, 27, 29
RELATIONSHIP BETWEEN UNIVERSITY AND RELATIONAL NET	15, 16, 17
RELATIONSHIP WITH UNIVERSITY PEERS	3, 4, 21, 22, 28
RELATIONSHIP WITH UNIVERSITY PROFESSORS	5, 6, 7, 8

DEPRESSION ANXIETY STRESS SCALE

(LOVIBOND & LOVIBOND, 1995; BOTTESI ET AL., 2014)

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement. The rating scale is as follows:

0   Did not apply to me at all

1   Applied to me to some degree, or some of the time

2   Applied to me to a considerable degree or a good part of time

3   Applied to me very much or most of the time

Statement	0	1	2	3
1. I found it hard to wind down (s)				
2. I was aware of dryness of my mouth (a)				
3. I couldn't seem to experience any positive feeling at all (d)				
4. I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion) (a)				
5. I found it difficult to work up the initiative to do things (d)				
6. I tended to over-react to situations (s)				
7. I experienced trembling (e.g. in the hands) (a)				
8. I felt that I was using a lot of nervous energy (s)				
9. I was worried about situations in which I might panic and make a fool of myself (a)				
10. I felt that I had nothing to look forward to (d)				
11. I found myself getting agitated (s)				
12. I found it difficult to relax (s)				
13. I felt down-hearted and blue (d)				
14. I was intolerant of anything that kept me from getting on with what I was doing (s)				

15. I felt I was close to panic (a)				
16. I was unable to become enthusiastic about anything (d)				
17. I felt I wasn't worth much as a person (d)				
18. I felt that I was rather touchy (s)				
19. I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat) (a)				
20. I felt scared without any good reason (a)				
21. I felt that life was meaningless (d)				

(a) = ANXIETY

(s) = STRESS

(d) = DEPRESSION

REFLECTIVE FUNCTIONING QUESTIONNAIRE

(FONAGY ET AL., 2016; MORANDOTTI ET AL., 2018)

Please work through the next 8 statements. For each statement, choose a number between 1 and 7 to say how much you disagree or agree with the statement, and write it beside the statement. Do not think too much about it – your initial responses are usually the best. Thank you.

Use the following scale from 1 to 7:

Strongly disagree	1	2	3	4	5	6	7	Strongly agree

Statement	1	2	3	4	5	6	7
1. People's thoughts are a mystery to me							
2. I don't always know why I do what I							
3. When I get angry I say things without really knowing why I am saying them							
4. When I get angry I say things that I later regret							
5. If I feel insecure I can behave in ways that put others' backs up							
6. Sometimes I do things without really knowing why							
7. I always know what I feel							
8. Strong feelings often cloud my thinking							

TRADITIONAL MASCULINITY AND FEMININITY SCALE

(KACHEL, STEFFEN & NIEDLICH, 2016)

Please, rate according to the following rating scale

Totally masculine	1	2	3	4 neither	5	6	7	Totally feminine

1. I consider myself as…

2. Ideally, I would like to be…

3. Traditionally, my interests would be considered as…

4. Traditionally, my attitudes and beliefs would be considered as…

5. Traditionally, my behaviour would be considered as…

6. Traditionally, my outer appearance would be considered as…