Predicting dropout intention in Moroccan universities: A first-year student study using Tinto's model

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ABSTRACT

Student attrition remains a pressing concern in open-access faculties in Moroccan universities. Identifying key factors influencing first-year students' dropout intention is crucial. Grounded in Tinto's (1993) Model of Institutional Departure, this quantitative study surveyed 2,220 first-year students across thirteen faculties in two universities to assess their perceptions of academic and social experiences, and to evaluate a prediction model using "intent to reenroll" at their faculty of registration the following year, as a proxy for dropout intention. Results of the binary logistic regression indicated that lower levels of initial commitments, academic integration, social integration, and subsequent commitments significantly predicted dropout intention. Academic integration and subsequent commitments were the strongest predictors. These findings suggest the need for targeted institutional strategies to enhance student persistence, particularly during the first year.

Keywords: Moroccan university, dropout, open-access faculties, first-year students, academic integration, social integration, intent to reenroll.

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INTRODUCTION

Moroccan higher education has undergone significant reforms in the past twenty-five years, including the National Charter for Education and Training (NCET 1999), Law 01.00, the Strategic Vision (CSEFRS, 2015), and the Framework Law (51.17). The most notable reform, introduced in 2000 through Law 01.00, established the *Licence-Master-Doctorat* (LMD) system, modelled after the Bologna Process. Implemented from 2003-2004, the LMD aimed to enhance quality, improve mobility, and facilitate international recognition of degrees (CSEFRS, 2014). In 2010, a strategic initiative was launched to diversify university models. This led to expanded public-private partnerships and the creation of new university-status institutions alongside public universities. Despite these developments, public universities remain predominant and marked by a dual system, comprising selective institutions with competitive admissions (12%), and open-access faculties, namely the Faculties of Letters and Human Sciences (FLHS), Science (FS), and Law, Economics, and Social Sciences (FLESS), hosting 88% of students (CSEFRS, 2018a).

While open-access faculties give a wider public more opportunities to access higher education, they face high dropout and unemployment rates. Only 58.7% of students in the *Licence des Études Fondamentales (LEF)* programs graduate within three years, and 64% leave without a degree (CSEFRS, 2018b). Dropout is most critical in the first two years: 25.2% leave after one year and 40.2% after two. The FLESS register the highest dropout and lowest graduation rates, followed by the FS and FLHS (CSEFRS, 2019). Unemployment affects 18.7% of graduates from these faculties, compared to 2.9% from non-university institutions and 5.6% from private higher education. Four years post-graduation, the LEF degree holders still face a 21% unemployment rate, exceeding the national average of 16.1%. These figures reflect persistent employment challenges and a misalignment between graduate qualifications and employer expectations (CSEFRS, 2018b).

Despite institutional strategies to improve student retention through pedagogical innovations (LMD system), the reinforcement of ICT in teaching, the implementation

of tutoring programs, the provision of psychosocial support services, and an increased state's allocation of student grants, open-access faculties continue to face structural and institutional constraints. Often perceived as fallback options for students unable to access selective programs, they are further weakened by ongoing reforms, overcrowding, low student-to-professor ratios, short administrative staff, and a misalignment with labor market needs, factors that contribute to unfavorable learning conditions and high attrition (Mansouri and Moumine, 2017).

While institutional reports have addressed these challenges from administrative or statistical perspectives, limited academic research has investigated the factors influencing first-year students' dropout from university (Bennaghmouch and Mansouri, 2024). This article aimed to fill this gap by analyzing the factors contributing to students' dropout intention during the first year, a period particularly decisive in the withdrawal decision process (Del Bonifro, Gabbrielli, Lisanti and Zingaro, 2020; Naylor, Baik and Arkoudis, 2018; Stewart, Lim and Kim, 2015). Given that actual dropout behavior was not tracked and that dropout decision is often preceded by intentions, this study employed "intent to reenroll" as a proxy for understanding dropout intention. According to Ajzen (1991), "intentions are assumed to capture the motivational factors that influence a behavior; they are indications of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the behavior" (183). This approach is supported in the literature (Krötz and Deutscher 2021; Cabrera, Nora and Castaneda, 1993; Findeisen, Brodsky, Michaelis, Schimmelpenningh and Seifried, 2024; Webb and Cotton, 2018; Véliz Palomino and Ortega, 2023), and it is "consistent with Tinto's emphasis on students deciding to depart as the penultimate dependent variable in the model" (Berger and Braxton, 1998, p. 107). Based on this assumption, the following question guided the research: What are the most significant factors influencing first-year students' dropout intention in university open-access faculties?

To answer this question, the study adopted a quantitative methodological approach and drew on Tinto's (1993) established theoretical Model of Institutional Departure to guide its design and analysis. The next sections present the conceptual framework, methods, results, discussion, and conclusion.

THEORETICAL FRAMEWORK

In the early seventies, student attrition became a universal concern in higher education (Braxton, Doyle, Hartley, Hirschy, Jones and McLendon, 2014; Berger, Ramirez and Lyon, 2012; Mayhew et al., 2016). A new era began with the emergence of a new perspective of research into student attrition theories grounded in the different fields of sociology and psychology. Its purpose was to describe the attrition process, explain the reasons why students dropped out of college, predict which student profiles were most likely to leave college, and develop solutions to the challenge of institutional retention (Bean, 1982; Braxton et al., 2014; Mayhew et al., 2016; Seidman, 2012).

Often interchangeable with "dropout", student attrition refers to the steady departure of students from a higher education institution before degree completion (Tinto, 2012). With the evolution of higher education retention theories, attrition has been described as "the diminution in numbers of students resulting from lower student retention" (Hadegorn, 2012, p.85). In 1975, research on student attrition was marked by the appearance of Tinto's (1975) groundbreaking theoretical model of dropout from higher education (Berger and Lyon, 2005; Braxton and Lee, 2005; Braxton et al., 2014; Kuh and Love, 2000; Pascarella and Terenzini, 2005). Tinto (1975) defined dropout as:

> ... a longitudinal process of interactions between the individual and the academic and social systems of the college, during which a person's experiences in those systems (as measured by his normative and structural integration) continually modify his goal and institutional commitments in ways which lead to persistence and/or to varying forms of dropout. (p.94)

When students perceive their academic and social experience as incongruent enough with the dominating value patterns of the college community, they fail to integrate academically and socially into the system. Their goal and institutional commitments decrease, leading to either a "voluntary" or "forced withdrawal" (p.92). Tinto (1975) argued that it is necessary to understand the "expectational and motivational attributes of individuals (such as those measured by career and educational expectations and levels of motivation for academic achievement)" (p.93). Knowing the type of degree students intend to earn and the importance they attach to earning it from a particular institution sheds light on their psychological orientation and helps predict the ways they will interact in the college academic and social setting.

Although Tinto's (1975) model was innovative, it was heavily criticized for overlooking students' intentions in predicting dropout behavior, and underemphasizing external factors that are especially relevant in under-resourced or non-Western settings (Bean and Metzner, 1985; Breier, 2010; Cabrera et al., 1993; Findeisen, Brodsky, Michaelis, Schimmelpenningh and Seifried, 2024; Guiffrida, 2006; Seidman, 2012).

In the early 1900s, Tinto developed the "Model of Institutional Departure" (Tinto, 1993). It sought "to explain how interactions among different individuals within the academic and social systems of the institution and the communities which comprise them lead individuals of different characteristics to withdraw from that institution

prior to degree completion" (p.113). The model describes the longitudinal process of student withdrawal as it happens after registration within a given institution, rather than a departure from the entire educational system. At its core is the students' institutional experience that is shaped by the level of academic and social integration and the degree to which they are committed to their academic goal and institution. Tinto (1993) argued that, "negative or malintegrative experiences serve to weaken intentions and commitments, especially commitment to the institution, and thereby enhance the likelihood of leaving" (p. 115).

According to Tinto (1993), intentions are aspirations, expectations, or plans that are often expressed in terms of goals. These goals determine the type and the level of education, career, and the nature of the experiences students may have to further enrollment in a given institution. The higher their educational and career goals, the more likely they are to persist (pp. 38-41). However, although intentions are determining in understanding attrition (Aarkrog, Wahlgren, Larsen, Mariager-Anderson, and Gottlieb, 2018), they must be nuanced. According to Tinto (1993), some students enter college with the intention of leaving before degree completion, such as the case of transfer students, students who were not admitted to colleges of their choice, or those who enroll in college with the explicit intention of acquiring some special knowledge or skill. In such cases, the student's "departure from their initial institution of registration reflects their efforts to achieve that goal, not a rejection of it" (p. 40).

Tinto's (1993) Institutional Model of Departure suggests that students' pre-entry attributes influence their initial intentions towards their goal and institutional commitments. In turn, initial goal and institutional commitments influence the students' institutional experiences, namely their levels of academic and social integration. Academic and social integration affect the students' intention towards their subsequent goal and institutional commitments, which result in their decisions to withdraw from or persist in an institution (p.114).

Pre-entry attributes refer to students' background characteristics. These include, among others, students' socio-economic status, parents' level of education, community size, age, gender, race, special needs, preferences, motivation, financial resources, skills, abilities, type of high school, GPA, average, and prior achievements.

Goal and institutional commitments refer to "the degree to which individuals are committed both to the attainment of those goals (goal commitment) and to the institution into which they gain entry (institutional commitment)" (p.115). They consist of "initial commitments" that occur before registration in a given institution and "subsequent commitments" that develop after enrollment. Initial commitments generally come from the choice of college as a family tradition or from the perceptions community members have about particular institutions. Subsequent commitments result from students' level of academic and

social integration after enrollment, which reinforces their motivation and desire to attain their educational goal from the same institution of registration.

Institutional experiences refer to students' academic and social integration systems. They each lead to persistence when the students develop "some type of social and/or intellectual membership in at least one college community" (p. 121). When students do not integrate into one of the systems or into either one, it is more likely that withdrawals from the institution may occur in different forms.

Academic integration depends on the "structural and normative" dimensions of the academic system in which the formal part "relates more directly to the meeting of certain explicit standards of the academic system" (Tinto, 1975, p.104), and the informal part "pertains more to the individual's identification with the norms of the academic system" (p. 104). It includes students' interactions with faculty and focuses primarily on their educational achievements and intellectual growth.

On the other hand, social integration depends on the degree of congruency students feel within the institution's social environment, "primarily through informal peer group associations, semi-formal extracurricular activities, and interaction with faculty and administrative personnel within the college" (Tinto, 1993, p. 107). It is composed of the established patterns of interactions among students, academic, and administrative staff that generally occur outside the formal academic settings of the college. Activities target students' social and intellectual needs. On an informal level, activities target student-peer relationships and sense of belonging development.

Although Tinto (1993) purposefully emphasized the role of student institutional experiences, he highlighted the effects of external factors upon persistence. A student may decide to drop out of college involuntarily, temporarily, or permanently despite adequate academic or social integration. As students' commitments are, generally, related to their community's "subculture" (p. 63), those who do not have strong institutional commitments may be influenced either positively or negatively by these communities (Abes and Stewart, 2019; Seidman, 2018; Tierney, 1992). Notably, students from disadvantaged, low-income, and unsupportive communities with no educational experience are likely to drop out (Bourdieu and Passeron, 2000). For example, family duties, financial difficulties, and employment, especially when the latter is not part of students' career goals, serve to "pull" them away from their college communities (Tinto, 1993, p. 63).

By emphasizing the different interactions that happen among the components of the institution based on social and academic integration, Tinto's (1993) theory is primarily an integration interactionalist theory, and the model is sociological in character (Braxton et al., 2014). From this perspective, the model advanced the research of student attrition by showing that the interplay between the student's individual goals and commitments (intra-institutional and external) affects both the departure

decision and the way of departure. Thus, it reaffirmed that the reasons for the student's voluntary departure or the intention to remain enrolled are two individual "attributes that stand out as primary roots of departure" (Tinto, 1993, p. 37). If institutions could grasp the mechanisms of this interplay, this knowledge would help to differentiate between the numerous types of student departure, and target institutional actions that could enhance retention and student persistence (Braxton et al., 2014; Kuh, Kinzie, Buckley, Bridges and Hayek, 2006; Mayhew et al., 2016; Miller, Bender and Schuhet, 2005; Seidman, 2012).

However, student dropout from higher education remains difficult to define because it varies in nature, intentions, and reasons (e.g., immediate transfer, delayed transfer, stopout, etc.). Not all dropouts mean a complete withdrawal from the broader education system. What professors, administrators, or family members define as a dropout may be different from what the leavers intend by leaving. Tinto (1993) suggested that the term "dropout" is more accurate only when it is "defined as a failure on the part of the individual to attain a desired and reasonable educational goal" (p.143).

Although not exclusively, this study is grounded in Tinto's Model of Institutional Departure (1993), which over decades has attained a "paradigmatic stature" (Baird, 2000; Braxton et al., 2014), and "has been the object of considerable empirical research, research that has tested the empirical validity of its formulations" (Braxton and Lee, 2005, p. 108). The model provided the conceptual foundation for this research study and informed selected constructs for investigation. However, this study did not aim to test the model per se, but to examine empirically a hypothesis derived from this framework. Guided by the research question mentioned earlier, the study tested the following hypothesis: "*Students' initial commitments, academic and social integration, subsequent commitments, and background characteristics would significantly predict their dropout intention (as inversely reflected in their self-reported intent to reenroll).*"

METHODS

To investigate the factors influencing first-year students' dropout intention, this study adopted a post-positivist paradigm and a quantitative, cross-sectional survey design (Cohen, Manion and Morrison, 2018). This approach was employed to: (1) assess students' perceptions of their institutional experiences; and (2) evaluate a predictive model of their intent to reenroll in their faculty of registration the following year.

Population and sampling

The population of interest in this study consisted of first-year students from open-access faculties affiliated with

Hassan II University of Casablanca (UH2C) and Cadi Ayyad University (CAU) in Marrakech. These universities were selected due to their regional diversity and the representativeness of their student populations. A non-random quota sampling strategy was employed to capture this diversity and ensure logistical feasibility. A total of ($n = 2,271$) students participated in the survey. It consisted of 1,103 participants from the H2UC and 1,168 participants from CAU. The survey was conducted between February and May 2018 across thirteen faculties in five cities: Casablanca, Mohammedia, Marrakech, Safi, and El Kelaâ des Sraghna. Participants belonged to the Faculties of Letters and Human Sciences (FLHS), Law, Economics and Social Sciences (FLESS), Science (FS), and Polydisciplinary Faculties (PF). While quota sampling limits the generalizability of findings, it offered a practical approach for assembling a broadly representative sample of first-year students (Neuman, 2015).

Questionnaire design and structure

The questionnaire was designed to examine Tinto's (1993) key constructs: *Initial Commitments*, *Academic Integration*, *Social Integration*, and *Subsequent Commitments*. To ensure accurate measurement, items were selected and combined from validated instruments used in studies on student attrition (Bean, 1980, 1983; Bean and Metzner, 1985; Braxton et al., 1995; Cabrera et al., 1993; Pascarella et al., 1983). The dependent variable, *intent to reenroll*, was operationalized using a single-item question.

The items were adapted to the Moroccan university context to reflect the specific concerns of the target population. They were translated into Classical Arabic (the language most commonly mastered by the respondents), and then back-translated to ensure semantic equivalence (Beaton, Bombardier, Guillemin and Ferraz, 2000). The questionnaire underwent content validity by two specialists in the field to ensure item relevance and comprehensiveness (Neuman, 2015). A pilot survey with 35 students confirmed the clarity, cultural relevance, and theoretical coherence of the items.

Constructs and instrumentation

The questionnaire consisted of Likert-type items designed to capture attitudinal and perceptual constructs, and categorical items for background and demographic characteristics.

The dependent variable: *intent to reenroll, was* assessed using a single-item measure (Q27): *"At this moment in time, do you intend to reenroll at this faculty next year?"*

This item reflects students' likelihood of reenrolling in the same faculty and was used as a proxy for dropout intention, such that lower intent to reenroll indicates a

higher likelihood of dropout intention.

Independent variables consisted of:

Initial Goal and Institutional Commitments: Institutional commitment was measured with two items addressing students' choice of faculty (Q1), reflecting their target degree, and choice of major (Q2), reflecting their willingness to attend their current faculty. *Goal commitment* was assessed with two items: Q3, which asked students to indicate the degree they aimed to complete (*licence*, master's, or doctorate), and Q7 focused on their career goal (Tinto, 1993).

Academic integration: Students were asked to rate professors' willingness to interact with them outside class (Q14), their participation in extracurricular activities with professors (Q15), satisfaction with the quality of teaching performance in the faculty (Q16), and satisfaction with their own intellectual development (Q17).

Social integration: Students were asked about their satisfaction with the administrative staff (Q11), their frequency of staying informed about events at the faculty (Q12), the friendships they formed since enrolling (Q21), the values and attitudes they shared with peers (Q22), and participation in extracurricular activities with peers (Q23).

Subsequent Goal and Institutional *Commitments: Goal commitment* was measured by Q4 (*"How important is it for you to complete your licence degree in three years?"*), which captured students' desired time to degree. *Institutional commitment* was measured by Q5 (*"How important is it for you to earn your degree from this institution?"*) to capture their ongoing desire to earn it from the same institution.

Background characteristics (corresponding to Tinto's pre-entry attributes) included age, type of baccalaureate, faculty, major, work status, and parents' professions, etc. They provided important contextual information about students' demographic and socio-economic profiles, and served as control variables in the analysis.

Items measured using 4-point Likert-type response categories were consistently coded so that higher values represented more positive responses. Response options varied slightly depending on the item. For example, "How important is it for you to complete your *licence* degree in three years?" ranged from 4 (very important) to 1 (not important at all), while "How often do your professors interact with you outside of class time?" ranged from 4 (always) to 1 (never).

Data collection procedure

Data collection started at the beginning of February 2018, after the students had spent one semester in the institutions. Surveys were administered "in-person" (Johnson and Christensen, 2017, p. 228), allowing the research team to ensure consistency across sites, confirm eligibility, and address participant queries in real time (Cohen et al., 2018). Permissions and consent were obtained from all the institutions under study before data collection. Consent from students was not required due to the large scale of the survey and the non-sensitive nature of the data (examined by the institutional authorities), a method quite acceptable in the Moroccan university context. Nevertheless, ethical standards were upheld. Prior to completing the questionnaire, all the participants were clearly informed that participation was voluntary and that they could decline to respond without any consequences, and the completion of the questionnaire was taken as an indication of their informed consent. Moreover, principles of confidentiality, data protection, and respect for persons were applied to safeguard their rights.

Data analysis

All data were analyzed using IBM SPSS Statistics version 24. Descriptive and frequency statistics were first used to summarize the characteristics of the sample. For the purpose of this study, only the items aligned with Tinto's Model of Student Departure (15 items) and the outcome variable (1 item) were included in the analysis. These items were grouped into four theoretical constructs: *Initial Commitments* (4 items), *Academic Integration* (4 items), *Social Integration* (5 items), and *Subsequent Commitments* (2 items). Additional demographic variables were included as control variables and dummy-coded as appropriate.

The dependent variable (Q27) measured students' *intent to re-enroll* in the following year with response options: Yes, No, and I don't know. For analysis, this variable was dichotomized so that *No* (explicit intent not to reenroll) was coded as 1, and *Yes/I don't know* (unclear intent) was coded as 0. This approach was justified by the study's focus on identifying factors associated with dropout intention, where only an explicit intent not to reenroll was treated as an indicator of dropout intention.

Binary logistic regression models were then estimated to examine the predictive power of constructs derived from Tinto's (1993) Model of Institutional Departure, along with background characteristics. Both unadjusted and adjusted models were tested to evaluate the relative contributions of each predictor. Model fit was assessed using the Hosmer and Lemeshow (2000) goodness-of-fit test.

Logistic regression analyses were conducted to identify the strongest predictors of intent to reenroll. Both bivariate and multivariate models were estimated, and additional analyses, including Pearson correlation coefficients, were used to further examine relationships among significant predictors. A final logistic regression model was specified to assess the combined effect of the theoretical constructs and background variables on intent not to re-enroll at their faculty of registration the following year.

RESULTS

Sample description

The final sample comprised 2,220 first-year students (M_age = 20.02, SD = 3.00; 49% male, 51% female). Nearly half (49.0%) resided in the Casablanca-Settat region, and one third (33.6%) reported a daily commute of 30-60 minutes. Most lived with their parents (63.6%) in nuclear households (86.1%), and a majority were first-generation students (60.5%). Parental education and employment levels were generally low: 47.6% of mothers and 34.3% of fathers had no formal education; 80.7% of mothers were unemployed, while 29.0% of fathers worked in manual labor.

Academically, 55.5% of students held a scientific baccalaureate, and 56.4% reported an average grade between 10 and 12 out of 20. Law was the most common major (21.5%), followed by physics and chemistry (17.3%). At CAU Marrakech, 14.6% were enrolled in the FLESS and 13.6% in FLHS. More than half (57.8%) received a student grant, and the majority (81.7%) did not work while studying.

Regarding commitments, 58.7% reported a defined career goal. Most made their own choice of faculty (68.0%) and major (74.8%). While 44.0% aimed for a licence degree, 58.4% expected to complete it within three years, and 74.5% intended to graduate from their faculty.

In terms of academic integration, 47.9% reported limited access to information. Professors were perceived as rarely available outside class (33.5%), and most students (77.7%) had not participated in extracurricular activities with professors. Teaching quality was rated positively by 45.9%, while 54.0% were moderately satisfied with their intellectual development. More than half (52.7%) reported voluntarily missing classes, most often due to lack of stimulation (40.0%).

Regarding social integration, 29.4% were dissatisfied with the administrative staff. Just under half (49.4%) reported making only a few friends, 38.2% said they shared values with peers, and 43.0% reported being happy at their faculty. Most (72.2%) had not engaged in extracurricular activities with peers, though 73.7% indicated that the majority of their friendships were formed within the faculty.

Overall, 90.7% of students reported attending primarily to earn a degree, and 66.6% intended to reenroll the following year. Among those not planning to return, the main reason cited was work obligations (77.4%).

Correlations among independent variables

Pearson product-moment correlations were conducted to examine the relationships among students' "initial commitments", "academic integration", "social integration", "subsequent commitments", and "background characteristics". To ensure consistency in interpretation, all response options were coded so that higher values represented more positive responses. For example, in Question 4 ("How important is it for you to complete your *licence* degree in three years?"), responses ranged from 1 ("not important at all") to 4 ("very important"). Similarly, Question 14 ("How often do your professors interact with you outside of class time?") was coded from 1 ("never") to 4 ("always"). The analysis revealed a series of weak to moderate but statistically significant associations among the study variables.

Initial commitment showed a positive and weak, yet significant, association with academic integration, social integration, subsequent commitment, and enrollment at FLESS Marrakech. Conversely, it was negatively and weakly associated with students from FLHS Aïn Chock. Academic integration had a positive and moderate association with social integration, and a positive but weak association with subsequent commitment and students at FLESS Marrakech. However, it was negatively and weakly associated with students working full-time.

Social integration was positively and weakly associated with subsequent commitment and students from FLHS Aïn Chock, but negatively and weakly associated with students from FLESS Aïn Sebaâ and those whose mothers were civil servants. Subsequent commitment was positively and weakly associated with FLESS Marrakech students, and negatively and weakly associated with those from FLHS Aïn Chock.

Enrollment at FLHS Aïn Chock was positively and moderately associated with age and a baccalaureate in letters, but negatively and weakly associated with a baccalaureate in science, and with enrollment at FLESS Mohammedia, FLESS Marrakech, and FLESS Aïn Sebaâ. Enrollment at FLESS Aïn Sebaâ was positively and weakly associated with students who were working full-time and whose mothers were civil servants. It was negatively and weakly associated with having an unemployed father, not working, holding a baccalaureate in letters, and being enrolled at FLESS Mohammedia or FLESS Marrakech.

FLESS Marrakech enrollment was positively and weakly associated with a baccalaureate in letters, and negatively and weakly associated with FLESS Mohammedia and a baccalaureate in science. Age showed a positive and weak association with having a baccalaureate in letters and working full-time, but a negative and weak association with having a baccalaureate in science and not working.

A baccalaureate in letters was positively and weakly associated with having an unemployed father, but it was negatively associated with having a civil servant mother. It also showed a strong negative association with a baccalaureate in science. A baccalaureate in science was also negatively and weakly associated with having an unemployed father.

Being employed (student) full-time was negatively and moderately associated with not working, while the not working status was negatively and weakly associated with

having an unemployed father. Finally, having a mother who is a civil servant was also negatively and weakly associated with having an unemployed father. A full matrix of correlation coefficients is presented in Table 1.

Table 1. Bivariate correlations among independent variables (N = 2,220).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Initial Commitments	1														
2. Academic Integration	.181**	1													
3. Social integration	.199**	.414**	1												
4. Subsequent commitments	.202**	.161**	.116**	1											
5. FLHS Aïn Chock	-.062**	0.001	.065**	-.087**	1										
6. FLESS Aïn Sebaâ	-0.030	-0.034	-.047*	-0.001	-.049*	1									
7. FLESS Marrakech	.082**	.082**	-0.001	.104**	-.111**	-.075**	1								
8. FLESS Mohammedia	0.000	0.003	0.018	0.005	-.072**	-.048*	-.110**	1							
9. Age	-0.027	-0.001	0.040	-0.020	.245**	-0.017	-0.036	-0.015	1						
10. Baccalaureate Letters	-0.028	0.012	0.010	-0.029	.140**	-.127**	.135**	-0.033	.162**	1					
11. Baccalaureate Science	0.014	-0.014	-0.007	0.013	-.149**	0.003	-.129**	-0.020	-.163**	-.875**	1				
12. Work status: Full-time	-0.037	-.043*	-0.018	0.010	0.030	.137**	-0.023	-0.034	.181**	0.013	-0.039	1			
13. Work status: Not working	-0.015	0.010	0.024	-0.004	-0.030	-.060**	-0.018	-0.001	-.215**	-0.004	0.017	-.422**	1		
14. Mother: Civil servant	-0.009	-0.041	-.045*	-0.034	-0.011	.115**	-0.017	0.026	-0.037	-.104**	0.038	0.029	-0.029	1	
15. Father: Unemployed	-0.019	-0.025	-0.035	0.020	-0.020	-.051*	0.007	0.029	0.038	.107**	-.084**	0.035	-.083**	-.045*	1

**p < .01. *p < .05. N = 2,220.

Correlation with intention to reenroll

Pearson correlations were computed to assess the relationships between students' initial commitments, academic integration, social integration, subsequent commitments, background characteristics, and their intent to re-enroll at the same faculty the following year. The coding scheme from earlier sections was maintained. The results showed weak but statistically significant negative associations between intent to re-enroll and students' levels of commitment and integration.

Students with lower levels of initial and subsequent commitments, academic integration, and social integration were less likely to express an intent to re-enroll in their faculty the following year. Specifically, weaker choices of faculty and major, unclear career goals, low satisfaction with teaching and intellectual development, and limited interaction with professors were associated with lower intent to reenroll. Similarly, weak social integration, reflected in dissatisfaction with administrative staff, weak peer relationships, and low extracurricular involvement, was also linked to decreased intent to reenroll. These associations were statistically significant, as shown in Table 2.

Table 2. Pearson correlations between study variables and intent to reenroll (N = 2,220).

Variable	r
Initial commitments	-.11**
Academic integration	-.14**
Social integration	-.11**
Subsequent commitments	-.15**
Faculty: FLHS Aïn Chock	.03
Faculty: FLESS Aïn Sebaâ	-.02
Faculty: FLESS Marrakech	-.02
Faculty: FLESS Mohammedia	-.01
Age	-.01
BAC: Letters	.00
BAC: Science	-.01
Work status: Full-time	-.01
Work status: Not working	.02
Mother's profession: Civil servant	.01
Father's profession: Unemployed	-.01

r = Pearson correlation coefficient. Listwise N = 2,220. **p < .01 (2-tailed).

The relationships among the independent variables and their ability to predict the odds of the dependent variable, namely, students' intent to re-enroll in their faculty of registration the following year, were assessed further using a binary logistic regression.

Binary logistic regression

A binary logistic regression was conducted using the four main variables, initial commitments, academic integration, social integration, and subsequent commitments, along with background characteristics, to test the research hypothesis. All variables were coded so that higher values represented more positive responses. The model was statistically significant (χ^2(15, N = 2220) = 96.227, p < .001), indicating that the independent variables reliably predicted students' intent to re-enroll at their faculty of registration the following year.

Four predictors were statistically significant: Lower levels of subsequent commitments, academic integration, initial commitments, and social integration were each associated with a reduced likelihood of intent to reenroll. Among these, subsequent commitments (earning a *licence* degree from the same faculty) emerged as the strongest predictor, followed by academic integration.

The background variables did not significantly contribute to the model. Complete regression results, including coefficients, odds ratios, and confidence intervals, are presented in Table 3.

Table 3. Logistic regression predicting intent to reenroll.

Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% CI Lower	95% CI Upper
Initial Commitments	-0.095	0.038	6.343	1	0.012	0.910	0.845	0.979
Academic Integration	-0.175	0.041	17.954	1	0.000	0.840	0.774	0.910
Social Integration	-0.062	0.030	4.119	1	0.042	0.940	0.886	0.998
Subsequent Commitments	-0.347	0.069	25.102	1	0.000	0.707	0.617	0.810
FLHS Aïn Chock	0.228	0.306	0.556	1	0.456	1.257	0.690	2.290
FLESS Aïn Sebaâ	-0.710	0.560	1.605	1	0.205	0.492	0.164	1.474
FLESS Marrakech	0.037	0.251	0.021	1	0.884	1.037	0.634	1.696
FLESS Mohammedia	-0.206	0.353	0.341	1	0.559	0.814	0.408	1.625
Age	-0.022	0.032	0.496	1	0.481	0.978	0.919	1.041
BAC Letters	-0.468	0.336	1.946	1	0.163	0.626	0.324	1.209
BAC Science	-0.521	0.327	2.546	1	0.111	0.594	0.313	1.126
Work Status: Full-time	-0.042	0.502	0.007	1	0.934	0.959	0.359	2.565
Work Status: Not working	0.164	0.248	0.436	1	0.509	1.178	0.725	1.914
Mother: Civil Servant	-0.077	0.396	0.038	1	0.845	0.926	0.426	2.010
Father: profession unemployed	-0.135	0.245	0.305	1	0.581	0.874	0.541	1.411
Constant	2.665	0.894	8.881	1	0.003	14.371		

B = unstandardized regression coefficient; S.E. = standard error; Exp(B) = odds ratio; CI = confidence interval; df = degrees of freedom; Sig. = p-value. N = 2,220.

DISCUSSION

The findings of this study are mostly consistent with Tinto's (1993) Model of Institutional Departure and contribute to understanding the most significant factors influencing first-year students' dropout intentions as reflected in their lack of intent to reenroll at their faculties the following year. Lower levels of initial commitments, academic integration,

social integration, and subsequent commitments were significantly associated with an increased likelihood of dropout intention. Among these, subsequent commitments and academic integration emerged as the strongest predictors. These results underscore the central role of academic and institutional-related processes in reducing students' dropout intentions, while background characteristics proved insignificant.

However, due to the methodological limitations of the study, these findings should be interpreted with caution. The cross-sectional design captured data at a single point in time. This precludes all conclusions about the directionality or causality of observed relationships. For instance, while lower academic integration is associated with dropout intention, the temporal sequence cannot be determined. It cannot be stated whether low integration leads to dropout intention or whether students who tend to drop out are less likely to engage academically. Moreover, as participants were not selected randomly, selection bias is possible; certain groups may have been over- or underrepresented in the study. These limitations restrict the extent to which the findings can be extended to the broader student population. Nevertheless, while future research employing longitudinal designs and random sampling strategies could strengthen both the internal and external validity, the current findings remain broadly consistent with prior empirical research on student dropout.

The importance of initial goal and institutional commitments in laying the ground for later integration and persistence found in this study is consistent with a substantial body of research associating pre-entry commitments to student attrition (Aljohani, 2024; Astin and Oseguera, 2012; Biémar, Philippe and Romainville, 2003; Okun, Goegan and Mitric, 2009; Schuster and King, 2022; Strauss and Volkwein, 2004). St. John, Paulsen and Starkey (1996) described students as "educational choice makers." When students start higher education with the right choice of institution and a clear educational goal, they become more engaged, achieve better academic results, and are less likely to drop out. Contrarily, students who enter college with weak initial commitments are more likely to drop out regardless of their cognitive ability. This holds particularly for high-performing students in open-access institutions when they feel "undermatched" (Bowen, Chingos and McPherson, 2009) and experience dissonance with the institution's environment. Once they find a better opportunity elsewhere, their initial commitments decrease, and the likelihood of departure increases.

The findings of this study indicated that less academically engaged students could be at a greater risk of dropping out. This result is consistent with Tinto's (1993) model and echoes previous research emphasizing the influence of academic engagement on student persistence or withdrawal behavior (Bean and Metzner, 1985; Kuh et al., 2006; Schmitz et al., 2010; Pascarella and Terenzini,

2005; Truta, Parv and Topala, 2018; Xu, 2016). Conducive academic environments and effective interactions with faculty members make students feel a sense of intellectual growth, which contributes significantly to their satisfaction and persistence to degree completion (Hoffmann and Oreopoulos, 2009; Mannan, 2007; Xu, 2016; Kuh et al., 2006; Pascarella and Terenzini, 2005; Sidelinger, 2016).

Nevertheless, the influence of academic integration on persistence depends primarily on the type of institution and should be examined along with other factors contributing to student departure. For instance, Braxton et al. (1997) found that academic integration had no significant effect on student persistence in some residential colleges. Pascarella and Chapman (1983) affirmed that persistence through academic integration occurs only indirectly through students' institutional commitment. Moreover, Kuh and Hu (2001) found that student-faculty interaction frequency does not necessarily lead to student persistence.

Influenced by academic integration, subsequent institutional commitments have consistently been identified as a determinant of persistence (Berger and Braxton, 1998; Braxton et al., 2000a, 2000b; Bowen et al., 2009; Mayhew et al., 2016; Pascarella and Terenzini, 2005). However, the present study findings also diverge from parts of the literature, suggesting more nuanced results. For example, Kuh et al. (2006) observed that strong goal commitment can offset the negative effect of low institutional commitment, enabling students to persist despite limited attachment to the institution. Conversely, Davidson et al. (2009) argued that goal commitment on its own cannot fully draw a distinction between persisters and non-persisters, stating instead that goal and institutional commitments are dependent on each other and do not operate separately.

Besides academic factors, this study's findings also showed that social integration contributed to shaping students' dropout intention. When students perceive that their experience is congruent with that of the institutional community, they feel more affiliated and develop a greater sense of belonging, thereby enhancing their persistence (Goguen, Hiester and Nordstrom, 2010; Hausmann, Schofield and Woods, 2007; Maunder, 2018; Sá, 2023; Strayhorn, 2012). Aligned with Tinto's (1993) model, students who did not build constructive relationships with peers and supportive connections with faculty members and administrative personnel were less likely to develop a stronger attachment to the institution. This finding is consistent with results from prior studies highlighting the role of social integration in student persistence throughout various institutional settings (Braxton et al., 2014; Goguen et al, 2010; Kuh et al., 2006; Piepenburg and Beckmann, 2022; Pascarella and Terenzini, 2005). However, findings from studies on commuter colleges, where social integration was found to have a greater impact on student departure (Al-Dossary, 2008; Schmitz et al., 2010), suggest the importance of investigating students'

integration process within their specific environmental contexts.

In contrast to the strong effects of academic and subsequent commitments, this study found that students' background characteristics were not significant predictors of their dropout intention. This outcome diverges from Tinto's (1993) model, which suggests that pre-entry attributes, such as demographic profile, academic preparation, financial resources, and work status, exert both direct and indirect influences on persistence. Similar results, however, have been observed in other studies, which emphasize that post-enrollment experiences, particularly academic and social integration, play a more decisive role in shaping student persistence than static background variables (Astin, 1997; Bean, 1982; Pascarella and Terenzini, 1979, 1983; Xu, 2016).

Although this study did not find significant effects of background characteristics, some research has demonstrated modest or context-specific influences. For example, background factors may exert indirect effects through initial commitment (Al-Dossary, 2008) or show stronger associations in residential colleges (Mayhew et al., 2016). Overall, however, the weight of evidence favors institutional experiences, particularly the quality of students' engagement with faculty, peers, and institutional structures, which has consistently been linked to satisfaction and persistence. At the same time, certain background variables, including socioeconomic status, parental education, and academic preparation, have been associated with attrition in other studies (Bozick, 2007; Aina, Baici, Casalone and Pastore, 2022).

CONCLUSION

Grounded in Tinto's (1993) Model of Institutional Departure, this study demonstrated that academic integration and subsequent commitments are the most influential factors shaping first-year students' dropout intentions, while initial commitments and social integration also play important roles. Background characteristics did not emerge as significant predictors, stressing the prominent influence of institutional experiences over pre-entry attributes. These findings provide an evidence-based perspective on the dropout issue in university open-access faculties and underscore the need for inclusive, student-centered academic environments that promote early engagement and structured progression toward degree completion.

Numerous targeted strategies could be implemented to support first-year students' persistence in open-access faculties. One effective approach is to implement comprehensive orientation programs to clarify academic and career goals before enrollment. Initiatives such as academic advising, mentoring, and opportunities to explore different subjects can help to confirm their academic choice and reinforce later academic and

institutional engagement. After enrollment, student-centered teaching pedagogies, increased faculty contact, regular progress assessments, and feedback are likely to enhance academic integration. Peer-led tutoring and mentoring initiatives could also be effective in elevating students' motivation and reducing uncertainty.

As the first year, especially the first semester, seems to be most critical for students to adjust to the new academic and social environment dynamics, it would be advantageous to establish transition programs, provide psychosocial support, and relevant learning workshops to expedite their integration. Creating "student success centers" and engaging "student life professionals" to collaborate with faculty, administrators, and students could enhance academic and administrative responsiveness, which is vital for building trust in institutional support. Furthermore, promoting co-curricular activities as part of long-term retention strategies could foster students' social integration and strengthen their sense of belonging. Advancing equity through inclusive policies, tailored support, and targeted interventions remains crucial for providing equal opportunities for student success.

Nevertheless, while the results of this study contribute valuable insights into first-year students' dropout intention predictors, it has several limitations to note. The cross-sectional survey design limits causal interpretation. The outcome variable "intent to reenroll" used as a proxy for dropout intention did not measure the actual dropout behavior, and the use of a single-item measure, as well as the reliance on self-reported data, may affect the depth and reliability of the results. Additionally, the sample was not randomly selected, and the results cannot be generalized to the students' overall population.

Future research could build on these findings by using longitudinal designs to track actual dropout behavior over time. Adding variables from other theoretical models of student attrition could expand understanding and refine predictive power. Qualitative methods could also be used to explore the lived experiences behind dropout intentions in more depth. Finally, artificial intelligence through machine learning algorithms could be used to analyze dropout pattern behaviors, identify key predictors of student departure, enabling proactive, data-driven retention interventions.

Competing interests

The author declares that there are no conflicts of interest, nor any competing financial or personal relationships that

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Data availability statement

Data that support the findings of this study are available upon request.

REFERENCES

Aarkrog, V., Wahlgren, B., Larsen, C. H., Mariager-Anderson, K., & Gottlieb, S. (2018). Decision-making processes among potential dropouts in vocational education and training and adult learning. *International Journal for Research in Vocational Education and Training*, *5*(2), 111-129.

Abes, E. S., Jones, S. R., & Stewart, D. L. (Eds.). (2019). *Rethinking college student development theory using critical frameworks.* Stylus Publishing, LLC.

Aina, C., Baici, E., Casalone, G., & Pastore, F. (2022). The determinants of university dropout: A review of the socio-economic literature. *Socio-Economic Planning Sciences*, *79*, 101102.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211.

Al-Dossary, S. (2008). *A study of the factors affecting student retention at King Saud University, Saudi Arabia: structural equation modelling and qualitative methods.* http://hdl.handle.net/1893/691

Aljohani, O. A. (2024). *Student attrition in higher education: an exploratory study of factors influencing student retention at a tertiary English language centre in Saudi Arabia* (Doctoral dissertation, RMIT University).

Astin, A. W. (1997). *What matters in college? Four critical years revisited.* John Wiley & Sons.

Astin, A. W., & Oseguera, L. (2012). *Pre-college and institutional influences on degree attainment.* In Seidman, A. (Ed.), College student retention: Formula for student success. 2nd edition. Rowman & Littlefield Publishers, Inc.

Baird, L. L. (2000). College climate and the Tinto model. Reworking the student departure puzzle, 62-80. Vanderbilt University Press.

Bean, J. P. (1980). Dropouts and turnover: The synthesis and test of a causal model of student attrition. *Research in Higher Education*, *12*, 155–187.

Bean, J. P. (1981). *Student Attrition, Intentions, and Confidence: Interaction Effects in a Path Model (R2 = .51).* Paper presented at the annual meeting of the American Research Association, Los Angeles.

Bean, J. P. (1982a). *Conceptual models of student attrition: How theory can help the institutional researcher. New Directions for Institutional Research, 1982*(36), *17-33.*

Bean, J. P. (1982b). Student attrition, intentions, and confidence: Interaction effects in a path model. *Research in Higher Education, 17*(4), 291-320.

Bean, J. P., & Metzner, B. S. (1985). A conceptual model of nontraditional undergraduate student attrition. *Review of Educational Research, 55*(4), 485-540.

Bean, J. P. (2001). *College student retention-defining student retention: A profile of successful institutions and students: Theories of student departure*. Education Encyclopedia-State University.com.

Bean, J. P., & Eaton, S. B. (2000). *A psychological model of student retention. In: Braxton, J. M. (Ed.), Reworking the student departure puzzle, 1, 48-61.* Vanderbilt University Press.

Bean, J., & Eaton, S. B. (2001). The psychology underlying successful retention practices. *Journal of College Student Retention: Research, Theory & Practice, 3*(1), 73-89.

Bean, J. P., & Metzner, B. S. (1985). A conceptual model of nontraditional undergraduate student attrition. *Review of Educational Research, 55*(4), 485-540.

Beaton, D. E., Bombardier, C., Guillemin, F., & Ferraz, M. B. (2000). Guidelines for the process of cross-cultural adaptation of self-report measures. *Spine*, *25*(24), 3186-3191.

Bennaghmouch, N., & Mansouri, Z. (2024). *Les défis de la déperdition étudiante dans les universités marocaines*. Editions L'Harmattan.

Berger, J. B., & Braxton, J. M. (1998). Revising Tinto's interactionalist theory of student departure through theory elaboration: Examining the role of organizational attributes in the persistence process. *Research in Higher Education, 39*(2), 103-119. http://www.jstor.org/stable/40196289

Berger, J., Ramirez, G. B., & Lyon, S. (2012). Past to Present: A Historical Look at Retention. In A. In Seidman (Ed.), College student retention: Formula for student success (pp. 7-34): Rowman & Littlefield.

Biémar, S., Philippe, M. C., & Romainville, M. (2003). L'injonction au projet: paradoxale et infondée? Approche longitudinale du choix d'études supérieures. *L'orientation scolaire et professionnelle*, *32*(1), 31-51. https://doi.org/10.4000/osp.3167

Bourdieu, P., & Passeron, J. C. (2000). Reproduction in society, education and culture. Second Edition. Trans. R. Nice. London: Sage.

Bowen, W. G., Chingos, M. M., and McPherson, M. S. (2009). *Crossing the finish line: Completing college at America's public universities (Vol. 52).* Princeton University Press.

Bozick, R. (2007). Making it through the first year of college: The role of students' economic resources, employment, and living arrangements. *Sociology of Education, 80*(3), 261-285. https://doi.org/10.1177/003804070708000304

Braxton, J. M., Bray, N. J., & Berger, J. B. (2000). Faculty teaching skills and their influence on the college student departure process. *Journal of College Student Development, 41*(2), 215.

Braxton, J. M., Doyle, W. R., Hartley III, H. V., Hirschy, A. S., Jones, W. A., & McLendon, M. K. (2014). Rethinking college student retention. John Wiley & Sons.

Braxton, J. M., & Lee, S. D. (2005). *Toward reliable knowledge about college student departure.* In A. Seidman (Ed.), College student retention: Formula for student success. 1st edition. Rowman & Littlefield Publishers, Inc.

Breier, M. (2010). From 'financial considerations' to 'poverty': towards a reconceptualization of the role of finances in higher education student drop out. *Higher Education, 60*(6), 657–670. https://doi.org/10.1007/s10734-010-9343-5

Cabrera, A. F., Nora, A., & Castaneda, M. B. (1993). College persistence: Structural equations modeling test of an integrated model of student retention. *The Journal of Higher Education*, *64*(2), 123-139. https://doi.org/10.2307/2960026

Cohen, L., Manion, L., & Morrison, K. (2002). *Research Methods in Education*. Routledge.

CSERFS (2014). *Rapport analytique. La mise en œuvre de la Charte Nationale d'Education et de Formation 2000-2013 : Acquis, déficits et défis*. shorturl.at/drMY8

CSERFS (2015). *Vision Stratégique de la réforme 2015-2030 : pour une école de l'équité, de la qualité et de la promotion*. shorturl.at/lxDSZ

CSEFRS (2018a). *L'enseignement supérieur au Maroc: efficacité, efficience et défis du système universitaire à accès ouvert*, Rapport sectoriel. shorturl.at/dlAP7

CSEFRS (2018b). Insertion des Lauréats de l'Enseignement Supérieur. https://shorturl.at/iVtKa

CSEFRS (2019). Réforme de l'enseignement supérieur. Perspectives stratégiques. Rapport N°5. shorturl.at/ezFHO

Davidson, W. B., Beck, H. P., & Milligan, M. (2009). The College Persistence Questionnaire: Development and validation of an

instrument that predicts student attrition. *Journal of College Student Development, 50*(4), 373-390.

Deci, E. L., & Ryan, R. M. (2012). Self-determination theory. *Handbook of Theories of Social Psychology, 1*(20), 416-436.

Del Bonifro, F., Gabbrielli, M., Lisanti, G., & Zingaro, S. P. (2020). Student dropout prediction. In *International Conference on Artificial Intelligence in Education* (pp. 129-140). Cham: Springer International Publishing.

Findeisen, S., Brodsky, A., Michaelis, C., Schimmelpenningh, B., & Seifried, J. (2024). Dropout intention: a valid predictor of actual dropout? *Empirical Research in Vocational Education and Training*, *16*(1), 10. https://doi.org/10.1186/s40461-024-00165-1

Goguen, L. M. S., Hiester, M. A., & Nordstrom, A. H. (2010). Associations among peer relationships, academic achievement, and persistence in college. *Journal of College Student Retention: Research, Theory & Practice, 12(3)*, 319-337.

Guiffrida, D. A. (2006). Toward a cultural advancement of Tinto's theory. *The Review of Higher Education*, 29(4), 451–472.

Hagedorn, L. S. (2012). *How to Define Retention: A New Look at an Old Problem*. In Seidman, A. (2012). College student retention: Formula for student success. 2nd edition. Rowman & Littlefield Publishers, Inc.

Hausmann, L. R., Schofield, J. W., & Woods, R. L. (2007). Sense of belonging as a predictor of intentions to persist among African American and white first-year college students. *Research in Higher Education*, *48*(7), 803–839.

Hoffmann, F., & Oreopoulos, P. (2009). Professor qualities and student achievement. *The Review of Economics and Statistics, 91*(1), 83-92.

Hosmer, D. W., Lemeshow, S., and Cook, E. (2000). Applied logistic regression. 2nd edition. *New York: John Wiley and Sons, Inc.*

Johnson, B., & Christensen, L. (2017). *Educational research: Quantitative, qualitative, and mixed approaches*. Sixth edition. Sage Publications, Inc.

Krötz, M., & Deutscher, V. (2022). Drop-out in dual VET: why we should consider the drop-out direction when analysing drop-out. *Empirical Research in Vocational Education and Training*, *14*(1), 1.

Kuh, G. D., & Hu, S. (2001). The effects of student-faculty interaction in the 1990s. *The Review of Higher Education, 24*(3), 309-332.

Kuh, G. D., Kinzie, J., Buckley, J. A., Bridges, B. K., & Hayek, J. C. (2006). *What matters to student success: A review of the literature commissioned report for the national symposium on postsecondary student success: Spearheading a dialog on student success.* Washington, DC: National Postsecondary Education Cooperative.

Law 01-00 (2000). Portant promulgation de la loi n° 01-00 portant organisation de l'enseignement supérieur. https://shorturl.at/ouQ19

Law 51.17 (2019). *Loi Cadre No. 51.17.* shorturl.at/mqGY2

Mansouri, Z., & Moumine, M. E. A. (2017). Outlook on student retention in higher education university reforms in Morocco. *International Journal of Education and Literacy Studies*, *5*(2), 53-60. doi:10.7575/aiac.ijels.v.5n.2p.53

Mannan, M. A. (2007). Student attrition and academic and social integration: Application of Tinto's model at the University of Papua New Guinea. *Higher Education, 53*(2), 147-165.

Maunder, R. E. (2018). Students' peer relationships and their contribution to university adjustment: The need to belong in the university community. *Journal of Further and Higher Education*, *42*(6), 756-768.

Mayhew, M. J., Rockenbach, A. N., Bowman, N. A., Seifert, T. A., & Wolniak, G. C. (2016). *How college affects students: 21st century evidence that higher education works* (Vol. 1). John Wiley & Sons.

NCET (1999). *Charte Nationale d'Education et de Formation*. Royaume du Maroc. Commission Spéciale Education Formation. www.dfc.gov.ma

Miller, T. E., Bender, B. E., & Schuh, J. H. (2005). *Promoting reasonable expectations: Aligning student and institutional views of the college experience.* San Francisco: Jossey-Bass.

Naylor, R., Baik, C., & Arkoudis, S. (2018). Identifying attrition risk based on the first-year experience. *Higher Education Research & Development*, *37*(2), 328-342.

Neuman, W. L. (2015). *Social Research Methods: Qualitative and Quantitative Approaches.* 7th ed. Boston: Pearson.

Okun, M. A., Goegan, B., & Mitric, N. (2009). Quality of alternatives, institutional preference, and institutional commitment among first-year college students. *Educational Psychology, 29*(4), 371–383.

Pascarella, E. T. (1980). Student-faculty informal contact and college outcomes. *Review of Educational Research, 50*(4), 545-595.

Pascarella, E. T., & Terenzini, P. T. (1983). Predicting voluntary freshman year persistence/withdrawal behavior in a residential university: A path analytic validation of Tinto's model. *Journal of Educational Psychology*, *75*(2), 215–226. https://doi.org/10.1037/0022-0663.75.2.215

Pascarella, E. T., & Terenzini, P.T. (2005). *How College Affects Students: A Third Decade of Research.* Vol. 2. San Francisco: Jossey-Bass.

Piepenburg, J. G., & Beckmann, J. (2022). The relevance of social and academic integration for students' dropout decisions. Evidence from a factorial survey in Germany. *European Journal of Higher Education*, *12*(3), 255-276.

Sá, M. J. (2023). Student academic and social engagement in the life of the academy—a lever for retention and persistence in higher education. *Education Sciences*, *13*(3), 269.

Seidman, A. (2012). *College Student Retention: Formula for Student Success.* 2nd ed. Lanham, MD: Rowman & Littlefield Publishers.

Seidman, A. (2019). *Minority Student Retention: The Best of the Journal of College Student Retention: Research, Theory & Practice.* Routledge.

Sidelinger, R. J., Frisby, B. N., & Heisler, J. (2016). Students' out of the classroom communication with instructors and campus services: Exploring social integration and academic involvement. *Learning and Individual Differences, 47,* 167-171.

Schmitz, J., Frenay, M., Neuville, S., Boudrenghien, G., Wertz, V., Noël, B., & Eccles, J. (2010). Étude de trois facteurs clés pour comprendre la persévérance à l'université. *Revue française de pédagogie. Recherches en éducation, 172,* 43-61.

Schuster, R., & King, B. R. (2022). First-year student retention, goal commitment, and institutional commitment: Two meta-analyses. *SN Social Sciences*, *2*(8), 145.

St. John, E. P. S., Paulsen, M. B., & Starkey, J. B. (1996). The nexus between college choice and persistence. *Research in Higher Education, 37(2), 175-220.*

Stewart, S., Lim, D. H., & Kim, J. (2015). Factors influencing college persistence for first-time students. *Journal of Developmental Education*, *38*(3), 12-20. https://www.jstor.org/stable/24614019

Strauss, L. C., & Volkwein, J. F. (2004). Predictors of student commitment at two-year and four-year institutions. *The Journal of Higher Education, 75(2), 203-227.*

Strayhorn, T. L. (2012). *College Students' Sense of Belonging: A Key to Educational Success for All Students.* New York: Routledge.

Terenzini, P. T., & Reason, R. D. (2005). *Parsing the First Year of College: A Conceptual Framework for Studying College Impacts.* University Park, PA: Center for the Study of Higher Education, Penn State University.

Tierney, W. G. (1992). An anthropological analysis of student participation in college. *The Journal of Higher Education, 63*(6), 603-618.

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research, 45*(1), 89-125. https://doi.org/10.3102/00346543045001089

Tinto, V. (1993). *Leaving College: Rethinking the Causes and Cures of Student Leaving.* 2nd ed. Chicago: University of Chicago Press.

Tinto, V. (2012). *Completing College: Rethinking Institutional Action.* Chicago: University of Chicago Press.

Truta, C., Parv, L., & Topala, I. (2018). Academic engagement and intention to drop out: Levers for sustainability in higher education. *Sustainability*, *10*(12), 4637.

Véliz Palomino, J. C., & Ortega, A. M. (2023). Dropout intentions in higher education: Systematic literature review. *Journal on Efficiency and Responsibility in Education and Science*, *16*(2), 149-158. http://dx.doi.org/10.7160/eriesj.2023.160206

Webb, O. J., & Cotton, D. R. E. (2018). Early withdrawal from higher education: A focus on academic experiences. *Teaching in Higher Education*, *23*(7), 835-852.

Xu, Y. J. (2016). Localizing college retention efforts: The distance between theoretical orientation and institution-specific needs. *Innovative Higher Education, 42,* 49–63.