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Peer Mentoring, Perceived Affiliation, Sense of Belonging and Social Inclusion: Evidence from a Portuguese University

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Abstract

This study analyzes peer mentoring as an institutional mechanism that may support students' transition to higher education, addressing a gap in the literature regarding how mentoring might influence academic affiliation, sense of belonging and social inclusion, simultaneously. Based on an integrated analytical framework that combines the concepts of the "student's craft," belonging and mentoring for social inclusion, the research adopts a mixed-methods approach grounded in methodological triangulation, including quantitative data from questionnaires applied to mentors and mentees, as well as qualitative evidence from sharing sessions and observation. In the context studied, results suggest that peer mentoring functions as a form of institutional mediation through which students access and interpret the norms and practices of university life, with relational support appearing central to translating that knowledge into meaningful engagement. Within the mentoring program in question, participation was also associated with students' reported sense of belonging and academic affiliation, as interrelated processes whose perceived impact varied across students' diverse trajectories, particularly among international students. Furthermore, the study highlights the reciprocal nature of mentoring, promoting development and participation among both mentees and mentors. Peer mentoring is not an isolated intervention, but rather part of a broader institutional ecosystem that can impact student inclusion, participation and success.

Keywords: student's craft; student diversity; higher education; mixed methods

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1. Introduction

Over recent decades, higher education has undergone profound transformations driven by the expansion, democratization and increasing diversification of the student population. Across Europe, and particularly in Portugal, policies promoting wider participation have enabled access to groups that were traditionally underrepresented in higher education, including first-generation students, mature students, international students and students from more diverse socioeconomic backgrounds (Beals et al., 2021; OECD, 2025; Directorate-General for Education and Science Statistics, 2025, Martins et al., 2024; Mauritti et al., 2023). While these developments represent significant progress toward greater educational equity, they also challenge higher education institutions to respond effectively to increasingly heterogenous student needs and experiences (Awang-Hashim et al., 2019; Ovink & Murrell, 2022).

As student populations become increasingly diverse, the central challenge facing higher education is no longer limited to widening access. Rather, universities are increasingly expected to create institutional conditions that enable students not only to enter higher education but also to participate fully in academic life, establish meaningful social relationships and successfully progress throughout their studies (Tinto, 2010; OECD, 2025). In this context, inclusion is understood not simply as participation in higher education but as students' opportunity to become active, recognized and legitimate members of the academic community.

Research on the transition to higher education has consistently shown that entering university constitutes a particularly demanding period in students' academic trajectories. This transition involves more than adapting to new learning environments; students must negotiate unfamiliar academic expectations, institutional rules, social relationships and forms of participation (Araújo et al., 2016; Casanova et al., 2021; de Oliveira et al., 2018; Wu & Gong, 2025). These challenges tend to be particularly significant during the first year of study and may disproportionately affect students with fewer opportunities to become familiar with the formal and informal academic and institutional codes that shape participation in the academic environment (Sampaio de Sá, 2023; Martins et al., 2024).

From a sociological perspective, Alain Coulon (Coulon, 2008, 2017) provides a particularly relevant framework for understanding this transition through the concept of the student's craft (*le metier d'étudiant*). Rather than interpreting university entry as a process of individual adaptation, Coulon conceptualizes it as a gradual process of academic affiliation, through which students learn the institutional, intellectual and relational codes that regulate participation in higher education. Becoming a university student therefore requires more than attending classes or fulfilling academic requirements; it involves progressively acquiring the implicit norms, practices and intellectual habits that characterize academic life. From this perspective, students' opportunities to appropriate these institutional codes are shaped by the cultural resources and dispositions they bring with them to higher education, echoing Bourdieu's concepts of cultural capital and habitus (Bourdieu, 1986). Such learning may be especially demanding for students with less familiarity with the institutional culture of higher education (Ivemark & Ambrose, 2021). Academic success depends, to a significant extent, on this process of affiliation, through which students become recognized as legitimate participants in the academic community.

Coulon's perspective is complemented by more recent research that highlights the importance of sense of belonging as a fundamental dimension of students' educational experiences. Studies consistently show that students who develop stronger feelings of belonging are more likely to engage with learning, seek academic support, persist in their studies and report higher levels of well-being (Gillen-O'Neel, 2021; Won et al., 2021; van Lamoen et al., 2025). However, belonging should not be understood merely as an individual feeling. Contemporary research emphasizes that sense of belonging is a multidimensional concept encompassing experiences of acceptance, recognition, peer support, and meaningful participation in academic life (Baek, 2025; Dias-Broens et al., 2026). It emerges through participation in academic practices and peer relationships that enable students to perceive themselves as recognized, valued and legitimate members of the university community (Martins et al., 2023). In this sense, belonging and academic affiliation represent complementary dimensions of the same process through which students become integrated into university life. Seen from this perspective, sense of belonging may be understood not only as an outcome of successful academic integration but also as one of the mechanisms through which students progressively develop academic affiliation. This interpretation shifts attention to the institutional arrangements that support both processes.

If learning the student's craft and developing a sense of belonging are central to successful participation in higher education, the question then becomes as follows: *which institutional mechanisms can support these processes, particularly in increasingly diverse higher education systems*?

Among the initiatives developed to facilitate students' transition to higher education, peer mentoring has become one of the most widely adopted institutional strategies. Although mentoring programs differ in their organization and objectives, they generally seek to support students' academic, personal and social integration by creating supportive relationships between more experienced and newly enrolled students (Jacobi, 1991; Colvin & Ashman, 2010; Yaffe et al., 2012). A substantial body of research has associated peer mentoring with smoother transitions to higher education, greater academic engagement, and improved retention (Cornelius et al., 2016; Collier, 2017; Lane, 2020; Olivier & Burton, 2020). Beyond these documented benefits, recent research suggests that peer mentoring also facilitates students' understanding of the implicit academic norms and expectations, facilitates the development of supportive peer networks, and promotes a stronger sense of belonging, particularly among students from underrepresented or vulnerable groups, thereby supporting processes of social inclusion (Hall et al., 2020; Pavlovic & Jeno, 2024; Castro-Olivo et al., 2024; Guerreiro & de Jesus, 2025).

Nevertheless, the existing literature has predominantly examined peer mentoring in terms of its outcomes, such as academic performance, adjustment, well-being or retention. Comparatively less attention has been devoted to understanding peer mentoring as an institutional mechanism through which students acquire the institutional and intellectual codes of university life, strengthen their sense of belonging, progressively achieve academic affiliation, and thereby contribute to social inclusion. Moreover, although the literature on the learning of the student's craft, belonging and peer mentoring has expanded considerably, these three strands of research have seldom been articulated within a common analytical framework.

This article addresses these gaps by bringing the literature on student's craft, sense of belonging and peer mentoring into dialog. We argue that this integrated perspective provides a more comprehensive framework for understanding students' transition to higher education. In this sense, peer mentoring is understood not simply as a support program but as an institutional mechanism through which students acquire the institutional and intellectual codes of university life and progressively develop a durable sense of belonging, thereby strengthening the processes of academic affiliation and social inclusion.

Empirically, this article examines students' experiences within a peer mentoring program implemented at a Portuguese public university to explore how mentoring supports students' learning of university life, academic affiliation and sense of belonging. Accordingly, the study addresses the following overarching research question: *To what extent, and through which mechanisms, does peer mentoring support processes of academic affiliation, sense of belonging and social inclusion among higher education students?*

To answer this question, the study pursues three objectives: (i) to examine how peer mentoring contributes to students' learning of the institutional and academic codes associated with university life; (ii) to analyze how this learning contributes to students' academic affiliation and a sense of belonging; and (iii) to explore how peer mentoring contributes to social inclusion within increasingly diverse higher education contexts.

2. A Case Study: Peer Mentoring Program at a Portuguese Public University

This article analyzes a peer mentoring program implemented at a Portuguese public university with more than 14,500 enrolled students, spread across 122 undergraduate,

master's, and doctoral programs in fields including social sciences, public policy, business, technology, and architecture (Iscte, 2026a). The institution is characterized by a highly diverse student population, with international students representing approximately 25% of total enrollment, alongside learners with varied academic backgrounds, age groups, and professional trajectories. This diversity has been accompanied by the development of institution-wide policies addressing gender equality, accessibility, and intercultural integration. Within this context, the peer mentoring program was developed to support students' transition to university and facilitate their integration into university life.

The program in question has been implemented over four consecutive editions, involving around 150 trained mentors and more than 300 mentees. Rather than relying solely on informal peer support, the program is institutionally embedded and coordinated through collaboration among several university units, including the Social Services and the Pedagogical Council. Its design combines structured mentor training, cross-unit coordination, and continuous monitoring, features that make it particularly suitable for examining how peer mentoring can support students' transition to higher education within an institutional framework.

The program aims to foster supportive relationships between intermediate or final-year students and first-year students. Through these relationships, mentors help new students become familiar with institutional practices and the implicit norms and expectations that shape academic life, while enabling them to make effective use of university resources. In this way, mentors contribute to newcomers' meaningful participation in the wider university community (OECD, 2025; Mauritti et al., 2025).

To support these objectives, all mentors participate in a compulsory twelve-hour training program before beginning their mentoring activities. The training is designed to develop technical, interpersonal and socio-emotional skills required for the mentoring role, with particular emphasis on active listening, teamwork, inclusive communication, and social responsibility. It also familiarizes mentors with institutional resources and student support services, enabling them to guide mentees effectively and refer them to appropriate forms of support when needed.

Beyond the mentoring relationships themselves, the program incorporates collective activities designed to strengthen students' engagement with the academic community. These include welcoming events at the beginning of the academic year, guided tours of the cities surrounding the university's two campuses, and volunteering initiatives that encourage civic participation while reinforcing students' connection with the university community and fostering their engagement in academic and social life.

Taken together, these characteristics make the program particularly well suited for examining how peer mentoring contributes to students' acquisition of the institutional and academic codes that shape university experience, the development of academic affiliation and sense of belonging, and broader processes of social inclusion. The program's systematic monitoring and evaluation provide a rich empirical basis for analyzing these processes. The research design, data sources, and analytical procedures are described in the following section.

3. Materials and Methods

This study adopted a mixed-methods case study design to examine how peer mentoring functions as an institutional mechanism to support students' learning of university codes, academic affiliation, sense of belonging, and social inclusion at a Portuguese public university. The study draws on the systematic monitoring and evaluation of the peer mentoring program, combining quantitative, qualitative and observational data to capture complementary dimensions of participants' experiences. Consistent with recommenda-

tions for methodological triangulation (Carter et al., 2014), the integration of multiple data sources strengthened the comprehensiveness and credibility of the findings.

3.1. Participants and Data Sources

Data were collected from both mentors and mentees through three complementary sources: online surveys, semi-structured sharing sessions with mentors and systematic participant observation, during 2024/2025 and 2025/2026 academic years.

Two anonymous bilingual online surveys were administered using Microsoft Forms, the university's institutional platform and, therefore, familiar to students: one aimed at mentors and the other at mentees. All eligible participants in the program (147 mentors and 343 mentees) were invited to participate by email, followed by a single non-mandatory reminder. The final analytical sample comprised 90 mentors and 99 mentees, corresponding to response rates of 61.2% and 28.9%, respectively. These response rates reflect the voluntary and non-mandatory character of research participation, which was independent from participants' enrolment in the mentoring program itself; the non-mandatory and anonymous nature of participation was explicitly emphasized in all recruitment communications. The surveys collected sociodemographic information (Table 1) and explored participants' motivations for joining the program, their overall satisfaction, perceived impacts of mentoring, and suggestions for improvement, primarily through closed-ended and Likert-type items complemented by open-ended questions. The survey dimensions were informed by previous research on academic adaptation and peer support (Araújo et al., 2016; Beltman & Schaeben, 2012; Casanova et al., 2021; Colvin & Ashman, 2010) and further refined through the project team's ongoing field engagement with students. The questionnaires were specifically designed to capture participants' experiences within the peer mentoring program. Each questionnaire also included role-specific questions. For instance, mentors were asked to select their main reasons for joining the program (e.g., "contributing to the welcoming/integration of new students", "developing skills", "meeting new people"), and to rate, on a 5-point scale ranging from "very poor" to "very good," the program's impact across dimensions such as personal growth, sense of belonging, skill development, and well-being. Additional items assessed overall satisfaction (1–5 scale, from "not at all satisfied" to "very satisfied") and behavioral intentions, namely willingness to participate again and to recommend the program to others (dichotomous yes/no items). Mentees answered analogous motivational items (e.g., "making friends and meeting new people", "receiving guidance on academic life", "having someone available to listen to and support them through personal challenges", "reducing feelings of isolation", "having support during the first weeks at university", "getting to know Portuguese culture and its educational system") and rated, on the same 5-point scale, the program's impact on their academic integration, sense of belonging, well-being, understanding of how the university works, and ease of following classes. Both questionnaires also included an optional open-ended question allowing participants to provide an overall evaluation of the program.

To complement the survey data, three semi-structured sharing sessions were conducted with volunteer mentors ($N = 34$) from different academic backgrounds, study cycles, gender, and age groups. Participation in the sharing sessions was likewise voluntary and open to all mentors, following the same invitation procedure used in the surveys. These sessions explored mentors' experiences within the program, including perceived challenges, successful practices, and reflections on mentoring relationships. Audio recordings were collected with participants' written informed consent, subsequently anonymized and transcribed for qualitative analysis, organized according to the predefined central research dimensions.

Table 1. Sociodemographic Profile and Baseline Characteristics of Mentees and Mentors.

Dimension/Variable	Mentees (N = 99) n (%)	Mentors (N = 90) n (%)
Gender		
Female	75 (76.53%)	63 (71.60%)
Male	23 (23.47%)	25 (28.41%)
Other/Non-binary	n.a	n.a
Age	M = 24.40 (SD = 9.30) Min: 18; Max: 68; Md = 21.00	M = 25.31 (SD = 9.67) Min: 19; Max: 58; Md = 21.00
Nationality		
Portuguese	61 (62.24%)	82 (92.13%)
International—Portuguese Speaking Countries	22 (22.45%)	7 (7.87%)
International—Other Nationalities	15 (15.31%)	n.a
Territorial Displacement		
Displaced Student (Living away from home)	46 (46.46%)	
Non-Displaced Student (Local)	53 (53.54%)	

Note. N = 99 mentees and N = 90 mentors. Percentages are based on valid cases (valid percent). M = Mean D = Standard Deviation; Md = Median; n.a: not reported due to cell counts below five, to protect participant anonymity.

Systematic participant observation was conducted longitudinally throughout the implementation of the program by members of the research team who had also completed the mentor training and served as mentors within the program. This dual role provided sustained access to mentoring activities and contextualized understanding of participants' interactions and experiences. Observational data were recorded in field notes and used as a complementary source for the qualitative analysis (Cachado, 2021).

3.2. Data Analysis

Quantitative and qualitative data were analyzed in a complementary and iterative manner within the overall mixed-methods case study design, combining descriptive and inferential statistical testing (via IBM SPSS Statistics v.28) with systematic thematic content analysis (via MAXQDA 2024). Survey data were first analyzed descriptively to characterize participants and examine their perceptions of the peer mentoring program across the main dimensions under study. Sociodemographic information provided a contextual profile of participants, while the remaining survey data were used to examine participants' experiences and perceptions.

Prior to statistical estimation, a missing value analysis was performed across both datasets to assess data integrity and non-response patterns. For the mentee survey (N = 99), item-level missingness was minimal, ranging from 0.0 to 3.0% across core demographic and composite variables. Little's MCAR test confirmed that data were missing completely at random (X^2 = 0.857, df = 2, p = 0.65), justifying the use of listwise deletion in multivariate analyses and retaining a stable analytical sample of N = 94 mentees with complete observations. For the mentor survey (N = 90), zero missing values (0.0%) were observed across demographic variables and composite indices, allowing the full mentor sample (N = 90) to be retained for analysis.

Following the missing value audit, original variables were recoded or aggregated to support their analytical interpretation. In the mentee dataset, the seven original response categories concerning motivations for joining the peer mentoring program were grouped into three meaningful analytical dimensions aligned with the study's conceptual framework: learning and deciphering implicit institutional rules, sense of belonging, and social inclusion. Age was also recoded into groups, reflecting the age distribution of first-year students in the sample. For descriptive analyses, nationality was aggregated into three broader

categories (Portuguese, Internacional—Portuguese-speaking countries and International—other nationalities). Small cell counts were not reported to protect participant anonymity. For inferential analyses, the two international categories were combined into a single category, resulting in a dichotomous variable (Portuguese, Internacional), allowing all cases to be retained while avoiding the reporting of small nationality subgroups. For the same reason, regarding descriptive analyses, gender categories with fewer than five participants were not reported separately in the presentations of results.

To assess participants perceived mentoring impacts, two role-specific composite indices were constructed. For mentees, the Global Mentoring Impact Index (GMII) combined four dimensions: Understanding Implicit Rules, Ability to Keep Up with Classes, Well-Being, and Sense of Belonging ($\alpha = 0.903$, $\omega = 0.905$; single-factor PCA explaining 77.83% of variance). For mentors, the Mentor Development Index (MDI) combined Personal Development, Sense of Belonging, Skills Development, and Well-Being ($\alpha = 0.827$, $\omega = 0.835$; single-factor PCA explaining 66.42% of variance). The internal consistency and dimensional structure of both indices were examined using Cronbach's alpha and principal component analysis (PCA).

Group differences in perceived mentoring impacts were examined using Mann–Whitney U tests according to the sociodemographic and mobility variables available for each participant group. For mentees, tests evaluated differences in overall impact (GMII) and its constituent dimensions (Understanding Implicit Rules, Ability to Keep Up with Classes, Well-Being, and Sense of Belonging) according to nationality (Portuguese, International) and territorial displacement status (Local, Displaced). For mentors, comparative analyses examined overall mentor development (MDI) and its sub-dimensions (Personal Development, Sense of Belonging, Skills Development, and Well-Being) across age profiles ($\leq$22 years, >22 years) and nationality. For all inferential non-parametric testing, exact p-values are reported alongside mean ranks, exact U and Z statistics, Rosenthal's effect size ($r = |Z|/\sqrt{N}$), and 95% confidence intervals (95% CI), allowing a precise evaluation of the practical magnitude of group differences.

For mentees, an Ordinary Least Squares (OLS) multiple linear regression was conducted using the GMII as the dependent variable ($N = 94$) to examine whether demographic, mobility, and relational factors were associated with perceived mentoring impact. Predictors included mentee satisfaction with mentor, nationality, territorial displacement status, and age group. Multicollinearity was assessed using variance inflation factors (VIF $\leq$ 1.408), tolerance values ($\geq$0.710), and the condition index ($\leq$5.118). Autocorrelation of residuals was evaluated using the Durbin-Watson statistic (2.078), and 95% confidence intervals (95% CI) were computed for all unstandardized regression coefficients.

Qualitative material was generated through mentors' sharing sessions ($N = 34$) and participant observation recorded in field diaries. The sharing sessions followed a semi-structured format designed to encourage open and informal discussion among participants. The sessions generally began with ice-breaking activities intended to strengthen relationships among mentors and facilitate subsequent discussion and sharing of experiences. In each session, the discussion was structured around three broad topics: the perceived success of the mentoring experience, both from the mentors' own perspective and in their relationships with mentees; difficulties or challenges perceived in relationships with mentees and in interactions with the institution, particularly regarding communication with university services and access to resources; and an overall assessment of the mentoring experience, including feedback on the adequacy of the program.

Following each sharing session, the facilitators prepared structured reports summarizing and organizing participants' contributions around the main thematic dimensions addressed during the sessions. A common reporting approach was used across the project,

while allowing sufficient flexibility to capture issues and experiences specific to each session. Rather than relying on a rigid coding scheme, the reports documented both the themes addressed through the planned activities and issues that emerged from participants' narratives. For the purposes of the present study, the reports were subsequently analyzed by the research team, comprising researchers directly involved in fieldwork and program coordination, using MAXQDA 2024 software, following the principles of reflexive thematic content analysis. The analysis focused on identifying and comparing recurrent patterns across the reports in relation to the study's central analytical dimensions, including academic affiliation, sense of belonging and social inclusion. An initial analysis was conducted by members of the research team and subsequently discussed collectively. The analytical categories and emerging interpretations were reviewed and discussed until consensus was reached, ensuring inter-coder reliability and interpretive validity.

Observational records were used to contextualize and support the interpretation of both survey results and participants' narratives.

Finally, findings from the different data sources were integrated through methodological triangulation. Survey results provided an overview of participants' profiles and perceptions, while qualitative evidence helped explain and contextualize the quantitative findings. Since the sharing sessions were conducted after the administration of the questionnaires, they also provided an opportunity to further explore issues identified in the survey data, contributing to a more comprehensive understanding of students' experiences within the mentoring program.

3.3. Ethical Considerations

Participation in the peer mentoring program was voluntary, and participation in the research study was independently voluntary as well. Survey responses were collected anonymously, whereas participants in the sharing sessions provided written informed consent for the recording and research use of the discussions. All qualitative material was anonymized prior to analysis, and the study adhered to the ethical principles of confidentiality, privacy, and responsible data management, in accordance with the institutional procedures and ethical guidelines established by the university.

4. Results

To examine how the institutional peer mentoring program supports students' learning of university codes, academic affiliation, sense of belonging and social inclusion, quantitative survey findings from mentees (N = 99) and mentors (N = 90) were integrated with qualitative evidence from mentor sharing sessions (N = 34), and longitudinal observation records. The findings are organized into three subsections: (i) sociodemographic and mobility profiles of participants; (ii) mentees' experiences of peer mentoring, focusing on the learning of institutional and academic codes, academic affiliation, and sense of belonging; and (iii) mentors' social inclusion, sense of belonging and personal development.

4.1. Sociodemographic and Mobility Profiles of Participants

The baseline characterization of program participants provides an overview of their main demographic features and mobility background. Table 1 summarizes these characteristics for mentees and mentors.

As detailed in Table 1, female students constitute the majority of both mentees (76.53% valid responses) and mentors (71.60%). This representation is substantially higher than the proportion of women in the university's overall student population (51%) and among mentees, particularly contrasts with their representation in undergraduate programs (44%) (Iscte, 2026b, p. 55).

Regarding age distribution, both cohorts had the same median ages (Md = 21.00 years) while showing considerable dispersion. The mentees' ages ranged from 18 to 68 years (M = 24.40, SD = 9.30), whereas mentor ages ranged from 19 to 58 years (M = 25.31, SD = 9.67), indicating the presence of participants across a broad age range in both groups.

With respect to nationality, Portuguese students represent nearly two-thirds of the mentee sample (62.62%), international students account for 37.37% (22.22% from Portuguese speaking countries and 15.15% from other foreign countries). In contrast, the mentor group was predominantly Portuguese (92.13%), with international mentors comprising 7.87%.

4.2. Institutional Guidance and Perceived Mentoring Impact Among Mentees

Concerning entry motivations, quantitative survey data show that seeking institutional guidance on academic life and administrative rules was the most frequently reported motivation for enrolling in the peer mentoring program, reported by 89.90% of mentees (n = 89). Motivations related to social inclusion were reported by 78.79% (n = 78), while motivations related to sense of belonging and peer connection were cited by 61.61% (n = 61).

When examined by territorial displacement status, seeking institutional guidance on academic life and administrative rules was reported by a similarly high proportion of displaced 89.13% ($n = 41$) and non-displaced mentees 90.57% ($n = 48$). Because 25.0% of table cells had expected counts below 5 (minimum expected count = 4.65), Fisher's Exact Test was used. No statistically significant association was found between territorial displacement status and this motivation ($p = 1.000$, Fisher's Exact Test; Cramer′s V $= 0.024$, $N = 99$).

Similarly, when examined by nationality, seeking institutional guidance on academic life and administrative rules was reported by 95.45% ($n = 21$) of mentees from Portuguese-speaking countries, 91.8% ($n = 56$) of Portuguese mentees, and 73.33% ($n = 11$) of other international mentees. Because 33.3% of the cells had expected counts below 5 (minimum expected count = 1.53), the Fisher-Freeman-Halton exact test was used. No statistically significant association was found between nationality and this motivation ($p = 0.065$, Cramer's $V = 0.236$).

In summary, seeking institutional guidance on academic and administrative rules was the most frequently reported entry motivation among mentees and was reported at high levels across territorial displacement and nationality groups. No statistically significant association was found between this motivation and either territorial displacement status or nationality ($p > 0.05$).

Overall program impact was evaluated using a validated composite index, the Global Mentoring Impact Index (GMII), which aggregates four core dimensions: Understanding Implicit Rules, Ability to Keep Up with Classes, General Well-Being, and Sense of Belonging ($\alpha = 0.903$; single-factor PCA loadings ≥ 0.845). Mentees reported a highly positive average impact score ($M = 14.75, SD = 3.04, N = 97$), indicating an overall positive evaluation of mentoring across the dimensions included in the index.

Mann–Whitney U tests were used to examine whether perceived mentoring impacts differed by nationality. International mentees reported significantly higher perceived impacts than Portuguese mentees in Sense of Belonging (U = 672.500, $Z = -3.322$, $p < 0.001$; r = 0.34; mean ranks: 59.82 vs. 41.71), as well as a significantly higher perceived Ability to Keep Up with Classes (U = 725.000, $Z = -2.952$, p = 0.003; r = 0.30; mean ranks: 58.36 vs. 42.58). Consistent with these differences, international mentees also reported significantly higher overall perceived mentoring impact on the composite GMII (U = 714.000, $Z = -2.798$, p = 0.005; r = 0.28; mean ranks: 58.67 vs. 42.40). No statistically significant differences were found for Understanding Implicit Rules (p = 0.303) or Well-Being ($p = 0.083$).

To examine whether demographic, mobility, and relational factors were associated with perceived mentoring impact, an Ordinary Least Squares (OLS) multiple linear regression

was conducted using the Global Mentoring Impact Index (GMII) as the dependent variable ($N = 94$). Multicollinearity diagnostics indicated no problematic collinearity among the predictors ($VIF \leq 1.408$, tolerance ≥ 0.710; condition index ≤ 5.118), and the Durbin-Watson statistic (2.078) confirmed residual independence. The overall regression model was statistically significant, accounting for 42.5% of the variance in perceived mentoring impact ($R^2 = 0.425$, Adjusted $R^2 = 0.399$, $F_{4,89} = 16.461$, $p < 0.001$). The complete regression parameters, unstandardized and standardized coefficients, exact p-values, 95% confidence intervals, and collinearity statistics are detailed in Table 2.

Table 2. OLS Multiple Linear Regression Predicting Perceived Mentoring Impact (GMII) Among Mentees ($N = 94$).

Predictor Variable	*B*	SE_B	*β*	*t*	*p*	95% CI Lower	95% CI Upper	VIF
(Constant)	18.241	0.812		22.464	<0.001	16.627	19.855	-
Mentee Satisfaction with Mentor	−0.418	0.057	−0.593	−7.371	<0.001	−0.530	−0.305	1.074
Nationality (International, Portuguese)	0.339	0.150	0.216	2.261	0.026	0.041	0.637	1.408
Territorial Displacement (Displaced, Local)	0.123	0.142	0.081	0.865	0.389	−0.160	0.406	1.396
Age Profile (≤22, >22 years)	−0.004	0.126	−0.003	−0.031	0.976	−0.254	0.246	1.102

Note. Dependent Variable: Global Mentoring Impact Index (GMII). Model Summary: $R^2 = 0.425$, Adjusted $R^2 = 0.399$, $F(4, 89) = 16.461$, $p < 0.001$. Durbin-Watson statistic = 2.078. Mentee satisfaction with mentor was reverse coded (lower scores indicate greater satisfaction).

When examined by territorial displacement status, a statistically significant difference was found only for Sense of Belonging ($U = 876.000$, $Z = -2.311$, $p = 0.021$, $r = 0.23$), with non-displaced mentees showing a significantly higher Mean Rank (55.46). No statistically significant differences were found for Understanding Implicit Rules, Well-Being, or Ability to Keep Up with Classes (all $p > 0.05$), nor for overall perceived mentoring impact through the GMII ($U = 1012.000$, $Z = -1.175$, $p = 0.240$).

As detailed in Table 2, after accounting for mentee satisfaction with the mentor, nationality, territorial displacement status, and age profile (≤22 years, >22 years), mentee satisfaction emerged as the strongest predictor of perceived mentoring impact ($\beta = -0.593$, $t = -7.371$, $p < 0.001$). Given the reverse coding of mentor satisfaction, where lower scores indicated greater satisfaction, the negative coefficient indicates that greater satisfaction with the mentor was associated with higher perceived mentoring impact. Nationality was also a statistically significant predictor ($\beta = 0.216$, $t = 2.261$, $p = 0.026$), with international mentees reporting higher perceived impact than Portuguese mentees. In contrast, neither territorial displacement ($\beta = 0.081$, $t = 0.865$, $p = 0.389$) nor age profile ($\beta = -0.003$, $t = -0.031$, $p = 0.976$) was significantly associated with perceived impact in the multivariate model.

To contextualize the quantitative patterns through triangulation, qualitative evidence from mentor sharing sessions and participant observation was considered alongside the survey findings. Qualitative records highlighted difficulties related to institutional procedures, digital academic platforms, and assessment regulations during the first weeks of university life, providing further insight into mentees' reported need for institutional guidance. One field note illustrates this process:

> "*In the initial weeks, mentees experience disorientation regarding academic deadlines, enrollment platforms, and evaluation norms. Having a senior peer mentor and an active WhatsApp group provides a safe, informal space to ask questions without fear of judgment. As mentees gain greater confidence within the institution, they handle administrative procedures more autonomously. They also begin responding to queries from other mentees, actively reinforcing the peer support network.*" (Field Note, Participant Observation)

Direct qualitative feedback from mentees further contextualized the strong association between mentee satisfaction and the overall perceived mentoring impact observed in the regression model ($\beta = -0.593$, $p < 0.001$). Positive evaluations of the program highlighted availability, approachability, and supportive role of mentors, including the emotional support provided during difficult moments:

> "*The mentor is excellent. When I go in person, whoever is there helps. . . I was feeling really down, and there I received help and a friendly word.*" (Mentee 27, Survey Open Comment)

4.3. Mentors' Social Inclusion, Sense of Belonging and Personal Development

While peer mentoring programs are primarily implemented to facilitate newcomer integration, the finding indicates that mentoring can also constitute a reciprocal development process, with mentors ($N = 90$) reporting benefits associated with their participation in the program. One of the ice-breaking activities invited mentors to represent mentoring through an object. The metaphors recorded during the session included a "flashlight" associated with guidance in moments of uncertainty, a "mirror" reflecting mentees' vulnerabilities back onto the mentors; and a "matryoshka" representing growth in successive layers.

Mann–Whitney U tests were used to examine whether perceived mentoring impacts differed by mentor age ($\leq$22 years, $n = 60$, >22 years, $n = 30$) and nationality (Portuguese, $n = 82$, Foreign, $n = 8$). Regarding age, a statistically significant difference was found in mentor perceived Sense of Belonging ($U = 637.000$, $Z = -2.431$, $p = 0.015$), with older mentors (>22 years) showing a higher mean rank (54.27) than younger mentors (41.12). To assess overall developmental impact, a composite Mentor Development Index was computed by combining four dimensions: Personal Development, Sense of Belonging, Skills Development, and Well-Being ($\alpha = 0.827$; single-factor PCA explaining 66.42% of variance). No statistical significant difference was found for Mentor Development Index ($U = 689.500$, $Z = -1.830$, $p = 0.067$), although older mentors showed a higher mean rank (52.52) than younger mentors (41.99). No statistical significant age differences were found for Personal Development ($U = 839.000$, $p = 0.560$), Skills Development ($U = 739.000$, $p = 0.115$), or Well-Being ($U = 772.500$, $p = 0.231$).

When examined by nationality, Mann–Whitney U tests revealed no statistically significant differences between Portuguese ($n = 82$) and international mentors ($n = 8$) across the impact dimensions: Personal Development ($U = 294.000$, $p = 0.591$), Sense of Belonging ($U = 237.500$, $p = 0.166$), Skills Development ($U = 288.000$, $p = 0.516$), Well-Being ($U = 297.500$, $p = 0.635$), or the Mentor Development Index ($U = 284.000$, $p = 0.526$). Despite the small size of the international mentor subgroup, international mentors displayed a descriptively higher mean rank for Sense of Belonging than Portuguese mentors (56.81 vs. 44.40), although this difference was not statistically significant.

Qualitative evidence further contextualized these quantitative patterns. Mentors described participation in the program as a personally rewarding experience that extended beyond providing support to mentees. Their accounts highlighted greater familiarity with the institution, opportunities to draw on their own previous experiences as students, and perceived personal development:

> "*The program was extremely enriching in many aspects, from the initial training, which I consider impeccable and very complete, to the actual work with mentees. It allowed me to discover campus spaces I didn't even know existed and added immense value to my journey.*" (Mentor 7, Survey Comment)

> "*I entered the program to provide the support I never received when I first entered higher education, and I stayed because I recognized the real impact it makes.*" (Mentor 9, Survey Comment)

5. Discussion

The findings suggest that peer mentoring may support students' transition to higher education through interconnected processes of institutional mediation, academic affiliation, and social participation. First, the strong demand for guidance on academic and institutional rules highlights that entering university involves learning the formal and informal codes through which academic life is organized, consistent with Coulon's concept of student's craft. Second, the perceived impacts reported by mentees, together with the strong association between satisfaction with the mentor and overall mentoring impact, indicate that this learning is embedded in supportive peer relationships that appear to facilitate both access to institutional knowledge and the development of a sense of belonging. Third, the experiences reported by mentees and mentors indicate that peer mentoring extends beyond initial transition by creating opportunities for reciprocal participation, recognition, and contribution within the academic community. Taken together, these findings suggest that peer mentoring may operate not simply as a source of practical support during the transition to higher education, but as a form of institutional mediation through which students seem to progressively acquire the codes of university life and develop academic affiliation, while simultaneously constructing a sense of belonging that functions as an outcome of transition and as one of the mechanisms through which affiliation is achieved.

5.1. Learning the Student's Craft: Institutional Guidance as a Shared Transition Need

One of the most striking findings of the study concerns the centrality of institutional guidance in students' motivation for joining the peer mentoring program. Nearly nine in ten mentees (89.90%) reported seeking guidance on academic matters and administrative procedures, making institutional guidance the most frequently reported motivation for enrolling in the program. Importantly, this pattern remained remarkably consistent across nationality and territorial displacement groups. The absence of statistically significant differences suggests that the need for institutional guidance is not confined to specific student categories. Rather, it represents a widespread feature of the transition to higher education in the context studied.

These findings are particularly relevant when considered through Coulon's (2008, 2017) concept of the student's craft. Entering higher education requires students to learn not only explicit academic requirements but also the institutional codes, routines and often implicit expectations through which university life is organized. Becoming a university student therefore involves a process of academic affiliation in which unfamiliar rules progressively become intelligible and manageable. The broad demand for institutional guidance observed in this study suggests that decoding university constitutes a broadly shared challenge during the transition to this level of education. This does not imply that all students experience these processes under equivalent conditions. Rather, as Bourdieu (1986) argues, although the academic field is governed by common rules, students enter with unequal volumes of cultural capital and *habitus*, shaping the extent to which these rules appear familiar and readily intelligible. The challenge identified here should therefore be understood as unequal access to the tacit institutional knowledge required for legitimate

participation in academic life, rather than merely a lack of information. In turn, Ivemark and Ambrose (2021) argue that these dispositions are not fixed and may be progressively reshaped through institutional experiences and social interactions. From this perspective, peer mentoring can be understood as a form of institutional mediation through which students gain access to the practical knowledge that appears to facilitate both the learning of the student's craft and the gradual process of academic affiliation.

The qualitative findings support this interpretation by showing that mentors did more than provide procedural guidance. They translated the often-tacit logic of university life into accessible and actionable knowledge within a trusted, non-judgmental relationship, which mentees described as helping them to clarify institutional procedures, navigate academic expectations and progressively act with greater autonomy. Rather than functioning merely as a support service, peer mentoring appears to reduce the opacity of institutional processes, which may facilitate students' legitimate participation in the academic community.

5.2. Relational Support, Academic Affiliation and Sense of Belonging

Although institutional guidance constituted mentees' primary motivation for joining the program, the findings indicate that its perceived impact depends less on students' demographic characteristics than on the quality of the mentoring relationship itself. Mentee satisfaction emerged as the strongest predictor of overall perceived mentoring impact, while age and territorial displacement were not significant predictors in the multivariate model. This finding suggests that the value of peer mentoring cannot be explained solely by the transmission of institutional knowledge. Rather, it points to the relational conditions through which such knowledge may become accessible and meaningful for students.

This interpretation is consistent with contemporary understandings of sense of belonging as a relational and multidimensional process grounded in experiences of acceptance, recognition, peer support and meaningful participation, rather than simply in social integration or institutional attachment (Dias-Broens et al., 2026; Gillen-O'Neel, 2021; Won et al., 2021). Within this perspective, belonging is not merely an outcome of successful adjustment but develops through everyday interactions that enable students to feel recognized, supported and legitimate participants in the academic community.

The qualitative evidence reinforces this interpretation. Mentees consistently valued mentors' availability, approachability and willingness to provide support during both academic and personal difficulties. The possibility of asking questions, "without fear of judgment" and receiving not only practical assistance but also "a friendly word" suggest that institutional learning was embedded within relationships characterized by trust and accessibility. Instead of representing separate dimensions of the mentoring experience, informational and socio-emotional support appeared to operate together, creating conditions in which students reported engaging more confidently with university experience.

Taken together, these findings suggest that academic affiliation and sense of belonging should not be understood as independent outcomes of successful transition but as mutually reinforcing processes. While institutional learning appears to enable students to participate more confidently in university life, supportive peer relationships seem to create the relational conditions through which this learning becomes possible. Peer mentoring therefore might contribute to students' understanding of university life and to their progressive recognition as legitimate members of the academic community.

5.3. Peer Mentoring and Social Inclusion in Diverse Student Trajectories

The findings also provide a more nuanced understanding of peer mentoring as a mechanism supporting inclusion within increasingly diverse higher education contexts. While mentoring was positively evaluated across the sample, its perceived impact was

not distributed uniformly across the groups examined. International mentees reported significantly higher perceived impacts on Sense of Belonging, Ability to Keep Up with Classes, and overall Global Mentoring Impact Index, whereas territorial displacement was associated only with lower levels of belonging, without significant differences in the overall mentoring impact. Nationality also remained a significant predictor of overall perceived mentoring impact in the multivariate model, whereas territorial displacement did not. These findings suggest that different forms of student mobility should not be assumed to generate equivalent experiences of transition or equivalent relationships with peer mentoring.

Rather than supporting a generalized interpretation of mentoring as primarily benefiting "vulnerable students", the findings point to the importance of recognizing the specific institutional challenges associated with different educational trajectories. International students negotiate entry not only into higher education but also into unfamiliar academic, institutional and, often, sociocultural environments. Within this context, peer mentoring appears to provide both practical guidance and a relational point of reference that may facilitate engagement with university life. By contrast, territorial displacement alone was not associated with greater perceived mentoring impact, although displaced students reported lower levels of belonging. These different patterns suggest that students' support needs cannot be inferred from a single indicator of mobility and reinforce the importance of avoiding homogeneous understandings of student diversity.

These findings are consistent with contemporary discussions on the social dimension of higher education, which emphasize that widening participation requires institutions not only to expand access but also to create conditions that enable meaningful participation and successful trajectories among increasingly heterogeneous student populations (Martins et al., 2023, 2024; OECD, 2025). From this perspective, social inclusion is better understood as a differentiated process that responds to the diversity of students' experiences rather than as a uniform response to presumed vulnerability. The present study contributes to this discussion by showing that peer mentoring may address distinct dimensions of students' transition according to their trajectories, while simultaneously providing a shared institutional resource that supports participation across the wider student population.

5.4. From Support to Participation: The Reciprocal Dimension of Peer Mentoring

Beyond its contributions to students' transition, the findings also highlight the reciprocal nature of peer mentoring. Although mentoring programs are primarily designed to support newcomers, the evidence suggests that participation may create opportunities for learning and development for those providing support as well. Quantitative results indicated positive outcomes across the dimensions of the Mentor Development Index, while qualitative accounts described mentoring as an enriching experience that mentors associated with greater familiarity with the institution, increased reflection on previous experiences, and personal and interpersonal development. The metaphors generated during a mentor reflection session (the flashlight, the mirror and the matryoshka) further illustrate mentoring as a process simultaneously involving guidance, reflexivity and continuous development.

Importantly, this reciprocal dynamic was not confined to mentors. Field observations indicated that, as some mentees became more confident in navigating university procedures, they also began responding to questions raised by other mentees and contributing to the circulation of institutional knowledge within the program. Rather than maintaining fixed positions in which mentors provide support and mentees receive it, the findings suggest that peer mentoring may create opportunities for knowledge and support to circulate across participants as they progressively gain confidence.

This movement from receiving support towards contributing to the support of others offers an important perspective on academic affiliation and social inclusion. As argued throughout this article, becoming a university student involves more than learning institutional rules or developing a sense of belonging; it also entails progressively occupying a legitimate position within the academic community (Coulon, 2008, 2017). From this perspective, the contribution of peer mentoring appears to lie not only in facilitating students' access to institutional knowledge but also in creating recognized participatory roles through which students actively contribute to university life. The findings therefore extend previous research on peer mentoring, which has primarily emphasized its effects on adjustment, retention and well-being (Collier, 2017; Lane, 2020; Olivier & Burton, 2020), by highlighting its potential to foster participation and reciprocal recognition within the academic community.

Overall, the findings suggest that peer mentoring should be understood as more than just a support intervention. It is part of a broader institutional ecology that promotes academic affiliation, belonging, participation and recognition. While mentoring alone cannot produce social inclusion, it may help create institutional conditions through which students progressively move from recipients of support to active contributors within the university community. This interpretation is consistent with institutional approaches that position peer mentoring within wider strategies for promoting equity, inclusion and student success in increasingly diverse higher education systems (Mauritti et al., 2026).

6. Study Limitations

Several limitations should be considered when interpreting these findings. First, the study was conducted within a single Portuguese public university, and the participant samples (90 mentors and 99 mentees) reflect the specific institutional context of the program. Although these samples provide substantial evidence on participants' experiences, the relatively small size of some subgroups limits statistical comparisons, and the findings should not be generalized to higher education settings characterized by different student populations, organizational cultures, or mentoring models.

Second, the sociodemographic and trajectory information available for participants was limited. The study considered age, gender, nationality and, for mentees, territorial displacement, but did not systematically capture other dimensions that may shape students' experiences of higher education, such as socioeconomic background, first-generation status, employment, or previous educational trajectories. This restricts the extent to which the study can examine how mentoring experiences intersect with broader patterns of student diversity and inequality.

Third, the study relied predominantly on self-reported and observational evidence and did not include a comparison group or longitudinal follow-up. The findings therefore cannot establish a causal relationship between participation in the mentoring program and academic affiliation, sense of belonging, well-being, or social inclusion. Other individual, relational, and institutional factors not examined in this study may also contribute to these processes. Moreover, although participants reported perceived benefits in navigating university life, the study did not examine objective indicators of academic performance, such as academic achievement, course completion, retention, or progression over time. Future research combining students' reported experiences with institutional academic data would provide a more comprehensive understanding of whether the process of institutional mediation, academic affiliation, and belonging identified in this study translate into measurable educational outcomes, including academic success and student persistence. Peer mentoring should therefore be understood as one component within a broader institutional ecology of student support rather than an isolated explanatory factor.

Finally, members of the research team were directly involved in program implementation, mentor training, mentoring activities, and program coordination. This sustained involvement provided privileged access to the field and supported a contextualized understanding of participants' experiences, but it may also have influenced data production and interpretation. To mitigate this risk, initial qualitative interpretations were subsequently reviewed and discussed collectively by the research team until consensus was reached.

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