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Understanding the link between graduate experiences and workforce integration in physical education and sports science

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ABSTRACT

Graduate employability remains a critical challenge in higher education in fields with diverse career pathways like physical education and sports science (PESS). Despite efforts to enhance employability through curriculum improvements and institutional support, gaps persist in workforce integration, particularly for non-teaching graduates. This study investigates the relationship between higher education experiences and employment outcomes among PESS graduates. Using data from 274 alumni of a state university in the Philippines, the study employed binary logistic regression to assess the influence of specialization, postgraduate education, and institutional support on employability. Results indicate that graduates in the teaching track were significantly more likely to secure employment as professional educators, while non-teaching graduates faced challenges aligning their careers with their academic background. Enrollment in postgraduate education emerged as a strong predictor of employment, however, curriculum evaluation and overall university experience were not immediate predictors of employability, though long-term employment outcomes were positively associated with graduates' perceptions of their academic training. These findings reinforce the need for higher education institutions (HEIs) to strengthen career development initiatives for non-teaching graduates and enhance work-integrated learning (WIL) opportunities.

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1. INTRODUCTION

Higher education plays a crucial role in preparing graduates for their careers by providing them with the necessary knowledge, skills, and competencies for workforce integration [1], [2]. As societies move towards achieving the United Nations sustainable development goals (SDGs), particularly SDG 4 (quality education) [3] and SDG 8 (decent work and economic growth) [4], it has become imperative that higher education institutions (HEIs) ensure that they equip graduates effectively for meaningful employment [2], [5]. While universities have made efforts to enhance employability through curriculum improvements and industry collaborations, gaps between academic training and job market expectations persist [6], [7]. This therefore highlights the need for a closer examination of how higher education influences employment outcomes and contributes to sustainable workforce development.

Physical education and sports science (PESS) graduates enter a diverse job market that includes teaching, coaching, sports management, rehabilitation, and health sciences [8]. Unlike structured career paths in fields such as medicine or engineering, employment opportunities in sports and physical education (PE) depend on factors such as industry demand, regional labor markets, and professional certification requirements [9], [10]. Research indicates that graduates pursuing teaching roles often experience a more seamless transition into the workforce, whereas those in non-teaching fields face greater challenges in securing stable employment [11]. These differences raise important questions about how university programs, curriculum design, and educational experiences shape employment prospects in PESS.

In the Philippines, the employment status of physical education graduates reflects both the opportunities and challenges of workforce integration. Recent tracer studies by Sano *et al.* [12] indicate that while the majority of bachelor of physical education (BPE) graduates secure employment, a significant proportion remain in private institutions, with fewer opportunities in the public sector due to licensure requirements. The licensure examination for teachers (LET) serves as a key determinant for public school employment, yet many graduates either delay or forgo taking the exam, restricting their access to government teaching positions [13]–[15]. Moreover, research by Wright and Grenier [16] highlights a growing trend of PE graduates transitioning to non-teaching careers, due to higher salaries and job security concerns. Similarly, Borres and Labitad [17] found that while graduates express general satisfaction with their careers, long-term stability and career progression remain areas of concern, particularly for those in contractual positions within private institutions. These challenges stress the need for universities to strengthen licensure preparation programs, expand career support services, and ensure that PE curricula align with evolving industry demands.

Furthermore, graduate employability is influenced by multiple factors, including academic qualifications, practical experience, soft skills, and industry engagement [5], [18]. Employers increasingly seek candidates who possess both technical expertise and transferable skills such as communication, leadership, adaptability, and problem-solving [19]. However, research suggests that graduates often struggle to align their skills with industry expectations, particularly when academic programs focus more on theoretical foundations than on applied learning [20]. This gap underscores the importance of work-integrated learning (WIL), internships, and experiential education in improving graduate readiness for the workforce [21], [22].

Hence, HEIs play a critical role in employability by implementing career preparation programs, mentorship initiatives, and industry partnerships [1]–[3], [21]. These strategies have been associated with improved workforce integration [20], [21], but their effectiveness varies across institutions and disciplines [23]. For PESS graduates, access to enhanced and aligned employability programs may significantly impact their transition into the labor market which emphasizes the need for further investigation into how academic programs align with employer expectations and sector-specific job demands.

Beyond undergraduate education, advanced qualifications such as postgraduate degrees, professional certifications, and specialized training contribute to career progression and job stability [24]. Graduates with additional credentials tend to have stronger career prospects, particularly in competitive fields [24], [25]. This raises important considerations for higher education policy, as universities must assess whether undergraduate programs adequately prepare students for employment or necessitate further education for career success.

Despite increasing research on graduate employability, studies specifically focused on PESS graduates remain limited [26], [27]. Most existing literature examines general employability trends rather than the unique career pathways within sports and PE. Given the interdisciplinary nature of PESS programs, which combine elements of education, sports science, health promotion, and management, it is crucial to understand how these academic tracks translate into workforce opportunities. Additionally, institutional practices play a significant role in employment outcomes, making it essential to account for these variables when assessing workforce integration [28].

Therefore, this study explicitly addresses critical gaps in existing literature by specifically examining graduate employability within PESS, an area previously underrepresented in employability research. Unlike general tracer studies that broadly assess graduate outcomes, this study uniquely differentiates between teaching and non-teaching graduates, providing empirical insights into distinct career pathways and their associated challenges. Furthermore, it uniquely integrates institutional experience variables—such as curriculum evaluation, student support services, and postgraduate education—into predictive models of employment outcomes, thereby offering recommendations specifically for PESS programs. Ultimately, this research seeks to provide empirical insights that can inform curriculum development, career preparation strategies, and higher education policies. As demand for data-driven educational strategies grows, a comprehensive analysis of how academic experiences translate into job success will help identify key areas for improving employability in PESS programs.

The general objective of this study is to examine the relationship between higher education experiences and workforce integration among graduates of PESS. Specifically, this study aims to analyze how university and program specific experiences, institutional support, and advanced studies influence employment outcomes. First, it seeks to explore the higher education experiences of PESS graduates, focusing on their academic journey, curriculum exposure, and access to student services that may contribute to their career preparedness. Second, it aims to assess the employment status and career trajectories of graduates, identifying the sectors they enter, and the alignment of their careers with their degree programs. Lastly, this study endeavors to identify key predictors of employability, investigating how factors such as program track, curriculum evaluation, and pursuit of advanced education impact job placement.

2. METHOD

2.1. Research design

This study employs quantitative research design, specifically a correlational research design, to examine the relationship between higher education experiences and employment outcomes among graduates of PESS. The correlational design is appropriate as the study aims to identify the significant predictors of employment, assessing how various academic and institutional factors influence workforce integration. By utilizing logistic regression, this study systematically explores the extent to which factors such as program track, curriculum evaluation, and the pursuit of advanced education contribute to employment status. Furthermore, this study adopts a cross-sectional design, as data were collected at a single point in time from graduates who had already transitioned into the workforce. Cross-sectional designs are widely used in tracer studies, which investigate the employment patterns, career trajectories, and professional outcomes of graduates after completing their education [29]. Similar studies have demonstrated the effectiveness of cross-sectional surveys in capturing the immediate and long-term employability of graduates, providing a snapshot of their career progression and the factors influencing their employment [30].

2.2. Participants of the study

The participants of this study are graduates of a state university in Northern Philippines who completed their degrees in BPE major in school physical education (BPE-SPE) and BPE major in sports and wellness management (BPE-SWM). The study traces graduates from the years 2017 to 2020. As shown in Table 1, a total of 274 graduates participated in the study, representing a 42.75% turnout rate from the total number of graduates. The response rate varies across graduation years and programs, with the highest turnout recorded for the 2019 batch, particularly in the BPE-SPE program (69.83%), while the lowest turnout was observed among 2017 BPE-SPE graduates (9.43%). The variations in response rates are attributed to factors such as accessibility of graduates, availability for participation, and level of engagement with the university's alumni network.

A response rate of 42.75% is acceptable for a tracer study, as it falls within the expected range for survey-based research on graduate employability. Tracer studies often encounter challenges in reaching graduates due to changes in contact details, migration, and varying levels of alumni engagement [31]. Prior research suggests that a 30%-50% response rate is generally considered sufficient for analyzing trends in graduate employment, provided the sample represents different graduation years and academic tracks [31], [32].

Table 1. Turnout response statistics

Year graduated	Program taken at college of human kinetics	Counts	Percentage* (%)	Turnout percentage (%)
2017	BPE-SPE	10	3.6	9.43
	BPE-SWM	20	7.3	28.99
2018	BPE-SPE	53	19.3	44.92
	BPE-SWM	56	20.4	54.90
2019	BPE-SPE	81	29.6	69.83
	BPE-SWM	24	8.8	54.55
2020	BPE-SPE	10	3.6	29.41
	BPE-SWM	20	7.3	38.46
Total		274	100	42.75

*Against total traced graduates

2.3. Data gathering procedure

This study used a semi-structured questionnaire designed for graduate tracer studies. The institution developed the survey instrument and validated it through expert reviews, pilot testing, and revisions. The survey was mainly administered through Google Forms for easy access and efficient data collection. To improve response rates, graduates were also contacted through mobile phone calls and personal emails.

Direct follow-ups were made for those who did not respond. In-person visits were arranged for graduates within the university's locality to address any concerns. All responses were securely recorded in a centralized database. Data accuracy, confidentiality, and integrity were maintained throughout the analysis.

2.4. Data analysis

The data were analyzed using SPSS v.20 and Jamovi thru descriptive and inferential statistical methods. Descriptive analysis involved presenting frequency distributions of graduates' experiences and employment status using stacked bar charts for visual interpretation. Employment outcomes, including job placement rates and career pathways, were also illustrated through frequency counts and percentages. To determine the significant predictors of employment, binary logistic regression analysis was conducted, with employment status as the dependent variable and factors such as university experience, curriculum evaluation, program track, and pursuit of advanced education as independent variables. The logistic regression model provided odds ratios (ORs) and significance values (p-values<0.05) to identify which factors had the strongest influence on employability.

3. RESULTS AND DISCUSSION

3.1. Higher education experience

Figure 1 illustrates the graduates' overall perceptions of their university experience indicated by their overall experience, student life, academic experience, and the extent to which the college provides a welcoming and supportive environment. The data suggests that the majority of respondents have a positive perception of their experiences at the university, with the majority of ratings falling within the "very good" to "excellent" categories. Among the four indicators, "your overall experience at this university" and "your academic experience at this university" received the highest percentage of positive ratings, with a substantial proportion of respondents rating their experience as "very good" or "excellent." This suggests that the university has successfully provided a satisfying and enriching educational journey for its graduates. The results also indicate that the institution effectively supports students' learning, curriculum delivery, and academic rigor. Notably, the "extent to which the college provides a welcoming and supportive environment for graduate students" shows a slightly higher proportion of respondents rating their experience as "fair" compared to the other indicators.

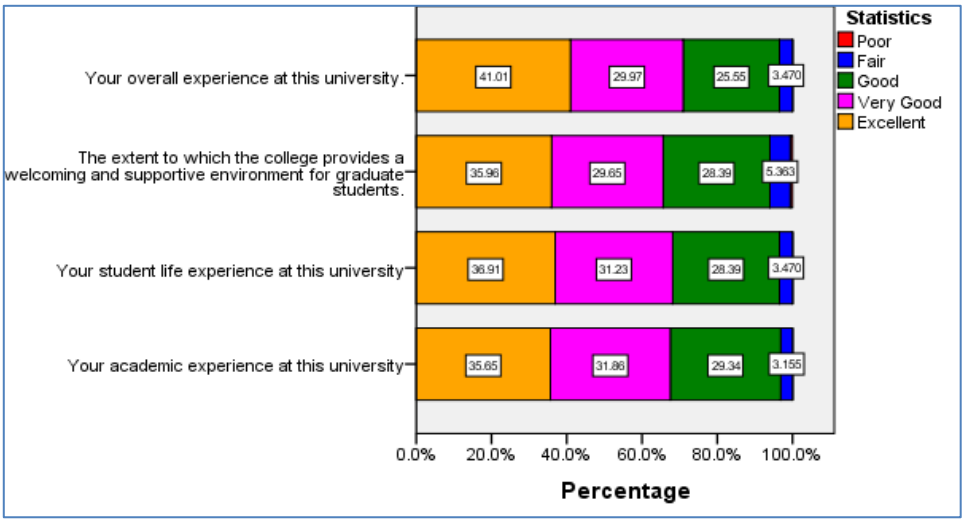

Figure 1. Perception of the graduates about their overall experience at the university

Moreover, Figure 2 presents the graduates' perception of their experience specifically within their degree program. When compared to Figure 1, which captures their overall experience at the university, a noticeable shift in responses can be observed, particularly in the distribution of "fair" and "poor" ratings. While graduates generally rated their overall university experience positively, their evaluations of specific aspects of the degree program reveal areas for improvement. One of the key positive findings in Figure 2 is the relatively favorable rating for the "inclusion of diverse perspectives in course discussions or assignments." This suggests that the degree program successfully integrates diversity and inclusivity into its curriculum. Similarly, the "academic standards of the degree program" received strong positive ratings,

indicating that graduates recognize the rigor and quality of their academic training. However, despite these strengths, several indicators received a higher proportion of "fair" and even "poor" ratings. One of the most pressing concerns evident, as in Figure 2, is the quality of teachers and faculty offering the degree program. Compared to the generally positive perception of the university as a whole, a significant number of respondents rated faculty quality in their program as only "fair" with some even selecting "poor."

The findings imply that faculty performance, pedagogical strategies, or engagement with students may be inconsistent across the program. A related issue is the perceived lack of encouragement and support from the degree program, which stands in contrast to the overall university experience where institutional support appeared stronger. This finding indicates that while students may feel supported at a general university level, program-specific mentorship, academic advising, or career guidance may be insufficient, leading to a less fulfilling experience. Another area of concern is the extent to which the program has kept pace with recent trends and developments in the field. A substantial portion of respondents rated this aspect as "fair" or "poor". It is also apparent that the quality of educational infrastructure within the degree program received mixed evaluations.

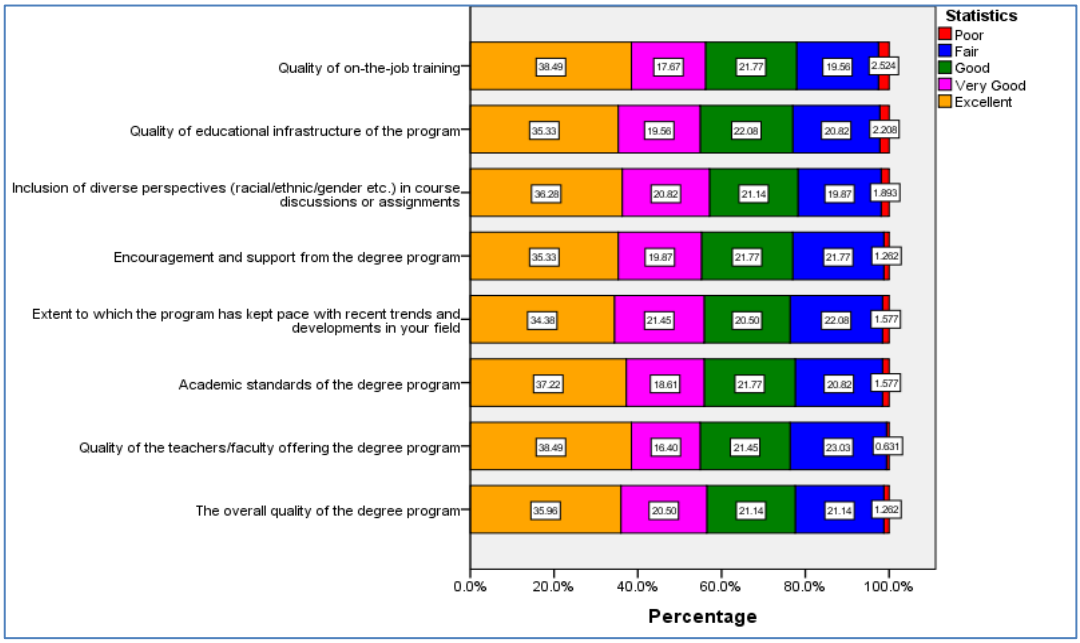

Figure 2. Perception of the graduates about their overall experience to the degree program

Moving on, Figure 3 presents the graduates' evaluation of the program's curriculum and the delivery of various student services. Consistent with the findings from Figures 1 and 2, the responses indicate a generally positive perception, with most indicators rated as "good" to "excellent". Among the student services evaluated, academic advising, accessibility of learning resources, and internship options received the highest ratings. Despite these strengths, Figure 3 also highlights areas where improvements are needed. One of the most notable concerns is the availability of financial support, which received a comparatively higher proportion of "fair" and "poor" ratings. This suggests that students may have faced financial constraints during their studies. Additionally, a significant portion rated classroom, laboratory, and other physical facilities as only "fair." This points to potential deficiencies in infrastructure, laboratory equipment, or the availability of study spaces, which may have affected the learning experience. Another key area for improvement is the availability and quality of information technology (IT) resources, including Wi-Fi access. The ratings suggest that while some students found IT services satisfactory, others encountered challenges in accessing reliable technological resources. In an increasingly digital learning environment, addressing these issues through enhanced internet connectivity, upgraded IT facilities, and expanded access to digital resources could significantly improve student experience. In terms of curriculum evaluation, graduates expressed largely positive perceptions regarding the clarity of program objectives, coherence of the curriculum, and the relevance of courses to program goals. The alignment of courses with expected learning outcomes was rated favorably which means that students generally felt that their academic training was well-structured and purposeful.

In terms of the perception of the graduates about the opportunities for skill enhancement and networking, Figure 4 shows that majority of graduates agreed that activities supporting these aspects were present, as evidenced by the high proportion of "available" responses across all indicators. However, a notable percentage of respondents indicated that certain networking opportunities were lacking, particularly in connecting with external professional communities and alumni. Among the different opportunities assessed, networking with fellow students was perceived as the most available, followed closely by skill-building activities such as teaching, writing, and making presentations. The high availability of skill-building opportunities indicates that the institution provides platforms for students to develop essential competencies beyond traditional classroom instruction, potentially through workshops, student organizations, or experiential learning initiatives. On the other hand, the findings highlight gaps in external engagement, particularly in terms of networking with alumni and accessing professional community members through conferences and networking events. A considerable higher proportion of graduates perceived these opportunities as "not available,". This limitation could have an impact on students' exposure to industry professionals, career mentoring, and real-world applications of their academic training.

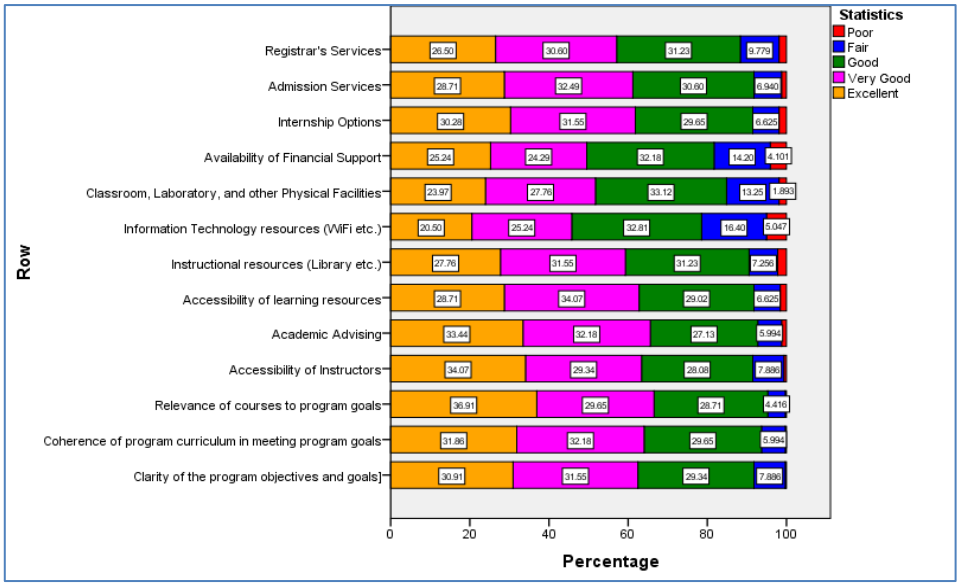

Figure 3. Evaluation of the graduates on the curriculum of the program and student services

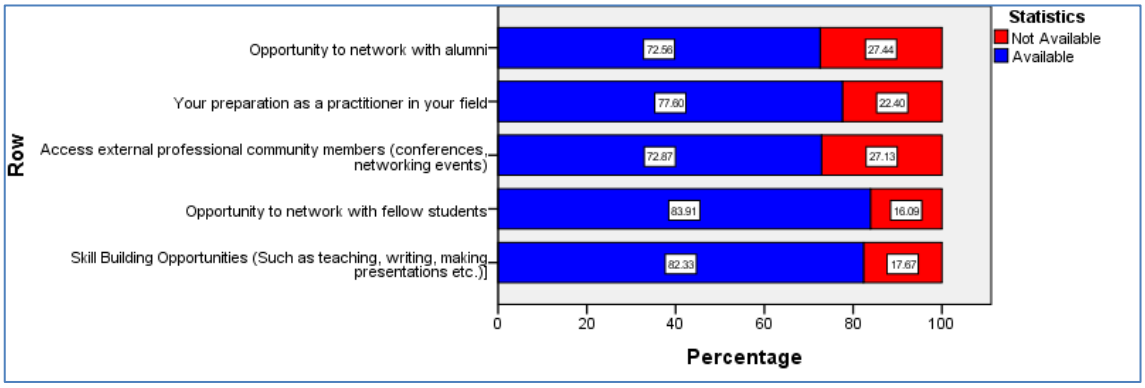

Figure 4. Perception of the graduates about the opportunities for skill enhancement and networking

Building on the results from the previous figures, this section discusses the findings on the higher education experiences of the graduates in relation to existing theories, potential causes, and their implications. Firstly, the findings reveal an overall positive perception of the university experience, yet disparities emerge when examining specific aspects of the degree program and institutional support. This suggests that while the university has established a strong academic foundation, program-level execution varies, potentially due to differences in faculty engagement, resource allocation, and curriculum design.

According to Kerby [33], model of student retention, academic and social integration are key factors influencing student satisfaction. The strong academic experience ratings indicate that students felt adequately challenged and supported in their learning, yet the weaker perception of faculty quality and program support suggests inconsistencies in pedagogical approaches and mentorship availability.

One plausible explanation for the divergence between institutional support and program-level experience is the difference in scale and focus. At the university level, policies, infrastructure, and student services provide a broad safety net for learners, creating an environment that fosters general satisfaction. However, program-specific interactions, such as faculty mentorship, curriculum coherence, and field-specific training, may lack the same level of refinement or standardization. This is reflected in the mixed ratings on faculty quality and encouragement from the degree program [34]. Research suggests that faculty-student interactions significantly impact student engagement and academic success [35], [36]. If students perceive a lack of accessibility or inconsistency in instructional quality, this may lead to lower satisfaction despite a generally strong academic framework.

The concern regarding curriculum alignment with industry trends also warrants attention. Curriculum relevance is a key determinant of graduate employability, as outlined in the human capital theory [37], [38]. The perception that programs do not fully integrate recent developments suggests potential gaps in industry partnerships, outdated course content, or insufficient opportunities for applied learning. This issue is further compounded by the limited networking opportunities reported by graduates. According to social capital theory [39], professional networks and access to industry connections play a crucial role in career progression. The lack of strong alumni engagement and external professional networking opportunities may hinder students' transition from academia to the workforce [40], [41].

On another note, the findings on student services, particularly financial aid and IT resources, also provide insights into student satisfaction. Financial constraints remain a challenge, and research indicates that financial stress can negatively impact academic performance and persistence [42]. If students struggle with financial difficulties, their overall experience may be affected, despite strong academic and institutional support. Similarly, in an increasingly digital learning environment, the limitations in IT resources highlight disparities in access to essential learning tools. The technology acceptance model [43] suggests that students' perceived ease of access to and usefulness of technological resources directly influence their engagement and learning outcomes. Addressing these gaps through expanded financial aid programs and enhanced digital infrastructure could significantly improve student experiences.

3.2. Employment status

In terms of the employment status of the graduates, Figure 5 presents that while the majority (82.48%) are employed, a notable proportion (17.52%) remain unemployed. A key insight from this data is the variation in employment rates between different academic specializations. Graduates of the BPE-SWM program exhibited a higher unemployment rate (27%) compared to those from the BPE-SPE program, where only 10% reported being unemployed. This disparity suggests that while both programs fall under the general discipline of PESS, their employment prospects differ, potentially due to industry demands, market saturation, or differences in skill application across job sectors.

Interestingly, Figure 6 provides further insight into the specific occupations of employed graduates, highlighting a significant contrast between graduates of the BPE-SPE and BPE-SWM. The data reveals that the majority (70%) of employed BPE-SPE graduates work as professional teachers, suggesting that their academic preparation aligns well with the teaching profession. In contrast, only 10% of BPE-SWM graduates are employed as sports coaches or fitness instructors, while a substantial 73% have pursued careers in other professions outside their field of specialization.

This discrepancy surfaces a critical concern regarding the career trajectories of BPE-SWM graduates. While the BPE-SPE curriculum is designed to meet the certification and employment requirements for teaching in schools, the employment landscape for sports and wellness management graduates appears to be less structured. The low percentage of BPE-SWM graduates working as sports coaches or fitness instructors suggests either a mismatch between their training and job market expectations or limited opportunities in the fitness and wellness industry. This corroborates with previous research indicating that employability in sports-related fields is often contingent on additional certifications, entrepreneurial skills, or industry-specific experience [44]. The findings are also consistent with career adaptability theory, which suggests that graduates who face barriers in securing jobs aligned with their training may shift to alternative professions to maintain employability [45]. The high percentage of BPE-SWM graduates working in other fields may indicate a lack of sufficient job market integration, which could be addressed through curriculum enhancements, career mentoring, and stronger industry partnerships. Additionally, studies emphasize the importance of internships and field experiences in shaping career readiness for sports and wellness graduates [46], [47].

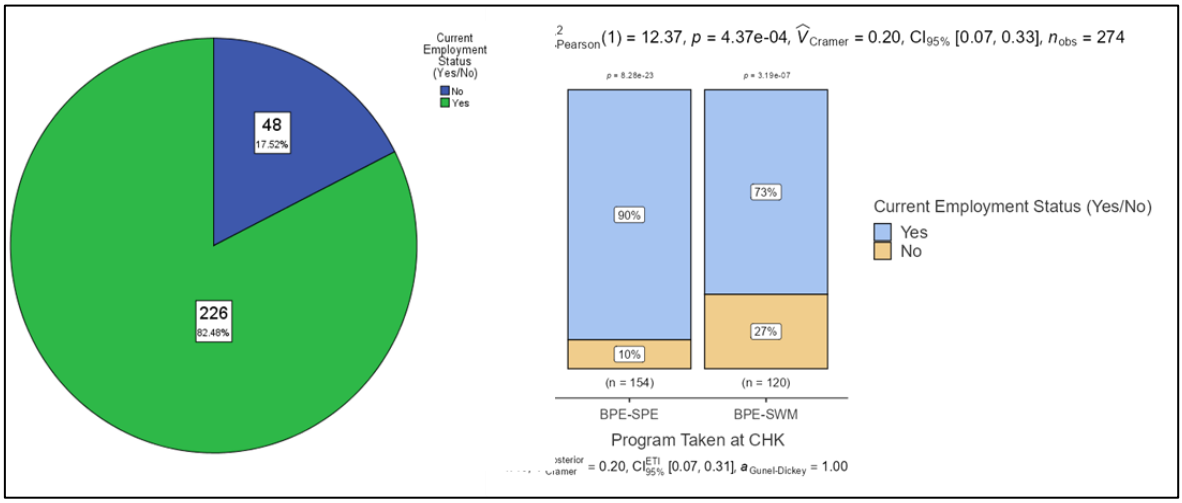

Figure 5. Current employment status disaggregated per program

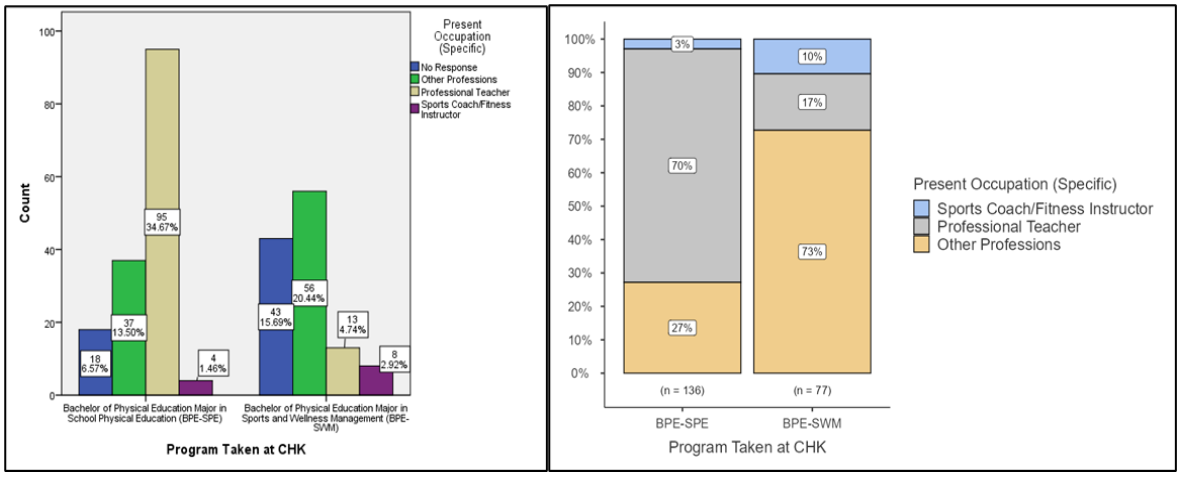

Figure 6. Present occupation of the graduates disaggregated per program

On the other hand, Figure 7 examines the relationship between graduates' current employment status and their decision to pursue advanced degree programs. The data indicates that a larger proportion of employed graduates (43%) have enrolled in advanced studies compared to only 24% of those who are not employed. Conversely, a significant percentage of unemployed graduates (76%) have not pursued further education, compared to 57% among those who are currently employed. These findings suggest that employment status may influence or facilitate the pursuit of graduate studies. One possible explanation is that those who are employed may have greater financial stability. Studies have shown that financial constraints are a key barrier to pursuing graduate degrees, particularly among early-career professionals [48]. Additionally, many employers provide incentives for professional development, such as tuition reimbursement programs or salary increases for employees with advanced qualifications [49]. On the other hand, the low rate of graduate school enrollment among unemployed individuals may reflect economic barriers, uncertainty about career trajectories, or lack of institutional support. Prior research suggests that individuals who face difficulty entering the job market may experience career indecision, making them less likely to commit to long-term academic pursuits [50], [51], some graduates may prioritize job searching over continuing education, believing that immediate employment is more critical to their financial well-being.

3.3. Predictors of employment

The main goal of this study is to determine significant predictors of employment of the PESS graduates. Table 2 presents the logistic regression analysis of factors predicting the employment status of graduates 3–6 months after graduation. The analysis examines the influence of several independent variables, including overall experience at the university and degree program, evaluation of curriculum and services,

program track (teaching vs. non-teaching), and pursuit of advanced degrees. The model results suggest that while some variables show potential relationships with employment outcomes, none of the predictors reach levels of statistical significance (p<0.05), though some exhibit notable trends.

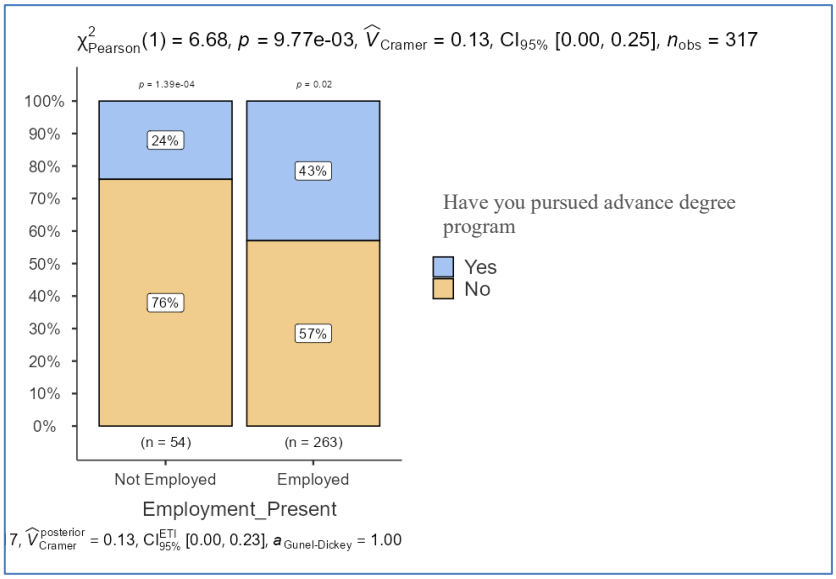

Figure 7. Present employment status and pursuit of advanced degree programs

Table 2. Logistic regression analysis of factors predicting employment status of graduates 3-6 months after graduation

Independent variable	AIC	R^2_{McF}	Overall model test			Estimate (p)		ORs
			χ^2	df	p	Intercept	Predictor	
Overall experience to the university and college	424	0.00101	0.423	1	0.515	0.14 (0.80)	0.09 (0.52)	1.09
Overall experience to the degree program	425	10.0e-5	0.0421	1	0.838	0.57 (0.13)	-0.02 (0.84)	0.980
Evaluation of curriculum and services	424	6.17e-4	0.260	1	0.610	0.25 (0.62)	0.07 (0.61)	1.07
Program track (teaching track – non-teaching track)	422	0.00635	2.67	1	0.102	0.70 (<0.001)	-0.381 (0.104)	0.683
Pursued advance degree programs (yes-no)	422	0.00602	2.53	1	0.112	0.349 (0.018)	0.380 (0.114)	1.46

Note: Estimates represent the log odds of "employment_36=employed" vs. "employment_36=not employed"

The overall experience at the university and degree program, as well as the evaluation of curriculum and services, were not significant predictors of employment status. This finding suggests that while graduates generally reported positive perceptions of their university experience (as discussed in Figures 1–3), these perceptions do not directly translate into employment outcomes. This aligns with prior research indicating that student satisfaction with academic programs does not necessarily predict employability, as job placement depends more on industry alignment, labor market conditions, and individual career strategies [52], [53].

A more notable trend emerges when examining the influence of program track (teaching vs. non-teaching). The results indicate that graduates in the teaching track were more likely to be employed than those in the non-teaching track, with an ORs of 0.683, suggesting that non-teaching track graduates had lower odds of employment. While this result is not statistically significant (p=0.104), it aligns with the findings in Figures 5 and 6, where BPE-SPE (teaching track) graduates had higher employment rates and were more likely to work in their field compared to BPE-SWM (non-teaching track) graduates, many of whom ended up in unrelated professions. This supports the idea that structured career pathways, such as teaching licensure programs, may offer graduates clearer job opportunities than less-defined fields like sports and wellness management.

Table 3 presents a logistic regression analysis examining factors predicting graduates' present employment status, which provides deeper insights compared to the analysis of employment 3–6 months after graduation, as in Table 2. Unlike the previous analysis, where most factors did not reach statistical significance, several predictors in this model show significant relationships with employment status, suggesting that certain academic and career decisions have a stronger long-term impact on employability.

A key finding in Table 3 is that overall experience with the degree program is now a statistically significant predictor of employment status (p=0.048), with an ORs of 1.28. This suggests that graduates who had a more positive perception of their degree program were more likely to be employed. This contrasts with Table 1, where neither overall university experience nor degree program experience was a significant predictor of employment within 3–6 months after graduation. The stronger relationship in the present analysis may indicate that graduates who initially struggled with employment eventually benefited from the quality of their degree program as they gained more experience, networked, or leveraged the skills acquired during their studies. This supports research suggesting that the perceived quality of academic programs can have long-term effects on career success, particularly in fields requiring specialized training [24], [53], [54].

The strongest predictors of present employment status are program track (teaching vs. non-teaching) and pursuing an advanced degree. Graduates from the teaching track were significantly more likely to be employed than those from the non-teaching track (p=0.002), with an ORs of 2.70. Similarly, those who pursued graduate education were significantly more likely to be employed (p<0.001), with an ORs of 2.38. These findings reinforce the trends observed in Figures 5 and 6, where teaching track graduates had higher employment rates and clearer career pathways, while non-teaching graduates often worked outside their field. The stronger relationship in Table 2 suggests that the structured nature of teaching careers continues to provide long-term employment stability, whereas non-teaching graduates may take longer to find stable career opportunities.

Similarly, the strong predictive effect of graduate education is consistent with Figure 7, which showed that a higher proportion of employed graduates pursued advanced degrees. The results align with human capital theory [37], [38], which posits that individuals with higher levels of education gain greater competitive advantages in the labor market. This also supports findings from Hemsley-Brown [55] that postgraduate education enhances employability by expanding career options, improving qualifications, and increasing access to leadership positions. Interestingly, the evaluation of curriculum and student services did not reach statistical significance (p=0.115), though it showed a positive trend (OR=1.30). This suggests that while graduates appreciate strong curricular support, other factors—such as program specialization and advanced education—play a more decisive role in employment outcomes.

Table 3. Logistic regression analysis of factors predicting present employment status

Independent variable	AIC	R^2_{McF}	Overall model test			Estimate (p)		ORs
			χ^2	df	p	Intercept	Predictor	
Overall experience to the university and college	290	0.0121	3.49	1	0.062	0.30 (0.66)	0.32 (0.06)	1.38
Overall experience to the degree program	289	0.0135	3.90	1	0.048	0.70 (0.14)	0.25 (0.04)	1.28
Evaluation of curriculum and services	291	0.00861	2.49	1	0.115	0.61 (0.33)	0.26 (0.12)	1.30
Program track (teaching track – non-teaching track)	283	0.0364	10.5	1	0.001	1.14 (<0.001)	0.992 (0.002)	2.70
Pursued advance degree programs (yes-no)	286	0.0244	7.05	1	0.008	1.29 (<0.001)	0.865 (<0.001)	2.38

Note: Estimates represent the log odds of "employment_present=employed" vs. "employment_present=not employed"

4. CONCLUSION

This study concludes that there is a strong connection between higher education experiences and graduate employability in PESS. The graduates' employment outcomes were significantly influenced by program specialization and postgraduate education. Teaching track graduates (BPE-SPE) had higher employment rates, particularly in education, whereas non-teaching graduates (BPE-SWM) faced greater challenges in securing jobs within their field. This suggests that structured career pathways, such as those with licensure and certification requirements, offer better employment stability. Additionally, postgraduate education proved to be a key factor in long-term employability which promotes the value of higher education investments in career advancement.

To improve employment outcomes, the university should implement enhanced career development initiatives. Non-teaching graduates would benefit from specialized certifications, job placement partnerships, and entrepreneurship training to support their transition into careers in fitness, wellness, and sports management. Strengthening industry collaborations with sports organizations, health institutions, and fitness centers can also help create clearer employment pathways. Additionally, expanding internship and WIL programs, particularly in applied sports science, rehabilitation, sports business management, and fitness training, can ensure that graduates gain hands-on experience relevant to job market demands. Furthermore, based on the weak areas of higher education experience, it is recommended that the faculty development programs should emphasize industry trends, innovative teaching methodologies, and technology integration to enhance educational quality. Curriculum revisions should incorporate emerging fields in sports science to keep graduates competitive. Lastly, future research should explore long-term employment trends, employer feedback, and the role of emerging technologies in shaping PESS careers.

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AUTHOR CONTRIBUTIONS STATEMENT

This journal uses the Contributor Roles Taxonomy (CRediT) to recognize individual author contributions, reduce authorship disputes, and facilitate collaboration.

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C : **C**onceptualization
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R : **R**esources
D : **D**ata Curation
O : Writing - **O**riginal Draft
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P : **P**roject administration
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CONFLICT OF INTEREST STATEMENT

The authors declare that there are no conflicts of interest associated with this research. They confirm that the research was conducted objectively, and that no external relationships or personal interests influenced the outcomes presented. The integrity of the research has been maintained by adherence to ethical guidelines and academic standards.

INFORMED CONSENT

Informed consent was duly obtained from all individuals who participated in this research. Participants were informed of the purpose of the study, the voluntary nature of their involvement, and their right to withdraw at any stage without consequence. All respondents provided their consent before data collection commenced, ensuring ethical compliance throughout the research process.

DATA AVAILABILITY

The dataset analyzed during this research is not publicly accessible in an open-access repository to protect the confidentiality and privacy of the participants. However, the authors support transparency and reproducibility in research and are open to sharing the data upon reasonable request. Interested researchers or institutions can directly contact the corresponding author to discuss data access arrangements under appropriate confidentiality terms.

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