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The Impact of Artificial Intelligence Applications in Career Guidance on University Students' Career Awareness and Decision-Making

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Abstract Objective: This research aimed to explore the impact of AI-based career advice on students' career awareness and decision-making at Philadelphia University in Jordan.

Methodology:A descriptive-analytical method was adopted to analyze data collected from a stratified random sample of 400 university students.**Key Findings:** Results of the study indicated that there were significant differences between students who used AI for career guidance and those who used traditional methods of career counseling; the former had substantially higher levels of career awareness and better decision-making skills. Differences were apparent across academic level, major, and cumulative GPA, with most benefiting science majors and those with higher GPAs. The gender differences were not significant.**Conclusions:** The use of artificial intelligence applications contributes to creating increased professional awareness among students and helps them make better career decisions.

Recommendations: The study recommended that universities integrate AI-based tools into advising services and create initiatives to improve students' digital skills, especially those majoring in social sciences and those with low academic performance.

Keywords: Artificial Intelligence, Career Guidance, Career Awareness, Decision-Making, University Students.

تأثير تطبيقات الذكاء الاصطناعي في التوجيه المهني على الوعي المهني واتخاذ القرار لدى طلبة الجامعات

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الملخص

الهدف:هدفت هذه الدراسة إلى استكشاف تأثير الإرشاد المهني المعتمد على الذكاء الاصطناعي على الوعي المهني واتخاذ القرارات لدي طلبة جامعة فيلادلفيا في الأردن. **المنهجية :** تم اعتماد المنهج الوصفي التحليلي في تحليل البيانات التي تم جمعها من عينة عشوائية طبقية مكونة من 400 طالب جامعي.

النتائج: أشارت نتائج الدراسة إلى أن هناك اختلافات كبيرة بين الطلبة الذين تلقوا مساعدة من الذكاء الاصطناعي في البحث عن التوجيه المهني مقارنة بالطلاب الذين استخدموا الطرق التقليدية للإرشاد المهني؛ حيث كان لدى الفئة الأولى مستويات أعلى بشكل ملحوظ من الوعي المهني ومهارات اتخاذ القرار الأفضل. وكانت الاختلافات واضحة حسب المستوى الأكاديمي والتخصص والمعدل التراكمي، وقد استفاد معظم الطلاب من التخصصات العلمية وأولئك الذين لديهم معدلات تراكمية عالية. كما توصلت الدراسة لعدم وجود فروق ذات دلالة إحصائية بين الجنسين.**الاستنتاجات** :يساهم استخدام تطبيقات الذكاء الاصطناعي في خلق وعيًا مهنيًا متزايدًا لدى الطلبة ويساعدهم على اتخاذ قرارات مهنية أفضل. **التوصيات**: أوصت الدراسة بأهمية قيام الجامعات بدمج أدوات تعتمد على الذكاء الاصطناعي في خدمات الإرشاد، وإنشاء مبادرات تعمل على تحسين المهارات الرقمية للطلاب، وخاصة أولئك الذين يدرسون العلوم الاجتماعية والذين يعانون من تحصيل أكاديمي منخفض.

الكلمات المفتاحية: الذكاء الاصطناعي، الإرشاد المهني، الوعي المهني، اتخاذ القرار، طلبة الجامعات.

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Background

The tremendous advancement of AI technology has transformed many sectors, including but not limited to Education and Employment. As highlighted in several recent studies, many of these advancements have been attributed to the implementation of Personalized and Adaptive Learning models aligned with current Learning Theory. There is extensive worldwide evidence that AI has many uses; however, there has been very little research in Jordan on how its use has impacted Education- and Employment-related activities, including Career Counseling and Guidance. Graduate Unemployment is one of the most serious societal issues facing Jordan. Therefore, providing high-quality Career Counseling to students for self-exploration of Career Interests, Career Decision-Making support, and the Development of Self-Efficacy is extremely important. Therefore, this paper examines how AI applications will enhance the effectiveness of Career Counseling by assessing students' experiences with currently implemented AI Applications at Philadelphia University.

However, the conventional framework of career guidance is unable to meet the changing needs of the undergraduate population, as it lacks sufficient personalization and responsiveness to these changes. Recently developed AI-based tools for exploring careers provide a major technological resource for evaluating students' skill sets and directing them toward appropriate career paths. These systems use algorithms that analyze learner data to produce tailored recommendations. As a result of students inquiring about their career options through these systems, they will receive timely and appropriate occupational pathways to help them match their aspirations and skills with their personal interests. (Sood & Guleria, 2023)Social Cognitive Career Theory helps demonstrate how these benefits can be interpreted in accordance with the theory, specifically how self-efficacy and outcome expectations are affected by feedback from intelligent systems. Given these findings, this research is important because it seeks to investigate how the application of AI tools might affect career counseling for college students. Since 1956, AI has been described as "computer systems that do tasks believed to require human intelligence like learning, adaptation, synthesis, or self-correction, or use data to find solutions to complex tasks". One of the main contributors to the Fourth Industrial Revolution (4IR), AI has been increasingly used in education to support learning processes and academic support activities (Adiguzel, Kaya, & Cansu, 2023).

Furthermore, AI can be particularly useful in development settings, as it can adapt to context, resources, and obstacles in local learning environments in developing countries (Huda, 2022) However, issues related to digital infrastructure, data privacy, and the ethical use of student data remain (Holmes, 2022). In addition, sociocultural issues (e.g., students', parents', and governments' perspectives on AI) determine AI's adoption and use in education, making culturally sensitive practice essential (Kuleto, 2021) Career guides (CG) are essential for helping people find careers that match their skills, interests, and attitudes. According to (Mistura, 2025), interdependent societal, behavioral, and environmental variables determine career preferences. Sound vocational advice can also help promote job readiness, personal development, and skill enhancement, all of which are vital in a volatile, competitive labor market. (keshif & khanum, 2021)

However, despite its relevance, students often still depend on informal advice rather than routine career counseling and over 70% of peer recommendations rather than evidence-based evaluations to determine their careers. Traditional models of career counseling struggle to adapt their practices to address professional needs; therefore, AI-supported platforms must respond to such shifts. Underlying AI systems will analyze students' interests, abilities, and learning performance to offer career recommendations tailored to each student (Escotet, 2024) opening pathways for students to explore multiple career paths and make informed decisions. However, issues such as data security, digital literacy, and reducing human engagement will require resolution for ethical and effective AI. (Muhammad, Patriana, Yusrain, Astaman, & Manja, 2024) Two theoretical frameworks were used in this study: SCCT, which is Social Cognitive Career Theory, and the Technology Acceptance Model (TAM). SCCT argues that cognitive personal characteristics (such as self-efficacy) will determine how a career interest is formed and what path is pursued. The TAM, with its emphasis on perceived usefulness and ease of use, conditions university students' acceptance of an AI-based career platform. This integration helps explain both behavioral intention and cognitive development in AI-supported career decision-making. Collectively, the two frameworks offer a strong foundation for thinking about university students' career knowledge and decision-making in the Jordanian context, particularly in the context of AI.

Previous Studies

The evidence on the roles AI plays across students' lives (school, university) has shown AI's relevance and importance as a significant influence on overall individual success. This research delves into the role of AI in Higher Education today. As artificial intelligence (AI) continues to transform higher education, it is fundamentally transforming governance, instructional methods, instructional techniques, and student development as well. Using descriptive-analytical approaches,

AI in Higher Education

Westman (2021) analyzes the experiences and perceptions of university students. Investigated the current evolution of AI to support and improve corporate governance in higher learning institutions. Research conducted in China and abroad has indicated that differences in awareness in dimensions of BCoE (Best Corporate Environment) might limit the integration of AI into governance-based structures to produce sustainable institutions effectively in order to realize the fullest potential of AI as a learning tool to gain knowledge from, as well as increase student and institutional awareness.

AI in Career Guidance and Decision Making

A growing range of studies highlights the capacity for AI to support student career planning and career decision making Muhammad et al. (2024) covers evidence on AI-backed career guidance applications such as career path prediction, job matching, and counseling from an academic and counseling perspective, and overall the findings concluded that AI can aid students in planning their course of study, receiving good career directions, and supporting immediate data action, and rely on the technology to find knowledge to push aside bias. The findings show that AI could support students in developing better academic reasoning, professionalism, and career planning skills. For instance, Shabur (2024) explored the use of AI technologies as a means to

support education in early career planning in Bangladesh, and through the social cognitive perspective engaged with the findings of human - technology interaction in the study. Based on an in-depth analysis of studies indexed in Scopus, Shbpur concluded that AI is used to help students make goal-setting, self-management, and career-related decisions. These findings validate AI as a cognitive and metacognitive resource that builds students' self-efficacy and adaptability, essential tools for informed career choices.

AI and Entrepreneurship Development

Alongside employment advice, recent research has increasingly focused on linking AI to entrepreneurship and entrepreneurial learning. AI applications help undergraduate students develop an entrepreneurial mindset and can provide personalized guidance on the field or corporate planning. This AI and machine learning implementation in tertiary education not only provides students with opportunities to become entrepreneurs but also facilitates their transition from academia to the workforce. Specifically, a 2025 study at a Chinese university uses a K-means clustering algorithm to classify students into entrepreneurial learner profiles and tailor AI to tailor different groups of students to innovation or entrepreneurship pedagogy (Zhang, 2025) Likewise, a quasi-experimental study in Saudi Arabia examined the effectiveness of teaching generative AI, particularly ChatGPT, in boosting students' digital entrepreneurship competencies in invention, artistic thinking, and entrepreneurship, compared with traditional training (Abdelmagaid, Jabil, Ibrahim, & Teleb, 2025) Collectively, they show that AI is not just a career guidance tool but a catalyst for innovation, entrepreneurship, and employability. However, most of the current evidence was derived from outside Jordan, and there remains a missing element in the knowledge base on the improvement of learning in enterprise planning and entrepreneurship among Jordanian university students using AI applications. Addressing this gap will be critical to creating AI-based interventions that assist students in making informed, smart career and entrepreneurial choices in the Jordanian university context.

Literature Gaps in Jordanian Statement

The available international literature also adds to the evidence that AI can enhance education and the provision of career advice to students. However, there is a dearth of research exploring how AI applications can be developed for use in Jordanian universities. Despite this, this work has rarely explored Jordanian students' knowledge, awareness, and use of AI-powered career-help tools; research has explored AI across multiple cultural and educational domains, particularly career prediction, decision assistance, and entrepreneurship growth. This issue is particularly problematic at Philadelphia University; not one of these has thoroughly examined these subjects. This gap underscores the need for empirical studies on how AI applications can influence Jordanian higher education students' career awareness and decision-making abilities.

Statement of the problem

Even though several nations around the globe have created Artificial Intelligence (AI) applications to assist with educational and career counseling, Jordanian universities/colleges are still relying more heavily on traditional means to provide student guidance in both the guidance process itself and about how these mechanisms are modified through economic changes or student demand for service. As a result, many students lack

confidence in their educational choices and have no adequate way to determine whether they are making appropriate choices to pursue their chosen career. Additionally, there is a lack of empirical research examining the impact of AI-driven career counseling systems on students' awareness of careers, decision-making, and self-efficacy in Jordan's institutions of higher education; furthermore, current systems have no clear indication as to how students' skill sets match up with the current needs of the labor market within Jordanian contexts; there is limited research on how AI-enabled job advising has actually helped people choose and develop their careers. The lack of data on the effectiveness of artificial intelligence career counseling applications has been documented in the Jordanian context; there is insufficient empirical evidence to demonstrate how these tools have been used in practice or to what extent. Hence, there is a pressing need for more studies, like this one, to explore how AI affects students' job selection processes, job knowledge, and employability. By offering an empirical look at how AI technologies have been (or will be) implemented at an educational institution in Jordan, this study will provide an opportunity to understand better how these technologies may be applied to improve career awareness and job selection among students enrolled in higher education.

Through examining the role of AI applications in career guidance impact on university students' career awareness and decision-making at Philadelphia University, using the Social Cognitive Career Theory (SCCT) and Technology Acceptance Model (TAM). It further integrates SCCT and TAM to explain both cognitive career development and students' acceptance of AI technologies, offering a theoretically grounded understanding of AI-supported career guidance.

Significance of the study

The significance of the study lies in the urgent need for career guidance in Jordanian universities, given its positive effect on students' job opportunities and on reducing unemployment among university graduates. With the rapid spread of technology around the world, it has become necessary to keep up with technological development and to provide unified methods for guiding career development based on this development, in order to enable society and educational institutions to achieve satisfying learning outcomes for the Jordanian labor market. This study is useful and significant for providing policy advice to decision-makers through a contribution-forming approach, as well as for universities in their own career counseling services.

Questions

The following research questions are considered in this study:

1. To what extent does the application of AI influence students' career awareness and career decision-making at Jordanian universities?
2. To what extent is AI more effective than traditional methods at enhancing the quality of career guidance?
3. Is the effect of AI influence on career guidance different for males and females at high and low GPAs, for science versus humanities?

Method

Study Design

To achieve the study objectives and answer the questions, a descriptive-analytical approach was used. This approach is appropriate as it enables the

examination of relationships between variables such as AI applications, career awareness, and decision-making without manipulating them. It also allows for analyzing differences across demographic variables, which aligns with the study's research questions, and is suitable for capturing students' perceptions within a real educational context.

Study population and Sample

All Philadelphia University students are registered for the second semester of the 2024/2025 academic year. A sample of 400 male and female students was selected from Philadelphia University using stratified random sampling to ensure proportional representation by major, gender, and cumulative GPA. The sample size within each stratum was determined based on its proportion in the overall student population, and participants were randomly selected from each subgroup to ensure representativeness. Table 1 illustrates these results.

Table (1): sample details

Variable	Category	Freq.	100%
Gender	"Male"	"200"	"%50"
	"Female"	"200"	"%50"
Major	"Scientific Majors"	"200"	"%50"
	"Humanities Majors"	"200"	"%50"
(GPA)	"Less than 2.5"	"50"	"%12.5"
	"From 2.5 To 3"	"100"	"%25"
	"From 3 To 3.5"	"100"	"%25"
	"More Than 3"	"150"	"%37.5"
Total		"400"	"%100"

Note. GPA = Grade Point Average

Tool

In order to collect data, the researcher developed an online questionnaire consisting of 20 items divided into three dimensions, and it was administered to obtain the required information from the participants:

1. Career Awareness: The objective is to gain an understanding and appreciation of career opportunities, as well as the skills and future employment they may offer. One prompt was: *"I am aware of the different career paths available in my field of study."*
2. Career Decision-Making: This dimension focused on students' confidence and career decision-making strategies. Things like, *"I feel confident in my ability to make informed decisions about my career"*.
3. Gender, GPA, and Major: The latter comprises demographic and educational parameters to assess their ability to benefit from AI-assisted career advice tools.

The scale was developed in an academic study to maintain the validity and reliability of the instruments. In the first step, a literature review was performed to identify the constructs and dimensions to be measured (Osipow, 1994) (Osipow & Gati, 1998) (Winer, 1992) (Gati & Saka, 2001) . The original 20 items were then developed using the

literature review to confirm that the items were clear, relevant, and adapted to the intended target population. A (10) expert panel of AI and academic advisors revised and evaluated; items were modified/refined to evaluate for clarity, legibility, and early psychometric properties of the scale. Lastly, statistical analyses, such as reliability tests and factor analysis, were performed to validate internal consistency, structural validity, and the scale's general applicability to the principal study. Using principal component analysis (PCA), an exploratory factor analysis (EFA) was conducted to examine the scale's underlying dimensionality. Any factor solution with an eigenvalue greater than 1 was retained. To add clarity to the factor structure, a varimax rotation was applied. An item was retained if its factor loading was 0.40 or greater. The final instrument consistent with the intended constructions when generating the final tools to be used in the actual research studies. The scales were distributed on a five-point (5-point Likert-type scale: Strongly agree, scored (5) points; Largely agree, scored (4) points; Moderately agree, scored (3) points; Slightly agree, scored (2) points; Do not agree at all, scored (1) points.

Validity and Reliability

Content validity

A panel of specialists with extensive backgrounds in both CG and AI examined the research tool for content validity by evaluating the extent to which the items measured the constructs of interest. After revisions based on expert input, the final version of the survey was produced, and the instrument's content validity was confirmed. Cronbach's alpha was also used to assess reliability in addition to content validity. Each dimension's reliability was calculated individually, with the following coefficients of reported reliability for each subset of the survey: AI Awareness (α=.81); Career Decision-Making (α=.83); Career Awareness (α=.85); therefore, the overall reliability for the total instrument was (α=.87), and each value exceeded the .70 standard for adequate internal consistency. These coefficients indicated both the instrument's reliability and the degree of certainty in its validity. Before any data was gathered from students participating in this research study, each student was provided with a description of the study and their own informed consent; thus, meeting ethical standards. Student participation in this study was voluntary, and they were told they could withdraw at any time without penalty. As a result, no identifying information was collected, thereby maintaining the confidentiality of the students who participated in this study. All participants' responses were anonymized. The data were stored securely and used only for research purposes; only the research team has access to them.

Procedure

To collect data, the researcher verified the scale's psychometric properties according to scientific principles, aiming to gather information that would achieve the study's objectives. Later, the researcher obtained approval and permission from the IRB of Philadelphia University, Jordan, (Approval No.: **2025/2024−5**) to request their assistance in distributing the questionnaire to sample individuals. Data were collected via an electronic questionnaire constructed with Google Forms. To construct the study variables, a structured questionnaire was made using standardized instruments. The standardized instruments were then adapted to align most closely with the study objectives, the target population's demographic characteristics, and the target population's needs. Finally, the Google Form was sent through official channels through Student

Groups and on social media groups as a final draft to maximize participation. The participant received informed consent at the start of the questionnaire, including the purpose of the study, an indication of voluntary participation, confidentiality of their responses, particularly that findings were not to be made known without their consent, and the right to withdraw from the study at any time; only those agreeing to the statement continued to complete the questionnaire. All responses were automatically collected and stored in a secure database accessible to the researcher, thus maintaining anonymity and confidentiality throughout the research. Responses were exported to statistical software (SPSS) after all data collection was completed, and descriptive and inferential analyses were performed to answer the objectives of the study.

Data analysis

To achieve the study objectives and answer the question, several statistical techniques were used, including the mean, standard deviation, independent-samples t-tests, ANOVA, and the Fit Indices Model.

Results

RQ1. To what extent does the application of AI influence students' career awareness and career decision-making at Jordanian universities? Descriptive statistics (means and standard deviations) were used to address this research question by assessing students' perceptions of AI applications in career guidance. To analyze AI for career guidance, first analyzed descriptive statistics of how students perceive AI. Ratings also showed substantial agreement and a high level of agreement across the two key dimensions. As shown in Table 2.

Table 2: The effect of AI on decision-making and career awareness.

Dimension	Number	Mean	SD
"Career Awareness"	"400"	"4.21"	"0.78"
"Career Decision-Making"	"400"	"4.05"	"0.82"
Total	"400"	"4.13"	"0.80"

Note. Scores measured on a 5-point Likert scale1 = Strongly Disagree, 5 = Strongly Agree

As Table 2 illustrates, Jordanian university students believe that AI has impacted their career decision-making and awareness. The scores on career awareness (M=4.21, SD=0.78) and career decision-making (M=4.05, SD=0.82) indicate that students report high levels of agreement regarding using AI in career awareness and decision-making processes. The overall average score (M=4.13, SD=0.80) indicates a positive attitude toward the use of AI technology among students with higher education in Jordan. In summary, the results verify that the student's perceptions of AI contribute to career awareness and a clear understanding, as well as to that of an educated person deciding on prospective careers.

RQ2. To what extent is AI more effective than traditional methods at enhancing the quality of career guidance? An independent samples t-test was conducted to compare the effectiveness of AI-based career guidance with traditional methods, directly addressing this research question One-sample t-tests were also conducted. The findings were consistent with a significant amendment, beyond the assumptions of neutralization, regarding subsequent career awareness ($t(399) = 31.00$, $p < .001$). The results were as follows:

Table (3): "Comparing AI and Traditional Career Counseling

Method	N	Mean	SD	T	df	p-value	"Effect Size (Cohen's d)"
AI-based Guidance	200	4.35	0.68	8.14	398	.001>p	0.81
Traditional Guidance	200	3.78	0.72				

Levene's test confirmed equality of variances ($p > 0.05$). AI-based career guidance was significantly more effective than traditional methods in enhancing students' career awareness and decision-making, with a large effect size (Cohen's $d = 0.81$) and 95% CI for the mean difference [0.43, 0.71].

RQ3. Is the effect of AI influence on career guidance different for males and females at high and low GPAs, for science versus humanities? Independent samples t-tests and one-way ANOVA were employed to examine differences across demographic variables (gender, major, and GPA), in line with this research question. Tests of comparison (t-tests & ANOVA) were performed to conduct additional inferential analysis of the perceived effect of AI by gender, Major, and GPA.

Table (4): Differences based on the gender

Gender	Mean	SD	t	df	p-value	Cohen's d
Male	4.08	0.79	1.94	398	.053	0.12
Female	4.18	0.81				

Table 4 showed that there were no statistically significant differences in AI perceptions based on gender ($p = .053$). Females reported slightly higher perceived effects, but the effect size was minimal (Cohen's $d = 0.12$).

Table (5): Differences based on academic major

Major	Mean	SD	t	df	p-value	Cohen's d
Scientific	4.25	0.75	2.84	398	.005	0.46
Humanities	3.89	0.82				

Table 5 presented that science students reported significantly higher perceived benefits of AI in career guidance than humanities students ($p = .005$), with a moderate effect size (Cohen's $d = 0.46$).

Table (6): GPA-based Perceptions

GPA Group	Mean	SD	N
"< 2.5"	"3.75"	"0.85"	"80"
"2.5–3.5"	"4.10"	"0.80"	"180"
"> 3.5"	"4.32"	"0.72"	"140"

Table (7): One-Way ANOVA Results

Source	SS	df	MS	F	p-value	η^2p
"Between Groups"	5.82	2	2.91			
"Within Groups"	"185.41"	397	0.47	6.23	.002	.064
"Total"	191.23	399				

Note. η^2p *= partial eta squared.*

Results show statistically significant GPA-based differences in students' perceptions of AI ($F(2, 397) = 6.23$, $p = .002$) with a small-to-moderate effect size. The use of ANOVA allows for determining whether differences between GPA groups are statistically significant, directly addressing the research question. As shown in Table 6, a linear trend is evident in means across GPA categories (ebbing as students' GPA decreases), with those with a GPA below 2.5 reporting the lowest perceived effect mean ($M = 3.75$, $SD = 0.85$). The GPA 2.5 to 3.5 group ($M = 4.10$, $SD = .80$), and students with GPA > 3.5 reported the highest mean perceived effects ($M = 4.32$, $SD = .72$). These results confirm that the observed differences between GPA groups are statistically significant, as demonstrated by the ANOVA findings.

There is some evidence that academically higher-achieving students see more value in AI for career guidance. However, it is unclear if such differences are statistically significant. ANOVA revealed that the perceived impact of AI was statistically significant by GPA group membership ($F = 6.23$, $p = .002$), providing evidence that the difference in means was not due to chance. The large effect size provides evidence that GPA affects CG's perception of AI, which aligns with students' judgments of AI's role in career advice, and that students who achieve more academically are more likely to prefer AI in CG than lower-achieving students.

Table (8): Fit Indices Model

Status	Acceptable Threshold	Value	Fit Index
"Good Fit"	"< 3.00"	"2.5"	"Chi-square/df (χ^2/df)"
"Good Fit"	"≥ 0.90"	"0.94"	"Comparative Fit Index (CFI)"
"Good Fit"	"≥ 0.90"	"0.91"	"Tucker-Lewis Index (TLI)"
"Good Fit"	"≤ 0.08"	"0.05"	"Root Mean Square Error of Approximation (RMSEA)"

Note. All indicators indicate how the model fits the observed data.

The information on model fit is shown in Table 8 to examine how the model fits the data. Model fit indices were used to evaluate how well the proposed model represents the observed data, supporting the validity of the analytical model used in this study. For instance, the chi-square to degrees of freedom ratio $\chi^2/df = 2.5$ was below the recommended maximum of 3.0, indicating an acceptable fit. The same can be said of CFI (0.94) and TLI (0.91), which exceed the cut-off of 0.90, indicating that model fit is adequate for the data. Further, the RMSEA = 0.05 was below the maximum threshold of 0.08, indicating a near-perfect fit with the data. In summary, when indices are taken together, the model demonstrated an acceptable and good representation of the data structure.

Discussion

The current research aim is to investigate the impact of artificial intelligence applications in career guidance on university students' career awareness and decision-making. According to a study, students attending Philadelphia University demonstrated average levels of knowledge regarding the use of AI in career counseling. This average level of awareness can be viewed through the Technology Acceptance Model (TAM), where moderate perceived usefulness and familiarity appear to affect students' behavioral intentions to adopt AI technology. Therefore, while students are aware of AI use cases, they have not yet

incorporated AI technology into their careers as part of their professional development. The study's results further demonstrate that participants rated AI as a very effective decision-making aid when determining their career paths. This finding is consistent with the TAM perspective, as it aligns with past research that has established a relationship between perceived usefulness of AI technology and increased acceptance and reliance on AI systems for decision-making. The results of this study support previous international research on the increasing use of AI technology in academic and career counseling contexts. Based on the TAM, participants who perceive AI technology as useful and easy to use may have similar patterns of acceptance in other educational environments. These AI tools are mostly personalized, offering tailored suggestions for building the desired career, pointers to access labor market information, and guidance on matching existing career-related skills with available job opportunities, which corroborate the positive perceptions reported in this study (Sood & Guleria, 2023). In terms of SCCT, greater personalization will increase self-efficacy and expected outcomes, thereby positively affecting students' belief in their ability to make career decisions.

Additionally, this study shows how educational institutions in Jordan might practically implement the systematic use of AI-enhanced career service platforms. Students have a clear understanding of the value AI has in building and improving awareness of career opportunities and making decisions. From an SCCT perspective, it is evident that self-efficacy and expected outcomes impact students' use of AI tools to enhance their engagement with career development. It is consistent with previous research on educational technology, which generally describes how AI can improve student readiness for post-secondary employment through adaptive learning and/or personalized feedback. This study evaluates students' perceptions of AI's usefulness for career development and engagement but does not assess their subsequent career outcomes. An additional explanation from an SCCT perspective is that the use of ongoing feedback mechanisms can enhance students' development of adaptive career behavior and informed decision-making.

A statistically and practically significant difference was found in the effectiveness of AI-derived feedback compared with human expert feedback. It was found that AI-generated feedback was much more effective than human expert feedback (N = 121). This difference may reflect the ability of AI systems to provide timely and personalized feedback, as indicated by the observed results. This can also be explained through SCCT, as timely and personalized feedback enhances students' self-efficacy and supports more confident career decision-making. These results are consistent with prevailing theories on cognitive feedback and self-regulated learning, which indicate that time-limited, individualized responses encourage motivation and decision-making.

It aligns with Huang (2025), which shows that intelligent career planning systems can offer precise, tailored suggestions to students and, in turn, their career choices. This alignment can also be interpreted through TAM, as systems that provide accurate and relevant outputs are more likely to be perceived as useful, thereby increasing user acceptance. This finding also helps identify that AI-integrated systems are a reliable complement to hand-guided career guidance, not only in resource-limited or high-demand contexts, especially for

students, but also in low-resource and high-demand cases. There is no measurable difference in perceptions of AI's effect on career development between females and males; the effect size is small enough to be of no real significance. The parameters associated with the Theory of Reasoned Action (TAM) describe differences in understanding ease of use and acceptance by gender, such that gender does not generate major behavioral differences. This is in keeping with Muhammad's findings, which indicate that gender has a very small positive effect on educational technology acceptance, with acceptance predominantly dependent on age, ease of use, and familiarity with technology (Muhammad, Patriana, Yusrain, Astaman, & Manja, 2024). There is evidence that guiding AI resources is feasible and acceptable for both men and women. GPA and fields of study also produced significant variability in attitudes toward AI applications; specifically, positive attitudes among students in science disciplines were significantly higher than those among students in the humanities. Prior experience with technology was a major predictor of the success of both science students and high-GPA students relative to the ICT experience and motivation experienced by each student; which suggests that the greater the extent of prior technology experience that a student has incurred, the greater the amount of perceived ease of use, which leads to an increase in acceptance and a subsequent increase in engagement via TAM.

Some humanities students might have difficulty adopting AI technologies because they have limited exposure to them or feel they are irrelevant. Using both SCCT and TAM, this can be interpreted as individuals who possess lower self-efficacy SCCT, or those who view AI technologies as having a lower level of perceived usefulness (TAM), resulting in decreased levels of engagement with AI systems. Therefore, these findings support the need for more inclusive implementation strategies in the examined context. For example, the lower perceived usefulness among humanities students suggests the importance of targeted support and training. Specifically, this can be realized by offering courses in humanities specialization that help students and allow them to participate in even less successful classes. It encourages inclusiveness and was noted by Guleria and Sood (2023), who showed that students with more advanced science backgrounds are able to learn more about AI systems in their career development than those in humanities majors. This research also supports the claim that these academically skilled students have greater positional advantages due to the use and use value of AI systems, higher self-control and self-reliance with technology, and clearer career goal definition. From a SCCT perspective, these findings reflect higher levels of self-efficacy and goal-setting behavior among high-achieving students. From a social cognitive perspective, social cognition theory suggests that self-efficacy and proactive learning behaviors increase the usage of technology and learning. The model fit indices for the study measuring the role of AI in AI-enabled learning were indeed satisfactory, and the model's stability supports these findings. In this case, the conceptual model contains elements like recognizing what AI is capable of, making decisions about students' careers based on AI tools, and any demographic characteristics that may influence how someone uses AI in their careers, in order to assess the impact of both cognitive and motivational factors on AI use in career applications. The results indicated that when considering both cognitive factors (SCCT) and

technology acceptance factors (TAM), there is a greater understanding of how students use AI-based career assistance systems than when considering either cognitive factors alone or technology acceptance alone.

This outcome aligns with Escotet (2024), who found that students with higher academic levels benefited more from AI-guided systems. In light of the outcomes of the current study, the findings relate to perceived benefits rather than actual career outcomes. It seems to closely align with the results of Westman et al. (2021), who reached similar conclusions about AI as a beneficial method for supporting student career advancement, employed through student consciousness-raising and academic decision-making in post-secondary education. Shabur (2024) also drew conclusions about the suitability of AI for early-career planning and for supporting students in academic contexts. To be sure, the contextual differences are stark. The outcomes of the current study differ marginally from those of Muhammad et al. (2024), who examined Islamic universities and found that the demand for students to have access to career advice far exceeded the capacity of existing intelligent systems. These differences may be related to contextual factors identified in the literature, social factors could aptly explain some differences - such as varied institutional resources, digital readiness, or student exposure to technology across educational contexts.

Conclusion

AI has been shown to provide personalized career guidance, helping students build awareness and prepare for their future careers through advanced data analytics. Results from this study provide unique, context-specific evidence demonstrating how AI assists with career guidance at Jordan's higher education institutions. More importantly, the findings suggest that educators should systematically use AI as an expert to help students identify and access additional support to inform and support their career-path decisions. In addition, the results of this study confirm the roles of Social Cognitive Career Theory (SCCT) and the Technology Acceptance Model (TAM) as theoretical frameworks for explaining how students use AI-supported career guidance systems. If nothing else, AI-enabled systems will interface with the physical world, and that they must be integrated into a university's training and career services plan in a way that scales proportionately to a university's specific needs. The findings also illustrate how universities can integrate AI-driven career guidance systems in structured and ethical manners. From a practical standpoint, there are implications for both universities and policymakers in implementing AI-enabled career services. Specifically, universities can leverage AI tools to improve career services, and policymakers can create or support the development of inclusive, accessible AI-based career guidance frameworks.

Limitations, Implications, and Recommendations

This research study has limitations that need to be addressed. First, this study was conducted at a single institution, Philadelphia University, thereby limiting the extent to which the findings can be generalized and the results applied to other institutions. Second, the study used self-reported data collected via a standardized questionnaire, which is subject to social desirability bias and errors in self-reporting. Third, the research design lacked a longitudinal or control group, which prevents any determination of the impact of AI-assisted career guidance over the longer term. Future research

should utilize a multi-institutional approach to cross-examine student cohorts from distinct universities in different geographical areas, thereby promoting external validity of the study. Additionally, qualitative methods, such as interviews or focus groups, could be used to understand better students lived experiences and responses to AI in career guidance. Future research could examine AI adoption models for students or counselors and measure the impact of AI-based career counseling on students at different educational levels (e.g., post-graduate and doctoral students) and on their life-stage decisions regarding career choice.

These findings have considerable implications for universities and decision-makers. Establishments should invest in AI-enhanced career-guided systems that consider students' contexts and are adaptable across disciplines; while ensuring they are accessible to all students rather than just a particular discipline, enabling equitable student support across disciplines. Policymakers can leverage such evidence to create national guidelines for ethical, inclusive, and evidence-based approaches to AI in higher education guidance systems. It will therefore enhance students' career readiness, aligning with the required workforce-oriented curriculum to support discipline knowledge, while also increasing connections between academic programs and labor market requirements and reducing inequalities in access to quality services for students. These findings lead to the following recommendations:

1. Introduce required orientation training courses that provide all students with the knowledge and skills to use AI applications effectively and ethically in academic and career contexts.
2. Create AI Career Counseling Centers on academic campuses to provide data-driven, academically grounded career guidance.
3. Implement specialized AI-supported career guidance for humanities students and those with lower GPAs, ensuring that technology tools are accessible to all.
4. Provide professional development programs to train counselors and academic advisors in the use of AI for career guidance, thereby improving their ability to support students effectively.

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− **Availability of Data and Materials:** The datasets generated and/or analyzed during this study are available from the corresponding author upon reasonable request.

−**Author Contributions:** [Al-Khawaldeh, S.] conducted the study independently, from design and data collection to application, analysis, interpretation, initial drafting, and final review and approval.

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