

# Smart Attendance, Smarter Acceptance: Understanding Staff Adoption of SPOT-Me Through the UTAUT Lens

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**Abstract**—This paper investigates staff acceptance of SPOT-Me, a mobile attendance management system implemented at Politeknik Tuanku Syed Sirajuddin (PTSS) in Malaysia. This study primarily examined the effects of performance expectancy, effort expectancy, social influence, and facilitating conditions on system acceptance by employing Unified Theory of Acceptance and Use of Technology (UTAUT). This study utilised a quantitative cross-sectional survey administered to 205 academic and non-academic staff. Due to the non-normal distribution, this study used descriptive statistics, Spearman's rho correlation, and the Mann-Whitney U test for analysis. Interestingly, the findings indicated that staff acceptance of SPOT-Me is very high. In addition, performance expectancy was associated with the strongest relationship with acceptance. Analogously, effort expectancy, facilitating conditions, and social influence also indicated similar results. Moreover, statistically, no significant difference was found between academic and non-academic staff. These findings highlighted clearly that both groups perceived the system in a broadly similar way. Overall, this study found that mobile attendance systems are acceptable when users consider them useful, easy to use, and supported by the institution. In a nutshell, the findings of this study provide practical evidence from the Malaysian polytechnic context and may be beneficial for similar digital transformation initiatives in public higher education.

**Keywords**— SPOT-Me, UTAUT, user acceptance, attendance system, public higher education, digital adoption.

## I. INTRODUCTION

Digital transformation has brought significant changes in the way organizations handle day-to-day administrative functions. In academia, attendance management is no longer a purely routine task; it now plays an important role in improving efficiency, supporting real-time reporting, facilitating mobility, and ensuring compliance and accountability. Traditional methods such as biometric systems, scorecards, and paper-based records often face constraints, including fixed-location requirements, processing delays, and weaknesses in reporting. As a result, many institutions are now shifting from conventional attendance systems to more dynamic mobile applications. This approach allows for a more flexible attendance recording process, while giving administrators the advantage to manage, coordinate, and monitor data more effectively and in real-time.

SPOT-Me is one form of such transformation. Developed as a mobile-based attendance system, it allows employees to record entry and exit times on their personal devices, thereby replacing the use of conventional biometric devices. Theoretically, the system offers a variety of operational advantages, including faster attendance management, reduced operational errors, increased transparency, centralized documentation, as well as compatibility with 21st-century management practices. However, the existence of a system from a technical standpoint does not necessarily guarantee its use in an organization. A system may work well from a technical standpoint, but it still fails to provide institutional value if users perceive it as difficult to use, less supportive, or irrelevant to their job needs. This is where human factors in digital implementations come in. Research on the adoption of technology consistently shows that what users perceive is one of the factors influencing the acceptance, rejection or limited use of a new system. According to Venkatesh et al. [1], the adoption of a system is determined not only by system design features but also by users' attitudes and perceptions, including perceived usefulness, perceived ease of use, social influence, expectations, and technical support. This becomes an important consideration in the public sector. This becomes an important consideration in the public sector and education where technology systems are often deployed to a diverse population with varying domains and timings of work and use-impact of the system.

With the increasing adoption of more attendance apps-based in the 21st century, but lack of empirical studies of Malaysian public sector. Previous literature has focused on e-learning, e-government or mobile payments or information systems. In this respect, this study examines acceptance of SPOT-Me among staffs (academic and non-academic) at Politeknik Tuanku Syed Sirajuddin (PTSS). This research draws on the Unified Theory of Acceptance and Use of Technology (UTAUT) to examine how much performance expectancy, effort expectancy, social influence and facilitating conditions influence acceptance by the staff. It also attempts to understand if there are differences in acceptance according to staff roles.

## II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

The UTAUT was proposed by Venkatesh et al. [1] to combine the key findings from eight major models of technology acceptance into a single explanatory model. It suggests that behavioural intention and use is significantly influenced by performance expectancy, effort expectancy, social influence and facilitating conditions. Owing to its broad scope and empirical validity, UTAUT has been widely applied to understanding adoption of educational technologies, information system, health care, e-government and consumer technologies. UTAUT is a suitable model to explain mobile attendance systems because they are part of the daily routine. Users not only consider whether the technology is there, but also whether it is useful to complete their tasks, whether it is easy to use in their normal working environment, whether their colleagues or managers expect them to use it and whether their organisation has put in place the necessary infrastructure to facilitate its use. All these aspects have consequences for continued usage and compliance.

### **Performance Expectancy**

Performance expectancy is the extent to which a user believes using the system will improve his/her performance at work. In the context of SPOT-Me, these benefits include quicker attendance recording, better quality reporting, more reliable data and time management. Performance expectancy has been identified as a key factor influencing technology acceptance in previous studies [1], [2]. In online service settings, it has been shown that if users understand the benefits of such services in increasing their operational productivity and performance, they are more likely to accept the system [3], [4]. It is also likely to be accepted if the system is perceived as making their work easier rather than harder.

**H1: Performance expectancy is positively related to the technology acceptance of SPOT-Me.**

### **Effort Expectancy**

Ease of use is the extent to which a technology is perceived as being easy to use. This relates to the clarity of the interface, ease of use, interaction complexity (low) and certainty (no frustration completing the task) of a mobile attendance system. Davis [5] and Venkatesh and Davis [6] observed that ease of use has a more significant impact in the early stages of implementation because, during this period, users are evaluating whether the new system is easy to use. Both the higher education and organisational literature have consistently shown that when technology is more intuitive, it is more accepted, especially by a highly diverse user population in terms of digital skills [7], [8].

**H2: Effort expectancy is positively related to the technology acceptance of SPOT-Me.**

### **Social Influence**

Social influence refers to the extent to which individuals perceive that people who matter to them believe they should use a particular technology. This incorporates supervisors, colleagues, institutional leaders and the organizational norms within the workplace. Social influence does not necessarily act in the direction of pressure, but also in the direction of signals of what is anticipated, important and agreeable in the taking. In some research based on Ajzen's [9] theory of planned behaviour and the subsequent UTAUT model, social influence may be a more significant factor in studies where technology is novel, visible, or linked to institutional expectations. Employees can be subject to peer or managerial behaviours and suggestions [10], [11] and personal beliefs in the field of technology adoption in organizations as well.

**H3: Social influence is positively related to the technology acceptance of SPOT-Me.**

### **Facilitating Conditions**

Facilitating conditions capture users' perceptions regarding the availability of organizational and technical support for system use. In practice, these include aspects of device compatibility, availability and stability of internet access, user training, access to technical assistance, as well as the existence of clear procedures when any issues arise. These factors are particularly critical, especially in environments where staff technical readiness varies or when operational disruptions can quickly undermine trust in the system. Studies have shown that strong facilitating conditions improve users' confidence and reduce uncertainty, thereby supporting continued adoption [12], [4], [13]. In the case of mobile attendance management, facilitating conditions may be particularly influential because daily use depends on reliable integration between the system, staff devices, and institutional support mechanisms.

**H4: Facilitating conditions is positively related to the technology acceptance of SPOT-Me.**

### **Staff Role and Acceptance**

SPOT-Me usage may also be affected by an employee's job role. Academic and non-academic staff may have a different work environment, administrative requirements and mobility. Therefore, it may be possible that they may differ in their responses to an attendance system. Previous studies have reported differences in acceptance between groups due to organisational culture, role, and work practices [14], [15].

**H5: Academic and non-academic staff will have differing acceptance of SPOT-Me.**

## **III. METHODOLOGY**

Factors associated with SPOT-Me acceptance were investigated in this study using a quantitative cross-sectional survey design. This study measures the perceptions of active users at a single point in time, and test the relationships postulated in the UTAUT. SPOT-Me was introduced as a mobile attendance system for staff in the Malaysian public higher education institution (PTSS) that was the focus of this study. The population of interest was staff (academic and non-academic) who had used the system. Convenience sampling was chosen for feasibility reasons. An initial response of 250 questionnaires was received, and 205 were usable after cleaning. It was appropriate for an institutional study which aims to understand the end-user perceptions during the implementation phase, while convenience sampling limits the generalizability of the study.

This involved a semi-structured questionnaire which was based on a previous validated questionnaire based on the UTAUT model [1], [16]. This included user profile and five constructs in this study, namely performance expectancy, effort expectancy, social influence, facilitating conditions and acceptance as the dependent variable. A five-point Likert scale was used to rate the items. Content validity was assessed through expert review, while internal consistency and construct adequacy were supported by acceptable Cronbach's alpha, composite reliability, average variance extracted, and factor loading thresholds as reported in the source study.

Data were collected electronically via institutional email and internal WhatsApp groups. A pilot test involving 30 staff members was carried out to refine wording and improve item clarity before the final distribution. The dataset was analyzed using SPSS version 26. As the result of normality testing indicated non-normal distribution, the study used non-parametric procedures. Descriptive statistics were conducted to determine the level of acceptance and perception of constructs. Spearman's rho was used to test the associations between each UTAUT predictor and acceptance, while the Mann-Whitney U test was used to compare academic and non-academic staff.

## IV. RESULTS

The descriptive results show that staff's perception of SPOT-Me is very positive across all measured constructs. The mean score of acceptance was 4.41 (SD = 0.64), indicating that respondents tend to believe that SPOT-Me is an appropriate and satisfactory solution when it comes to attendance management. The most accepted was the suitability of SPOT-Me as the means of tracking office attendance (item A1, M = 4.68), and the level of confidence in using the system was a bit lower but positive (item A3, M = 4.18). Such findings suggest that acceptance might indicate the staff tend to perceive the system as applicable and viable in their everyday life.

The overall mean of performance expectancy was 4.41 (SD = 0.70) which shows a high level of agreement that SPOT-Me is helpful, saves time, and enhances work related to attendance. Another high mean (M = 4.34, SD = 0.71) was also achieved in effort expectancy, indicating that users mostly believe that the application is easy to learn, navigate, and use. Social influence was rated a little lower (M = 4.15, SD = 0.76), although there is a positive overall score. This indicates that peer and institutional support are important. Facilitating conditions had a mean of 4.35 (SD = 0.61), which means that the support and infrastructure required are usually available.

**Table 1:** Descriptive statistics for the study constructs

Construct	Mean	SD	Interpretation
Acceptance	4.41	0.64	High acceptance of Spot-Me
Performance Expectancy	4.41	0.70	Strong perceived usefulness
Effort Expectancy	4.34	0.71	High perceived ease of use
Social Influence	4.15	0.76	Moderately positive influence
Facilitating Conditions	4.35	0.61	Favorable support conditions

We conducted the rho correlation analysis proposed by Spearman. All predictors are positively and significantly related to acceptance in order to test the hypothesized relationships. Results show that performance expectancy is the most important factor that leads to acceptance ( $\rho < 0.857$ ), followed by other significant factors are effort expectancy, facilitating conditions, social influence; and hence, all of them were highly statistically significant ( $p < 0.01$ ). These findings also support H1 to H4 and claim that perceived usefulness, ease of use coupled with institutional support and social encouragement are all significant predictors in the explanation of staff acceptance. The pattern of relationship strength obtained is significant and deserves attention. Performance expectations emerged as a dominant factor, indicating that staff acceptance was heavily influenced by the belief that the system actually improved the effectiveness of their work. Effort expectations as well as facilitator conditions also showed strong relationships, indicating that usability aspects and organizational readiness levels were important elements in maintaining positive attitudes towards the app. On the other hand, social influences, while statistically significant, were found to be relatively weaker, illustrating that users tend to make judgments based on their own practical judgments rather than simply according to the behavior of colleagues.

**Table 2:** Spearman's rho results for H1–H4

Hypothesis	Relationship	$\rho$	p-value	Result
H1	Performance Expectancy (PE) → Acceptance	0.857	< 0.01	Supported
H2	Effort Expectancy → Acceptance	0.782	< 0.01	Supported
H3	Social Influence (SI) → Acceptance	0.521	< 0.01	Supported
H4	Facilitating Conditions (FC) → Acceptance	0.728	< 0.01	Supported

The acceptance between the academic and non-academic staff was then measured by using Mann-Whitney U test. There was no significant difference in the acceptance scores (U = 3444.000, Z = -0.289, p = 0.772), implying that the groups had similar acceptance levels. Similarly, there were no significant differences on performance expectancy (P = 0.512), the effort expectancy (P = 0.623), social influence (P = 0.394) or facilitating conditions (p = 0.342). This outcome suggests that SPOT-Me is received in a broadly similar manner across staff roles. Despite differences in job scope, both academic and non-academic employees appear to evaluate the usefulness, usability, support conditions, and general acceptability of the system in comparable ways. From an implementation perspective, this is encouraging because it indicates that the system is not disproportionately benefiting or burdening one staff category over another.

**Table 3:** Mann–Whitney U results by staff role

Construct	Z value	p-value	Interpretation
Acceptance	-0.289	0.772	No significant difference
Performance Expectancy	-0.337	0.736	No significant difference
Effort Expectancy	-0.717	0.473	No significant difference
Social Influence	-0.766	0.444	No significant difference
Facilitating Conditions	-0.373	0.709	No significant difference

## V. DISCUSSION

The results reinforce the belief of the staff will accept administrative technology if they feel that the technology is helpful to them in their job. Consistent with the UTAUT and the latest studies in the technology acceptance, performance expectancy was the most significant influencing factor in terms of acceptance [17], [18]. With SPOT-Me, the acceptance to the employees appears to be fueled by the idea that the system will not only grant them access to the application, but also make it easier and more accurate to manage attendance. In the case of SPOT-Me, staff appear to accept the system not because it is merely available, but because it is seen as helpful in managing attendance more efficiently. Recent research concerning the digital transformation in the public sector also reveals that users tend to be more accepting of the digital initiatives if they contribute to the efficiency, productivity, service quality and organisational performance [19], [20].

Effort expectancy also showed a strong relationship with acceptance, indicating that ease of use remains central to successful system diffusion. These findings suggest that staff are more likely to use SPOT-Me when the application can be seamlessly integrated

into their daily routine without requiring a high level of learning effort. This illustrates that acceptance of SPOT-Me will increase when users feel that the system is easy to understand, easy to use, and does not interfere with existing workflows. These findings are in line with previous studies in technology adoption that emphasized the importance of ease of use as a key determinant of system acceptance [5], [6]. In addition, a study based on the Unified Theory of Acceptance and Use of Technology (UTAUT) also shows that effort expectations are an important predictor of users' intentions to use digital systems in the context of higher education and digital services [21], [18]. Therefore, ease of use should not be seen solely as a technical design feature, but as a critical factor that supports continuous compliance, builds user confidence, and promotes effective use of systems.

Effort expectancy also showed a strong relationship with acceptance, indicating that ease of use remains central to successful system diffusion. This result suggests that staff are more willing to use SPOT-Me when the application fits smoothly into daily routines and does not require excessive learning effort. The finding aligns with classic technology acceptance work emphasizing that perceived simplicity is a practical gateway to adoption [5], [6]. Recent studies of the digital transformation of the public sector have also emphasized the role of readiness, quality of the system, support, security, and trust in the successful digital roll-out of services [19]. Moreover, the current studies on the adoption of information technology have revealed that facilitating conditions help to strengthen the connection between intention and behaviour of the users to adopt technology [20].

Although the social influence played a major role, it appeared to play the least role compared to the other four factors. In the case of SPOT-Me, the employees may be aware of how the rest will respond to the system, however, their acceptance will still be highly affected by what they think of the system. Recent reviews of UTAUT indicate that the effect of social factors depends on the user characteristics, technology characteristics, organisational culture and use situation [17], [18]. The less significant impact of social influence in our experiment could indicate that employees have adopted SPOT-Me because they find it helpful in their work, rather than because of others.

The other important observation is that no difference was found between the academic and non-academic staff in the acceptance of SPOT-Me. This is an interesting discovery because staff members in various positions should have different perceptions and experiences relating to a new system. The findings of this research however reveal that there were no significant differences in the manner in which they experienced the system. The result implies that the implementation of SPOT-Me reached both groups with a relatively consistent message and operational experience. This observation also concurs with the recent research that explores the technology acceptance in higher education, and states that technology acceptance among various users and institutions is not universal [22], [18]. This is a good thing as far as management is concerned because it is an indication that SPOT-Me was adopted in a way that was inclusive by nature and did not appear to favor one group of staff over the other.

## VI. IMPLICATIONS

Theoretically, this research contributes to the existing body of evidence regarding the application of the UTAUT model as a powerful research model when studying the topic of facilitating the introduction of technology in the higher education and the public-sector level. In more detail, it generalizes the UTAUT to the more unexplored mobile attendance administration. The highest number of studies on the adoption of technology have been on learning platforms, e-government and consumer technology. Conversely, this paper demonstrates that, the adoption of administrative applications that become institutional practices can also be viewed through the prism of UTAUT. The results confirm the significance of performance expectancy, effort expectancy and facilitating conditions regardless of situations and have a chance to prove that social influence can be significant but comparatively less significant in systems where more easily users can see the benefits of the system as the part of routine.

The study has certain implications for institutions that have already implemented or intend to implement the mobile attendance system. One of the initial implementation plans is to concentrate on the advantages of the system with respect to streamlining the processes, instead of merely complying. When systems are perceived to directly add value to processes, then chances are that these will be embraced. Second, simplicity, nevertheless, should be central. Simpler solutions are more likely to result in sustained use. Third, the conditions of facilitation have to be good. Users should feel secure, have convenient access to information and expect to be able to quickly resolve technical issues. Lastly, although it is not a major driving force, the availability of institutional and other leaders, and the prominence of managerial support, could help establish the system as early as possible in the process.

## VII. LIMITATIONS AND FUTURE RESEARCH

Several limitations should be acknowledged in this study. First, the study was conducted within a single public higher education institution. As a result, the findings may not fully represent the experience of staff in other polytechnics, universities, or wider public-sector organisations. Second, the use of convenience sampling may limit the extent to which the sample reflects the broader staff population. Third, the cross-sectional design of the study only captured staff perceptions at a specific point in time. Therefore, this study could not explain how acceptance of SPOT-Me evolved as users became more proficient in using the system or as institutional policies changed over time. Finally, as data were collected through self-reporting responses, the study findings were likely influenced by response bias, including respondents' tendency to provide answers that were considered more socially acceptable.

Future studies are recommended to address these limitations by involving respondents from various institutions as well as using probability-based sampling methods to improve the level of representativeness of findings. Longitudinal study designs are also considered suitable for examining changes in consumer acceptance over time, particularly as systems become more integrated into institutional routines. In addition, comparative studies involving multiple attendance management systems, or comparisons between public and private institutions, have the potential to provide a more comprehensive understanding of the adoption of technology in an administrative context. In addition, qualitative approaches such as interviews or focus group discussions can be used to gain a deeper understanding of users' personal experiences, especially among individuals who still show doubts even if the overall level of acceptance is positive. This approach can help shed light on the human and organizational factors underlying the statistical findings obtained.

## VIII. CONCLUSION

This study aimed to examine the level of acceptance of SPOT-Me, which is a mobile-based attendance management system, among academic and non-academic staff at PTSS using the framework of the Unified Theory of Acceptance and Use of Technology (UTAUT). The study found that acceptance was high, and the four main constructs of UTAUT had a positive relationship with

acceptance of the system. Performance expectations were identified as the most dominant factors, followed by effort expectations and facilitator conditions, while social influences played a more moderate role. In addition, no significant differences were found between academic and non-academic staff. Overall, these findings underscore a clear yet important message, which is that the success of a digital presence system largely depends on how well users trust that the system is truly useful, easy to use, and supported by the organization. For public higher education institutions that are implementing administrative digitalization, the main challenge is not simply to introduce new systems, but to ensure that the system gains users' confidence in real practice. In this context, SPOT-Me is seen to have successfully achieved these goals in a study environment, thus making it a relevant case for reference in future research on institutional technology adoption.

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## REFERENCES

- [1] V. Venkatesh, M. G. Morris, G. B. Davis, and F. D. Davis, "User acceptance of information technology: Toward a unified view," *MIS Quarterly*, vol. 27, no. 3, pp. 425–478, 2003.
- [2] V. Venkatesh, J. Y. Thong, and X. Xu, "Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology," *MIS Quarterly*, vol. 36, no. 1, pp. 157–178, 2012.
- [3] A. A. Alalwan, Y. K. Dwivedi, N. P. Rana, and R. Algharabat, "Examining factors influencing Jordanian customers' intentions and adoption of internet banking: Extending UTAUT2 with risk," *Journal of Retailing and Consumer Services*, vol. 40, pp. 125–138, 2017.
- [4] Y. K. Dwivedi, M. A. Shareef, A. C. Simintiras, B. Lal, and V. Weerakkody, "A generalised adoption model for services: A cross-country comparison of mobile health (m-health)," *Government Information Quarterly*, vol. 34, no. 3, pp. 355–367, 2017.
- [5] F. D. Davis, "Perceived usefulness, perceived ease of use, and user acceptance of information technology," *MIS Quarterly*, vol. 13, no. 3, pp. 319–340, 1989.
- [6] V. Venkatesh and F. D. Davis, "A theoretical extension of the Technology Acceptance Model: Four longitudinal field studies," *Management Science*, vol. 46, no. 2, pp. 186–204, 2000.
- [7] N. D. Oye, N. A. Iahad, and N. Ab.Rahim, "The impact of e-learning on students' performance in tertiary institutions," *International Journal of Computer Networks and Wireless Communications*, vol. 2, no. 2, pp. 121–130, 2012.
- [8] B. Bervell and I. N. Umar, "Validation of the UTAUT model: Reconsidering non-linear relationships of exogenous variables in higher education technology acceptance research," *Eurasia Journal of Mathematics, Science and Technology Education*, vol. 13, no. 10, pp. 6471–6490, 2017.
- [9] I. Ajzen, "The theory of planned behavior," *Organizational Behavior and Human Decision Processes*, vol. 50, no. 2, pp. 179–211, 1991.
- [10] T. Escobar-Rodriguez and E. Carvajal-Trujillo, "Online purchasing tickets for low-cost carriers: An application of the unified theory of acceptance and use of technology (UTAUT) model," *Tourism Management*, vol. 43, pp. 70–88, 2014.
- [11] N. M. Suki and N. M. Suki, "Consumer environmental concern and green product purchase in Malaysia: Structural effects of consumption values," *Journal of Cleaner Production*, vol. 132, pp. 204–214, 2017.
- [12] H. H. Teo, L.-B. Oh, C. Liu, and K.-K. Wei, "An empirical study of the effects of interactivity on web user attitude," *International Journal of Human-Computer Studies*, vol. 58, no. 3, pp. 281–305, 2003.
- [13] P. Ifinedo, "Understanding information systems security policy compliance: An integration of the theory of planned behavior and the protection motivation theory," *Computers & Security*, vol. 31, no. 1, pp. 83–95, 2012.
- [14] Y. K. Dwivedi et al., "Research on information systems failures and successes: Status update and future directions," *Information Systems Frontiers*, vol. 13, no. 4, pp. 357–370, 2011.
- [15] A. Tarhini, K. Hone, and X. Liu, "A cross-cultural examination of the impact of social, organizational and individual factors on educational technology acceptance between British and Lebanese university students," *British Journal of Educational Technology*, vol. 46, no. 4, pp. 739–755, 2015.
- [16] A. Raman and Y. Don, "Preservice teachers' acceptance of learning management software: An application of the UTAUT2 model," *International Education Studies*, vol. 6, no. 7, pp. 157–164, 2013.
- [17] M. Blut, A. Y. L. Chong, Z. Tsigana, and V. Venkatesh, "Meta-analysis of the unified theory of acceptance and use of technology: Challenging its validity and charting a research agenda in the red ocean," *Journal of the Association for Information Systems*, vol. 23, no. 1, pp. 13–95, 2022.
- [18] L. Xue, A. Mat Rashid, and S. Ouyang, "The Unified Theory of Acceptance and Use of Technology in higher education: A systematic review," *SAGE Open*, vol. 14, no. 1, 2024.
- [19] H. Moutamir and T. El Qour, "Digital transformation of public services: Systematic review of key success factors," *Journal of Theoretical and Applied Information Technology*, vol. 103, no. 15, pp. 5895–5912, 2025.
- [20] R. Shahi and B. P. Chaudhary, "Digital transformation: Adoption of information technology systems in higher education institutions of Nepal," *Cogent Business & Management*, vol. 12, no. 1, Art. no. 2524601, 2025, doi: 10.1080/23311975.2025.2524601.
- [21] A. M. Al-Rahmi et al., "Integrating the role of UTAUT and TTF model to evaluate social media use for teaching and learning in higher education," *Frontiers in Public Health*, vol. 10, Art. no. 905968, 2022.
- [22] B. G. Acosta-Enriquez et al., "Acceptance of artificial intelligence in university contexts: A conceptual analysis based on UTAUT2 theory," *Heliyon*, vol. 10, Art. no. e38315, 2024.