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How Integrated Mobile Platforms Transform Talent Management Processes[ab]

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Abstract

In the era of rapid digitalization, organizations are increasingly adopting advanced technologies to improve efficiency, and for this reason, they demand a skilled workforce. This transformation requires innovative talent management strategies that leverage digital tools to improve human resource management, thereby fostering employee productivity and satisfaction. The research analyzes how HR management has evolved from purely operational functions to strategic talent management units. As a result of examining the best practices from various countries, this study explores the implementation of digital talent management systems by exhibiting the global shift towards mobile applications that give the workforce a competitive edge over their competitors. It underscores the emerging significance of super-apps, which combine multiple streams of services within a single platform, resulting in a more cohesive and efficient user experience. This study aims to empirically assess the user preference for super-app, designed for contemporary talent management processes at international scales, in comparison to web applications, and to explore how the variety of services offered influences its adoption. As a

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result of the comprehensive analysis of the data, it aims to contribute to the literature on super-apps and digital HR platforms by focusing on increasing the overall user experience and organizational effectiveness. Within the scope of the research, the results concluded can be identified within three major components. These components can be described in the following manner which specific talent management services offered in the comprehensive super-app are preferred over other services, which talent management services are jointly used within the app, and finally, which services have a positive impact on the rest of the offered services' utilization rate for the end-user. The study contributes to the literature by describing the adoption and effects of super-apps across digital human resource platforms, typically, it deals with improvements in user experience and agility at the organizational level. It has been noticed that there is an increase in public personnel training participation and career planning courses through the super-app. Further, it has been seen that applications to career fairs via the super-app affect inclusion into internship programs and participating career planning courses affects access to public recruitment platforms.

Keywords: Talent Management, Mobile HR Technology, Super-Apps, Digital HR, Career Support

1. Introduction

Since the birth of civilization, societies have been transforming continuously. The advancements in information technologies, especially starting in the early 20th century, along with the dissemination of advanced technologies, have triggered a paradigm shift. Technologies such as artificial intelligence (AI), machine learning, image processing, automation, robotics, and the Internet of Things have reshaped production and economic output as they have been increasing efficiency and leading to a demand for a more skilled and efficient workforce. With regard to these technological advancements, organizations are developing strategies so that they can adapt their business processes to the commonly appreciated standards all around the globe. Organizations are also striving for enhanced competitive advantage, and they support the quality of human resources (HR), employee productivity, and satisfaction, thus expanding professional contributions (Cebeci et al., 2020). Consequently, human resource management and modern talent management practices have gained significance, with a growing enthusiasm for them, which then leads to the orientation and adoption of digital tools and methods.

Digital HR practices are becoming progressively more prevalent, and there are indicators that these practices and talent development are positively correlated (Nageeb & Saad, 2022). The HR technology market, estimated at $23.98 billion in 2022, is predicted to reach $39.9 billion by 2029, driven by an increase in employment and the digitalization of talent management, with talent management services projected to hold the largest share, according to the Fortune Business Insights HR Technology Market Size-Growth 2029 Report (Future Market Insights, 2024). As can be seen from examining the best practices of the advanced economies, strong efforts are emerging in various countries to boost efficiency through the expansion of digital talent management processes in both the public and private sectors.

2. Talent Management

Talent management has become an important aspect of organizational strategy emerging from research by McKinsey & Company in 1997 on the "War for Talent" (Beechler & Woodward, 2009). The need for talent management is further underscored by the several challenges involved in attracting and retaining qualified employees as demographics change, technology advances, and globalization occur. Talent management is, however, different from the traditional human resource procedures and makes available a strategic-cum-holistic approach for its beneficiaries, emphasizing talent acquisition, development, retention, and succession planning to gain competitive advantage.

The talent management framework within organizations is essential for improving performance and maintaining a competitive edge. Deloitte has highlighted the criticality of a win-win employee value proposition (EVP) notion through attractive incentives and digital connection, starting from educational partnerships to engaging prospective talent at very early stages (Deloitte, 2018). Talent acquisition is directed at merit-based recruitment to ensure organizational fit and diversity, as integrated into a smooth onboarding process (United Nations, 2005) (CIPD, 2022). Regarding talent development, essential training that aligns with unique corporate strategies is vital for fostering continuous learning, thereby enhancing job satisfaction and retention rates (Noe, 2016) (Collings & Mellahi, 2009).

Thereby, the implementation of practices that help create a suitable working environment and the encouragement of employees can be regarded as a talent retention enabler (SHRM, 2018) (Allen et al., 2017). Succession planning entails the training of high-potential individuals to become leaders who can hold the organization steady through the challenges they face (Rotwell, 2016) (Ngiu et al., 2021). This integrated approach to talent management emphasizes the organization's strategic objectives at different stages of the talent life cycle as the link the higher the organizational resilience and the competitive advantage.

2.1 Digitalization in Talent Management

From operational personnel record systems in the 1960s to departments offering basic HR services in the 1980s, HR management has evolved over time. The 1990s and the first half of the 2000s turned the focus of these departments to filling the recruiters, learning, performance, and compensation management roles. Nowadays, they aim to make organizations free by creating efficient, transparent, digital, and integrated workspaces. New technologies in working environments are creating a demand for highly trained HR personnel, which is altering corporate strategy and, thus, making them effectively execute talent attraction and retention practices. The economy and society are undergoing structural change due to the emergence of new digital technologies, which is accelerating the transformation of HR departments into talent management units (Atay et al., 2022).

AI, machine learning, and other digital technologies improve processes from recruitment to talent development, enabling organizations to remain competitive and attract and retain talented employees. Talent management, the process of utilizing human resources in an organization effectively, efficiently, and verifiably is positively affected with the use of digital tools and platforms ranging from technologies like data analytics, automation, and social media (Nageeb & Saad, 2022).In particular, AI-powered recruitment tools streamline the process of finding qualified applicants, enhance employee engagement, and manage training and development activities more efficiently (Sotnikova et al., 2021).

Additionally, digitalization plays a key role in shaping talent management and the development of knowledge, skills, and competencies, making HR processes more effective through the integration of online training systems and digital communication tools, thus attaining sustainable development goals and meeting the demands of the labor market (Rožman et al., 2022) (Zapata & Gómez, 2023) (Marin, 2023). New digital technologies in talent management significantly enhance strategic HR management by supporting skill acquisition, boosting employee performance, motivation, loyalty, and enabling more efficient, wide-reaching training activities while reducing the required time and costs (Anunthawichak, 2023).

2.1 Digital Talent Management Systems - Best Practices Examples

Disseminating first from the developed economies, more comprehensive talent management policies and digital systems have started to be adopted globally instead of remaining with only the classical type of personnel affairs that have been there in the sector for a longer period of time. Rapid technological advancements are replacing traditional face-to-face methods with digital tools in talent management and career services, leading to restructuring and transformation in this field (Gülmez, 2021).

Advanced economies are developing strategies and projects focusing on talent management to optimize their overall productivity. In the United States, digital tools have been developed

by the United States Office of Personnel Management (OPM), such as the Pathways program and USAJOBS website, whose aim is to enhance early career programs, facilitate job applications, and track open public sector positions (Friedman, 2023) (USAJOBS, 2024). All countries examples are shown below.

Table 1. Digital Career Services

Career Services	Country Examples
Basic HR Functions	South Korea-e-Saram
	European Commission-Sysper2 HRMS
Intern/Recruitment Processes (Public Sector)	USA-USAJOBS
	Australia-APSJOBS
	United Kingdom-Civil Service Career/Civil Service Jobs
	France-Place de l'emploi public/PASS
	Hong Kong-Government Vacancies
	Canada-GCJOBS
	Singapore-CareerGrit
Intern/Recruitment Processes (Private Sector)	Avature
	Glassdoor
	Hong Kong-talentgov.hk
	Indeed
	LinkedIn
	Monster
	SAP Success Factors
	Singapore-Career GRIT
	Workday
Training (Public Sector)	USA-USALearning
	Germany-Digitalakademie
	Australia -Public Service Academy
	United Kingdom-Civil Service Learning Platform
	South Korea -Nara Learning Center
	Spain-Campus INAP
	France-mentor.gov.fr
	Canada-Digital Academy
Training (Private Sector)	edX
	Coursera
	LinkedIn Learning
	Udacity
	Udemy
Career Events	France-Jeunes d'Avenirs
	Kaggle
	Singapore-Career GRIT

The Australian Government's APS Jobs website is a platform for job listings and career information in the public sector, offering registration for job opportunities that serve both students and current employees (APS Jobs, 2024). The "APS Academy," established in 2020, serves as an online resource for public sector employee development in Australia, featuring online courses and workshops (APS Academy, 2024). In the UK, the "Civil Service Jobs" website constitutes a platform for viewing UK public sector job listings that are searchable with various filters. Job offerings listed on the website require registration to apply, and the website also sends email alerts to its users when new job opportunities emerge (Civil Service Jobs, 2024).

The “Place de l’emploi public” platform centralizes public job listings in France, offering a searchable database by various criteria and detailed information on public sector recruitment, with a mobile app available on the app market (Place de l’emploi public,2024). “Place de L’Apprentissage et de Stages” (PASS) serves as a portal for public sector internship postings by enabling filtered searches and sending app notifications that might potentially lead to internship opportunities for students (PASS, 2024).

South Korea’s approach includes the e-Learning Center for Public Officials and the e-SARAM system, focusing on training public employees annually and managing their entire employee lifecycle digitally (National Human Resources Development Institute Training Programs, 2024) (MPM, 2024). In Hong Kong, the talentgov.hk platform was developed to facilitate informed career decisions and access to job opportunities (Talent.gov.hk, 2024). Canada’s Government of Canada Jobs (GC Jobs) platform serves as a key resource for job listings and career programs, enabling profile creation for job applications (Government of Canada, 2024a). The Digital Academy was founded to improve public services and digital skills among public employees, creating a positive effect on both public and private sector expertise (GC Jobs, 2024) (Government of Canada, 2024b). In Singapore, CareerGrit offers a guide for job seekers to find suitable jobs based on their capabilities and some unique key career development strategies (CareerGrit, 2024).

3. Digital Talent Management in Türkiye

Human resources, which is the main driver of productivity, is of course a very important element for all countries, which underscores the efficacy of skills development and motivation for competitiveness toward productivity growth. In Türkiye, the establishment of the Presidential Human Resources Office in 2018 under the Presidential Government System made a shift towards an efficient and comprehensive public administration. The Office, mandated by Presidential Decree No. 1, aims to enhance human capital aligned with Türkiye’s vision and priorities through various responsibilities such as talent development, project and innovation production for human resource development, talent management, and improving merit and competence in public employment (T. C. Resmi Gazete, 2018).

The Office has introduced contemporary human resource management methodologies to position Türkiye as a global talent hub. These strategies are executed through initiatives like the Career Planning Course and YTNK TV for career awareness among students. In addition to YTNK TV, the Office also provides lots of other services, such Regional and International Career Fairs, the National Internship Program, and the Career Gate-Public Recruitment Platform which have been established to improve employee competitiveness and match qualified talents with their associated opportunities. The Talent Gate online platform and the Distance Learning Gate have been created to provide accessible career services such as private sector job applications, career consulting, and professional development. The e-insan application integrates all of these services, offering a comprehensive digital HR ecosystem. The Office’s digital talent management initiatives have acquired international recognition, highlighting the need for continuous examination and adoption of best HR practices in the context of global best practices and innovations.

4. The Impact of Mobile Applications on the Talent Management

4.1 Global Status of the Mobile Applications

In 2024, internet usage surged to 5.35 billion people, or 66.2% of the global population, a significant increase from 2.73 billion that was recorded in 2014. A staggering 96.5% of these internet users utilize mobile phones, contributing to 58% of the global internet traffic [38]. DataReportal statistics highlight the continuous growth in mobile usage and its digital adoption, with the number of unique mobile users reaching 5.61 billion in January 2024, demonstrating an increase of 138 million over the past year. Smartphones now constitute 85% of global mobile devices (Datereportal, 2024). Specifically, in Türkiye, internet users have increased from 39.4 million in 2014 to 74.41 million, accounting for 86.5% of the population, with 98.9% owning at least one phone, 98.8% of which are smartphones (Datereportal, 2024). This data underscores the pivotal role of mobile phone technology and its applications in daily life, while also emphasizing the expanding market for mobile applications.

4.2 Mobile Human Resources Technologies

The adoption of digital talent management applications, especially integrated mobile apps, is anticipated to boost the competitive edge of the global workforce by providing them the essential mobility and flexibility skills. This will boost efficiency in both the public and private sectors all around the globe. Utilization of digital tools in talent management is quite beneficial as they streamline processes, create transparent work environments, and reduce the amount of time needed for HR related non-value adding operational jobs. Mobile applications, which are increasingly dominant in the world's internet traffic, create and maintain new opportunities in the domain of talent management. They simplify complex recruitment processes, support continuous learning without physical constraints, and enhance overall employee motivation. In addition to these, mobile apps also store valuable data for talent retention and succession planning that can be gathered and manipulated according to the case-specific requirements.

Despite the advantageous prospects of mobile apps, only 17% of HR departments prioritize mobile HR services in their strategic approaches. Integrating mobile applications into HR processes can be described as a driver of corporate transformation, with 56% of companies redesigning HR processes to leverage digital tools (Datereportal, 2024) (PwC, 2024). Cloud-based technologies, due to the benefits they have provided in terms of accessibility, scalability, and cost-effectiveness, have fueled demand for mobile HR apps, with the mobile app utilization rate rising from 4% to 20% within a year (Datereportal, 2024). However, there is still some undiscovered potential for the exact capabilities of comprehensive mobile applications that offer a variety of distinct talent management processes all together.

4.3 Super-Apps

The concept of a super-app brings together several services in one application and is an umbrella application that combines all different functions into one (Zhu et al., 2023) (Salehi et al., 2024). Its purpose is to satisfy users' daily needs by providing all of the services through the same platform without the need to download different applications, thus giving them the advantage of a super-app that not only offers personalized services but also a single and exclusive application approach for every specific service (Hasselwander, 2024a). Recently, a group of unicorns, the market leaders which has a valuation of over 1 billion dollars, including Uber, Bolt, Grab, GoJek, Didi Chuxing, and Careem, have shifted their focus to become super

apps. The transformation here is combining their core services namely ride-sharing with a variety of additional choices (Hasselwander, 2024b). In addition, these particular companies are willing to meet the following target: To all times create qualified app usage by the users, utilizing such components as customer care, data sharing customization as well as the extension of the size of their user base. Gartner, the American Technology Research and Consulting firm's projections say that more than 50% of the world's population will be super-apps users by 2027 (Gartner, 2024).

Academic research on the utilization of super-apps has discussed accelerated growth, with studies addressing adoption rates and revealing the advantages and obstacles associated with these versatile platforms. Despite the considerable attention gathered by super-apps in media and on the internet, academic literature in this domain still remains somehow limited, and there is a certain need for more future research. While there are some researchers that are just concentrating on the emergence of super-apps in the Asian region, there are also others that extend their view to encompass broader global perspectives, exploring super-apps' social, cultural, and political ramifications alongside different patterns of user behavior (Salehi et al., 2024).

As part of their innovation, governments made super-apps to simplify the access to state services and bring together multiple applications into one platform. Some of these examples are Estonia's Smart-ID, Singapore's LifeSG, and the Philippines' eGov, to name a few. In the human resources sector, super-apps are the total opposite as they are the ones used not only to create digital alternatives to manual operations but to also encourage employee participation in the workplace along with showing their latest achievements and efficiency. Distinguished career services apps such as South Korea's e-Saram and Malaysia's CareerGrit are specifically designed to support employment and career development endeavors. Super-apps represent a substantial shift towards utilizing the benefits of the latest technology trends, offering a consolidated platform for diverse services, thereby enhancing efficiency, user engagement, and information accessibility. Indicators suggest that this trend will continue to evolve over time, which will have an undeniable effect on both the private and public sectors. Therefore, the notion of super-app will significantly design the new practices and operations within the human resources and public administration domains.

In conclusion, digital HR technologies typically focus on basic HR functions, lacking integrated services for talent and career management, especially in public sector apps that are designed for the use of public sector employees and enthusiasts. Super-apps in HR could allow easy access to all of the combined services via a single login, promoting more user interaction by offering the users a diverse set of capabilities they are able to integrate with.

4. Aim of the Study

The rise of digital talent management applications has led to integrated systems through the development of cloud technologies (Bersin, 2016). The evolution of talent management applications is underscored by a shift towards agile, customer-centric mobile solutions. The growing prevalence of cellular internet usage, both globally and domestically, presents organizations with a prominent opportunity to prioritize and invest in mobile talent management solutions. Additionally, the industry is experiencing a significant surge in the emergence of

"super-apps", which integrate the most recent talent management services with fundamental HR activities.

Literature suggests that the functionalities within super-apps can influence user behaviors both positively and negatively, indicating the complexity level for user engagement with these platforms (Deloitte University Press, 2017). The Technology Acceptance Model (TAM) is often applied in this context, identifying perceived usefulness and ease of use as keys to users' acceptance and engagement with new technologies (Davis, 1989). Technology utilization and customer satisfaction are largely dependent on system and service quality, as well as service diversity (Deloitte University Press, 2017). User satisfaction depends on service and system quality, which refers to the speed and usability of the app, whereas service diversity refers to the variety of services that are being offered in the app (Deloitte University Press, 2017) (Zeithaml, 1988) (Gao & Bai, 2014).

In addition to that, Hussin et al. found that mobile platforms are more effective (0.973) compared to web-based applications (0.633) in user engagement (Arif Hussin et al., 2020), where 0 denotes no engagement and 1 full engagement. Wong et al. highlighted the existence of user preferences for both the mobile or web platforms, suggesting the inclusion of mobile videos along with web services for a more comprehensive approach (Han Rebekah Wong, 2012). It has been emphasized the importance of ease of use and information presentation in both web and mobile applications, pointing out that web applications often provide greater flexibility and accessibility (Core.ac.uk, 2017). The limitation of using mobile applications, to some extent, may come from the incomplete exploration of the features of the app by the users. Undoubtedly, thereby, leaving parts of the app unused.

These findings suggest that adopting a consolidated approach to service applications, wherein it will have web and mobile outlets and will be a more user-centric end vision, to meet widely varying user needs and increase user satisfaction important driver for promoting the uptake of digital applications.

This research, therefore, sought to assess empirically user engagement in an all-rounded comprehensive talent management super-app, conceived by modern talent management processes at a national and international level, vis-a-vis externally diverse web applications by considering the functionality of services and their multi-platform availability critically regarding the application of the super-app.

4.1 Research Hypotheses

Within the scope of the research purpose, the following eight hypotheses can be stated as the research hypotheses of this study.

"H1.1: Accessing public personnel training through the super-app has an impact on the completion of trainings available on the Distance Education Platform."

"H1.2: Accessing the Talent Gate application through the super-app affects the application status for career fairs."

"H1.3: Accessing the YTNK TV application through the super-app has an impact on the completion of career planning courses."

"H1.4: Users accessing career planning courses through the super-app has an impact on the application status for career fairs."

"H2.1: Users completing the career planning courses through the super-app has an impact on their entry status into the internship program."

"H2.2: Users applying to career fairs through the super-app affects their entry status into the internship program."

"H2.3: Users completing the career planning courses through the super-app has an impact on their entry status in the public recruitment module."

"H2.4: Users applying to career fairs through the super-app has an impact on their entry status in the public recruitment module."

5. Method

e-insan and the services offered through e-insan web applications are aimed at end users. The web applications include the Distance Learning Gate (uzaktanegitimkapisi.cbiko.gov.tr), Talent Gate (yetenekkapisi.org), TALENT TV (ytnk.tv), National Internship Program (kariyerkapisi.cbiko.gov.tr), and Career Gate-Public Recruitment Platform (isealimkariyerkapisi.cbiko.gov.tr). Public personnel training activities, statistics on the Career Planning Course for university students, the number of applications to career fairs, data on entry to internship programs, and data on public job postings between October 1, 2023, and March 1, 2024, have been used from transaction records. The data for the analyzed applications have been obtained using e-insan and the user statistics of the relevant web applications. Data cleaning has been performed for each analysis, and random sampling principles have been applied, creating sample sets of 5,000 individuals including 32 institutions and 125 universities.

The econometric model created for the analysis is provided below:

$$y_i = \beta_0 + \beta_1 X_i + \varepsilon_i$$

In the econometric model, the "y" variable includes:

- Percentage of public personnel training programs viewed,
- Percentage of Career Planning Course viewed,
- Application status to Regional Career Fairs,
- Entry status to the National Internship Program module,
- Entry status to the Career Gate module.
- Additionally, the "X" variable includes:
- e-insan usage status, both hybrid and e-insan-only,
- Number of e-insan logins,
- Fixed effects for universities and institutions where individuals are employed, which are included in the analysis.

After creating sample sets, the hypotheses were tested using regression analysis. The regression analyses were conducted by applying the Least Squares Dummy Variables (LSDV) estimation methods. Institutional fixed effects were controlled for all models for public personnel participating in online training programs, and university fixed effects were controlled

for students taking the career development courses and applying to career fairs. Additionally, the impact of super-app usage on the completion rates and percentages of online training programs and career planning courses, as well as the interest shown in the internship program and public vacancies, was analyzed using LSDV estimation methods.

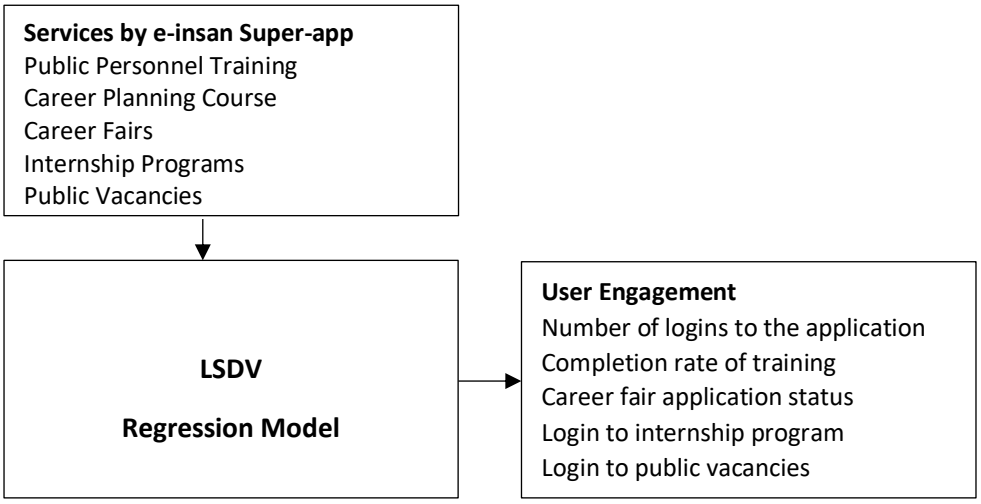

Figure 1. Analysis Model

6. Findings

In this study, data provided by web applications and the "e-insan" super-app, which contains digital talent management services, was analyzed. It has been determined that accessing public personnel training via e-insan has a positive effect on the completion percentage of public personnel training, and hypothesis H1.1 is accepted. Accessing the Talent Gate application via e-insan was not found to have a positive effect on the application status for career fairs, leading to the rejection of hypothesis H1.2. A positive effect of accessing Career Planning Courses via e-insan on the completion of courses was identified, and hypothesis H1.3 is accepted. However, it was determined that users' access to Career Planning Courses via e-insan did not have a positive effect on their application to career fairs, resulting in the rejection of hypothesis H1.4.

Furthermore, it was found that users' completion of Career Planning Courses via e-insan did not have a positive effect on their entry into the internship program, leading to the rejection of hypothesis H2.1. In contrast, users' application status to fairs via e-insan was found to have a positive effect on their entry into the internship program, and thus hypothesis H2.2 is accepted. Additionally, the completion of Career Planning Courses via e-insan by users positively impacted their entry into the public recruitment module, validating hypothesis H2.3. Lastly, it was determined that users' application status to career fairs via e-insan did not have a positive effect on their entry into the public recruitment module, resulting in the rejection of hypothesis H2.4.

Table 2. Results of the hypothesis

Hypothesis No	Hypothesis	Analyst Result

H1.1	Accessing public personnel training through the super-app has an impact on the completion of trainings available on the Distance Education Platform.	Accepted (p<0,01)
H1.2	Accessing the Talent Gate application through the super-app affects the application status for career fairs.	Rejected
H1.3	Accessing the YTNK TV application through the super-app has an impact on the completion of career planning courses.	Accepted (p<0,01)
H1.4	Users accessing career planning courses through the super-app has an impact on the application status for career fairs.	Rejected
H2.1	Users completing the career planning courses through the super-app has an impact on their entry status into the internship program.	Rejected
H2.2	Users applying to career fairs through the super-app affects their entry status into the internship program.	Accepted (p<0,01)
H2.3	Users completing the career planning courses through the super-app has an impact on their entry status in the public recruitment module.	Accepted (p<0,1)
H2.4	Users applying to career fairs through the super-app has an impact on their entry status in the public recruitment module.	Rejected

8. Discussion and Conclusion

The use patterns of e-insan super-app and web applications were analyzed for measuring the effectiveness of management services in public personnel training courses, career planning courses, career fair applications, internship programs, and job postings in the public sector. Results show that e-insan super-app has many advantages regarding flexibility, accessibility, and user engagement, which positively affect public personnel training and career planning courses completion.

Mobile applications are not equally effective for all services. Thus, flexibility of mobile application has no significant impact on applicants for career fair applications, because extensive applications like uploading resumes seem better suited for the web. Convenience at mobile applications works great with some services, but the more elaborate inputs or large screen navigation for better maneuverability are still best suited for web applications.

An analysis revealed intricate relationships among various talent management services. Completion of career planning courses through mobile apps, associated with higher participation in some services (like the Career Gate module). Also, career fair applications have impact on internship program access. The results did not show as strong an association between career fair applications and access to public recruitment platform. Additionally, the study found that completing career planning courses through e-insan did not have an effect on access the internship program. Thus, while mobile applications are critical for enhancing engagement in certain areas, web applications remain crucial for others, particularly those needing more complex interactions.

Here are some valuable responses from the research regarding the impact of integrated mobile applications on effective dissemination and consumption of talent management services. Evidently, the flexibility and real-time notifications in the e-insan super-app have significantly increased accessibility and completions for public employee training and career planning courses. Notably, the study identifies areas of hybrid applications that mobile apps do not replace; for instance, career fair applications and internship program access, where more detailed data entry will occur. Mobile applications allow user engagement; the study recommends a hybrid solution in situations where both mobile and web applications are used together. In line with future enhancements for the e-insan platform, the research finding points towards ensuring the continuity of balance with mobile and web access, along with combining AI-driven suggestions for improved user experience. Future study scope should revolve around improved user interfaces, user support systems, and further app functionality extension through the inclusion of additional career services.

In this way, this study would contribute to building a very broad understanding of how mobile applications might prove useful within talent management systems, alongside giving implementational benefits for enhancing the user experience as well as the operational efficiency by digital talent management platforms. Among contributions this study makes to literature is a new analysis of super-apps vis-a-vis digital HR platforms. Integrated mobile applications have a huge role in enhancing user experience and improving organizational efficacy. The research examines ways super-apps allow users to access multiple services without restriction, thus shedding light on how these applications can improve the efficiency of HR processes, increase employee engagement, and ultimately improve performance in today's organizations.

9. Future Research

Truly, new research has some primary thrust areas that can be taken up for further refining the usage of talent management applications in terms of functionality and user engagement:

9.1 Holistic Analysis of Service Data

Integrating all the e-insan services would require a more holistic and comprehensive consideration of all services contention. As a result, services can be manipulated in composing relationships about each other and interfacing with user experience, hence functional and technical improvements of the application. One would be able to discover potential synergies of different functional aspects from looking at all of the overall services.

9.2 Impact of Notifications and Social Media Sharing

Then comes a research theme aimed at exploring the impact of notifications and social media sharing on application usage. For instance, this will look into the users' reactions to network notifications, such as reminders, updates, or personalized alerts, and how social media activities rate their usage of the application. Such studies would expose effective strategies for improving retention and use of the application. Another topic for future studies could cover the role social media plays in getting users onboard with career services and talent management tools.

Filling these areas of research will ultimately make possible valuable insights for future studies regarding improving the performance of the e-insan platform and similar systems of

digital talent management in designing their effectiveness to meet the needs of both users and organizations.

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Data Availability

The data supporting this study are not publicly available due to privacy and confidentiality restrictions.

Declaration of Computing Interest

The authors declare that they have no competing interests related to this research.

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