

Association for Information Systems

AIS Electronic Library (AISeL)

Rising like a Phoenix: Emerging from the
Pandemic and Reshaping Human Endeavors
with Digital Technologies ICIS 2023

Governance, Digital Strategy, and Value

Dec 11th, 12:00 AM

Algorithmic Personnel Management: A Personnel Slack View

Ishan Prempradeep Kakkar

Indian Institute of Management - Kashipur, ishan.phd2105@iimkashipur.ac.in

Mayank Sharma

Indian Institute of Management - Kashipur, mayank.sharma@iimkashipur.ac.in

Venkataraman Krishnaswamy

Indian Institute of Management - Kashipur, venkat.krishnaswamy@iimkashipur.ac.in

Follow this and additional works at: <https://aisel.aisnet.org/icis2023>

Recommended Citation

Kakkar, Ishan Prempradeep; Sharma, Mayank; and Krishnaswamy, Venkataraman, "Algorithmic Personnel Management: A Personnel Slack View" (2023). *Rising like a Phoenix: Emerging from the Pandemic and Reshaping Human Endeavors with Digital Technologies ICIS 2023*. 13.

https://aisel.aisnet.org/icis2023/gov_strategy/gov_strategy/13

This material is brought to you by the International Conference on Information Systems (ICIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in Rising like a Phoenix: Emerging from the Pandemic and Reshaping Human Endeavors with Digital Technologies ICIS 2023 by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

Algorithmic Personnel Management: A Personnel Slack View

Completed Research Paper

Mr. Ishan Prempradeep Kakkar

Indian Institute of Management –
Kashipur

Kundeshwari, Kashipur-244713
ishan.phd2105@iimkashipur.ac.in

Prof. Mayank Sharma

Indian Institute of Management –
Kashipur

Kundeshwari, Kashipur-244713
mayank.sharma@iimkashipur.ac.in

Dr. Venkataraghavan Krishnaswamy

Indian Institute of Management – Kashipur

Kundeshwari, Kashipur-244713
venkat.krishnaswamy@iimkashipur.ac.in

Abstract

This study delves into the potential influence of Algorithmic Personnel Management (APM)-based systems on optimizing personnel management (PM) processes and their subsequent impact on personnel slack. Employing a multi-case study analysis, we probe the capabilities afforded by APM-based systems, with a keen focus on their potential effects on PM processes, personnel slack, and organizational outcomes. Our exploration intimates the possibility of APM-based systems augmenting talent acquisition, talent management, and performance management processes, aligning employee competencies with organizational opportunities, and fostering adaptability amidst tumultuous business landscapes. Furthermore, the study conjectures the metamorphosis of conventional personnel managerial roles within the APM-based systems context, accentuating the necessity for personnel managers to acclimate to strategic and analytical duties. This research endeavors to enrich the academic discourse on algorithmic personnel management, workforce optimization, and organizational outcomes, proffering pragmatic implications for organizations contemplating APM-based systems implementation and shedding light on prospective trajectories for future inquiries.

Keywords: Algorithmic Personnel Management, Algorithmic Personnel Management Capability, Personnel Slack, Organizational Slack, Organizational Outcomes

Introduction

Personnel slack refers to surplus personnel resources in an organization that can yield desirable and undesirable outcomes (Damanpour 1991; Mishina et al. 2004; Nohria and Gulati 1997). If handled meticulously, it acts as a safety net and assists organizations in dealing with unexpected happenings such as shifts in market trends or unplanned departure of employees (Vanacker et al. 2017). However, if not handled well, excessive workforce may result in ineffectiveness, reduced drive among workers and inflated expenditure leading to compromised organizational performance (Mishina et al. 2004; Nohria and Gulati 1997). Therefore, striking equilibrium between advantages and disadvantages associated with personnel slack poses a crucial task before entities.

Personnel management (PM) activities like recruitment, training, career development, and performance management play a pivotal role in aligning workforce skills and composition with strategic needs, thereby

calibrating personnel slack (Vaiman et al. 2015). However, managing contemporary workforces through traditional PM approaches has become challenging due to rising complexity from globalization, shifting customer preferences, and tech-driven business environments (Bondarouk and Brewster 2016). Considering such challenges, algorithmic personnel management (APM) systems have emerged as a means to utilize advanced analytics, machine learning technology, and artificial intelligence to generate data-driven insights and automate PM activities and processes (Duggan et al. 2020; Kellogg et al. 2020; Leicht-Deobald et al. 2019). By optimizing PM processes through automation, predictive analytics, and personalized recommendations, APM-based systems may enable organizations to balance personnel slack effectively.

Algorithmic solutions enable organizations to stay agile and reactive by offering real-time insights into workforce dynamics, pinpointing skill deficiencies, and proposing targeted actions. Secondly, the digital transformation of organizations has led to an unparalleled accessibility of data, which can be utilized for better-informed PM decisions (Saputra et al. 2022). Algorithmic solutions can analyze extensive data sets, detect patterns, and reveal insights that may not be immediately evident to human decision-makers. By harnessing these data-driven insights, organizations can improve their capacity to manage personnel slack and make well-informed choices regarding workforce planning, employee growth, and talent acquisition.

However, despite APM's promise, rigorous inquiry into its specific role in assisting organizations to leverage personnel slack remains limited. While emerging research shows positive impacts on discrete PM activities, how organizations utilize APM-transformed practices to achieve equilibrium between the advantages and drawbacks of personnel slack needs attention.

Employing a multi-case study approach, our investigation focuses on two research objectives regarding APM systems. We attempt to establish if personnel slack enabled by APM driven PM processes and practices leads to some organizational outcomes. Further, we probe how organizations are able to balance and utilize personnel slack through these APM-defined PM activities and processes. Additionally, we explore whether APM systems confer any unique organizational capabilities through optimizing personnel slack. To address these objectives, the examination involves an in-depth analysis of seven published case studies on APM implementation. By applying open and focused coding techniques, we conduct a thematic analysis to elucidate APM systems' abilities in the optimization of PM processes, handling personnel slack, and exerting influence. Ultimately, this multi-case study approach enriches our research objectives by furnishing empirical evidence investigating the potential impacts of APM systems on transforming PM practices, achieving equilibrium in slack management, and cultivating organizational capabilities.

Literature Review

Personnel Slack and Firm Performance

Slack in businesses is a general term that may refer to several types of surplus organizational resources (Cyert and March 1963). Personnel slack denotes excess personnel that a company can allocate for new ventures. While this resource has potential advantages, its effect on firm performance is complex, according to existing research. Both positive and negative implications of personnel slack exist.

Mishina et al. (2004) argue about one such negative implication: personnel slack causes personnel stickiness i.e., the difficulty in redeploying personnel stemming from employee resistance to job changes, hiring/training costs, and resource reallocation difficulties. This impedes personnel deployment towards new initiatives, hindering innovation and causing reduced firm performance. Trapped in existing tasks, personnel resources cannot contribute to new initiatives, limiting innovation capacity. Personnel slack, which impedes firm performance, also arises when organizations keep more staff than necessary to cushion against future market shocks or disruptions, relying on prior skills and capabilities (Vanacker et al. 2017). Market disruptions often require new skills and create a skill-task mismatch between available and required personnel slack, leading to a need for additional capabilities (Vanacker et al. 2017). Furthermore, aligning the personnel with specific tasks, lowers upper management's discretion to reallocate these extra resources to alternate tasks (Wernerfelt and Montgomery 1988). This argument stems from the "Resource Discretion" theory, which states that an organization should be able to re-task surplus resources to other purposes as and when the needed (Sharfman et al. 1988). Granting employees autonomy in training and decision-making empowers them, thus structurally empowering the organization and increasing their commitment

(Ebers and Maurer 2014). Employee commitment is vital for organizational innovation, enabling both the utilization and transformation of employees' relevant knowledge (Pertusa-Ortega et al. 2010). Thus, it can be inferred that organizations with a high degree of task-autonomy and discretion promote innovation while a centralized environment hinders innovation.

Nonaka (1994) further contributes to the existing literature and argues that human capital's worth is more associated with the current organizational routines than financial resources i.e. human knowledge and skills are context-dependent (Chi et al. 2014), hindering their transferability across tasks, unlike financial resources. This makes it challenging for firms to reassign personnel, hurting their performance and limiting their ability to explore and experiment. Exploration/innovation can enhance competitiveness, but not all firms can afford the necessary resources. SMEs/startups prioritize survival over innovation due to high transactional costs, market imperfections, and information asymmetries causing capital and labor constraints (Baker and Nelson 2005; Nohria and Gulati 1997), hence for such firms, redeployment of personnel for exploration activities is easier compared to recruiting. One should also remember that developing and nurturing a slack of human resources, precisely customized to address an organization's future difficulties and opportunities is arduous (Vanacker et al. 2017). While SME or startups may find recruiting difficult and costly, other firms on the contrary find spot recruitment a cost-effective option over retention of personnel with general-skills when it comes to the newer-updated knowledge needs of an organization (Lecuona and Reitzig 2014). Similarly, during market disruptions, larger organizations may require new skills to compete, but reskilling may be limited due to associated costs or inexperience. This can lead to the need for need-based recruitment of candidates with the necessary knowledge and skills (Lecuona and Reitzig 2014; Vanacker et al. 2017). While numeric strength is one measure of personnel slack, it is not solely determined by the number of employees in an organization. It is a dynamic concept that depends on the organization's knowledge inventory and the market demand for a particular skill-set (Chen et al. 2010). The knowledge inventory refers to an organization's collection of skills and knowledge at a particular moment (Chen et al. 2010). However, disparities between the skills possessed and needed can hinder the effective use of personnel slack, which could otherwise enhance the firm's performance.

The relationship between personnel slack with firm performance is not entirely negative. There also exists upsides of personnel slack on firm performance. Academicians have found that exploration/experimentation is facilitated when personnel slack resources are available (Damanpour 1991; Nohria and Gulati 1997) encouraging innovation and enhancing firm performance. Providing employees with slack time or extra time within their work routine creates opportunities for them to engage in exploratory or experimental activities, leading to innovation (Garud et al. 2013). This fosters an innovative culture, which may lead to improved firm performance.

Considering both the positives and negatives of personnel slack and its dynamic nature, it becomes desirable for any organization to possess some kind of technological management capability which can optimize and redeploy slack personnel on the go. Here we propose that through the algorithmic management of personnel, an organization can overcome the constraints associated with managing personnel slack and optimally utilize these resources for activities that promote firm performance.

Algorithmic Personnel Management

Technology's convergence with management is hardly a novel concept, however, recent advances in AI, such as large language models like GPT-3, natural language processing, computer vision, innovations in IoT and other AI capabilities have enabled unprecedented applications of algorithmic techniques, tools and insights to business processes, management and decision-making (Brynjolfsson et al. 2018; Thomas and Rajeev 2018). Such algorithmic techniques, tools and insights have collectively manifested into a concept known as algorithmic management. Algorithmic management refers to the incorporation of data analytics, machine learning, and other algorithmic and AI tools into business decision-making processes and organizational functions (Mateescu and Nguyen 2019). It involves leveraging algorithms and AI to provide data-driven insights and automate certain personnel management functions, which can be broadly termed as Algorithmic Personnel Management (APM). APM is an intriguing intersection of algorithms and conventional personnel management (PM), prompting one to revisit conventional notions of PM practice (Kellogg et al. 2020). Jarrahi et al. (2021) define APM as the "data-driven, algorithmic orchestration of organizational operations and labor". APM isn't merely an integration of algorithms into PM practices, rather it indicates a transformative shift towards an environment where decision-making is informed, if not

dominated, by algorithmic insights. APM uses data-driven algorithms to improve personnel decisions and automate PM tasks, relying on a control system that minimizes human involvement in executing managerial decisions (Duggan et al. 2020; Kellogg et al. 2020; Leicht-Deobald et al. 2019). APM has come to represent a defining feature of contemporary digitally-driven organizations (Meijerink et al. 2021).

Consequently, APM isn't isolated in its application but rather spans across multifaceted PM functions. In the area of talent acquisition, the transformative potential of APM unfolds with encouraging implications. APM algorithms in talent acquisition bestow the capability to actively analyze applicant characteristics to sort and filter them from a wider pool through added intelligence mechanisms that are able to standardize interviews and even forecast candidate performance outcomes (Mirowska and Mesnet 2022). This swift and analytical sorting and filtering may potentially aid in addressing the challenges stemming from personnel slack, while expediting decision-making. In recruitment, algorithms are especially apt at forecasting skill gaps and recommending optimal hiring strategies (Vanacker et al. 2017). The reach of APM isn't just confined to talent acquisition. Venturing into the sphere of performance management, APM systems are used to track and monitor employee productivity metrics, decipher collaborative patterns, identify low (high) performers and contrive retention strategies (Lamarca and Ambat 2018), thereby ensuring a proactive rather than a reactive approach by the organization. These proactive measures could collectively address the challenges associated with personnel slack, possibly counteracting the negative effects of personnel stickiness on organization efficiency and adaptability (Mishina et al. 2004). On digging further, we find that the tendrils of APM don't just stop at performance management but extend to the PM functions of shift scheduling, talent mobility, workflow monitoring and even employee engagement. In a dynamically evolving business landscape, algorithms are increasingly being used to facilitate talent mobility by recommending internal transfers, job rotations and gig-work based on skills-fit (Kaliannan et al. 2023). Algorithms are also being leveraged for monitoring workflows, predicting absenteeism and even identifying potential talent churn (Gal et al. 2020). Scholarly investigation indicate that algorithms are also emerging as valuable instruments for organizations to identify employee engagement issues through sentiment analysis of employee feedback (Tursunbayeva et al. 2018). These attributes of APM could enable organizations to achieve better flexibility in redeploying and mobilizing the workforce while ensuring higher employee engagement levels. APM systems employ an array of advanced methodologies such as predictive analytics, natural language processing and sentiment analysis each refining the PM decision-making matrix in its unique way (Tursunbayeva et al. 2018). In short, APM represents a pivot towards managing personnel through deep quantification, surveillance, automation and predictive analytics (Kellogg et al. 2020).

This promising narrative, while enticing, is not devoid of inherent challenges. An overarching concern that resonates within scholarly discourse is the potential dehumanization brought forth by these algorithms. This stands in stark contrast to conventional PM practices, which traditionally prioritize the humane and interpersonal aspects of workforce management. In consonance with this apprehension of dehumanization, Jarrahi et al. (2021) pose a contemplative query: Could it be that in their relentless quest for efficiency, these algorithms overlook the very essence of human subjectivity? Algorithms prioritizing efficiency and standardization could lead to the potential subversion of employee wellbeing and dignity, while obscurity in automated decisions impacting career trajectories may breed distrust. Similarly, the surveillance architecture inherent in APM systems, though valuable for data accumulation and collation, may inadvertently threaten the sanctum of psychological safety (Giermindl et al. 2022). These concerns underscore the imperative of an ethical APM approach grounded in human values (Gal et al. 2020). Organizational mechanisms aimed at empowering employees to consent to data collection, audit algorithms, contest unfair decisions and retaining oversight over automated frameworks may constitute a potential stride towards the realization of an ethical approach to APM (Adams-Prassl 2022; Jarrahi et al. 2021). Another step in this direction could be for the organizations to conceptualize employees as engaged collaborators rather than passive data points. This may lead to a mutually beneficial and symbiotic assimilation of APM within the organizational framework (Tomprou and Lee 2021).

Summing up these reflections, APM may be envisioned as a linchpin of future PM functions and practices, particularly in the context of modulating the dualities of personnel slack. However, it should be acknowledged that APM retains its status as an approach, possessing effectiveness but also hinging on careful implementation. As the scholarly exploration in the domain of APM advances it not only becomes evident that APM has the potential to address workforce inefficiencies, but it also highlights a crucial interplay between technological advancements and human values.

Research Objective

Personnel slack is the idle time or unused capacity of an organization's workforce (Garud et al. 2013; Rahrovani and Pinsonneault 2012), which can lead to both favorable and unfavorable consequences for organizations (Damanpour 1991; Nohria and Gulati 1997). If balanced optimally, personnel slack facilitates exploratory activities fostering innovation (Damanpour 1991; Garud et al. 2013) which can enhance firm performance. It also aids organizations to adapt to market disruptions and environmental changes (Vanacker et al. 2017) through workforce flexibility. Optimized personnel slack can also provide employees with opportunities for career development, training, and learning, resulting in improved employee engagement and retention (Bentley and Kehoe 2020) while offering valuable insights into the workforce's skillsets and capabilities. Such insights can enable more informed workforce planning decisions such as talent acquisition, succession planning, and resource allocation (Lefebvre 2023; Vanacker et al. 2017). Finally, since optimizing personnel slack helps organizations allocate resources effectively, reduce costs, retain skilled employees, and provide flexibility, it may improve financial performance. In contrast, unbalanced personnel slack can lead to negative consequences for firms, such as complacency and a lack of urgency among employees, resulting in reduced productivity, innovation, and competitiveness (Nohria and Gulati 1997). Excessive personnel slack can also increase labor costs (since employee retention costs may outweigh recruitment costs) leading to diminished financial performance (Lecuona and Reitzig 2014). Therefore, balancing the positive and negative impacts of personnel slack rather than eliminating it in entirety may be more prudent for organizations to improve their performance (Nohria and Gulati 1997). Crucial to achieving this balance are PM practices like recruitment, skill mapping, training, career management, performance management and workforce mobility play a critical role in calibrating personnel slack that aligns with business objectives. Recruitment-related activities are labeled as talent acquisition, while others fall under talent management. Effective talent acquisition ensures personnel slack comprises skilled employees aligned to strategic requirements (Vaiman et al. 2012). Training minimizes skill mismatches between available and demanded competencies (Vanacker et al. 2017). Performance management identifies low performers for corrective actions while career planning retains top talent (Collings and McMackin 2021). However, traditional PM approaches struggle with increasingly complex, global and technology-driven workforces (Bondarouk and Brewster 2016). This has led organizations to adopt APM systems that apply advanced analytics and AI to optimize these PM processes (Duggan et al. 2020; Meijerink et al. 2021). However, scholarly investigation into APM's role in balancing the positive and negative outcomes of personnel slack through PM process optimization remains limited. While emerging research indicates APM's positive impacts on discrete PM processes, the utilization of APM-transformed processes to balance personnel slack merits investigation. Our study addresses this gap through a multi-case study analysis guided by the following research questions.

RQ1: Does personnel slack enabled by APM driven PM activities and processes lead to some organizational outcomes?

RQ2: Does APM driven personnel slack management yield any specific organizational capabilities.

Our study also proposes a conceptual framework for practice (Figure 1.):

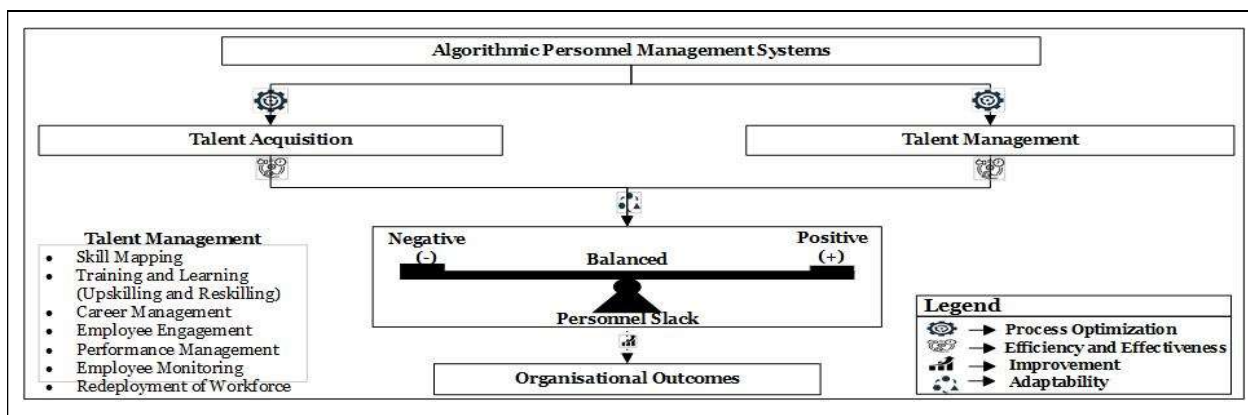


Figure 1.: Proposed Conceptual Framework

Research Methodology

Multi-Case Study Research

This study employs a multi-case study analysis to explore the impact of APM-based systems on optimizing personnel slack through and their implications on organizational performance. The multi-case study approach is adopted for several reasons. Firstly, it allows for the in-depth investigation of the phenomenon in its real-life context (Recker 2013; Rose et al. 2014), offering rich and detailed insights into the complexities of APM-based systems and their effects on PM activities. Secondly, this methodology facilitates the comparison of multiple cases, enhancing the findings' external validity, robustness, and generalizability (Rowley 2002; Yin 2009). Thirdly, the utilization of a multi-case study analysis allows for the development and enhancement of theoretical frameworks derived from practical experiences (Recker 2013; Yin 2009), contributing to the existing literature on PM, workforce optimization, and the evolving role of personnel managers in the digital age.

For multi-case study research, selecting cases is the most critical and challenging aspect (Eisenhardt and Graebner 2007). It is important to consider that feasibility and accessibility factors also play a role in the selection of cases (Seawright and Gerring 2008). Following the guidelines (Paré 2004) for selecting cases in IS domain, the cases included in this study were carefully selected from published case studies by solution developers or organizations adopting these solutions. The case selection process aimed to ensure the representation of diverse industries, sizes, and geographical locations, thus capturing a broad range of perspectives and experiences related to APM-based systems. In addition, the cases were selected based on the availability of sufficient information and data to facilitate a rigorous analysis of the impact of APM-based systems on personnel slack through the optimization of PM processes subsequently leading to some organizational outcomes. In the case selection process, a list of AI/ML-based HR solution providers was compiled using a search engine like Google. The search strings used to search the relevant cases started with the terms "AI/ML in" OR "AI/ML-based" and included the following terms "talent acquisition," "recruitment," "hiring," "talent management," "career development," "training and learning," "performance management" and "HR." We assumed search results' first 5 pages were the most relevant (Google-LLC 2022). The solution or product descriptions of the search results are then examined. The website (URL) is recorded for further investigation if the descriptions match our research objectives. Following this, the case studies or customer stories on each solution provider's website are analyzed for cases specifying company names and data details that demonstrated the performance of their solutions. These case studies were then validated using the disclosures (website) of the organizations that implemented them, and the details were cross verified for accuracy of the data mentioned in them. An important criterion for selecting the cases was that the case studies should have moved past the conceptual phase and advanced to either the prototype phase or actual productive use. This criterion was incorporated to ensure our research reflected real-world phenomena (Rose et al. 2014). Our case selection process aimed to ensure the representation of diverse industries, sizes, and geographical locations, thus capturing a broad range of perspectives and experiences related to APM-based systems. Through this method we narrowed down our case analysis to seven case studies of which two case studies Iceland Foods (Sapia 2022) and Amazon (HireVue 2022) represent APM systems in talent acquisition while HERE Technologies (Hitch 2020), Schneider Electric (Gloat 2022), Unilever (Gloat 2021), Altimetric (inFeedo 2022) and HelpSystems (Reflektive 2020) represent Talent Management.

An in-depth independent analysis was conducted for each case study to allow for the emergence of unique concepts and themes within the distinct organizational contexts (Eisenhardt 1989). The data from the initial within-case analyses was systematically organized into a matrix format as given in Table 2 below, with cases representing the columns and standardized categories as the rows. This matrix structure enabled effective visualization and comparison of findings across cases (Miles and Huberman 1994). We initially employed an open coding technique to identify preliminary concepts, relationships and patterns inherent within each case (Strauss and Corbin 1990). Significant aspects were captured through descriptive codes such as "improved retention" and "increased engagement" (Saldaña 2021). These initial codes were compiled into a codebook containing definitions and examples for each code. To ensure consistency, the codebook was collaboratively finalized among authors through deliberation and consensus (DeCuir-Gunby et al. 2011; MacQueen et al. 1998).

We then transitioned from open coding to focused coding by refining and categorizing codes into broader conceptual themes (Saldaña, 2015). By applying focused coding across all cases, overarching themes emerged across the multi-case dataset (Eisenhardt 1989). These encompassing themes included “Efficiency Gains”, “Data-Driven Decisions”, “Alignment with Company”, “Employee Autonomy and Empowerment”, “Employee Development and Growth” and “Employee Productivity and Performance”. We iteratively refined the themes, patterns and relationships in an ongoing process (Eisenhardt 1989). Additionally, we examined recurring trends and unique variations through a comprehensive pattern recognition across cases. The findings were then synthesized into a coherent narrative highlighting crucial insights from the cross-case comparisons (Yin 2009). Finally, the study's findings were compared with existing literature, contributing to the existing knowledge base, and offering new insights into the impact of APM-based systems on personnel slack.

Themes and Sub-Themes	Iceland [1]	Amazon [2]	HERE [3]	Schneider [4]	Unilever [5]	Altimetrik [6]	HelpSystems [7]
Efficiency Gains							
– Time savings	X	X		X	X		
– Scalable system	X	X	X	X	X	X	X
– Cost savings	X	X	X	X	X	X	X
Data-Driven Decisions							
– Quality hiring decisions	X	X					
– Predictive algorithms	X	X		X	X		
– Skills matching	X	X	X	X	X		
– Internal talent visibility			X	X	X		
Alignment with Company							
– Alignment with organizational values	X						
– Goal alignment				X			X
Employee Autonomy and Empowerment							
– Increased autonomy				X	X		
– Career development				X	X		
Development and Growth							
– Upskilling employees					X		
– Employee retention				X		X	X
– Enhanced engagement			X	X	X		X
Productivity and Performance							
– Top talent focus		X				X	
– Productivity gains		X		X	X		X
– Performance tracking						X	X

Table 1. Themes and Sub-themes

Within Case Analysis

Attributes	APM Systems in Talent Acquisition		APM Systems in Talent and Performance Management				
	Iceland	Amazon	HERE	Schneider	Unilever	Altimetrik	HelpSystems
Industry	Retail	E-commerce	Location Technology	Energy	FMCG	IT Services	Technology
Employee	25000+	1 Million	9300+	155000+	149000+	1,500+	3000+
Location	UK	Global	Europe and America	Global	Global	16 locations	Global

Case Context	Supermarket chain with pandemic hiring challenges	Amazon's success and focus on data, innovation, speed; pandemic hiring challenges	HERE Technologies' challenge of managing & leveraging internal talent	Schneider's challenge of misalignment between employee empowerment and work environment	Unilever's focus on reskilling employees with "future-fit skills"	Altimetrik's challenges of real-time communication, scalable employee feedback	HelpSystems' quest to enhance employee engagement and productivity
Key Challenge	Urgent need for 5,500 new team members from a monthly pool of 50,000 applicants	Meeting increased hiring demands due to the pandemic and online shopping growth	Efficiently managing and utilizing internal talent for projects	Limited development opportunities, high employee turnover due to inadequate career growth	Addressing the need for employee reskilling and upskilling	Lack of real-time communication, unscalable employee feedback system leading to high turnover	Enhancing employee engagement and productivity across rapid growth
Prior Approach	Centralized conventional recruitment	Recruiting apprenticeships, internships, graduates, MBAs, military talent ahead of time	Traditional methods of talent management and allocation	Traditional talent management approaches, limited internal mobility	Traditional training and career development methods	Traditional communication methods, manual feedback collection	Recognizing the importance of employee engagement in driving productivity and revenue
Limitations	Centralized approach not sustainable long-term solution	Traditional hiring methods not scalable to meet current demands	Limited workforce visibility, challenging team formation	Lack of career growth opportunities, high hiring costs	Limited work flexibility, limited cross-functional growth	Inability to address overlooked concerns, inefficient feedback collection	Lack of clear goals, regular feedback, and performance tracking
APM Solution	AI-powered recruitment system "Smart Interviewer"	AI-powered hiring solution, HireVue	Hitch's Talent Mobility Solution	AI-based talent mgmt. system, "Open Talent Market" (OTM)	AI-driven platform, "FLEX Experiences"	AI-powered virtual assistant, "Amber"	Reflektive's, performance mgmt. platform
Key Features	Tailored and unbiased candidate experience, eradication of bias via "blind AI-chat," scalability, customized assessment process	AI-driven HireVue Assessments, personalized interactions, constructive feedback	Matching employee skills with projects, improved visibility, efficient team building, cost savings	Professional profiles, customized recommendations, internal mobility, project and mentorship opportunities	Flexible working program, customized projects, purpose-driven learning, organizational agility, democratized career development	Real-time employee satisfaction evaluation, likelihood of leaving assessment, personnel managers' support	Performance-driven culture, clear goals, regular feedback, recognition, performance tracking

Outcomes	97% completion rate, 77% unbiased recommendation rate, reduced costs (5 Euros / candidate), 8,000 work hours saved	43% faster interviews, 250-300% more candidates screened, 48% YOY time savings on interviews, 30-minute reduction in phone screens	~67% employee profiles updated, reduced hiring, onboarding, and training costs, saved 111 FTE salaries, increased engagement, 21% increase in employee growth index	Over 60% adoption rate, 2,300 employees exploring new opportunities, unlocking 127,000+ hours of capacity, over \$15 million in savings, enhanced mentoring culture	700,000 released work hours, 500,000 repurposed hours for critical projects, 26,000 hours saved on regular processes, 41% increase in average worker productivity	90% response rate, addressing 92% overlooked concerns, tracking high-potential employee experiences, 64% savings in retaining at-risk employees	30% increase in revenue growth, improved employee engagement, 15% reduction in employee turnover, 10% increase in employee productivity
Benefits	Increased efficiency, diverse and skilled workforce, reduced hiring time and effort	Efficient, scalable hiring, focus on higher-impact tasks for recruiters	Enhanced talent utilization, cost savings, improved engagement and collaboration, better inclusion	Improved employee retention, increased productivity, lower recruitment costs, enhanced career development	Enhanced employee engagement, increased cross-functional assignments, improved organizational agility	Improved real-time communication, enhanced employee satisfaction, more efficient feedback collection	Improved productivity, higher engagement, reduced turnover
Impact	Successfully aligned with Iceland's values and culture, optimized hiring processes	Ability to hire top talent, adapt to evolving business needs, optimize recruitment process	Transformed HERE into a more agile and networked organization, optimized internal talent management	Empowered employees, improved internal mobility, efficient project staffing, nurtured internal talent pool	Effective upskilling / reskilling, improved career development, enhanced workforce visibility	Effective personnel operations improvement, better retention strategies	Revenue growth, clear alignment of goals and performance, enhanced employee engagement
Table 2. Within Case Analysis							

Cross-Case Analysis and Discussion

APM-Based Solutions in Talent Acquisition.

Talent acquisition is an essential aspect of the PM function of any organization. Apart from possessing the necessary skills and expertise, candidates with the right organizational fit are equally important. An organizationally fit candidate will likely stay longer, work harder, and exhibit a greater sense of loyalty and commitment, leading to a better return on investment. In today's competitive markets, quick recruitment is necessary due to sudden increases in demand, exits, or time-sensitive projects. However, selecting the right candidate with required skills and organizational fit can be challenging, particularly with a large number of applicants. APM-based systems (such as Iceland's "Smart Interviewer" chatbot and Amazon's Hirevue video assessment system) can be vital tools for streamlining recruitment processes. These systems provide personalized feedback, are bias-free and scalable (as attributed by Sapia-the organization behind "Smart Interviewer") and save time and resources. APM-based systems in talent acquisition facilitate data-

driven decision-making, by capturing and analyzing quantifiable data-points (such as aptitude test scores, response times, and linguistic patterns in chatbot interactions; facial expressions and body language cues in video assessments etc.) from candidates during the assessment process. Utilizing advanced algorithms and AI/ML on these data-points, APM-based systems objectively evaluate and rank candidates, providing precise profiles and transparent recommendations to managers, cultivating a diverse and skilled workforce. APM-based systems have also led to considerable time savings in the interview scheduling process for Iceland and Amazon. These systems allow candidates to initiate interviews at their convenience without needing an interviewer's presence, resulting in over 8000 hours of saved time for Iceland and 68000 hours for Amazon. In addition, such APM systems use a few questions and non-verbal cues to create candidate profiles and recommendations, reducing screening and interview time by over 40%. This has enabled Iceland and Amazon to evaluate 250-300% more candidates than traditional recruitment methods. APM-based systems generate personalized profiles predicting job performance, allowing for the recruitment of the right mix of talent. Besides time savings, cost savings too are significant, with recruitment costs per candidate reduced to approximately five Euros. In times of market disruptions, when organizations strive to quickly acquire necessary talent with new and requisite skills (Lecuona and Reitzig 2014), cost and time savings from APM-based systems could become the deciding factor for an organization's competitive advantage in this endeavor. Such systems are also scalable and compatible with high-volume recruitment, providing insights and recommendations into a broader pool of candidates with diverse skill sets and organizational fit. These insights can help organizations adapt their workforce composition (through new and diverse recruitment), address skill-gap concerns, and respond to changing market conditions, effectively re-configuring their workforce to align with strategic objectives (Hashemi-Petroodi et al. 2021). Effective workforce re-configuration ensures that an organization maintains its competitive edge and agility in a dynamic market environment (Hashemi-Petroodi et al. 2021). The benefits afforded by APM-based systems such as time and cost savings, skill and organizational fit of employees and workforce re-configuration capability creates skilled personnel slack. Skilled personnel slack facilitates exploration/experimentation, leading to innovation and improved organizational performance (Damanpour 1991). Also, APM-based systems provide personalized feedback to candidates and ensure a bias-free process, attracting a wider range of candidates, and may reduce chances of missing unique perspectives or skill sets, enhancing innovation capacity.

APM-Based Solutions in Talent and Performance Management.

After talent acquisition, talent management is an essential part of an organization's strategy. It involves various functions like career management, skill mapping, training, and development, workforce engagement, employee retention, productivity, performance management and redeployment. These functions aim to discover and cultivate an organization's talent, ensuring that people with the right skills are in the right positions at the right time to enhance organizational success. Effective talent management is crucial for several reasons. Retaining top-performing employees is necessary to ensure that skilled and capable individuals contribute to achieving organizational goals. Career development and growth promote job satisfaction, engagement, and value addition to the organization. A robust talent management strategy helps organizations address skill gaps and prepare for future workforce requirements by identifying and nurturing potential leaders. The increasingly changing dynamics of the business landscape have accentuated the importance of organizational agility and adaptability, making the need for effective talent management ever more important. However, managing talent effectively through conventional talent management practices has become difficult owing to increasing work environment complexity, due to globalization and rapid technological advancements. Nevertheless, the advent of data-driven technologies such AI, big data etc. has created unprecedented opportunities for organizations to harness the power of data in talent management giving rise to APM-based (algorithmic) talent management solutions.

APM-based systems such as HERE Technologies' Hitch Talent Mobility solution, Schneider Electric's Open Talent Market, Unilever's Flex Experiences, Altimetrik's Amber, and HelpSystems' Reflektive provide insights into the skills, capabilities, and potential of the organization's workforce, thereby enabling better data-driven decision-making. As was the case in talent acquisition systems, APM-based talent management systems too employ advanced algorithms and AI/ML on quantifiable data-points. These data-points may include employee skill sets, career aspirations and interests, career transition openings, internal gig-job opportunities, employee productivity, employee satisfaction, and employee feedback and sentiment. Based on this data, APM-based systems use employee profiles to match their present and desired skills, interests,

and career aspirations with available internal opportunities, leading to highly personalized recommendations ensuring skill-task fit (Vanacker et al. 2017). These recommendations can be in the form of internal gig jobs, learning opportunities or career transition openings. Similarly, APM-based systems ensure managers can access employee profiles to find the best candidate for their projects while balancing workforce asymmetry, i.e., re-tasking employees from over-staffed projects to workforce-stretched or lagging projects. This two-way matching and alignment for employees and managers gives the organization a dynamic workforce re-tasking ability. Such an ability resulted in savings of hundreds of thousands of hours for HERE Technologies, Schneider Electric, and Unilever. Mechanisms such as these provide organizations with a workforce tailored to their tactical and strategic objectives (Vanacker et al. 2017) and rapid redeployment capability (Wernerfelt and Montgomery 1988). In the face of a turbulent business environment or market disruptions, this peculiar ability to quickly re-task and re-configure the workforce afforded by APM-based systems can be effective for an organization to retain its edge. Akin to talent acquisition, APM-based talent management systems too facilitate workforce re-configuration. This re-configuration differs in that while APM-based talent acquisition systems focus on adapting and modifying workforce composition by acquiring and assimilating new talent from external market sources, APM-based talent management systems do so through internal development, redeployment, and engagement of the existing workforce within the organization. Another advantage of APM-based systems is that such systems offer employees discretionary autonomy, which is tied to increased productivity and organizational performance. This freedom to make career-related decisions promotes engagement and retention. Schneider Electric experienced over a 50% improvement in talent retention through such autonomy, as opportunities aligned with employees' interests fuel internal motivation and enhanced productivity.

Apart from the time savings discussed above, APM-based talent management systems have also yielded millions of dollars in cost savings. These cost savings occur because of two factors viz. (1) employees taking up tasks or gigs that interest them but are usually outsourced and (2) internal mobility and re-staffing reduces recruitment costs. For Schneider Electric these savings were upwards of 15 million dollars. Such monetary savings can be used to bolster the financial slack of an organization. It is well established in extant literature that high financial slack spurs organizational and innovation performance (Bradley et al. 2011; Vanacker et al. 2013). In times of crisis such as uncertain business environments or disruptions financial slack provides organizations with a cushion to absorb shocks, while in stable environments it encourages innovation (Bradley et al. 2011; Vanacker et al. 2013). Strategic re-orientation in response to declining performance is relatively easier for organizations with higher financial slack (Barker Iii and Barr 2002). Such benefits can be further improved if higher financial slack is combined with a balanced and optimized workforce (personnel slack).

Mapping employee skills to opportunities is just one aspect of a comprehensive talent management strategy. Setting clear goals, monitoring performance, providing regular feedback, recognizing contributions, and offering appropriate rewards forms the other part of performance management. APM-based talent management systems assist in establishing objectives at various tiers, including individual, team, project, and organizational levels, guaranteeing alignment and attainability. Such objectives offer employees a purposeful sense, leading them to become more devoted to enhancing their performance, and improving organizational performance, employee engagement, and productivity. APM-based talent management systems track employee performance and goals to identify areas for improvement and potential corrective actions. The system provides metrics to both managers and employees to facilitate feedback during one-on-one meetings. Feedback can serve as a tool for employee improvement or as a means of encouragement. APM-based talent management systems also aid in recognizing high-performing employees and recommend appropriate rewards resulting in higher employee satisfaction and engagement, thereby reducing turnover. APM improved employee retention by more than 15% at HelpSystems, while improving productivity by 10% and employee satisfaction by 22% (from 68% to 90%). All these improvements culminated in a 30% revenue growth for HelpSystems. Higher revenue translates into higher profitability and improved firm performance.

As necessary as providing feedback to employees, it is equally important to receive feedback from employees and address their concerns. If left unaddressed such employees tend to leave the organization. This challenge becomes even more critical if the at-risk employee is high performing (top talent). For organizations, retention of top talent is crucial since their attrition can severely impede organizational performance and competitiveness. High attrition among top talent may result in a loss of essential knowledge, skills, and experience which can be challenging to replace. Even if replaceable, the cost of

replacing such employees can be expensive, encompassing recruitment, onboarding, and training expenses. APM-based talent management systems, especially conversational chatbots such as Amber track employee feedback and sentiment and provide organizations with insights into potential issues. This allows managers to address employee concerns before they become more significant problems proactively. Through Amber, Altimetrik could retain approximately 64% of at-risk employees and address more than 90% of their concerns, which previously went unheard. This way, APM-based talent management systems optimize the organization's workforce, supporting employee engagement, productivity, and retention.

Algorithmic Personnel Management as an Organizational Capability

Organizational capabilities are the abilities, qualities and competences possessed by an organization that allows it to accomplish its goals and objectives (Maritan 2001). Dynamic capabilities are a specific subset of these capabilities that enable an organization to respond and adapt to changing environments, reconfigure internal resources, and shape external conditions to maintain a competitive advantage (Eisenhardt and Martin 2000). They further argue that resource reconfigurations, rather than capabilities, are the source of competitive advantage. However, dynamic capabilities assist in improving resource reconfigurations, creating a sustainable competitive advantage. Since personnel are a crucial strategic asset for an organization, PM practices are considered an essential organizational capability (Mavondo and Farrell 2003). According to Lepak and Snell (2002) the strategic significance of personnel lies in their ability to enhance the efficiency and effectiveness of the organization, take advantage of market opportunities, and mitigate potential threats. Thus, through extant literature and our study we propose that APM is an emerging and crucial capability for diverse organizations. APM has the potential to enhance organizational outcomes through data-driven technologies and advanced analytics. APM systems offer multiple advantages, such as improving the efficiency and effectiveness of PM processes by automating repetitive tasks and minimizing human error. This optimization enables resource allocation to strategic activities, boosting performance. APM systems facilitate data-driven decision-making, identifying trends and patterns in employee behavior, skills, and performance. This data-focused approach aligns personnel capital investments with organizational goals. Additionally, APM systems foster a culture of continuous improvement and innovation by providing real-time feedback and insights, motivating employees to develop skills and proactively contribute to organizational objectives. The impact of APM systems varies depending on the organization's size and type. Small and medium enterprises can benefit from streamlined PM processes and strategic decision-making, leveraging the agility and adaptability of APM systems to effectively respond to market changes and opportunities. On the other hand, multi-national companies can use APM systems to manage complex, diverse, and geographically dispersed workforces, optimizing human capital investments, promoting global collaboration, and maintaining competitiveness in an interconnected world.

Research Implications

Academic and Theoretical Implications

Our study extends the literature on AI and algorithms in PM activities by examining their impact on personnel slack, talent acquisition, and management. Contributing to theoretical research on the business value of AI in organizational settings, showcasing APM-based systems as a potentially important capability for balancing personnel slack. This aligns with the theories' core principles, emphasizing the strategic importance of leveraging AI for sustainable competitive advantage. Our study examines previously unexplored or limitedly studied theoretical constructs in the context of APM systems, such as relationships between APM enabled PM processes and activities, personnel slack, and potential organizational outcomes. This sheds light on underlying mechanisms driving these associations, offering a fresh perspective on how APM can optimize PM processes to balance personnel slack leading to improved organizational outcomes. This fresh perspective on APM's ability to optimize PM processes for balancing personnel slack may be due to the time savings afforded by APM systems such as Unilever's rapid redeployment of the workforce, saving 26,000 hours on regular processes and Iceland's AI-driven "Smart Interviewer" significantly reducing recruitment time and effort. Another instance can be Schneider Electric's workforce reconfiguration via the Open Talent Market, addressing employee development concerns. Furthermore, these cases suggest that APM might enhance organizational outcomes by streamlining processes, swiftly reallocating resources, and optimizing workforce composition. Unlike traditional IT/IS-based systems, we argue that APM systems

offer unique capabilities for optimizing PM processes, personnel slack management, and talent optimization through data-driven insights and advanced algorithms. Our research suggests that theoretical measures can potentially evaluate APM-based systems' impact on organizational performance indicators such as workforce productivity and talent retention. This framework may be assessed using turnover rates, satisfaction surveys, and strategic alignment of workforce composition, providing insight into APM-based system effects on performance. Our study potentially advances the understanding of APM-based systems, uncovering new constructs and emphasizing their distinct nature while offering a robust framework for optimizing personnel slack and workforce reconfiguration processes.

Implications for Practice and Conceptual Framework

This study emphasizes the potential advantages of APM-based systems in managing personnel slack through optimization of PM processes and practices possibly resulting in enhanced organizational outcomes. Managers may benefit from data-driven decisions, rapid workforce re-tasking, and increased agility compared to traditional PM approaches, optimizing personnel slack, and balancing its effects, leading to improved outcomes. We suggest that APM-based systems may also foster inter-departmental coordination and synergy by enhancing information flows and promoting cross-functional collaboration. These systems could enable comprehensive employee insights, allowing for data-driven decision-making and strategic workforce planning, impacting talent acquisition and management effectiveness. However, we do caution that while the flair of algorithmic precision may be alluring, organizations should tread carefully by auditing algorithms for latent biases and ensuring transparency in their utilization of employee data. Scholarly investigations have highlighted the propensity of algorithms to engender discrimination and bias predicated upon gender, race, and other legally safeguarded attributes (Ajunwa 2020). Ensuring a balanced fusion in this dynamic is vital because neither can truly succeed without a harmonious integration of the other.

Our research proposes a conceptual framework illustrating APM systems' potential optimization of PM processes, affecting personnel management aspects, and leading to efficient capabilities that may help managers balance and optimize personnel slack, subsequently influencing organizational outcomes (Figure 2). Managers may track APM-based systems' impact on performance indicators to assess the effectiveness of APM implementation and make refinements as needed.

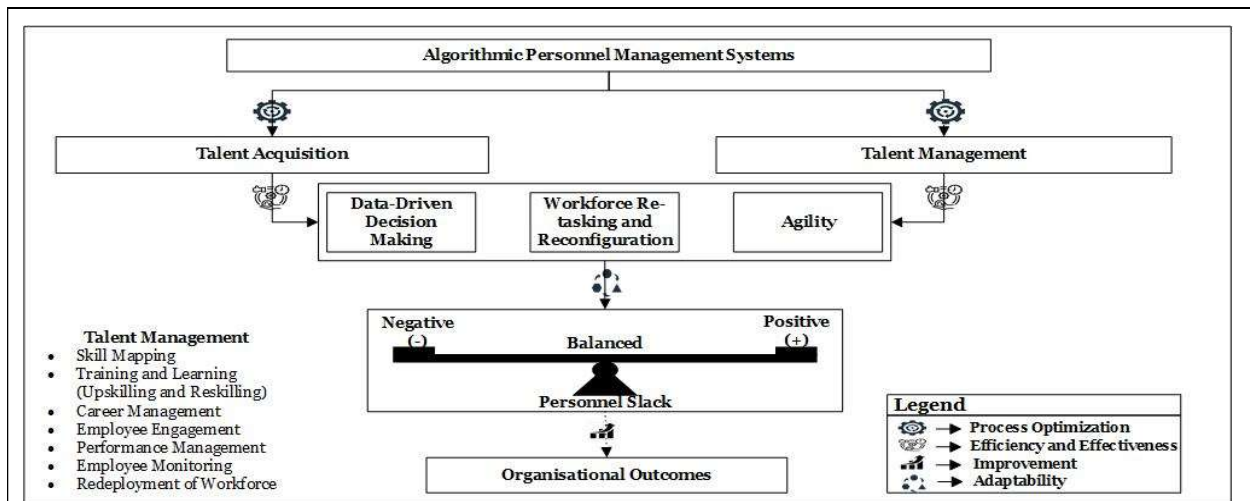


Figure 2.: Conceptual Framework

Limitations

This study, although insightful, has limitations due to its reliance solely on secondary case studies and success stories from APM solution providers' websites. While these offer insights into favorable APM outcomes, they often omit discussions of challenges, risks or possible biases associated with APM systems, potentially limiting the depth of analysis. While some vendors claim impartiality, past research has

indicated biases in recruitment platforms. These could not be investigated thoroughly in this study because of its dependence on secondary data sources. Overall, while valuable insights emerge, readers should note the study's dependence on provider perspectives in secondary data without counterbalancing viewpoints. Future research could address this limitation through multi-stakeholder primary data collection, encompassing both favorable and unfavorable APM experiences from diverse organizations. Nevertheless, within its defined scope, this study offers useful revelations into how APM may enhance and optimize PM processes to manage personnel slack.

Conclusion and Future Research Directions

Our study examines the impact of APM systems on optimizing personnel slack through transformation of PM processes and its organizational outcomes. Using a multi-case study analysis, we highlight the timesaving, cost saving, workforce reconfiguration and PM processes transformation capabilities which may have the potential to enhance financial slack, innovation performance, and organizational resilience. Our findings contribute to the literature on personnel management and workforce optimization in the digital era. The research demonstrates that APM systems can improve talent and performance management, align employee skills with organizational opportunities, and foster adaptability in dynamic business environments. Additionally, it underscores the transformation of traditional managerial roles, encouraging personnel managers to embrace strategic and analytical responsibilities. Our study presents academic, theoretical, and practical implications, guiding practitioners in implementing data-driven talent management solutions that promote skill-task fit, employee engagement, and retention, improving performance.

Our analysis reveals that APM-enabled personnel slack resulting from optimized PM processes can lead to favorable organizational outcomes such as efficiency gains, enhanced innovation, adaptability, employee retention, engagement, and financial performance which answers our first research question. The workforce reconfiguration and re-tasking capabilities afforded by APM systems enable organizations to respond swiftly to changing business landscapes, re-align employee skills with emerging opportunities, and maintain competitive advantage. Thus, APM itself emerges as a crucial organizational capability that allows organizations to balance personnel slack and derive strategic value from it. This answers our second research question.

Our multi-case analysis unveils a myriad of fascinating directions for future research on APM-based systems, delving into their impact on personnel management and organizational outcomes. One compelling avenue could be exploring the second-order organizational capabilities that APM systems can afford, such as enhancing collaboration, or promoting knowledge sharing among employees. These capabilities may give rise to a more adaptive and resilient organization, capable of thriving in the face of relentless change. Another captivating area for investigation might be the interplay between APM systems and cutting-edge technologies such as augmented reality (AR), virtual reality (VR), Metaverse, and blockchain. For instance, researchers could explore how integrating AR and VR in personnel training and development, powered by APM systems, may revolutionize workforce preparedness and competence. Likewise, the fusion of blockchain with APM systems could potentially enhance data security, transparency, and trust in PM processes. Furthermore, examining the strategic alignment of organizations with APM systems might yield invaluable insights into how this synergy promotes a more effective workforce management approach, driving superior performance. Scholars could explore how companies seamlessly aligning their strategic objectives with APM systems' capabilities can capitalize on the optimal balance of personnel slack, thus maximizing organizational outcomes. By thoroughly investigating these multifaceted dimensions, researchers may illuminate the ever-evolving role of APM systems in PM, uncovering their impact on organizational outcomes, and exposing the intricate interdependencies that exist within these complex systems. Future research could investigate the long-term effects of APM systems, broaden the scope to include small and medium-sized enterprises, and non-profit and public sector organizations, address ethical concerns, and examine the role of organizational culture and leadership in successful implementation. This line of inquiry has the potential to significantly advance our understanding of APM systems, paving the way for more effective, ethically responsible, and culturally aware implementations in the future. Finally, our study establishes APM as an important emerging phenomenon at the nexus of technology, management and organizations that warrants continued scholarly attention.

References

- Adams-Prassl, J. 2022. "Regulating Algorithms at Work: Lessons for a 'European Approach to Artificial Intelligence'," *European Labour Law Journal* (13:1), pp. 30-50.
- Ajunwa, I. 2020. "The Paradox of Automation as Anti-Bias Intervention," *Cardozo L. Rev.* (41), p. 1671.
- Baker, T., and Nelson, R. E. 2005. "Creating Something from Nothing: Resource Construction through Entrepreneurial Bricolage," *Administrative Science Quarterly* (50:3), pp. 329-366.
- Barker III, V. L., and Barr, P. S. 2002. "Linking Top Manager Attributions to Strategic Reorientation in Declining Firms Attempting Turnarounds," *Journal of Business Research* (55:12), pp. 963-979.
- Bentley, F. S., and Kehoe, R. R. 2020. "Give Them Some Slack—They're Trying to Change! The Benefits of Excess Cash, Excess Employees, and Increased Human Capital in the Strategic Change Context," *Academy of Management Journal* (63:1), pp. 181-204.
- Bondarouk, T., and Brewster, C. 2016. "Conceptualising the Future of Hrm and Technology Research," *The International Journal of Human Resource Management* (27:21), pp. 2652-2671.
- Bradley, S. W., Shepherd, D. A., and Wiklund, J. 2011. "The Importance of Slack for New Organizations Facing 'Tough' Environments," *Journal of Management Studies* (48:5), pp. 1071-1097.
- Brynjolfsson, E., Mitchell, T., and Rock, D. 2018. "What Can Machines Learn, and What Does It Mean for Occupations and the Economy?," *AEA Papers and Proceedings* (108), pp. 43-47.
- Chen, A. N. K., Hwang, Y., and Raghu, T. S. 2010. "Knowledge Life Cycle, Knowledge Inventory, and Knowledge Acquisition Strategies*," *Decision Sciences* (41:1), pp. 21-47.
- Chi, M. T., Glaser, R., and Farr, M. J. 2014. *The Nature of Expertise*. Psychology Press.
- Collings, D. G., and McMackin, J. 2021. "The Practices That Set Learning Organizations Apart," *MIT Sloan Management Review* (62:4), pp. 1-6.
- Cyert, R. M., and March, J. G. 1963. *A Behavioral Theory of the Firm*. Englewood Cliffs: Prentice Hall.
- Damanpour, F. 1991. "Organizational Innovation: A Meta-Analysis of Effects of Determinants and Moderators," *Academy of Management Journal* (34:3), pp. 555-590.
- DeCuir-Gunby, J. T., Marshall, P. L., and McCulloch, A. W. 2011. "Developing and Using a Codebook for the Analysis of Interview Data: An Example from a Professional Development Research Project," *Field Methods* (23:2), pp. 136-155.
- Duggan, J., Sherman, U., Carbery, R., and McDonnell, A. 2020. "Algorithmic Management and App-Work in the Gig Economy: A Research Agenda for Employment Relations and Hrm," *Human Resource Management Journal* (30:1), pp. 114-132.
- Ebers, M., and Maurer, I. 2014. "Connections Count: How Relational Embeddedness and Relational Empowerment Foster Absorptive Capacity," *Research Policy* (43:2), pp. 318-332.
- Eisenhardt, K. M. 1989. "Building Theories from Case Study Research," *Academy of management review* (14:4), pp. 532-550.
- Eisenhardt, K. M., and Graebner, M. E. 2007. "Theory Building from Cases: Opportunities and Challenges," *Academy of Management Journal* (50), pp. 25-32.
- Eisenhardt, K. M., and Martin, J. A. 2000. "Dynamic Capabilities: What Are They?," *Strategic Management Journal* (21:10-11), pp. 1105-1121.
- Gal, U., Jensen, T. B., and Stein, M.-K. 2020. "Breaking the Vicious Cycle of Algorithmic Management: A Virtue Ethics Approach to People Analytics," *Inf. Organ.* (30), p. 100301.
- Garud, R., Tuertscher, P., and Ven, A. 2013. "Perspectives on Innovation Processes," *Academy of Management Annals* (7), pp. 775-819.
- Giermindl, L. M., Strich, F., Christ, O., Leicht-Deobald, U., and Redzepi, A. 2022. "The Dark Sides of People Analytics: Reviewing the Perils for Organisations and Employees," *European Journal of Information Systems* (31:3), pp. 410-435.
- Gloat. 2021. "Unilever Brings Their Workforce into the Future with a Purpose-Led Upskilling and Reskilling Initiative Powered by Gloat's Talent Marketplace." Retrieved 29 December, 2022, from <https://gloat.com/resources/unilever-customer-success-story/>
- Gloat. 2022. "How Schneider Electric Increased Employee Retention." Retrieved 02 January, 2023, from <https://gloat.com/resources/schneider-electric-customer-success-story/>
- Google-LLC. 2022. "Google Search – Discover How Google Search Works." Retrieved 23 December, 2022, from https://www.google.com/intl/en_in/search/howsearchworks/
- Hashemi-Petroodi, S. E., Dolgui, A., Kovalev, S., Kovalyov, M. Y., and Thevenin, S. 2021. "Workforce Reconfiguration Strategies in Manufacturing Systems: A State of the Art," *International Journal of Production Research* (59:22), pp. 6721-6744.

- HireVue. 2022. "Amazon Drives Hiring Innovation and Experience with Hirevue." Retrieved 25 December, 2022, from <https://www.hirevue.com/case-studies/amazon>
- Hitch. 2020. "Here Technologies Taps Talent Mobility to Increase Workforce Productivity." Retrieved 28 December, 2022, from <https://hitch.works/resources/here-technologies-taps-talent-mobility-solution-to-increase-workforce-productivity/>
- inFeedo. 2022. "Altimetrik Saved 62% of at-Risk Employees with Ai." Retrieved 21 December, 2022, from <https://resources.infeedo.com/altimetrik-case-study>
- Jarrahi, M. H., Newlands, G., Lee, M. K., Wolf, C. T., Kinder, E., and Sutherland, W. 2021. "Algorithmic Management in a Work Context," *Big Data & Society* (8:2), p. 20539517211020332.
- Kaliannan, M., Darmalingam, D., Dorasamy, M., and Abraham, M. 2023. "Inclusive Talent Development as a Key Talent Management Approach: A Systematic Literature Review," *Human Resource Management Review* (33:1).
- Kellogg, K. C., Valentine, M. A., and Christin, A. 2020. "Algorithms at Work: The New Contested Terrain of Control," *Academy of Management Annals* (14:1), pp. 366-410.
- Lamarca, B. I., and Ambat, S. 2018. "The Development of a Performance Appraisal System Using Decision Tree Analysis and Fuzzy Logic," *International Journal of Intelligent Engineering and Systems* (11), pp. 11-19.
- Lecuona, J. R., and Reitzig, M. 2014. "Knowledge Worth Having in 'Excess': The Value of Tacit and Firm-Specific Human Resource Slack," *Strategic Management Journal* (35:7), pp. 954-973.
- Lefebvre, V. 2023. "Human Resources Slack and Profitability: Smes, Large Firms, and the Role of Business Group Affiliation," *Eurasian Business Review*.
- Leicht-Deobald, U., Busch, T., Schank, C., Weibel, A., Schafheitle, S., Wildhaber, I., and Kasper, G. 2019. "The Challenges of Algorithm-Based Hr Decision-Making for Personal Integrity," *Journal of Business Ethics* (160:2), pp. 377-392.
- Lepak, D. P., and Snell, S. A. 2002. "Examining the Human Resource Architecture: The Relationships among Human Capital, Employment, and Human Resource Configurations," *Journal of Management* (28:4), pp. 517-543.
- MacQueen, K. M., McLellan, E., Kay, K., and Milstein, B. 1998. "Codebook Development for Team-Based Qualitative Analysis," *Cam Journal* (10:2), pp. 31-36.
- Maritan, C. A. 2001. "Capital Investment as Investing in Organizational Capabilities: An Empirically Grounded Process Model," *Academy of Management Journal* (44:3), pp. 513-531.
- Mateescu, A., and Nguyen, A. 2019. "Algorithmic Management in the Workplace," *Data & Society* (8), p. 1030332.
- Mavondo, F., and Farrell, M. 2003. "Cultural Orientation: Its Relationship with Market Orientation, Innovation and Organisational Performance," *Management Decision* (41:3), pp. 241-249.
- Meijerink, J., Boons, M., Keegan, A., and Marler, J. 2021. "Algorithmic Human Resource Management: Synthesizing Developments and Cross-Disciplinary Insights on Digital Hrm," *The International Journal of Human Resource Management* (32), pp. 1-18.
- Miles, M. B., and Huberman, A. M. 1994. *Qualitative Data Analysis: An Expanded Sourcebook, 2nd Ed.* Thousand Oaks, CA, US: Sage Publications, Inc.
- Mirowska, A., and Mesnet, L. 2022. "Preferring the Devil You Know: Potential Applicant Reactions to Artificial Intelligence Evaluation of Interviews," *Human Resource Management Journal* (32:2), pp. 364-383.
- Mishina, Y., Pollock, T. G., and Porac, J. F. 2004. "Are More Resources Always Better for Growth? Resource Stickiness in Market and Product Expansion," *Strategic Management Journal* (25:12), pp. 1179-1197.
- Nohria, N., and Gulati, R. 1997. "What Is the Optimum Amount of Organizational Slack?: A Study of the Relationship between Slack and Innovation in Multinational Firms," *European Management Journal* (15:6), pp. 603-611.
- Nonaka, I. 1994. "A Dynamic Theory of Organizational Knowledge Creation," *Organization Science* (5:1), pp. 14-37.
- Paré, G. 2004. "Investigating Information Systems with Positivist Case Research," *Communications of the association for information systems* (13:1), p. 18.
- Pertusa-Ortega, E. M., Zaragoza-Sáez, P., and Claver-Cortés, E. 2010. "Can Formalization, Complexity, and Centralization Influence Knowledge Performance?," *Journal of Business Research* (63:3), pp. 310-320.

- Rahrovani, Y., and Pinsonneault, A. 2012. "On the Business Value of Information Technology: A Theory of Slack Resources," in *Information Systems Theory: Explaining and Predicting Our Digital Society, Vol. 1*, Y.K. Dwivedi, M.R. Wade and S.L. Schneberger (eds.). New York, NY: Springer New York, pp. 165-198.
- Recker, J. 2013. *Scientific Research in Information Systems: A Beginner's Guide*, (2 ed.). Springer Cham.
- Reflektive. 2020. "How Helpsystems Grew Revenue 30% with Reflektive Partnership." Retrieved 04 January, 2023, from <https://www.reflektive.com/resource/how-helpsystems-grew-revenue-30-with-reflektive-partnership/>
- Rose, S., Spinks, N., and Canhoto, A. I. 2014. *Management Research: Applying the Principles*. Routledge.
- Rowley, J. 2002. "Using Case Studies in Research," *Management Research News* (25:1), pp. 16-27.
- Saldaña, J. 2021. *The Coding Manual for Qualitative Researchers*. sage.
- Sapia. 2022. "Solving Volume Hiring for a Top 10 Uk Supermarket Chain." Retrieved 19 December, 2022, from <https://sapia.ai/resources/case-study/iceland/solving-volume-hiring-for-a-top-10-uk-supermarket-chain/>
- Saputra, A., Wang, G., Zhang, J. Z., and Behl, A. 2022. "The Framework of Talent Analytics Using Big Data," *TQM Journal* (34:1), pp. 178-198.
- Seawright, J., and Gerring, J. 2008. "Case Selection Techniques in Case Study Research: A Menu of Qualitative and Quantitative Options," *Political Research Quarterly* (61:2), pp. 294-308.
- Sharfman, M. P., Wolf, G., Chase, R. B., and Tansik, D. A. 1988. "Antecedents of Organizational Slack," *Academy of Management Review* (13:4), pp. 601-614.
- Strauss, A., and Corbin, J. M. 1990. *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Thousand Oaks, CA, US: Sage Publications, Inc.
- Thomas, D., and Rajeev, R. 2018. "Artificial Intelligence for the Real World: Don't Start with Moon Shots," *Harvard Business Review*, pp. 108-116.
- Tomprou, M., and Lee, M. K. 2021. "Employment Relationships in Algorithmic Management: A Psychological Contract Perspective," *Computers in Human Behavior* (126), p. 106997.
- Tursunbayeva, A., Di Lauro, S., and Pagliari, C. 2018. "People Analytics—a Scoping Review of Conceptual Boundaries and Value Propositions," *International Journal of Information Management* (43), pp. 224-247.
- Vaiman, V., Haslberger, A., and Vance, C. M. 2015. "Recognizing the Important Role of Self-Initiated Expatriates in Effective Global Talent Management," *Human Resource Management Review* (25:3), pp. 280-286.
- Vaiman, V., Scullion, H., and Collings, D. 2012. "Talent Management Decision Making," *Management Decision* (50:5), pp. 925-941.
- Vanacker, T., Collewaert, V., and Paeleman, I. 2013. "The Relationship between Slack Resources and the Performance of Entrepreneurial Firms: The Role of Venture Capital and Angel Investors," *Journal of Management Studies* (50:6), pp. 1070-1096.
- Vanacker, T., Collewaert, V., and Zahra, S. A. 2017. "Slack Resources, Firm Performance, and the Institutional Context: Evidence from Privately Held European Firms," *Strategic Management Journal* (38:6), pp. 1305-1326.
- Wernerfelt, B., and Montgomery, C. A. 1988. "Tobin's Q and the Importance of Focus in Firm Performance," *The American Economic Review* (78:1), pp. 246-250.
- Yin, R. K. 2009. *Case Study Research: Design and Methods*. SAGE Publications.